

Functional levels and nurse workload of elderly awaiting nursing home placement and nursing home residents: A comparative study.

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Abstract

The aim of this study was twofold: to compare the functional levels of elderly awaiting nursing home placement and nursing home residents, and to compare their nurses' physical and psychological workloads. In Norway, the demand for nursing home placement has increased greatly. Elderly awaiting placement can receive care from home health care services and/or from their families. Documenting elderly's functional levels may illuminate the extent of the carers' workloads and the need for support during the waiting period. The study was conducted in 2005 on two groups in northern Norway. Using the Multi-Dimensional Dementia Assessment Scale to assess functional levels, one group of nurses assessed elderly awaiting nursing home placement ($n=36$) and another group of nurses assessed nursing home residents ($n=47$). The nurses also reported physical and psychological workloads in caring for these elderly.

A comparison of the functional levels between elderly awaiting nursing home placement and nursing home residents showed few statistically significant differences. Nursing home residents had two lower motor functions, needed more assistance with activities of daily living, more regular administration of enemas, were more often unable to speak, and showed lower orientation levels. Clinically significant similarities were found in five motor functions, including rising from lying to sitting, rising out of bed and walking, and in behavioural and psychiatric symptoms. Both groups of elderly had a high prevalence of sadness and fearfulness. The results of this study indicate that elderly awaiting nursing home placement can be as frail as nursing home residents. These results highlight the elderly's need for assistance and reveal the need for more nursing home beds. Nurses in home health care and nursing homes rated physical and psychological workloads similarly. Since many carers provide care 24 hours a day, these results also illuminate the need to support carers during the waiting period.

Keywords:

Elderly, waiting list, nursing home placement, resident, nursing home, level of functioning, MDDAS, nurses, workload

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INTRODUCTION

Norway is facing an ageing population (1). The current national policy supports the elderly living at home for as long as possible. Since 1997, public subsidy schemes for building nursing homes (NHs) have increased the number of NH beds, but there are still not enough to meet the required 250 per 1000 inhabitants above 80 years of age (2). In 2005, the gross margin ratio of NH beds was about 19% (3). Therefore, after requesting NH placement, many elderly have to continue living at home. Since 1988, when the responsibility for NHs was transferred from counties to municipalities, the demand for NH placement has increased sharply, and NHs provide care to more frail residents. In 2002, the mean age of NH residents was 83 years; their main physical diagnoses were stroke (15-19%) and chronic heart disease (5-6%). About 80% of NH residents suffered from cognitive impairment, of which 40-48% had advanced dementia disease (ADD) (4).

When elderly become too frail to manage at home, or when their carers cannot take care of them any longer, they or their carers can request NH placement. A physician and the nurse leader of home health services then conduct a thorough assessment of their needs. If NH is determined to be the needed level of care and no bed is available, their name is placed on a waiting list. During the waiting period, elderly receive assistance from home health care, and often from their families as well. Many elderly want more assistance than they receive (5), which can pose great stress on carers who can be at risk for negative health effects such as depression, anxiety, fatigue, burnout, and even precipitated mortality (6-8). Nursing home waiting lists are used in Norway, as well as in other countries. In the Netherlands (9) and in Canada (10), elderly had to wait several years after requesting NH placement. Many Irish carers who postponed a NH placement decision until there were no other alternatives, reported feelings of failure, anxiety, and guilt (11-12). Often, a critical incident precipitated NH placement of American elderly (13). In their meta-analysis, Gaugler *et al.* (14) reported that cognitive impairment, three or more activities of daily living (ADL) dependencies, and prior NH use were the strongest predictors of NH admission in the US. Other reported predictors were care burdens (15), the need for more skilled care and carers' health problems (16), symptoms of hallucinations (17), incontinence, night-time agitation and wandering (18).

Studies have focused on characteristics of NH residents, including problems with dressing (19), feeding (20), and toileting (21). Most American NH residents fluctuated between agitated and apathetic behaviours during the course of the day (22); behavioural symptoms and agitation were common among residents with ADD (23). A review of the literature showed vocally disruptive behaviour in 11%-30% of the NH residents (24). Depression (22.2%) and anxiety (9.9%) were common among Dutch NH residents (25). At admission and six months after NH placement, Scocco *et al.* (26) examined 68 Italian NH residents and found that living in a NH had not brought about any improvement or stabilization; rather, their clinical condition worsened, and all expressed feelings of loneliness and marginalization (26).

A Cochrane review found no statistically significant differences between elderly living at home and those living in institutions when comparing functioning, mental status, attitudes toward perceived health, life satisfaction, and mortality (only one paper was included, fulfilling the inclusion criteria) (25). Still, there have been interesting studies. Shugarman *et al.* (26) found that many American NH residents had a more severe stage of cognitive impairment and needed more assistance with ADLs than home care clients. Research has also shown that, compared to elderly living at home, Japanese NH residents were more depressed (29). Nursing home residents in Israel and the US showed statistically significantly more hopelessness, tension, and anxiety than those residing in the community (30-31).

Due to the shortage of NH beds in Norway, many frail elderly continue living at home after they have been assessed as needing NH care. Interviews with carers of elderly awaiting NH placement have revealed that they often lack adequate assistive devices, such as mechanical lifts. Thus, reasonably carers and home health care providers regularly provide time-consuming and burdensome care. To illuminate the amount of assistance needed, we compared functional levels between elderly awaiting NH placement and NH residents, and nurses' physical and psychological workloads in caring for them. In our opinion, the nurses' assessments of workloads in home care, as well as the elderly's functional levels, are suitable measures to illuminate the burden of care for carers of elderly awaiting NH placement. A literature search on CINAHL, MEDLINE ADVANCED, and PsycINFO revealed no studies comparing elderly awaiting NH placement and NH residents or nurses' workloads in caring for these elderly. It may seem self-evident that elderly awaiting NH placement have low functional levels, similar to some NH residents. Still, how low their functional levels actually

can be has earlier neither been documented nor described in details. Illuminating the similarities and differences between elderly awaiting NH placement and NH residents may firstly contribute to a broader understanding of the need for more NH beds. Secondly, it may also illuminate carers' workloads and their need for adapted support while waiting for NH placement.

