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The availability of allied health care in nursing homes

MARIKE E. DE BOER¹, C. J. LEEMRIJSE², C. H. M. VAN DEN ENDE², M. W. RIBBE¹ & J. DEKKER³

¹Department of Nursing Home Medicine, Institute for Research in Extramural Medicine, VU University Medical Centre Amsterdam,

²NIVEL (Netherlands Institute for Health Services Research), Utrecht, and

³Department of Rehabilitation Medicine, Institute for Research in Extramural Medicine, VU University Medical Centre Amsterdam, The Netherlands

ABSTRACT

Purpose. To determine the availability of allied health care in nursing homes in the Netherlands, and its dependency on characteristics of the nursing home.

Methods. Structured surveys by telephone were carried out in a sample of 100 from a country total of 286 somatic (for somatic patients only) and combined (with units for both somatic and psychogeriatric patients) nursing homes. Multiple linear regression analyses were performed to determine relationships between the availability of care and the type of nursing home, its country location (urban/non-urban) and the presence of specific wards/units within the nursing home.

Results. Physiotherapy and occupational therapy were present in almost all nursing homes (99% and 93% respectively); 92% of the nursing homes offered speech- and language therapy and 88% had dietetics available. Average availability rates were: 2.16 full time equivalents per 100 beds/places for physiotherapy, 0.96 for occupational therapy, 0.38 for speech- and language therapy and 0.18 for dietetics. Somatic nursing homes and nursing homes with stroke-units, day-care, or outpatient care present, had higher availability rates on allied health care.

Conclusions. Allied health care disciplines varied in terms of full-time equivalents per 100 beds/places. Per discipline also a wide variation exists in full-time equivalents per 100 beds/places among all participating nursing homes, regardless of their type. Characteristics of nursing homes had small effects on availability rates. International research is recommended in order to compare data and eventually reach consensus on optimal availability rates of allied health care in nursing homes, tuned to the demand.

INTRODUCTION

Demographic trends of continuing growth of both absolute and relative numbers of elderly people will lead to an increasing need for long-term services, such as nursing homes. This 'aging' of populations accounts for many well-developed countries, among which the Netherlands. In the Netherlands already, approximately 56,400 people are admitted to nursing homes on a yearly basis, along with another 3390 people coming in for day-care [1]. This means that about 0.4% of the Dutch population is currently residing in nursing homes [2,3]. Out of every 100 people aged 65 years and over approximately three live in nursing homes [4]; the average age of nursing home residents is 85 years [5]. Three types of Dutch nursing homes can be distinguished: those for physically ill (somatic) patients, those for psychogeriatric patients, and combined types with separate wards for each category. In 2002, there were 44 somatic, 48 psychogeriatric and 242 combined nursing homes in the Netherlands, with a total of 59,065 beds and 5193 day-clinic places [1]. Other possible specific wards or units nursing homes are stroke-units, youth wards, day-care, hospitalreplaced care (care otherwise provided in the hospital, such as rehabilitative care after a total hip replacement) and/or outpatient care. The type of care delivered in Dutch nursing homes can be described as continuous, long-term, systematic and multidisciplinary [6], and is comparable to skilled nursing facilities in the US [4]. Unlike most other countries, the Netherlands employs specially trained physicians to provide medical care in nursing homes, with an average ratio of one full-time doctor per 100 beds [4].

Most Dutch citizens have health care insurance which covers the costs of primary care and medication as well as the costs of in-hospital and outpatient treatment. In addition, everybody is insured under the Exceptional Medical Expenses Act (AWBZ), which also covers all nursing home expenses, irrespective of the resident's income or personal financial resources [4,7]. Admissions to nursing homes do, however, require approval of an 'indication committee', which means that decisions as to the use of institutional services are centralized [7].

Residents are admitted to nursing homes for several reasons: 50% require long-term institutional care, 40% use predominantly rehabilitative services, 5% have terminal illnesses and another 5% require special services as the care needed by comatose people and those on respirators [7]. Although, especially among psychogeriatric patients the vast majority (96%) will stay in the nursing homes until they die, about half of all people admitted to nursing homes in the Netherlands, will be discharged again [8]. Of all discharged residents 44% return home [9]; one in three residents is discharged home after rehabilitation [4,7]. The intensive work delivered by the rehabilitative services provided in the nursing homes, includes care by a variety of allied health care personnel, like physiotherapists, occupational therapists, speech- and language therapists and dieticians.

Allied health care plays an important role not only in the scope of improvement of health conditions, but also in the increase of self-coping strategies of residents.

