Mental and physical performance of dementia patients in long-term residential care

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Abstract

Introduction: Dementia syndromes are an increasing medical and social problem in today's world. Preservation of the best possible quality of life in dementia patients relies on prolonging their independence in daily life for as long as possible. Dementia patients require increasing support as the disease progresses and will ultimately become dependent on the help of others.
Aim of the research: To assess the level of mental and physical performance and nutritional status in patients with dementia syndromes in long-term residential care.
Material and methods: The study group comprised 62 patients with dementia syndromes resident in a Medical and Nursing Care Facility in Pustków. Selected aspects of quality of life were investigated with the Barthel scale, GDS scale according to Reissberg, Abbreviated Mental Test Score (AMTS) and Mini-Nutritional Assessment (MNA) scale.
Results: In our study men performed better than women on the Barthel scale, 58% of all patients were rated moderately severe on that scale, 36% were severe and 7% were mild. Assessment of the current severity of dementia on the GDS scale showed that 28% of the patients had very severe dementia, 27% had mild deficits, 27% had moderate deficits, 11% had moderately severe dementia and 6% had borderline dementia. In a mental state assessment according to the AMTS scale, men scored higher than women. This difference indicates less memory deficit and better psychological and physical status among men. With regard to nutritional status, our study revealed a risk of malnutrition in 65% of the patient and actual malnutrition in 7%.
Conclusions: The Barthel scale, rating the performance of dementia patients with regard to activities of daily life, classified more than half of the patients as „moderately severe". Women had lower mean scores than men in the Barthel scale, AMTS scale and GDS scale, indicating that dementia is more prevalent among women than among men. The findings of the present study document a risk of malnutrition in dementia patients in long-term residential care.

Introduction

The term senile dementia refers to a syndrome caused by a brain disorder, usually chronic or progressive, and characterised by derangement of the higher cortical functions, such as memory, thinking, orientation, comprehension, counting, ability to learn, language and evaluation. Consciousness is not affected. The cognitive impairment is usually accompanied, and sometimes preceded, by reduced control over social and emotional responses, behaviour and motivation. Communicative impairment is a frequent manifestation of dementia syndromes but it is never an isolated or presenting symptom [1, 2].

The presence of memory problems is a main criterion for diagnosing dementia syndromes but not all memory disorders are associated with dementia. Dementia also presents as decreased intellectual performance and deterioration in performing daily living activities. The symptoms should be present for at least six months to allow a diagnosis of dementia. Deficits of higher cortical functions prevent patients from performing professional duties and result in personality changes [3].

The prevalence of dementia syndromes is high. Dementia is diagnosed largely in those over 65 years of age and its prevalence doubles every 5 years, resulting in a prevalence rate of 40% among those older than 85 years of age [4–6]. Complicating the problem is the fact that the onset is usually insidious, with the early symptoms put down to physiological ageing [5, 7].

The main causes of dementia include degenerative diseases of the brain (Alzheimer's disease, dementia with Lewy bodies, frontotemporal dementia) and vascular diseases (vascular dementia). There is also a mixed dementia and a mild cognitive disorder defined as an intermediate condition between ageing and mild dementia [2, 8]. Senile dementia considerably impairs the patient's functioning and has a definite effect on his or her mental well-being and quality of life. Accompanying symptoms or comorbidities, which occur frequently, may result in a depressed mood, poorer physical performance and sometimes a lack of willingness to live [5].

Material and methods

The following figures illustrate the prevalence of dementia syndromes in Poland: dementia afflicts approximately 400,000 (10–15%) patients over 65 years of age, including 300,000–350,000 patients with Alzheimer's. Severe cognitive deficits are diagnosed in more than 45% of the patients, and the rate of dementia among nursing care facility residents is 60–80% [6].

The present study involved 62 patients, including 37 women (60%) and 25 men (40%). The mean age was 81.5 years (SD = 6.92) for women and 74.5 years (SD = 7.68) for men. The study group consisted of residents of the Medical and Nursing Care Facility in Pustków. All patients gave their consent to participate in the study. Before the study began, demographic data were obtained from the patients, including the following information: age, gender, place of residence, overall health status, hospitalisation, mode of admission to the Centre, and earlier admissions to residential care facilities. Co-morbidities were also recorded for each patient. Diagnostic tests and scoring systems were administered to verify the patients' physical and mental status. The following tools were used: 1) patient assessment according to the Barthel scale, 2) Reisberg's Global Deterioration Scale (GDS), 3) Hodgkinson's Abbreviated Mental Test Score (AMTS), 4) Assessment of nutritional status – MNA score.