Aim of the study

The aim of this study was twofold: to compare functional levels of elderly awaiting NH placement and NH residents, and to compare their nurses' physical and psychological workloads.

METHOD

Design

This was a quantitative descriptive study. Data were collected by questionnaires and analysed by descriptive statistics.

Sample/Participants

This study was conducted in a municipality in Northern Norway and included two samples. The inclusion criteria for the first sample were: over 67 years, awaiting NH placement on a specific date, and willing to voluntarily participate. In this group, 63 elderly were awaiting NH placement. Nine died early in the data collection period, one was admitted to an institution, and one did not receive home health services due to geographic reasons. Of the 52 remaining elderly awaiting NH placement, 36 consented to have their functional levels assessed by a scale (response rate 69%). The inclusion criteria for the second sample were: over 67 years, residing as a resident in a selected NH with 73 residents, and willing to voluntarily participate. Nine died early in the data collection period, one was at the end of life, one re-located, and one was under 67 years old. Of the 61 remaining NH residents, 47 consented to assessment of their functional levels based on a scale (response rate 77%).

Instrument

The instrument for this study was the Multi-Dimensional Dementia Assessment Scale (MDDAS) (32), designed at Umeå University. The MDDAS is comprised of both multiple-choice and open-ended questions about motor function, vision, hearing, speech, ADL-

functions, behavioural and psychiatric symptoms, use of psychoactive drugs, and staff's experienced physical and psychological workloads. In the MDDAS, the assessments of motor functions are based on 7 items, ADL-functions on 11 items, person-time-place orientation ability on 14 items, behavioural symptoms on 24 items, and psychiatric symptoms on 12 items. The physical and psychological workloads were measured by a visual analogue scale with ratings from 1 to 5 (minimum-maximum). The MDDAS was originally constructed to assess the functional levels of institutionalized patients. In the current study, the item '*goes into other patients' bed to sleep*' was excluded, since this item was irrelevant for elderly awaiting NH placement. We also find the terms 'behavioural disturbances', 'psychiatric symptoms' and 'psychiatric workloads' in the original version of the MDDAS somewhat awkward. Thus in the Norwegian translation of the MDDAS, we used the terms 'behavioural symptoms', 'psychiatric symptoms' and 'psychological workloads'. The MDDAS scales were completed by registered nurses (RNs) or enrolled nurses (ENs) who were willing to complete the scale, knew the elderly well, or were NH residents' primary nurses. The term 'nurses' in this paper refers to both RNs and ENs.

Validity and reliability

Tests for intra-rater reliability of the Swedish version of the MDDAS (32) resulted in an α of 0.78 and Phi 0.60 and for inter-rater reliability an α of 0.75 and Phi 0.64 (33). The cut-off score for the cognitive impairment sub-scale was validated against the corresponding cut-off score of the Mini-Mental State Examination (MMSE) (34) with 90% sensitivity and 91% specificity (35). The translation of the MDDAS into Norwegian was considered unproblematic due to similarities in the Swedish and Norwegian languages, as well as the fact that one of the authors is Swedish and is also one of the designers of the MDDAS. A pilot study of the questionnaire was conducted with nine participants (some were RNs and ENs) of various ages to ensure that the questionnaire was clear and understandable. The MDDAS in our study was completed by RNs or ENs. This indicates a high agreement about the terminology used in the MDDAS (32) and ensures inter-rater reliability.

Data collection

Data collection occurred from June 1 through September 2005. Home health service leaders distributed the MDDAS to nurses who best knew the elderly who were awaiting NH placement; the leading nurse in the NH distributed it to NH residents' primary nurses.

Data analysis

The data were processed by the Statistical Package for the Social Sciences (SPSS) software, version 12.0. For categorical variables, differences between elderly awaiting NH placement and NH residents were tested with chi-square-tests. Fisher's Exact Test was used when cells had an expected count less than 5. These results are presented as per cent distributions. For continuous variables, differences between elderly awaiting NH placement and NH residents were tested with independent sample t-tests. These results are presented as mean \pm SD. The statistical significance level for all tests was 5% (36).

Ethical considerations

The Head of the Social Welfare Unit at the municipality and the National Committees for Research Ethics in Norway (57/2004) approved the study.

The elderly or their carers received a letter explaining the study from leaders in their area of home health services or from the leading nurse in the NH. They were asked to give informed consent for nurses to be involved in providing the researchers' information about assessments of the elderly. They were promised confidentiality and assured their consent was voluntary, and that they had the right to withdraw from participation at any time without stating a reason.

The questionnaire contained intimate questions about frail and vulnerable elderly awaiting NH placement or already residing in a NH. For elderly who could understand the information, we told nurses to ask for their informed consent before beginning the data collection. If the elderly showed resistance toward participation, they would not have been included. If the elderly had ADD and could not understand the information, informed consent was sought from carers or elderly's next of kin, emphasizing that they consider acting in the elderly's best interest.

RESULTS

Demographics

There were no statistically significant differences in age and sex between elderly awaiting NH placement and NH residents. Those awaiting NH placement were older on average, with a mean age 84.6 ± 8.4 (minimum 70, maximum 100) versus 83.1 ± 6.3 (minimum 71, maximum 93), respectively. Females represented 61.1% of elderly awaiting NH placement and 68.1% of NH residents (Table 1).

