ORIGINAL RESEARCH

Minimum Data Set-Home Care- as an additional tool in the admission procedure for a nursing home

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Abstract

Objectives: To investigate how the request for nursing home admission is performed and whether Minimum Data Set (MDS) Home Care can contribute to the process of admission to a nursing home.

Methods: Design: Observational study. Participants: Persons on a priority waiting list for a public nursing home (n=47).

Measurements: Inventory of the added information provided by the use of the MDS Home Care and an inventory by the general practitioner.

Results: People on the waiting list scored well for activities of daily living but live in a vulnerable home-care situation, caused by severe communication problems or/and pain or/and a higher level of cognitive problems than expected on regular data.

Conclusion: The admission procedure to nursing homes has to be adapted. The MDS Home Care can be an additional tool.

Key words
Nursing homes, Home care

1 Introduction

Compared to other European countries, a high percentage of elderly people in Belgium live in a nursing home [1]. For most of the elderly living at home, admission to a nursing home is a transition with considerable consequences and impact. Finding the right level of care is a difficult issue [2]. Therefore the decision to admit someone to a nursing home has not to be taken lightly. Hence, governments and health care funders have drawn up policies to carefully select candidates for admission, based on the care needs of candidates. In Belgium four criteria have to be met for patients to be admitted in a nursing home: patients need to have undergone a multidisciplinary assessment (crit 1), patients need specialized medical, nursing and paramedical care (crit 2), home care services are at the end of their possibilities (crit 3) and there is an important care need measured by means of an adapted version of the Activities of Daily Living Katz-scale (crit 4) [3]. Using a defined algorithm, this adapted scale has five outcome levels: O, A, B, C and Cd, ranging from very mild to high level of dependency. Nursing homes are urged (e.g. by differentiation in financial incentives) to admit only patients scoring B (moderate), C (severe) or Cd (severe with dementia).

All European countries evaluate the degree of dependency and its impact on long term care. Above all the physical aspects are crucial as evaluated by Instrumental Activities (IADL) and Activities of Daily Living (ADL) [4]. Several countries developed for this evaluation instruments, scales, questionnaires and interviews (Germany, Luxemburg, France, Belgium, The Netherlands, Sweden, Finland). These instruments classify patients in different levels of dependency, as done in Belgium. The evaluation is performed by professional home care workers, district nurses, care brokers or multidisciplinary teams.

The admission criteria as indicated above have been criticized by primary health care workers because they don't cover the real care situation and leaves people with dementia out of the scope. First, only the Activities of Daily Living Katz-scale care need assessment is performed on a regular basis for every patient. Nearly 30% of those scoring 'very mild' to 'mild' on this scale are scored as 'complex clinical care' with the Minimal Data Set [5, 6]. They present a lot of unmet needs which would also justify nursing home admission [7, 8]. Second, only for one third of all nursing home admissions home care had been involved in the decision process admission [9, 10].

The Minimum Data Set (MDS) was designed in the 1980s as a tool for use in Medicaid–Medicare certified nursing homes. Its aim was to help physicians to identify their elderly patients' needs and to provide standardized health care plans [11]. A Home Care (HC) version of MDS was developed in order to assess the needs and direct health care planning for community-dwelling elderly. The inventarized items cover cognitive functions, communication, vision and hearing, mood, social functioning, situation of the informal caregiver, ADL and IADL, continence, inventory of comorbidity, situation of feeding, skin and mouth problems, housing conditions and medication use.

There are two elements in MDS-HC process: First, a multidisciplinary and multidimensional assessment of the elderly patient and second, relevant clinical problems, shown as 'clinical assessment protocol(s)' (CAP's). These CAP's are calculated based on the imported data of the patient. The aim of these CAP's was to detect blind spots and offer indications for management and in-depth evaluation of problems detected during the multidimensional assessment. The MDS has been found to be a valid and reliable instrument in several studies [12-14]. A literature study shows that the implementation of MDS / RAI in nursing homes has a positive effect on the completeness and accuracy of care-plans and positive effects on physical and mental functioning of the elderly and that it is useful in home care [15, 16]. A recent RCT shows important advantages for the quality of care in long term care facilities [17].

