

# Orientation towards living in an old age home: an instrument to predict use of an old age home

Liesbeth M. Haken<sup>1,2</sup> MSc, Nardi Steverink<sup>3</sup> PhD, Wim J. A. van den Heuvel<sup>2,4</sup> PhD  
and Siegwart M. Lindenberg<sup>1</sup> PhD

<sup>1</sup>Interuniversity Center for Social Science Theory and Methodology (ICS), University of Groningen, the Netherlands, <sup>2</sup>Northern Centre for Healthcare Research (NCH), University of Groningen, Groningen, the Netherlands, <sup>3</sup>Department of Internal Medicine/Geriatrics, University of Groningen, Academic Hospital, Groningen, the Netherlands and <sup>4</sup>University Maastricht, Maastricht, the Netherlands

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## Orientation toward living in an old age home. An instrument to predict admission into an old age home

**Background:** This study presents an alternative assessment method for establishing the demand for an old age home among a community-dwelling older population. The instrument, called 'orientation towards admission into an old age home', represents the intensity of the need for admission as expressed by older people themselves. Therefore it is indicative of the 'subjective demand'.

**Methods:** Using a longitudinal design (1993–98), the study tests whether a stronger orientation towards admission into an old age home leads to use of an old age home. This assessment method is compared with another method of assessing 'subjective demand', that is by those who have applied for and are waiting for admission. Additionally, the method is compared with an 'objective' indicator of

demand, that is, the level of physical impairments and age of the elderly person.

**Results:** Results show that the subjective demand as measured by the 'orientation toward admission into an old age home' is indeed related to actual use of an old age home. The subjective demand as measured by being on a waiting list is not significantly related to the use of an old age home. The level of physical impairments (the objective demand) and age are sometimes, but not always, significantly related to the use of an old age home.

**Conclusion:** The instrument 'orientation' provides us with a valuable instrument in assessing 'subjective demand' for an old age home among community-dwelling older people.

**Keywords:** physically frail elderly, institutionalization, assessment methods, orientation scale.

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## Introduction

The elderly population requires more and different health and care services than the younger population, as morbidity in the elderly population reflects chronicity, multimorbidity and specific old age diseases (1). Care is therefore an important aspect in the life of older people. Nursing homes form an important component in the continuum of care. The Skilled Nursing Facilities (SNFs) provide specialized care for the elderly in need of intense care. Residential Care Facilities (RCFs) and Intermediate Care Facilities (ICFs) (hereafter called 'old age homes') provide care to the less handicapped.

Understanding the circumstances under which community-dwelling older people develop a need for an old age home may provide insight into how the use of these arrangements could be reduced or prevented. Furthermore, the demand for old age homes among the elderly needs to be known in order to anticipate the future need for health care (2, 3). This necessitates a method to determine the demand among community-dwelling older people.

There are several ways in which demand has been determined, but none of these methods is without problems. Establishing the care needs by looking at the 'objective demand', that is, determining the level of the physical impairments, is insufficient for predicting the chance of admission into an old age home. Especially in old age homes (as compared with nursing homes which provide more specialized care), other factors like formal or informal help, living alone or not, age and gender have repeatedly been found to be associated with an increased

### Correspondence to:

Liesbeth Haken, Northern Centre for Healthcare Research (NCH), University of Groningen, Postbus 196, 9700 AD Groningen, the Netherlands.  
E-mail: e.m.haken@med.rug.nl

chance of admission (4–9). Yet, how these factors are precisely related to a change of admission into an old age home, and how these factors are related to each other, is unclear.

A more appropriate way of establishing the requirement for old age homes seems to be to ask older people whether they intend to move into an old age home in the (near) future (the 'subjective demand'). People's application for this type of care has often been used as an indicator of subjective demand. However, the entry into an old age home is frequently based on an assessment of the needs of applicants (10). Requesting care is thus filtered by an application process, which leads to strategic behaviour. People may apply in order to have the option just in case something happens, while others may be pushed to this precaution by other people. In contrast, in order not to put themselves in a category with people who cannot live independently, people may not apply although they are physically frail (11). Measuring demand by application may therefore not represent the real 'subjective demand'.