Please, insert Table 1

Motor functions

Table 2 shows differences between elderly awaiting NH placement and NH residents in terms of motor functions. The differences were statistically significant for two motor functions: more elderly awaiting NH placement were able to get up from a chair and to walk without assistance up and down staircases. For other motor functions, no differences were found, indicating elderly awaiting NH placement needed almost as much assistance as NH residents when rising from lying to sitting, rising out of bed, and walking. Many elderly in both groups had very low motor function levels; about one half of elderly awaiting NH placement were able to rise without assistance from lying to sitting, rise out of bed without assistance, and walk with aid. About only a quarter of elderly in both groups were able to walk without assistance (Table 2).

Please, insert Table 2

ADL-functions, speech, vision and hearing

Table 3 presents differences in ADL-functions, in addition to results regarding speech, vision, and hearing. For most ADL-functions, the differences were statistically significant; elderly awaiting NH placement were more self-reliant than NH residents concerning dressing, toileting, hygiene, and eating. Among elderly awaiting NH placement, 14.7% were able to complete their morning care without assistance; no NH residents were able to do so. About one half of elderly awaiting NH placement were able to defecate on the toilet without assistance, compared to only a tenth of the NH residents. Few elderly awaiting NH placement needed enemas, compared to almost one half of the NH residents. Differences in the ability to speak were statistically significant, as well; none of the elderly awaiting NH placement were totally non-communicative, while 12.8% of NH residents could not speak and used only nonverbal communication. No statistically significant differences were found regarding vision and hearing (Table 3).

Please, insert Table 3

Orientation ability

Table 4 presents differences in orientation ability between elderly awaiting NH placement and NH residents. A very high portion of both groups of elderly had memory disturbances. All differences except two were statistically significant. More elderly awaiting NH placement were oriented to time, place, and their own identity. Significantly more elderly awaiting NH placement recognized their relatives than NH residents. Regarding orientation about their own first name and the ability to recognize the staff, no statistically significant differences were found (Table 4).

Please, insert Table 4

Behavioural symptoms

Table 5 presents differences in behavioural symptoms between elderly awaiting NH placement and NH residents. Only two statistically significant differences were found; more NH residents spit out medicine and rolled up table cloths. While these two behaviours were the only statistically significant differences found, the prevalence of some behavioural symptoms was high within both groups. The most frequent symptoms were 'disturbed sleep at night' and 'continually seeks attention of the staff'. Other frequent symptoms in both groups were 'wandered alone or with other patients back and forth', 'refused to be dressed and undressed', and 'used aggressive threats (words or gestures) towards patients and/or staff'. The prevalence of 'hits patients and/or staff' was also relatively high in both groups (Table 5).

Please, insert Table 5

Psychiatric symptoms

Table 6 presents differences between elderly awaiting NH placement and NH residents in psychiatric symptoms. Only one statistically significant difference was found; elderly awaiting NH placement complained more often than NH residents. However, both groups demonstrated common psychiatric symptoms, usually viewed as negative; nearly one half of elderly awaiting NH placement were 'sad daily or sometimes weekly', a fifth 'cried daily or sometimes weekly', and many were often annoyed. The corresponding numbers for NH residents were lower. About a third of elderly in both groups were 'fearful daily or sometimes weekly'. Regarding hallucinations, no statistically significant differences were found between the groups (Table 6).

Please, insert Table 6

Nurses' physical and psychological workloads

Table 7 presents the nurses' workloads in caring for elderly awaiting NH placement and NH residents. No statistically significant differences were found in this data. The physical workload was rated at 2.9 ± 1.4 for those awaiting NH placement versus 3.0 ± 1.3 for NH residents. Psychological workload was similar for both groups; it was rated 2.5 ± 1.4 . Physical and psychological workloads were rated from minimum to maximum in home health care and in the NH (Table 7).

Please, insert Table 7

DISCUSSION

The main result of this study was that frail elderly awaiting NH placement and NH residents showed many similarities in five motor functions and most variables regarding behavioural and psychiatric symptoms. Nurses' workloads for the two groups were similar, as well. These results indicate that elderly awaiting NH placement because of lack of NH beds need NH care, and that during the waiting period, their carers and home health nurses have a heavy workload, as well as the great need for support, adequate devices such as mechanical lifts, and appropriate respite services.

Statistically significant differences in functional levels between elderly awaiting NH placement and NH residents were found in fewer areas than expected, indicating that elderly awaiting NH placement were not as frail as those in NHs. Elderly awaiting NH placement had higher levels of two variables of motor functioning; they needed less assistance with ADL-functions, had infrequent speech impairment, and were more orientated than NH residents.

Similarities

Our assessment included all residents in the NH, including elderly recently admitted to the NH as well as those at end of life. Thus, we had expected to find greater differences between the two groups. Our expectations were that the functional levels of elderly awaiting NH placement would be close to the functional levels of elderly recently admitted to NH.

We discuss variables that showed no statistically significant differences as similarities. For these variables, we consider elderly awaiting NH placement as frail as NH residents. Yet, for

many of these variables, including five motor functions, there were clearly tendencies that elderly awaiting NH placement had higher functional levels than NH residents. However, the similarities between the groups are clinically significant and illuminate the frailty of elderly awaiting NH placement. Still, we believe that most tendencies would become statistically significant with a larger sample. In addition, relocation to a NH implied adjustment to new environments, which could have positively or negatively affected NH residents' functional levels. According to the American psychologist Lawton, environments affect human beings' behavioural competence, health, cognition, and social behaviour, as well as their psychological well-being and quality of life (37).