Nowerdays the Belgian government is considering introducing the MDS-InterRai Suit instruments in health care. The question therefore arises whether the MDS-Home care instruments give additional information compared to the information gathered by means of the admission criteria described above.

2 Methods

2.1 Patient selection

All the people on the priority waiting list of a small (capacity 65 residents), rural, public nursing home were asked to co-operate. This convenient sample was used in a preparatory process of a local social welfare program. All patients signed an informed consent form.

2.2 Instruments

Social services were asked to provide data on the formal indication for nursing home admission (item 1a) as indicated by the family and the family physician (item 1b). Data on the involvement of local home care services were also included (item 2).

The family physician (n=9) was asked to complete an ADL assessment at baseline by means of an adapted version of the Activities of Daily Living Katz-scale (item 3). According to an algorithm of the Belgian Government the ADL scale has

five outcome levels: O, A, B, C and Cd, ranging from very mild to high level of dependency. A Charlson Comorbidity Index (item 4) and an inventory of patients' medication at the time admission was applied for (item 5) [3, 18].

All persons included in the study were visited at home by an occupational therapist of the local social welfare service (FB) in a three month period. She performed the Minimum Data Set Home Care (MDS-HC) (item 6) version and a semi-structured interview (item 7). The Minimum Dataset/Resident Assessment Instrument (MDS/RAI) is a standardized comprehensive assessment system implemented nationwide in the USA with a view to improving care planning and quality of care [19].The Cognitive Performance Scale is one of the outcome measures of MDS, with a good relation to the Mini Mental State Examination (MMSE)(item 8) [20, 21]. A score of two or more indicates cognitive loss [21]. Another outcome is the list of patient assessment protocols (item 9) and ADL scales (item 10).

The interviews covered personal issues not included in the MDS-HC version, like what the influence was of the social situation on the request for external services and to what degree carers and family members were included in the care process.

Item 1a, 2 and 3 belong to the usual procedure. Item 1b, 4, 5 and 7 are extraprocedural. Item 6, 8, 9 and 10 are part of the MDS assessment.

2.3 Analysis
A descriptive analysis was performed.

3 Results

Forty-eight persons were included, of whom one was excluded due to admission to the nursing home between the inclusion and the start of the study. The mean age was 81.5Y (range 64-92), men/women ratio equaled 0.34 (= 12/35). Three out of 47 persons were not aware that they were on the waiting list, 10 persons still lived with their partner and were registered as a couple on the waiting list. Table 1 lists the degree of dependence according to the ADL evaluation: 66% doesn't meet the basic criteria for admission. Criterium 4 therefore is not met.

Table 1. Degree of ADL dependency(N=47)

Variable	n	%
Missing	1	2.1
Very mild	22	46.8
Mild	9	19.1
Moderate	11	23.4
Severe	0	0.0
Severe with dementia	4	8.5

For seven patients (14.9%) data from the local home care authorities were available. For 31 (66%) social services only had notions about the indication for admission (item 1a) (see Table 2). For 40% no data about home care services were available. Criterium 1, 2, and 3 are not met.

Dementia and mobility problems are by far the most important reasons for nursing home admission according to the family physician (item 1b)(see Table 2). Differences exist between social services' assessment (9.7% dementia, 6.5% Mobility problems) and the family physicians' (29.8% dementia, 19.1% mobility problems). Criterium 1 assessment therefore is not met.

Table 2. Indications for nursing home admission as noted by the social service and the family physician (multiple reasons can be marked)

Indication for admission	Social service	Family Physician
	N=31	N=42
To be assured of a place when needed	10 (32.3%)	
Care need	6 (19.4%)	3 (6.4%)
No caregiver available	4 (12.9%)	
Dementia and cognitive loss	3 (9.7%)	14 (29.8%)
Physical deterioration	2 (6.5%)	
Mobility problems	2 (6.5%)	9 (19.1%)
Lack of social contact	2 (6.5%)	
Hemiplegia	1 (3.2%)	2 (4.3%)
Loneliness	1 (3.2%)	
No children to help	1 (3.2%)	
Unclear	1 (3.2%)	4 (8.5%)
Living conditions	1 (3.2%)	
Bereavement	1 (3.2%)	
Tired	1 (3.2%)	
High age		7 (14.9%)
Unknown		4 (8.5%)
Dependency		7 (14.9%)
Depression		2 (4.3%)
Cardiac Failure		2 (4.3%)
Parkinsons'disease		2 (4.3%)
Risk for accidental falls		2 (4.3%)
Miscellenia (epilepsy, vertigo, partner with dementia)		6 (12.6%)

Based on the Charlson comorbidity index, patients on average had 2.6 (range 0-6) different coexisting chronic conditions, indexed in Table 3 (item 4).