An 'orientation-scale' was developed by Steverink to overcome the difficulties of measuring the demand for care (12, 13). This instrument represents an alternative method for establishing the 'subjective demand' for an old age home. The instrument can be used to assess the demand among all community-dwelling older people. Orientation was defined as the intensity of need for admission into an old age home. As orientation is not filtered by an application process, it represents more directly the wish of the elderly person. Orientation was measured by a combination of items assessing *behaviour* towards old age home entry and the *preferences* for the moment of entry.

If the instrument indeed makes assessment of the intensity of the need for admission possible, it may enable us to predict old age home use. The research question is: does orientation towards admission into an old age home predict actual use of an old age home? In other words, can we claim that the stronger people's orientation, the more likely that, in the future, they will move into an old age home?

Furthermore, the study will compare the effect of two methods of assessing the 'subjective demand' (orientation vs. application) for admission into an old age home. In addition, the effect of the level of physical impairments (the objective method) as well as age on the admission into an old age home will be studied.

## Methods

### Sample

The validity of the concept orientation was tested using a longitudinal design. The sample consists of 607 physically frail elderly, which is a subgroup of the main sample of the Groningen Longitudinal Ageing Study (GLAS) ( $n = 5279$ ) on Functional Status and Need for Care (14, 15, 12). The

607 physically frail elderly were followed from 1993 to 1998, allowing a series of measurements of four points in time (1993, 1994, 1995 and 1998). Information on whether an older person moved into an old age home was acquired by asking local councils and housing corporations about the history of the addresses of the 607 physically frail elderly over a period of 5 years (1/1/1993–1/1/1998). In 1993 none of these elderly people were using institutional care. During the 5-year study-period, 61 of the elderly moved into an old age home.

The study is restricted to physically frail elderly. Restricting the investigation to this specific target group is appropriate, because physical frailness is often a prerequisite for the use of care (9). Physical frailty has been measured with a six-item physical functioning scale (a subscale of the MOS Short-form General Health Survey, SF-20) (16). The selection criterion was having physical restraints in at least three of the six physical activities [which were: very demanding activities (e.g. carrying heavy objects), less demanding activities (e.g. carrying groceries), walking stairs or a hill, bending or kneeling, walking, eating or dressing]. Another selection criterion concerned age restrictions. Only people older than 65 years were included, because at younger age the use of institutional care arrangements is limited (17, 9).

### Measurement

The orientation scale consists of six questions, measuring behaviour in relation to living in an old age home (item 1, 4 and 6) and the preferences for the moment of entry into an old age home (item 2, 3 and 5, see Table 2). The scale score consists of the sum of the scores of the six items, resulting in a range from no orientation (0) to a strong orientation (12). These questions were only asked when an elderly person was not (yet) admitted into an old age home.

The level of functional limitations was established using an 18-item physical restriction scale (GARS), measuring (i) adl activities (18). Possible scores run from 18 to 72. The mean score in this sample was 33. This is considered fairly high in comparison with the main sample of the GLAS study in which also not physically frail elderly were included (mean score was 24) (15).

Being on a waiting list was determined by the sixth item of the orientation scale (see Table 2), in which the elderly were asked whether they applied for admission into an old age home.

### Analyses

The Mann–Whitney test for two independent groups was used to compare the group who went into an old age home with the group who did not move into an old age home on: the mean score on orientation, whether or not being on a waiting list, the level of physical disability and age

(Table 3). Probabilities below 0.05 were regarded as statistically significant. Furthermore, the effects of the strength of orientation, being on a waiting list, the level of physical impairments and age on admission into an old age home were determined by Cox proportional hazard regression models. The effects of these four variables in 1993, 1994 and 1995 were studied in separate models (Table 4).

For two respondents, the data on the orientation scale in the first measurement were missing. Furthermore, the current address of two of the 607 elderly people could not be traced. These four participants were excluded from the analysis.

## Results

The characteristics of the sample are presented in Table 1. The study group consisted of 75.3% women. The mean age was 75.7 years. More than half of the study group was living alone (51.7%).