Patient assessment according to the Barthel scale

The Barthel scale comprises 10 questions referring to such activities as feeding, transfers (e.g. from a chair to the bed), grooming, toilet use, washing oneself and bathing, walking along flat surfaces, climbing stairs, getting dressed and undressed and faecal and urinary continence. There are three possible answers to each question, with scores from 0 to 10–15 points. The highest possible total score is 100 points. Scoring brackets corresponding to the patient's overall state of health are as follows: 0–20 points – very severe; 21–85 points – moderately severe; 86–100 points – mild.

Reisberg's Global Deterioration Scale (GDS)

Reisberg's Global Deterioration Scale was used to determine current severity of dementia as correlated with the patient's cognitive and functional status.

Hodgkinson's Abbreviated Mental Test Score (AMTS)

The Abbreviated Mental Test Score was used to evaluate patients' mental status. The test consisted of 11 questions, with every correct answer scoring 1 point and every wrong answer scoring 0 points. Score brackets were as follows: 0–3 points – severe memory deficit; 4–6 points – moderate memory deficit; 7–8 points – mild memory deficit; 9–10 points – normal.

Assessment of nutritional status – MNA score

Scoring brackets: 24 points or more – good nutritional status; 17–23.5 points – risk of malnutrition; below 17 points – malnutrition.

Results

The mean overall Barthel score in the study was 40.5 (SD = 30.5). Women had a lower mean score (X = 34.6; SD = 26.7) than men (X = 47.4; SD = 34.7) (Table 1).

According to the Barthel scale, 58% of the patients were in a moderately severe overall condition, 36% were classified as severe and 7% had mild overall impairment (Figure 1).

According to the GDS scale, 28% of the patients had very severe dementia, while 27% had moderate