Although the care provided by allied health care disciplines in nursing homes is thought to be essential in providing optimal care for residents, very little research has been conducted, neither nationally nor internationally, into the availability of allied health care within nursing homes, or into characteristics that might influence the availability. Therefore, the aim of this paper is to give insight into the availability of allied health care in nursing homes in the Netherlands, and to determine whether the availability of care is dependent on characteristics of the nursing home, such as the presence of specific wards.

It is expected that in nursing homes availability rates among disciplines will differ as a result of differences in the duration and frequency of treatment sessions provided by these allied health care disciplines. Nursing homes with specific wards/units, like stroke-units or day-care are thought to provide more intensive treatment programmes and are therefore expected to have more allied health care.

METHODS

Sample

At the time of data-collection, the Netherlands had 286 somatic and combined nursing homes. After stratification of the nursing homes according to type (somatic or combined) as well as size (0 – 50 beds; 51 – 100 beds and > 100 beds) a proportional sample of 100 of these nursing homes was drawn. Data collection took place in September 2003.

Measurements

Data were collected through a survey by phone in every participating nursing home. Allied health care managers in the nursing homes were sent a structured questionnaire in advance, whereafter the answers to the questions were collected by phone in order to optimize the response. The questionnaire included

questions on the characteristics of nursing homes and the availability of the allied health care disciplines physical therapy, occupational therapy, speech- and language therapy and dietetics. Questions on characteristics of the nursing homes involved: the presence of specific wards/units (i.e., day-clinic, stroke units, youth wards, hospital-replaced care and outpatient care) and per ward/unit the number of beds/day-care places involved. Questions on availability of allied health care were focussed on the presence of the discipline and the full time equivalents (FTE) of the available personnel. All FTE's are presented per 100 somatic and psychogeriatric beds plus day-care places. Furthermore, it was registered whether the nursing home was located in the highly urbanized (western) part of the country or the less urbanized (north, east, south) part.

Analyses

Descriptive statistics were used to analyse the basic characteristics of the participating nursing homes.

Descriptive analyses were also used to provide data on the presence of allied health care per discipline, as well as the presence and average number of beds of specific wards/units within the nursing home. The average availability of allied health care disciplines was expressed in FTE's per 100 beds/day-care places.

Relationships between the availability of allied health care and characteristics of nursing homes were explored by means of multiple linear regressions for every discipline separately and all disciplines together.

The availability of care (FTE per 100 beds/places) was the dependent variable; all variables concerning the presence of specific wards/units (shown in Table I) and variables on the type and size of nursing homes and its country-locations were entered as independent variables. Outliers in the availability of care, defined as full-time equivalents per 100 beds/places deviating more than 2 standard deviations (SD) from the mean, were excluded from these analyses. Selected variables were entered in one step into the regression model (method enter). The independent variables were all dichotomized and the level of significance was set at 0.05. All analyses were carried out using SPSS 11.5.

RESULTS

Sample.

Of the sample of 100 nursing homes, 88 participated in the study (13 somatic and 75 combined nursing homes); characteristics are presented in Table I.

In comparison, no significant differences were found for the 12 non-responding nursing as to the number of beds or day-care places. The 13 participating somatic nursing homes had an average of 90 beds and day-care places (range 18 – 190). The size of the combined nursing homes was significantly larger ($p=0.000$); on average 220 beds/places (range 35 – 584). No significant differences were found between somatic and combined nursing homes in the mean number of somatic beds ($p=0.617$) or day-care places ($p=0.316$).

The nursing homes that took part in this study varied in the presence of specific wards/units (Table I). About three quarters of the nursing homes provided day-care. Outpatient care was available in about 70% of the homes. More than half of the nursing homes had a specific stroke unit. In comparison with the other specific wards, stroke-units were relatively small (9 beds on average).

Availability of allied health care

Data on the presence of the allied health care disciplines and the average availability are shown in Table II. Of all allied health care disciplines, physiotherapy was the most frequently present in nursing homes (99%), followed by occupational therapy (93%), speech-and language therapy (92%) and dietetics (88%).

The average full time equivalent (FTE) was calculated for four disciplines, as is presented in Table II. The highest availability rate was found for physiotherapy, on average more than 2 FTE per 100 beds/places. In comparison, the availability of dietetics (0.18 per 100 beds/places) was fairly low. For all disciplines differences in availability were found between nursing homes as is reflected in the 95% confidence intervals of the availability rates (see Table II).

[TABLE 1 AND TABLE 2]

Factors associated with the availability of care

For each of the four disciplines separately and together, variables significantly associated with the availability of care, are shown in Table III.