Table 2 presents the items of the orientation scale and shows the frequencies per item. In the present analyses, three measurement moments of orientation were used (1993, 1994 and 1995). The frequencies are presented per year, concerning the elderly who participated in the study in that year. The table shows that especially the items 1, 4, and 5 were answered more frequently with 'often' or 'yes' than the items 2, 3, and 6.

Reliability analyses ( $\alpha = 0.81, 0.82$  and  $0.82$  in 1993, 1994 and 1995, respectively) showed that the orientation

**Table 1** Characteristics of the study group ( $n = 603$ ), at baseline(1993)

Gender	
Male	24.7% (149)
Female	75.3% (454)
Age	
65–69	21.4% (129)
70–74	28.2% (170)
75–79	24.4% (147)
80 and older	26.0% (157)
Mean	75.7 years
Living alone or not	
Living alone	51.7% (312)
Not living alone	48.3% (291)
Mean level of physical impairments (18–72)	33.2

scale can be regarded as highly internally consistent at all three measurement moments. Factor analysis (principal component analyses) showed that there is one underlying dimension [explained variance in 1993 = 53.2% (Eigenvalue = 3.2), in 1994 = 54.6% (Eigenvalue = 3.3) and in 1995 = 54% (Eigenvalue = 3.2)]. All items are strongly related to this component.

The analyses reported in Table 3 explored whether the four variables: orientation, being on a waiting list, the level of physical impairments and age in 1993, 1994 and 1995

**Table 2** The orientation-scale and the frequencies per item

		1993 ( $n = 603$ )	1994 ( $n = 497$ )	1995 ( $n = 436$ )
1. You know that older people can move into an old age home. Do you ever consider this for yourself?	0 never	51.7	60.6	62.6
	1 occasionally	40.5	35.0	33.7
	2 often	7.8	4.4	3.7
2. If they called you to tell you there is a place for you in an old age home, would you accept that place?	0 no	90.9	93.8	92.0
	1 maybe	4.5	2.8	4.6
	2 yes	4.6	3.4	3.4
3. Do you intend to move into an old age home in the near future?	0 no	86.9	90.5	90.8
	1 maybe	8.8	5.6	6.4
	2 yes	4.3	3.8	2.8
4. Do you ever speak with family, friends or acquaintances about moving to an 'old age home'?	0 never	62.7	66.6	68.8
	1 occasionally	33.2	31.0	29.8
	2 often	4.1	2.4	1.4
5. Do you intend to move into an old age home within 5 years?	0 no	50.7	56.9	50.7
	1 maybe	41.0	34.0	42.2
	2 yes	8.3	9.1	7.1
6. Did you ever ask for information about or apply for admission into an old age home? did not apply	0 no	87.1	89.1	86.2
	1 asked for information,	8.1	5.8	9.9
	2 yes, applied and waiting for admission	4.8	5.0	3.9

**Table 3** Use of old age home by orientation, waiting list, physical impairments and age in 1993, 1994 and 1995 (n in parentheses)

	<i>Did not move into an old age home</i>	<i>Did move into an old age home</i>	<i>Mann-Whitney tests</i>
Mean orientation (0–12)			p = 0.000
1993 (603)	1.90 (542)	3.30 (61)	
Score on scale			
0 or 1	54.4%	36.1%	
2 or higher	45.6%	63.9%	
1994 (495)	1.56 (452)	3.35 (43)	0.000
Score on scale			
0 or 1	62.4%	32.5%	
2 or higher	37.6%	67.5%	
1995 (434)	1.59 (404)	3.29 (31)	0.005
Score on scale			
0 or 1	59.6%	38.7%	
1 or higher	40.4%	61.3%	
Waiting list (in percentage)			
1993			
On waiting list (29)	86.2% (25)	13.8% (4)	0.501
Not on waiting list (574)	90.1% (517)	9.9% (57)	
1994			
On waiting list (25)	76.0% (19)	24.0% (6)	0.008
Not on waiting list (472)	91.7% (433)	8.3% (39)	
1995			
On waiting list (17)	82.4% (14)	17.6% (3)	0.097
Not on waiting list (419)	93.1% (390)	6.9% (29)	
Mean level of physical impairments (18–72)	SD	SD	
1993 (603)	32.7 (542) (9.8)	37.0 (61) (9.3)	0.000
1994 (496)	33.3 (454) (10.7)	39.1 (52) (10.2)	0.000
1995 (455)	33.1 (407) (10.5)	42.4 (48) (10.9)	0.000
Mean age (65–94)			
1993 (603)	74.4 (542) (6.2)	78.7 (61) (6.0)	0.000