Table 1. Mean Barthel scores and standard deviations by gender

Score	Total	Women	Men
X	40.5	34.6	47.4
SD	30.5	26.7	34.7

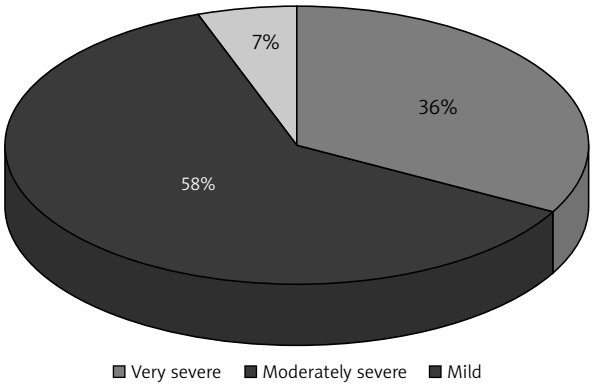

Figure 1. Overall patient status according to the Barthel scale

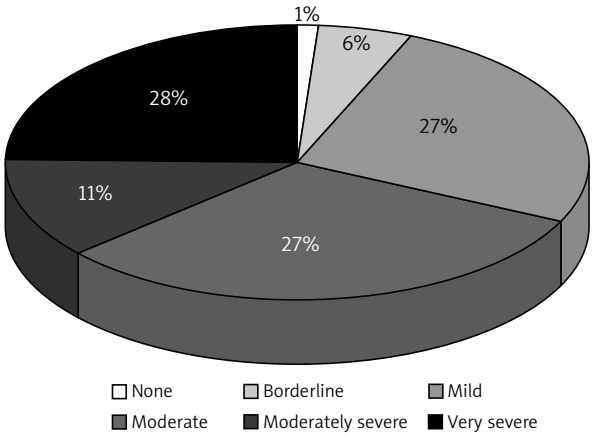

Figure 2. Severity of dementia according to the GDS scale

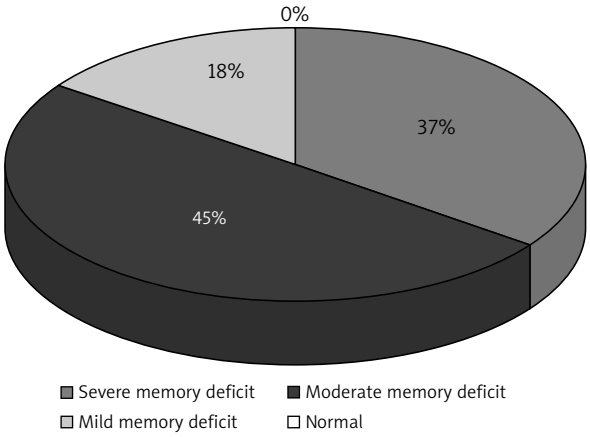

Figure 3. Patient status according to the AMTS scale

Table 2. Mean AMTS scores and standard deviations by gender

Score	Overall	Women	Men
X	3.9	3.6	4.1
SD	1.7	2.7	2.8

Table 3. Mean MNA scores and standard deviations by gender

Score	Overall	Women	Men
X	21.4	21	22.1
SD	3.0	2.6	3.5

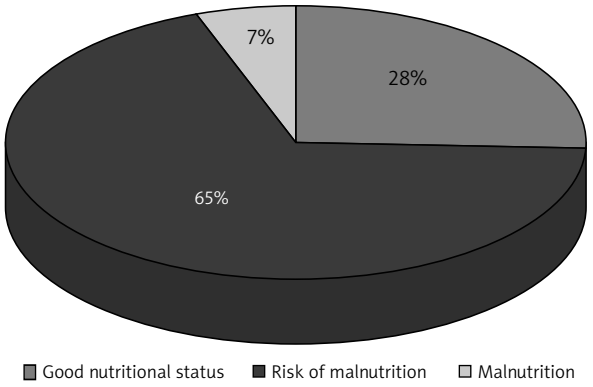

Figure 4. Nutritional status according to the MNA scale

or mild dementia. Moderately severe dementia was diagnosed in 11% of the patients, 6% had borderline dementia and one presented no dementia (Figure 2).

The mean overall AMTS score was 3.9 (SD = 1.7). Women had a lower mean score (X = 3.6; SD = 2.7) than men (X = 4.1; SD = 2.8) (Table 2).

According to the AMTS scale, 45% of the patients in the study had a moderate memory deficit, 37% had a severe deficit and 18% had a mild deficit (Figure 3).

The mean overall MNA score was 21.4 (SD = 3.0). Women had a lower mean score (X = 21; SD = 2.6) than men (X = 22.1; SD = 3.5) (Table 3).

According to the MNA scale, 65% of the patients were at risk of malnutrition, 28% represented adequate nutrition and 7% were malnourished (Figure 4).

Discussion

Dementia syndromes produce numerous impairments with regard to both the mental abilities and the performance of the patient. Physical limitations associated with symptoms of dementia affect the perception of quality of life of the patients. Numerous studies have confirmed that functional performance is related to the severity of dementia.

Białachowska [9] found that mild dementia was associated with slightly poorer functioning, without limitations of physical performance or motor activity, while patients with severe dementia were dependent on others and required assistance with all basic activities of daily living.

In our study men performed better than women on the Barthel scale. Fifty-eight percent of all patients were rated moderately severe on that scale, 36% were severe and 7% were mild (Table 1, Figure 1). These results are compatible with those of Braunwald [10], who found that dementia is more prevalent in women than in men. Assessment of the current severity of dementia on the GDS scale showed that 28% of the patients had very severe dementia, 27% had mild deficits, 27% had moderate deficits, 11% had moderately severe dementia and 6% had borderline dementia (Figure 2).

In a mental state assessment according to the AMTS scale, men scored higher than women. This difference indicates less memory deficit and better psychological and physical status among men. The overall mean AMTS score for the entire group was 3.9 for the maximum possible total of 11 (Table 2).

Kowalska *et al.* [11] found in their study that 60–80% of residents of long-term nursing care and treatment facilities suffered from senile dementia, with more than 45% showing severe cognitive deficits and memory impairment. In the present study, a moderate memory deficit was diagnosed in 45% of the patients, while 37% had a severe memory deficit and 18% had a mild deficit (Figure 3).

Regardless of assessment criteria and characteristics of study groups, all studies show a significant rise in the prevalence of dementia-related disorders and symptoms with age. Advancing age is undoubtedly the main cause of dementia syndromes. Mean age in the entire group in the present study was 78 years.

Józwiak [2] points out that the upper age limit of study populations keeps changing. According to him, dementia develops in those over 65 years of age, but he also points to studies confirming senile dementia in individuals over 50 years of age.

With regard to nutritional status, our study revealed a risk of malnutrition in 65% of the patients and actual malnutrition in 7%. Similar findings were described by Humańska and Kędziora-Kornatowska [12], who used the MNA scale to assess nutritional status in residential care facility residents and in elderly people living with their families. A risk of malnutrition was diagnosed in 60% of the subjects. The authors pointed out that individuals living with their families had better nutritional status than residential care facility residents.

Nutritional disorders are a form of the wider spectrum of behavioural disorders associated with dementia syndromes. Reduced consumption of food may be related to co-existing depression, while increased food intake may be secondary to increased appetite, memory problems and the compulsive reflex of putting all objects in the mouth, which is very often seen in dementia patients. The poor quality of life of dementia patients is reflected by marked physical and psychological dependence, as confirmed by a number of studies. Early diagnosis of dementia-related disorders increases possibilities for treatment and may substantially improve the quality of life of the patient and his/her carers. Predicted demographic trends and available data on the prevalence of dementia-related disorders help us realise the magnitude of the problem that will need to be faced in the future.

Conclusions

The Barthel scale, rating the performance of dementia patients with regard to activities of daily life, classified more than half of the patients as "moderately severe". Women had lower mean scores than men in the Barthel scale, AMTS scale and GDS scale, indicating that dementia is more prevalent among women than among men. The findings of the present study document a risk of malnutrition in dementia patients in long-term residential care.

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