Motor functions

Results of the two groups showed similarities in motor functions: ability to rise from lying to sitting, rising out of bed, walking without assistance, and walking with instrumental help. This indicates that elderly awaiting NH placement needed almost as much assistance as NH residents in transferring from bed to chair and walking during the day. One important difference to consider is that when NH residents needed assistance, the physical conditions were adjusted to their performance with devices such as mechanical lifts. In addition, two attendants were often available in the NH to assist with mobility. Elderly awaiting NH placement received almost the same amount of assistance in their homes, where quarters could be close. Assistance in the home was provided by carers or community nurses, who often came in the morning and assisted the elderly in getting out of bed. During the day, carers had to assist elderly when community nurses were unavailable. Assisting elderly with rising from lying to sitting, rising out of bed, and walking can be physically demanding, as adequate devices, such as mechanical lifts, seemed scarce commodities in the homes which explain the occurrence of some carers' backaches (38).

Behavioural symptoms

For most variables, elderly awaiting NH placement and NH residents had the same prevalence of behavioural symptoms. These behavioural symptoms typically occurred with cognitive impairment (30), which was a strong predictor of NH placement (12). Three out of four elderly awaiting NH placement also had memory disturbances. Many NH residents 'continually sought attention of the staff', which was commonly reported in a Norwegian NH where residents rarely communicated with each other and communicated with staff mainly during care and meal times. The rest of the time, many NH residents tried to seek staff's

attention (37). Limited communication between NH residents and staff can be due to low staffing levels, and hence, lack of time for satisfactory conversations. In the current study, the prevalence of verbal threats and physical hitting was high, especially among NH residents. We did not explore the amount of communication between NH residents and staff, but an unsatisfactory interaction can increase the prevalence of threats and hitting and result in work stress for nurses. In a Swedish NH, 68.4% of caregivers reported they had been exposed to violence during the previous year (38). Some Australian nurses experienced high levels of stress working with cognitively impaired residents, especially if their behaviour was perceived as threatening (41).

Psychiatric symptoms

Many similarities were found between elderly awaiting NH placement and NH residents regarding psychiatric symptoms. Both groups had a high prevalence of psychiatric symptoms. In terms of emotional psychiatric symptoms, elderly awaiting NH placement tended to have more symptoms than NH residents. We found it clinically significant that about one half of elderly awaiting NH placement were sad and one fifth cried daily or weekly, possibly indicating difficult life situations or labile emotional responses. In addition, the prevalence of psychiatric symptoms for elderly awaiting NH placement can actually be higher than reported, possibly because some elderly may have desired to hide their tears from the nurses, and therefore cried only when being alone. Our results are contrary to studies that reported NH residents were more depressed than community-dwelling elderly (27-28). Elderly awaiting NH placement in our study were probably more frail and had more difficult life situations than community-dwelling elderly in these studies.

Nurses' workloads

Nurses' physical and psychological workloads were similar whether working in home health care or in a NH. However, nurses' workloads tended to be slightly higher than workloads reported by Sandman *et al.* (32) in their study from 1988, which used the MDDAS to assess 3600 elderly living in different long-term care institutions in Sweden. Higher workload indicates frailer residents or lower staffing levels. There are two important reasons for lower functional levels among Norwegian NH residents during recent years (4): an increasing number of elderly (1) and strengthening of home health care as a public priority area since the 1980s. Today, the Norwegian Government financially supports building new NHs, but still a lack of NH beds must be contended with for many years (3).

A consequence of higher workload can be higher RN turnover rates and lack of qualified nurses. In Norway, turnover rates and long-term illnesses are very high among NH and home health care staff (3). In America, high turnover was found directly related to low staffing levels (42). In 2006, 78% of nurses working in Norwegian NHs assessed their staffing levels as too low (43). However, turnover can also be related to the availability of alternative jobs. In Norwegian rural municipalities, NHs and home health care are often the only job possibilities for health personnel. A study published in 2007, revealed that for Norwegian nursing students, working in elderly care institutions remained unpopular throughout their entire study period (44).

Differences

Motor functions

Two motor functions showed elderly awaiting NH placement had statistically significant higher functional levels compared with NH residents. Elderly awaiting NH placement needed less assistance rising from chairs and walking up and down stairs. A remaining question is how often NH residents can engage in activity to maintaining their mobility in walking and manoeuvring stairs.

Behavioural symptoms

Regarding behavioural symptoms, statistically significant differences were found between elderly awaiting NH placement and NH residents for two variables: residents in NHs spit medication and rolled up table cloths more often than elderly awaiting NH placement. We assume that it is much easier for elderly awaiting NH placement to refuse medication because their medications are often self-administered. A reason for the difference in rolling up table cloths can be that this kind of behaviour is much more observable by nurses in NHs than home health nurses visiting elderly in their homes.

Psychiatric symptoms

Regarding psychiatric symptoms, the only statistically significant difference was that elderly awaiting NH placement complained more often than NH residents. It is possible that they had valid reasons for complaining, e.g., not receiving the institutional care assessed that they needed. During the waiting period, they may have experienced limited assistance, a common experience among Norwegian elderly (7). However, NH residents may also have had valid reasons for complaining. If they had previously complained, perhaps their complaints were

not taken seriously, since communication between NH residents and NH staff can be limited (39).

ADL-functions

Compared with elderly awaiting NH placement, NH residents were statistically significantly less capable of carrying out ADL-functions without assistance. All NH residents needed assistance with morning care. Also an American study showed that NH residents were more disabled and needed more assistance with ADL-functions than home care clients (28). An interesting related question is 'How many opportunities do NH residents have to remain independent?' In a Swedish study, Kihlgren *et al.* showed that elderly with ADD who received integrity promoting care showed improvements in most of their functions (45).