differ for the elderly who moved into an old age home during the 5-year study period and for those who did not. In the three analyses the elderly who participated in the study in a specific year were included. Not participating the next year could be the result of nonresponse or to admission into an old age home (as the orientation score would, in that case, not have been asked in the next measurement).

The elderly who did move into an old age home during the 5-year study-period had a mean orientation of 3.30 in 1993, while the mean score of the elderly who did not go into an old age home was 1.90. The admission into an old age home could have taken place directly after the measurement in 1993, but also no sooner than 1997. In 1994, the mean score of orientation of the elderly who went into an old age home was 3.35. This means the admission could have taken place soon after this second measurement in 1994, but also in 1997. In 1995, the mean score of

orientation of the elderly who were admitted into an old age home was 3.29, in contrast to a mean of 1.59 of those who were not. Mann-Whitney tests show that the strength of the orientation differs significantly for the elderly who moved into an old age home and for those who did not ( $p = 0.000$  in 1993,  $p = 0.000$  in 1994 and  $p = 0.005$  in 1995). Additionally, the distribution of the scores on the orientation-scale is presented. The elderly who were not admitted into an old age home, had low scores compared with the elderly who (later) were admitted.

In 1993, 4.8% of the elderly said that they applied for and were waiting for admission into an old age home (see Table 2). In 1994 and 1995 this was 5.0 and 3.9%, respectively. During the 5-year study-period, 13.8% of the elderly who mentioned being on a waiting list in 1993 moved into an old age home, while 9.9% of the elderly who were not on a waiting list also went into an old age

home. These differences are not significant ( $p = 0.501$ ). In 1994, the elderly on a waiting list significantly more often moved into an old age home (24% against 8.3%,  $p = 0.008$ ). However, in 1995, these differences were again not significant (17.6% against 6.9%,  $p = 0.097$ ).

The level of physical impairments among the elderly who were admitted into an old age home is significantly higher than the level of physical impairments among the elderly who were not admitted (in all three measurements:  $p = 0.000$ ). The elderly persons who did move into an old age home were also significantly older than the elderly not admitted ( $p = 0.000$ ). These results indicate that – when studied separately – the strength of orientation as well as the level of physical impairments and age are related to whether or not an older person moves into an old age home.

Table 4 presents the Cox proportional hazard regression models, in which the effects of orientation, being on a waiting list, the level of physical impairments and age (the independent variables) on admission into an old age home (the dependent variable) are considered together. To study whether the same variables consistently predict admission, the three measurement periods are considered separately.

The Table 4 shows that a stronger orientation in 1993 significantly predicts whether an elderly person will be admitted into an old age home during the following 5 years, as did a higher level of physical impairments and a more advanced age.

It was also studied whether the strength of orientation as measured in 1994 and 1995, respectively, predicted

admission into an old age home during the period 1994–98 and during the period 1995–98. Both analyses show that orientation is the most significant predictor of admission into an old age home. The 1994 analysis shows that older age also increases the chance of admission, while the level of impairments is not significantly related to admission. The 1995 analysis, however, shows that the level of impairments is significantly related to admission, whereas age is not.

## Discussion

The demand for old age homes among community-dwelling older people is often determined in an ‘objective’ manner by establishing the level of physical impairments or in a ‘subjective’ manner by looking at those who have applied for an old age home. This longitudinal study (1993–98) presents and compares an alternative assessment method for ‘subjective demand’ for an old age home, by studying the strength of ‘orientation towards an old age home’ among a community-dwelling older population.

The results show that the orientation of the elderly who do enter an old age home during the 5-year study-period is significantly stronger than the orientation of the elderly who do not enter an old age home. This result is consistently found during all the three measurement moments (in 1993, 1994 and 1995). Since the admissions took place over a period of 5-year (1993–98), the instrument seems to make it possible to assess the chance of admission into an old age home up to 5 years prior to admission.