Table 3. Morbidity inventory based on the Charlson Comorbidity Index (n = 42)

Pathology	N	%
Locomotor problems	16	38.1%
Cerebro vascular diseases	12	28.6%
Vessel diseases	11	26.2%
Dementia	10	23.8%
Heart failure	9	21.4%
Mild Diabetes mellitus	7	16.7%

Table 3. (Continued.)

Pathology	N	%
Peptic ulcer	6	14.3%
Infarction	5	11.9%
Chronic lung disease	5	11.9%
Parkinson's disease	5	11.9%
Severe Diabetes mellitus	3	7.1%
Quadri hemiplegia	2	4.8%
Non metastatic cancer	2	4.8%
Non-severe liver disease	1	2.4%
Kidney disease	1	2.4%
Lymphoma	1	2.4%
Systemic disease	0	0.0%
Severe liver disease	0	0.0%
Metastatic cancer	0	0.0%
Leucemia	0	0.0%

Table 4 shows the indicated problems as measured by MDS-HC (item 9). A vulnerable home care situation, as defined by the MDS criteria, a high risk for admission, communication problems, pain and an increased risk for accidental falls are important issues for more than 50% of these people. The ADL scores are relatively good (item 10) (see Figure 1). Cognitive performance is disturbed in more than 34% of cases (item 8). The adapted ADL Katz scale detects 8.5% of persons with dementia, the GP 23.8% and the MDS 34.5%.
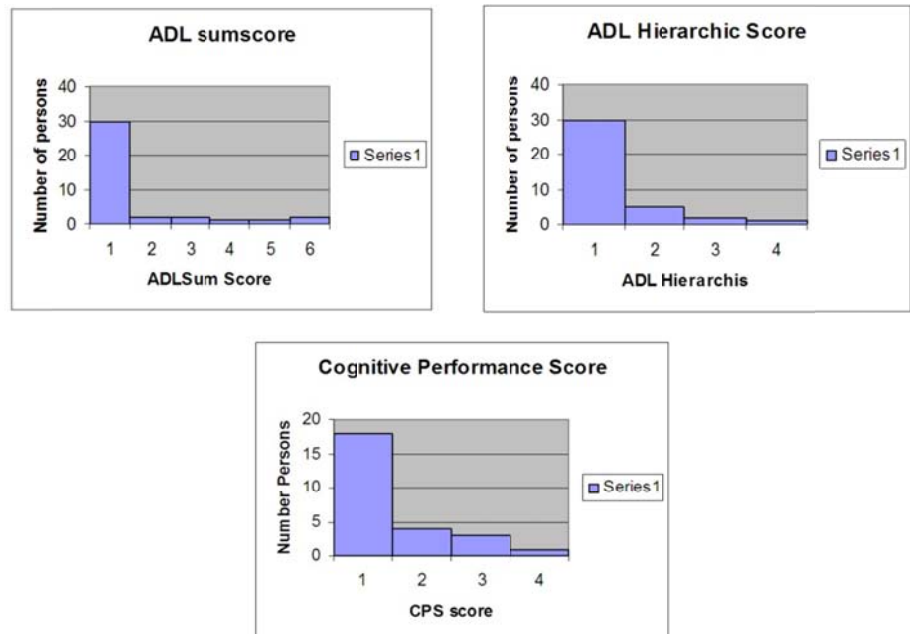

Figure 1. Frequency distribution of the Cognitive Performance Score, ADL scores and degree of depression. The lower the score, the smaller the problem

Table 4. Ranking --- in descending order of frequency of the Patient Assessment Protocols as measured by MDS-Home care