The availability of physiotherapy in nursing homes appeared not to be related to any of the investigated factors. However, a positive relation was found between both the presence of day-care (+0.36 FTE) and a

stroke unit (+0.23 FTE) and the availability of occupational therapy. Furthermore, somatic nursing homes (+0.14 FTE) and nursing homes presented with day-care (+0.21 FTE) were found to have more speech- and language therapy FTE's, as opposed to combined nursing homes and nursing home without day-care. Nursing homes offering outpatient care showed higher availability rates on dietetics (=0.07 FTE). The 'total availability' of allied health care, the availability of physiotherapy, occupational therapy, speech and language therapy and dietetics together, appeared to be related only to the presence of [table 3]. hospital replaced care. Hospital replaced care refers to care, like post-operative care after total hip replacement, taken over by rehabilitation services in nursing homes for patients who can not go home yet when hospital care stops. Where hospital replaced care is present in a nursing home, this 'total availability'-rate of allied health care was on average 0.78 FTE per 100 beds/places higher. In general, percentages of variance in availability, as a result of the investigated characteristics, are relatively small (see Table III).

[TABLE 3]

DISCUSSION AND CONCLUSION

The main aim of the present study was to gain insight into the availability of physiotherapy, occupational therapy, speech- and language therapy and dietetics in Dutch nursing homes. This paper is, certainly in the Netherlands, but as far as our knowledge stretches also internationally, the first to present such data. However, as a result of the growing numbers of elderly, the increasing need for nursing home care and the demand on allied health care disciplines is by far not an issue existing only in the Netherlands. The availability rates found are relevant as a reference for future developments in the field of allied health care in nursing home settings. Furthermore, these data can be used as a starting point for improvements in allied health care, such as an increasing consensus as to optimal availability rates. The study was limited to somatic and combined nursing homes; the availability of allied health care in psychogeriatric nursing homes was not included in this study. Future research into the availability of allied health care in psychogeriatric nursing homes is therefore recommended.

In order to further optimize allied health care for nursing home residents it is advisable to, in future research internationally compare availability rates, taking into account differences in health care systems. Hopefully, these data will encourage other researchers to undertake similar work in their countries in order to make international comparisons possible.

Data of the current study indicate that in most Dutch nursing homes allied health care is available, although differences between nursing homes can be substantial. The disciplines physiotherapy, occupational therapy, speech- and language therapy and dietetics are the most common in nursing homes, but vary considerably in availability. Both physiotherapy and occupational therapy are present in almost all nursing homes, although the average availability of the latter is half as common. Both disciplines play an important role in nursing home care as they provide suitable interventions aimed at maximizing functional abilities and minimizing functional losses. Any loss in functional ability can produce dependency, increase the need for caregiver involvement and substantially affect an individual's quality of life [10].

In comparison with physiotherapy and occupational therapy, speech- and language therapy and dietetics have much smaller numbers on availability.

While speech- and language therapist(s) are present in almost all nursing homes, some nursing homes do not have a dietician among their staff. Considering the fact that malnutrition is common among nursing home residents [11,12], and the potentially serious consequences of under-nutrition [13], this lack of a dietician in some nursing homes is remarkable as it potentially increases risks. The Dutch Health Care Inspectorate revealed that, despite the presence of a multidisciplinary guideline on adequate fluid- and nourishment intake, the improvements in the provision of nourishment and fluids to nursing home residents are yet insufficient [14].

Differences in FTE's between disciplines can be explained by differences in treatment intensities between the allied health care disciplines. Care by dieticians is often provided in short contacts with a low frequency, which is much less intensive than, for example, weekly training sessions in physical therapy.

As expected the availability of allied health care in nursing homes is to some extent related to characteristics of the nursing homes. The active role that occupational therapists play in the treatment of stroke-patients is reflected in the larger availability of these disciplines in nursing homes with stroke units. The availability of occupational therapy and speech- and language therapy is higher in nursing homes

providing day-care. These disciplines play an important role in prevention and keeping day-care residents as independent as possible. Residents coming in for day-care in nursing homes also need to be able to get around in their home setting, thereby increasing the demand on occupational therapists in (for example) providing wheelchairs and other adaptive materials. In a similar way, speech- and language therapists, can contribute to the prevention and treatment of swallowing disorders and/or communication problems. The fact that the availability of speech and language therapy is found to be higher in somatic nursing homes than in combined nursing homes, might be the result of smaller treatment possibilities for this discipline in treating psychogeriatric residents.

Currently, a range of availability rates on all allied health care disciplines is found in nursing homes, as is reflected in the presented confidence intervals.