In our study, statistically significantly more NH residents needed an enema, than among elderly awaiting NH placement. We did not investigate the use of laxatives, diet, or mobility, but in a Finnish NH, 55.3% of all NH residents received laxatives regularly (46). A review of the literature showed elderly with constipation often had faecal incontinence (47). Although in our study, few elderly awaiting NH placement needed enemas, they may have been constipated, since in a Swedish study, 22% of community-dwelling elderly women reported that they regularly used laxatives because of constipation (48). Perhaps the faecal frequency of elderly awaiting NH placement was difficult for nurses to monitor while they lived at home. When the need for more assistance and enemas became evident, NH placement became a more viable option. Faecal incontinence was difficult for Australian carers to cope with (49), and has been reported to be a predictor of NH placement (50-51).

Statistically significantly more NH residents had lost speech and used only nonverbal sounds to communicate than elderly awaiting NH placement. This difference indicates difficulty living at home with great care needs and lack of ability to communicate, which has been reported to be a strong predictor of NH placement (14).

Orientation ability

Compared with elderly awaiting NH placement, NH residents were statistically significantly less orientated to time, place, and person. This indicates more memory disturbances, cognitive impairment, and ADD among NH residents, yet many elderly awaiting NH placement had great problems with their orientation ability, as well; less than half of them knew the correct

month and year. However, orientation to time is often of less concern in terms of mental status than orientation to place and person.

Limitations of the study

There are some limitations of the present study. The validity and reliability of the MDDAS (32), had previously been tested (33-35). Regarding content validity, we found some of the items in the MDDAS to be too narrow and concrete, for example item number 34: *'Takes things from fellow patients' drawers and cupboards'*. The reasons that elderly display this behaviour can vary and the item does not appropriately measure the elderly's ability to separate their own and other residents' property. The face validity of this study was ensured by a high response rate. Comparability of elderly awaiting NH placement and NH residents can be questioned. Nurses working in NHs were able to observe the residents 24 hours a day, while nurses working in home health care only saw the elderly a few hours a day or a few times a week. Thus, the true prevalence of psychiatric and behavioural symptoms could be higher than reported among elderly awaiting NH placement. The elderly could feel more sad and fearful while being alone or pretend to be happier when community nurses visited them. In addition, carers provided much time-consuming and burdensome care to elderly awaiting NH placement. This might have influenced the nurses' assessments of workloads. If nurses had to provide the needed care without the carers' contributions, the nurses' assessments of workload might have been higher. Concerning generalizability, the sample for this study included elderly on a specific NH municipality waiting list at a certain date and NH residents in a selected NH. Thus, these findings are not representative for all NH waiting lists or NH residents, but they may be transferable to similar settings.

Conclusions

This study reported similarities and differences in functional levels and nurses' workloads between two samples: a sample of frail elderly awaiting NH placement and a sample of NH residents. Statistically significant differences were found for two motor functions, in the activity of daily living functions, the need for enemas, the ability to speak, and orientation ability. Clinically significant similarities were found for five motor functions, behavioural and psychiatric symptoms and nurses' workloads, indicating the frailty of elderly awaiting NH placement. They were almost as frail and needed almost as much assistance as NH residents. Elderly awaiting NH placement had a high prevalence of sadness and fearfulness, perhaps

indicating their life situation was being experienced as difficult. Their emotional responses may be important to attend to.

Implications for nursing practice/education and research

There are several implications of this study for nursing practice, nursing education, and policy. The frailty of elderly awaiting NH placement highlights their need for assistance and their carers' need for support and appropriate respite services during the waiting period. Adequate devices, such as mechanical lifts, must be available in elderly's homes to reduce the physical workload and to avoid back injuries to carers and nurses.

The high turnover rates and lack of qualified nurses in elderly care make it important that nurses engage in making caring for the elderly, both in NHs and home health care, more attractively in the future. In nursing schools, it is of importance to focus on teaching about elderly's needs and care. When nursing students are in the practice setting, they need to be guided in a way that fosters their interest in working with elderly in the future.

Nurses need to acknowledge an ethical responsibility for engaging in policy issues, such as advocating for greater funding in the care of the elderly. To provide appropriate health services to Norwegian elderly, more NH beds and flexible additional services and support in home care will be of importance. Further research comparing elderly awaiting NH placement and NH residents is needed to expand our understanding about the life situation for elderly on NH waiting lists and their carers.

Acknowledgements

The authors wish to thank Centre for Research in the Elderly in Tromsø for supporting this research with grants (project number SAT259-05). Furthermore, they wish to thank the participants for their generosity and openness during the interviews.

Author contribution

All listed authors have contributed directly to this study and this article. Data collection, analysis work and drafting of manuscript were performed by AMSF. KN, NH, AN and FG contributed to critical revisions of manuscript. KN, NH and AN regularly met with AMSF for discussion, support and supervision throughout the complete process.