**Table 4** Cox regression models of use of old age home during the 5-year study-period, by orientation, on waiting list, level of physical impairments and age in 1993, 1994 and 1995

	<i>B</i>	<i>Significance</i>	<i>Odds ratio</i>	<i>95% Confidence interval (OR)</i>	
				<i>Lower</i>	<i>Upper</i>
1993					
Orientation (0–12)	0.1513	0.0019	1.16	1.06	1.28
On waiting list (0 = no, 1 = yes)	-1.0875	0.0746	0.34	0.102	1.11
Level of physical impairments (18–72)	0.0337	0.0080	1.03	1.01	1.06
Age (65–94)	0.694	0.0006	1.07	1.03	1.12
1994					
Orientation (0–12)	0.1971	0.0008	1.22	1.09	1.37
On waiting list (0 = no, 1 = yes)	-1.1552	0.7780	0.86	0.29	2.51
Level of physical impairments (18–72)	0.0287	0.0515	1.03	0.99	1.06
Age (65–94)	0.0590	0.0159	1.06	1.01	1.11
1995					
Orientation (0–12)	0.1982	0.0060	1.22	1.06	1.40
On waiting list (0 = no, 1 = yes)	-0.5702	0.4631	0.57	0.12	2.59
Level of physical impairments (18–72)	0.0351	0.0307	1.04	1.00	1.07
Age (65–94)	0.0439	0.1439	1.04	0.99	1.11

It was found that applying for admission (and being on a waiting list) often does not lead to actual admission. Other mechanisms seem to play a role in the step from application to admission. This method of predicting the demand for old age homes by looking at waiting lists therefore seems to be insufficient.

The results further show that the level of impairments (the 'objective demand') is sometimes found to predict use of an old age home, but this result is not found consistently over the years. One could object that – as this study uses a physically frail sample – the influence of the level of physical impairments on admission into an old age home was difficult to study. However, if the level of physical impairments would determine admission, one would expect that an increase above the 'frailty baseline' would make an admission into an old age home even more likely. As this is not the case and other factors seem to play an important role in the admission, assessing the chance of admission into an old age home by the level of physical impairments does not seem to be an appropriate method. In addition, being older seems to increase the risk of admission, but again this effect is not consistent.

The study has some potential limitations. An important fact is that in-between an expressed demand for care and factual admission into an old age home, several factors such as admission committees, length of waiting lists and the available supply play a role. This study does not take these factors into consideration. Still, orientation (own subjective demand) proved to predict the use of an old age home in spite of these possibly disturbing factors.

The subjective demand, as determined by application, was assessed by one item of the orientation scale in which the elderly could mention whether they applied for an old age home. This variable does therefore not necessarily represent 'actually being on a waiting list', but rather whether the elderly themselves say if they are on a waiting list or not. Furthermore, the item measuring whether a person did or did not apply for an old age home, is also part of the complete orientation scale consisting of six items. However, this is not considered to be a problem. Additional analyses (not presented) which excluded this sixth item from the scale show very similar results. Seemingly, having applied for an old age home contributes only marginally to the predictive power of the orientation scale. Still, in the analyses all six items of the original scale are used, because the main objective of the instrument is to assess the care demand among a community-dwelling older population, and to do so with a scale that is as strong as possible.

In this study we strictly focus on several ways of assessing demand, without considering other possibly confounding variables or interactions between the variables. For a better understanding of when and why admission takes place, this should be considered.

In sum, the findings suggest that the scale 'orientation' provides us with a valuable instrument for assessing 'subjective demand' for an old age home among community-dwelling older people. This method of assessing 'subjective demand' seems better capable of predicting admission into an old age home than assessing the 'subjective demand' by looking at application for admission and also better than establishing care needs by the 'objective' level of physical impairments and by age. Assessments of care needs by the orientation towards an old age home thus provide us with valuable information for the anticipation of the future need for old age homes and with possibilities to study the mechanisms leading to a need for admission into an old age home. Knowing under what circumstances a need for care develops may indicate how admission into an old age home might be prevented.

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