Ranking order	Domain requiring attention/ patient assessment protocol	n	%
1	Preventive health measures, immunization and screening (E.g. planning influenza vaccination)	25	86,2
2	Brittle support system	22	75,9
3	Health promotion	18	62,1
4	Communication disorders	17	58,6
5	Visual function	16	55,2
6	Falls	16	55,2
7	Pain	14	48,3
8	Skin and foot conditions	14	48,3
9	Risk for institutionalisation	13	44,8
10	Urine incontinence and catheter	13	44,8
11	Cognitive dysfunction	10	34,5
12	Depressive symptoms and anxiety	8	27,6
13	Cardio-respiratory problems	8	27,6
14	Pressure ulcer	8	27,6
15	ADLs/rehabilitation potential	7	24,1
16	Behavior problems	6	20,7
17	Social functioning	6	20,7
18	Voiding	6	20,7
19	Faeces-incontinence	6	20,7
20	Oral health	5	17,2
21	Diminished service package	5	17,2
22	Environment	5	17,2
23	Dehydratation	3	10,3
24	Palliative care	2	6,9
25	Elder abuse	1	3,4
26	IADL	0	0,0
27	Alcohol abuse	0	0,0
28	Compliance	0	0,0
29	Medication management	0	0,0
30	Psychofarmaca	0	0,0

Using the ADL scale, only 33% of patients are eligible for nursing home admission. Using the client assessment protocols of the MDS, showing in 76% of case a brittle support system and a high risk of institutionalization the MDS gives a more appropriate insight into the care needs and motivation for a waiting list.

4 Discussion

The evaluation of admission criteria is actually not met. The MDS-HC data provide information clarifying the need for the request of a nursing home admission, giving insight into the possibilities of home care (crit 3), the reasons for the need of medical and paramedical care (crit 2), revealing important clinical issues (crit1) and information about ADL/IADL (crit 4) . The use of the MDS-Home care therefore offers an integrated, standardized way information about criterium 1 to 4 and therefore can be an additional tool in the decision to admission.

Although most people are not depressed and have only few ADL deficits, they live in a vulnerable home care situation, experience pain and have severe communication problems. These people have serious difficulties in keeping their care system work sufficiently. These collected data are in contrast with the regular assessment, indicating that nearly 66% of the candidates do not fulfill the basic conditions for admission. The discrepancy is in line with published results in the same region [22]. In the latter sample, 30% of the people scoring 'very mild' or 'mild' on the Katz scale lived in a complex care situation needing more care according to the MDS-HC.

The strength of the study is that well-documented information is available to enable health care providers, social services and health care authorities to understand the request for admission to a nursing home. Its weakness is the small sample that cannot be extrapolated for the whole country.

This study shows an important lack of information from the social services.

The family physician's judgment of dementia in 25% of cases was not confirmed by the Cognitive Performance Score. This score correlated well with the Mini Mental State Examination [20]. The diagnosis for dementia has to be improved.

The data about the use of medication are in line with known data [23]. Self-medication was not inventoried. The presence of co-morbidities such as dementia, locomotor problems and cardiovascular problems is congruent with national and international data [24-28]. A remarkable fact is that the prevalence of incontinence in patients included in our study is lower than could be expected in this type of population [29, 30]. Under-reporting could be the cause.

It is regrettable that an invasive and life-changing process such as admission to a nursing home, is not better prepared. Social services are badly informed and the data confirm earlier findings suggesting that home care services are hardly involved in the decision-making process on their patients' admission for nursing homes [9, 10]. This can be marked as an issue of lacking quality of care. There is a gap in the judgment of social services and family physicians concerning the indication for admission. It is clear that they have quite a different view on the matter and make their decisions based on different perspectives.

The results of this and similar studies may urge the authorities to review the conditions for admission. The use of the MDS-HC could have considerable advantages. Pooling data can provide information about morbidities in home care causing dependency and need for specialized care. If used in home care, these data can be transposed to the nursing home databank once a person is admitted as a starting point for care planning, to be adapted as to the clinical evaluation [31].

Further research is needed to clarify how representative these data are for the whole country and if implementing Minimal Data Set Home Care reduces admission rates in nursing homes.

Sources of support

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