Table 1. Demographics of elderly awaiting nursing home placement and residents in a nursing home

Demographics	Habitation		P-value
	nursing home placement	home	
Age, mean	84.6 ± 8.4	83.1 ± 6.3	.338
Female, %	61.1	68.1	.509

Table 2. Comparison of elderly awaiting nursing home placement and residents in nursing home with regard to motor functions

Characteristic in %	Habitation		P-value
	Awaiting nursing home placement (n = 36)	In a nursing home (n = 47)	
Able to rise without assistance			
from lying to sitting	52.8	42.6	.355
Able to rise out of bed without assistance	50.0	36.2	.206
Able to rise up from a chair	61.1	39.1	.048
Walks without assistance	27.8	25.5	.818
Able to walk without assistance up and down staircases	22.2	6.4	.050*
Walks with aid (helper)	55.6	42.6	.240
Walks with aid (instrumental help e.g. walking stick, trestle)	63.9	48.9	.174

* Fisher's Exact Test

Table 3. Comparison of elderly awaiting nursing home placement and residents in nursing home with regard to ADL-functions, speech, vision and hearing

Characteristic in %	Habitation		P-value
	Awaiting nursing home placement (n = 36)	In a nursing home (n = 47)	
<i>ADL-functions</i>			
Normal ability to dress after instructions, encouragement or on own initiative	22.2	6.4	.050*
Able to go to the lavatory alone on own initiative	44.4	15.6	.004
Defecates on toilet without help	47.2	10.9	.000
Needs enema to be able to defecate	8.3	45.7	.000
Accomplishes upper/lower hygiene after instructions, encouragement or on own initiative	33.3	12.8	.024
Fed partly or completely	13.9	38.3	.014
Needs assistance of no attendants on morning care	14.7	.0	.012*
Needs assistance of two attendants on morning care	26.5	41.3	.169
<i>Speech, vision and hearing</i>			
Not able to speak, uses sounds	.0	12.8	.035*
Blind or greatly reduced vision	16.7	17.4	.931
Reduced hearing, not able to manage normal conversational level	28.6	37.0	.428

* Fisher's Exact Test

Table 4. Comparison of elderly awaiting nursing home placement and residents in nursing home according to their orientation ability

Characteristic in %	Habitation		P-value
	Awaiting nursing home placement (n = 36)	In a nursing home (n = 47)	
Memory disturbances	74.3	93.6	.014
<i>Time</i>			
Knows what time of day it is	60.0	34.9	.027
Knows what month it is	44.4	23.3	.046
Knows what year it is	45.7	18.6	.010
<i>Place</i>			
Knows that he/she is in a nursing home or at home	86.1	54.5	.002
Knows name of town that he/she is in	88.6	62.2	.008
Knows where own bed is	83.3	46.7	.001
<i>Identity</i>			
Knows own first name	100.0	95.6	.306*
Knows own surname	100.0	84.4	.016*
Knows own age	63.9	20.5	.000
Knows own birthday	66.7	40.0	.017
Knows own year of birth	68.6	40.9	.014
<i>Recognition</i>			
Recognizes his/her relatives	100.0	81.8	.008*
Recognizes the staff	80.0	75.6	.637

* Fisher's Exact Test

Table 5. Comparison of elderly awaiting nursing home placement and residents in nursing home according to their behavioral symptoms daily or sometimes weekly

Characteristic in %	Habitation		P-value
	Awaiting nursing home placement (n = 36)	In a nursing home (n = 47)	
Takes things from fellow patients' drawers or cupboards without any apparent reason	25.0	23.4	.866
Packs his/hers things, is often on his/her way home	8.3	8.5	1.000*
Often stands at the front door to go out	16.7	17.0	.966
Is 'occupied' with his/her previous work in the ward	11.1	17.0	.448
Wanders alone or with other patients back and forth	19.4	29.8	.283
Piles up chairs, pushes tables, turns furniture upside down, etc.	.0	6.4	.254*
Disturbed sleep at night	63.9	61.7	.838
Does not want to go to bed	27.8	21.3	.492
Unruly in bed, throws bedclothes on the floor	22.2	21.3	.917
Mixes up food	22.2	23.9	.857
Eats other people's food	.0	4.3	.501*
Eats potted soil, cigarette butts, etc.	.0	2.1	1.000*
Spits out medication	8.3	29.8	.016
Refuses to be dressed and undressed	16.7	29.8	.166
Undresses in the day room	5.6	17.0	.175*
Urinating in waste paper baskets, washbasin or on floor	5.6	4.3	1.000*
Smears faeces on clothes, furniture, etc.	13.9	12.8	1.000*
Continually seeks attention of the staff	41.7	59.6	.106
Aggressive threats (words or gesture) to patients, staff	27.8	30.4	.793
Hits patients/staff	11.1	17.4	.425
Shrieks and shouts continuously	8.3	13.0	.724*
Tears up newspapers, etc.	.0	10.9	.064*
Hides things	13.9	26.1	.176
<u>Rolls up table cloths</u>	.0	28.9	.000

* Fisher's Exact Test

Table 6. Comparison of elderly awaiting nursing home placement and residents in nursing home according to their psychiatric symptoms

Characteristic in %	Habitation		P-value
	Awaiting nursing home placement (n = 36)	In a nursing home (n = 47)	
<i>Behaviour</i>			
Disturbed and restless daily or sometimes weekly	33.3	39.1	.589
Overactive ('manic') daily or sometimes weekly	.0	8.5	.129*
Seeks help groundlessly daily or sometimes weekly	27.8	19.1	.354
Complaining daily or sometimes weekly	47.2	21.7	.015
Speaks to him/her self daily or sometimes weekly	11.4	17.0	.479
<i>Emotions</i>			
Sad daily or sometimes weekly	47.2	27.7	.066
Cries daily or sometimes weekly	22.2	14.9	.390
Fearful daily or sometimes weekly	38.9	29.8	.385
Easily annoyed daily or sometimes weekly	41.7	25.5	.120
Suspicious daily or sometimes weekly	19.4	10.9	.276
<i>Hallucinations</i>			
Hallucinates (visually) daily or sometimes weekly	11.1	8.5	.722*
Hallucinates (auditorally) daily or sometimes weekly	5.6	4.3	1.000*