Moreover, nursing homes with one or more allied health care disciplines absent do also exist. The relatively small percentages of explained variance show that the differences between nursing homes can not be explained by just the presence of specific wards. This suggests that other factors, such as local policies of nursing home managements on allied health care for residents, also play a role in decisions on the availability of care. The broad range found in availability rates also suggests a lack of consensus on optimum availability levels of allied health care disciplines in nursing homes. Altogether, this leads to the undesirable situation of non-transparent inequality in the allied health care available to residents in different nursing homes. Ideally the provision of care should be tuned to the demand. Effectively mapping out the demand and using these numbers to adjust the availability, should decrease differences between nursing homes in availability rates of allied health care. Of course this also asks for, preferably international, consensus in the debate on the provision optimal care, taking into account issues around quality of care. Due to the fact that there is little insight into the effects of allied health care for nursing home residents, no statements can be made regarding the sufficiency of the availabilities found.

However, knowledge of the adequacy of availabilities of allied health care in nursing homes is of great importance in the scope of the growing percentage of older people on the total population and, for example, current economy measures taken concerning allied health care by the Dutch government. A study conducted in Canada revealed that increasing the amount of physiotherapy and occupational therapy from 1 FTE per 200 beds to 1 FTE per 50 beds had a positive effect on the functional status of long-term care residents [15]. Concerning dietetics and speech and language therapy no such studies could be found. Therefore, research focussing on both the efficacy and the efficiency of allied health care is of major importance in order to establish a norm on optimal and ideally international availability rates of allied health care in nursing homes. Similar research as presented in this paper on the current availability of allied health care in nursing homes is, therefore, recommended in other countries. In order to make comparisons possible, researchers of all countries are invited to share their research activities on this topic with the researchers of the presented study.

Some such international comparisons could subsequently be a 'starting point' for an international debate on optimal care in nursing homes tuned to the demand of its residents and based on international studies on the efficacy and efficiency of this care.

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TABLES

Table I. Characteristics of the participating nursing homes ($n = 88$).

	Somatic		Combined		Total	
	n (13)	%	n (75)	%	n (88)	%
Number of beds/ day care places						
0–100	7/13	53.8	6/75	8.0	13/88	14.8
101–200	6/13	46.2	28/75	37.3	34/88	38.6
>200	–	–	41/75	54.7	41/88	46.6
Presence of specific wards/units						
Day care	3/13	23.1	65/75	86.7	68/88	77.3
Stroke unit	2/13	15.4	46/75	61.3	48/88	54.5
Youth ward	1/13	7.7	12/75	16.0	13/88	14.8
Hospital replaced care ¹	4/13	30.8	30/75	40.0	34/88	38.6
Outpatient care ($n = 70$) ²	7/8	87.5	42/62	67.7	49/70	70.0

¹Care no longer provided in hospitals, taken over by nursing homes, for patients who can't go home yet (like post-operative care after a total hip replacement). ²Information on the outpatient care is only available for 70 out of the 88 nursing homes.

Table II. Presence of allied health care disciplines in nursing homes ($n = 88$) and the average availability in FTE per 100 beds/places.

	Nursing homes with the discipline present		Average availability (Fte per 100 beds/places) ¹	
	n	(%)	average	(95% CI) ²
Physiotherapy	87	(98.9)	2.16	(1.96–2.36)
Occupational therapy	82	(93.2)	0.96	(0.83–1.08)
Speech- and language therapy	81	(92.0)	0.38	(0.32–0.43)
Dietetics	77	(87.5)	0.18	(0.15–0.21)

¹(Missing cases in FTE per 100 beds/places: physiotherapy $n = 1$, occupational therapy $n = 4$, speech- and language therapy $n = 6$, dietetics $n = 6$). ²95% confidence interval: with a certainty of 95% the true value of β lies in between these values.

Table III. Factors associated with the availability (FTE per 100 beds/places) of allied health care (physiotherapy, occupational therapy, speech- and language therapy, dietetics, and total).

	B ¹	95% CI ²	p-value ³
Physiotherapy			
None			
Occupational therapy ^a			
Presence of day-care	0.359	0.131 0.588	0.002
Presence of stroke unit	0.227	0.032 0.423	0.023
Speech- and language therapy ^b			
Somatic nursing home	0.141	0.005 0.278	0.042
Presence of day-care	0.212	0.100 0.324	0.000
Dietetics ^c			
Presence of outpatient care	0.073	0.010 0.136	0.024
Total ^d (physiotherapy + occupational therapy + speech- and language therapy + dietetics)			
Hospital-replaced care	0.784	0.206 1.362	0.009

¹B-coëfficiënt: if B is positive this implicates a growth in availability; if B is negative this implicates a decrease in the availability of care. ²95% confidence interval: with a certainty of 95% the true value of B lies in between these values. ³Significance level: a p-value of 0.05 or less indicates a significant relationship. ^aPercentage of explained variance is 22%. ^bPercentage of explained variance is 14%. ^cPercentage of explained variance is 7%. ^dPercentage of explained variance is 8%.

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