* Fisher's Exact Test

Table 7. Comparison of elderly awaiting nursing home placement and residents in nursing home with regard to nurses' estimated degree of workload

Characteristic	Habitation		P-value
	Awaiting nursing home placement (n = 36)	In a nursing home (n = 47)	
Workload (physical) (1-5)(mean)	2.9 ± 1.4	3.0 ± 1.3	.796
Workload (psychological) (1-5)(mean)	2.5 ± 1.4	2.5 ± 1.4	.935

References

1. Statistics Norway Population projections. National and regional figures. Strong population growth expected. 15.11.2005. 2005, Statistics Norway, Oslo.
2. Ministry of Health and Social Affairs. *Stortingsmelding nr 31. Avslutning av handlingsplan for eldreomsorgen, 2001-2002. (Finalization of action plan for care of the elderly, 2001-2002)*. 2002, Helse- og Sosialdepartementet, Oslo. (In Norwegian).
3. Ministry of Health and Care Services. *Stortingsmelding nr 25. Mestring, muligheter og mening, 2005-2006. (Coping, possibilities and meaning, 2005-2006)*. 2006, Helse- og Omsorgsdepartementet, Oslo. (In Norwegian).
4. Nygaard H. Sykehjemmet som medisinsk institusjon – et fatamorgana? (Nursing home as a medical institution – a fata morgana?) *Tidsskrift Norsk Lægeforening* 2002; 122: 823–5. (In Norwegian).
5. Statistics Norway *Helse i Norge (Health in Norway)*. Publikasjon SA 41, 2000, Statistisk Sentralbyrå, Oslo. (In Norwegian).
6. Schulz R, Beach S. Caregiving as a risk factor for mortality: the Caregiver Health Effects Study. *Journal of the American Medical Association* 1999; 282: 2215-2219.
7. Bakas T, Austin JK, Jessup SL, Williams LS, Oberst MT. Time and difficulty of tasks provided by family caregivers of stroke survivors. *Journal of Neuroscience Nursing* 2004; 36: 95-106.
8. McConaghy R, Caltabiano ML. Caring for a person with dementia: Exploring relationships between perceived burden, depression, coping and well-being. *Nursing and Health Sciences* 2005; 7: 81-91.
9. Meiland FJ, Danse JA, Wendte JF, Klazinga NS, Gunning-Schepers LJ. Caring for relatives with dementia – caregiver experiences of relatives of patients on the waiting list for admission to a psychogeriatric nursing home in The Netherlands. *Scandinavian Journal of Public Health* 2001; 29: 113-121.

10. Reuss GF, Dupuis SL, Whitfield K (2005) Understanding the experience of moving a loved one to a long-term care facility: family members' perspectives. *Journal of Gerontological Social Work* 2005; 46: 17-46.
11. Ryan AA, Scullion HF. Nursing home placement: an exploration of the experiences of family carers. *Journal of Advanced Nursing* 2000; 32: 1187 – 1195.
12. Schur D, Whitlatch CJ. Circumstances leading to placement: a difficult caregiving decision. *Lippincott's Case Management* 2003; 8: 187-195.
13. Liken MA. Critical incidents precipitating institutionalization of a relative with Alzheimer's. *Western Journal of Nursing Research* 2001; 23: 163-178.
14. Gaugler JE, Duval S, Anderson KA, Kane RL. Predicting nursing home admission in the U.S: a meta-analysis. *BMC Geriatrics* 2007; 7: 13
15. Gaugler JE, Leach CR, Clay T, Newcomer RC. Predictors of nursing home placement in African Americans with dementia. *Journal of the American Geriatrics Society* 2004; 52: 445-452.
16. Buhr GT, Kuchibhatla M, Clipp EC. Caregivers' reasons for nursing home placement: clues for improving discussions with families prior to the transition. *The Gerontologist* 2006; 46: 52-61.
17. Aarsland D, Larsen JP, Tandberg E, Laake K. Predictors of nursing home placement in Parkinson's disease: a population-based, prospective study. *Journal of the American Geriatrics Society* 2000; 48: 938-942.
18. Upton N, Reed V. The meaning of incontinence in dementia care. *The International Journal of Psychiatric Nursing Research* 2005; 11: 1200-1210.
19. Cohen-Mansfield J, Creedon MA, Malone T, Parpura-Gill A, Dakheel-Ali M, Heasley C. Dressing of cognitively impaired nursing home residents: Description and analysis. *The Gerontologist* 2006; 46: 89-96.

20. Simmons SF, Reuben D. Nutritional intake monitoring for nursing home residents: A comparison of staff documentation, direct observation, and photography methods. *Journal of the American Geriatrics Society* 2000; 48: 209-213.
21. Anger JT, Saigal CS, Pace J, Rodriguez LV, Litwin MS. True prevalence of urinary incontinence among female nursing home residents. *Urology* 2006; 67: 281-287.
22. Buettner L, Fitzsimmons S. Mixed behaviors in dementia: the need for a paradigm shift. *Journal of Gerontological Nursing* 2006; 32: 15-22.
23. Cohen-Mansfield J, Libin A. Verbal and physical non-aggressive agitated behaviors in elderly persons with dementia: robustness of syndromes. *Journal of Psychiatric Research* 2005; 39: 325-332.
24. McMinn B, Draper B. Vocally disruptive behaviour in dementia: Development of an evidence based practice guideline. *Aging & Mental Health* 2005; 9: 16-24.
25. Smalbrugge M, Pot AM, Jongenelis L, Gundy CM, Beekman ATF, Eefsting JA. The impact of depression and anxiety on well being, disability and use of health care services in nursing home patients. *International Journal of Geriatric Psychiatry* 2006; 21: 325-332.
26. Scocco P, Rapattoni M, Fantoni G. Nursing home institutionalization: a source of eustress or distress for the elderly? *International Journal of Geriatric Psychiatry* 2006; 21: 281-287.
27. Mottram P, Pitkala K, Lees C. Institutional versus at-home long term care for functionally dependent older people. *Cochrane Database of Systematic Reviews* 2002; 1: CD003542.
28. Shugarman LR, Fries BE, James M. A comparison of home care clients and nursing home residents: can community based care keep the elderly and disabled at home? *Home Health Care Services Quarterly* 1999; 18: 25-45.

29. Onishi J, Suzuki Y, Umegaki H, Endo H, Kawamura T, Iguchi, A. A comparison of depressive mood of older adults in a community, nursing homes, and a geriatric hospital: factor analysis of geriatric depression scale. *Journal of Geriatric Psychiatry and Neurology* 2006; 19: 26-31.
30. Ron P. Depression, hopelessness and suicidal ideation among the elderly: a comparison between men and women living in nursing homes and in the community. *Journal of Gerontological Social Work* 2004; 43: 97-116.
31. Gueldner SH, Loeb S, Morris D, Penrod J, Bramlett M, Johnston L, Schlotzhauer P. A comparison of life satisfaction and mood in nursing home residents and community-dwelling elders. *Archives of Psychiatric Nursing* 2001; 15: 232-240.
32. Sandman PO, Adolfsson R, Norberg A, Nystrom L, Winblad B. Long-term care of the elderly. A descriptive study of 3600 institutionalized patients in the county of Vasterbotten, Sweden. *Comprehensive Gerontology [A]*. 1988; 2: 120-132.
33. Karlsson S, Bucht G, Eriksson S, Sandman PO. Factors relating to the use of physical restraints in geriatric care settings. *Journal of the American Geriatrics Society* 2001; 49: 1722-1728.
34. Folstein MF, Folstein SE, McHugh PR. "Minimal state". A practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research* 1975; 12: 189-198.
35. Johansson K, Sandman PO, Karlsson S. Picking behaviour in cognitively impaired residents in geriatric settings: prevalence of the behaviour and characteristics of the residents. *Scandinavian Journal of Caring Sciences* 2004; 18:12-18.
36. Pallant J. *SPSS Survival Manual. A step by step guide to data analysis using SPSS for Windows (Version 12)*. 2005, Open University Press, Berkshire.
37. Lawton MP. Environment and other determinants of well-being in older people. *The Gerontologist* 1983; 23:349-357.

38. O'Donnell ME. The long gray tunnel: the day-to-day experience of spouse caregivers of people with Alzheimer's disease. *Scholarly Inquiry for Nursing Practice* 2000; 14:47-71; discussion 73-76.
39. Hauge S. *Jo mere vi er sammen, jo gladere vi blir? – en feltmetodisk studie av sjukeheimen som heim. (The more we are together, happier we become: a field methodical study of the nursing home as home)*. 2004, Dr. polit. Avhandling, Universitetet i Oslo, Institutt for sykepleievitenskap og helsefag, Det medisinske fakultet, Oslo. (In Norwegian)
40. Isaksson U, Graneheim UH, Richter J, Eiseman M, Åström S. Exposure to violence in relation to personality traits, coping abilities, and burnout among caregivers in nursing homes. *Scandinavian Journal of Caring Sciences* 2008; (in press)
41. Rodney V. Nurse stress associated with aggression in people with dementia: its relationship to hardiness, cognitive appraisal and coping. *Journal of Advanced Nursing* 2000; 31:172-180.
42. Harrington C, Swan JH. Nursing home staffing, turnover, and case mix. *Medical Care Research and Review* 2003; 60: 366-392.
43. Dørnes ID. Strammere bemanning. (Tighter staff levels). Aktuelt. 03.11.2006. *Norsk Sykepleierforbund*. (In Norwegian).
<http://sykepleierforbundet.no/article.php?articleID=12473&categoryID=1375>
44. Kloster T, Hoie M, Skar R. Nursing students' career preferences: a Norwegian study. *Journal of Advanced Nursing* 2007; 59: 155-162.
45. Kihlgren M, Kuremyr D, Norberg A, Bråne G, Karlson I, Engström B, Melin E. Nurse-patient interaction after training in integrity promoting care at a long-term ward: analysis of video-recorded morning care sessions. *International Journal of Nursing Studies* 1993; 30: 1-13.
46. Hosia-Randell H, Suominen M, Muurinen S, Pitkala KH. Use of laxatives among older nursing home residents in Helsinki, Finland. *Drugs Aging* 2007; 24: 147-154.

47. Stevens TK, Soffer EE, Palmer RM. Fecal incontinence in elderly patients: common, treatable, yet often undiagnosed. *Cleveland Clinical Journal of Medicine* 2003; 70: 441-448.
48. Walter S, Hallbook O, Gotthard R, Bergmark M, Sjodahl R. A population-based study on bowel habits in a Swedish community: prevalence of faecal incontinence and constipation. *Scandinavian Journal of Gastroenterology* 2002; 37: 911-916.
49. Cassels C, Watt E. The impact of incontinence on older spousal caregivers. *Journal of Advanced Nursing* 2003; 42: 607-616.
50. Armstrong M. Factors affecting the decision to place a relative with dementia into residential care. *Nursing Standard* 2000; 14: 33-37.
51. Matsumoto M, Inoue K. Predictors of institutionalization in elderly people living at home: the impact of incontinence and commode use in rural Japan. *Journal of Cross Cultural Gerontology* 2007; 22: 421-432.