

The Functional Condition and Physical Mobility among Patients Provided with Long-Term Institutional Care

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Abstract

Introduction. The increase of dysfunction in the functional condition and a decrease in physical mobility lead to independence limitation and increased demand for health care services.

Aim of the study. The aim of the research was to evaluate the association between functional condition and physical mobility and selected demographic variables of patients provided with long-term institutional care.

Material and methods. The study group consisted of persons provided with long-term institutional care. The following standardized research tools were used in this study: the Cognitive Assessment Scale, the Edmonton Functional Assessment Tool and the Barthel Index.

Results. Studies have shown that with increasing dysfunction of the functional condition of mobility decreases patients. The analysis showed no significant correlation of functional condition with age and gender of the respondents.

Conclusions. The results indicate a need systematic assessment of the functional condition of patients, which determines adjustment of care to the capabilities and needs of the patients.

Key words: functional condition, mobility, long-term care

Słowa kluczowe: stan funkcjonalny, sprawność ruchowa, opieka długoterminowa



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Introduction

In compliance with the binding legal regulations in Poland, the services provided in the healthcare sector within the stationary long-term care are provided by care institutions which include care and treatment facilities as well as nursing and care facilities. This form of care is available only to chronically ill persons who need round-the-clock provision of nursing, care or rehabilitation services and continuous treatment, but at the same time do not require hospitalization on a hospital ward [1] and who obtained up to 40 points on the Barthel Index [2].

An important role in the provision of care to chronically ill patients is played by the social welfare sector in which are functioning social welfare homes [3]. These institutions are dedicated to people who require full-time care because of age, illness or disability and who are dysfunctional in daily life [4].

Literature analysis shows that persons covered by long-term care are characterized by a diversified degree of independence, out of which a substantial number is fully or partially dependent [5–8]. A higher incidence of individual deterioration rather than mobility improvement was reported [5].

The knowledge of patient functional condition enables the choice of appropriate interventions, which can help improve their functional condition and retain independence [9]. Dependence on other people is sometimes a vital necessity, however it can also become the cause of many problems associated with the loss of autonomy. That is why this phenomenon should be considered holistically [10]. One of the basic tasks of health care is to detect risk factors affecting the ability of the elderly to live independently and also to take preventive and therapeutic action against building up disability and dependence upon carers and caring institutions [11, 12].

The aim of the study

The evaluation of the correlation between functional condition and mobility as well as with the selected demographic variables of inpatients with cognitive disorders provided with long-term care.

The materials and methods

Observational studies were conducted in long-term care institutions in Cracow by means of standardized research tools. All the participants in the study were the people over 60 who obtained up to 10 points on the Cognitive Assessment Scale (CAS)[13], which points out to the occurrence of cognitive dysfunction [14]. The Edmonton Functional Assessment Tool (EFAT) [15] was used to evaluate the functional condition of the participants in the study. EFAT assesses the extent to which patients are able to stimulate themselves when confronted with limitations resulting from an illness [16]. The tool consists of several domains enabling to assess, among others, dysfunctions in terms of communication, mental condition, the ability to keep balance, daily activity, tiredness and motivation as well as the occurrence of pain and breathlessness [15, 16]. Each individual domain is assessed on a 4-point scale from 0 to 3 (0 = full functional condition, 1= slight dysfunction, 2 = medium dysfunction, 3= complete loss of functional competence). In individual domains the assessment is based on the description of a particular behaviour or activity [14]. To assess mobility, on the other hand, the Barthel Index was used [17]. It is possible to score from 0 to 100 points in the Barthel Index assessment, where the higher the score, the better mobility [18].

If the subject of the assessment is not the patient's subjective impression about their condition, but psycho-

physical competence – the assessment by an outsider which can be directly observed - it will be more objective from the self-assessment made by the patient [19]; in particular, when the persons under examination display communicative or cognitive competence dysfunctions [20]. Therefore, the data referring to the functional condition and physical mobility presented in this study were gathered on the basis of the patients' behaviour observed by the researcher in co-operation with medical staff directly providing care to the patients taking part in the study as well as the analysis of medical documentation. The study was conducted without the intervention into the process of treatment, care or rehabilitation of the patients.

The presented research findings are part of a larger research project which was positively assessed by the Bioethical Commission of the Jagiellonian University in Cracow (KBET/43/B/2005 dated 24 February 2005).

The statistical analysis

The method of measurement applied in the study does not reveal any lack of data. The gathered material was encoded and saved in the *Excel* programme. The obtained results underwent a statistical analysis with the application of *Statistica* statistical batch. The quantitative factors, such as the level of functional condition and mobility, age (measured in years) and the duration of stay in a caring facility (measured in months) were presented by means of average, minimum and maximum standard deviation. To define the correlation between functional condition with age, the duration of stay and mobility, Spearman's correlation was used. To assess the differences in the functional condition of patients depending on gender, U Mann-Whitney's Test was adopted with the value of $p < 0,05$ as statistically vital in all the tests.

Results

Altogether 160 people took part in the study, out of whom 80 were inmates of caring/therapeutic facilities while the remaining people were residents of a social welfare home. Over ¾ of the participants in the study (N = 125; 78.2%) were women. Men made up 21.8% (N = 35) of the examined population. The average age of the participants was 82.1 year (SD = 7.7), while the average duration of stay in the caring institution – 41.9 months (Table I).

The average results for the functional condition and mobility were presented in Table I.

Table I. Descriptive statistics

Variable	N Number of participants	Average	Minimum	Maximum	SD Standard deviation
Age	160	82,06	61,00	100,00	7,67
Duration of stay	160	41,91	6,00	288,00	56,59
Functional condition	160	17,44	5,00	30,00	5,75
Mobility	160	32,81	0,00	95,00	26,01

Source: Author's own elaboration.

The analysis of the impact of the chosen demographic factor did not reveal any significant correlation between the functional condition and the age of the patients ($r = 0.002$; $p > 0.05$). Gender was the consecutive demographic factor which underwent the analysis. The gathered results allow us to conclude that there is no interaction between gender and the functional condition of the examined, either ($p > 0.05$; $Z = -0.352$).

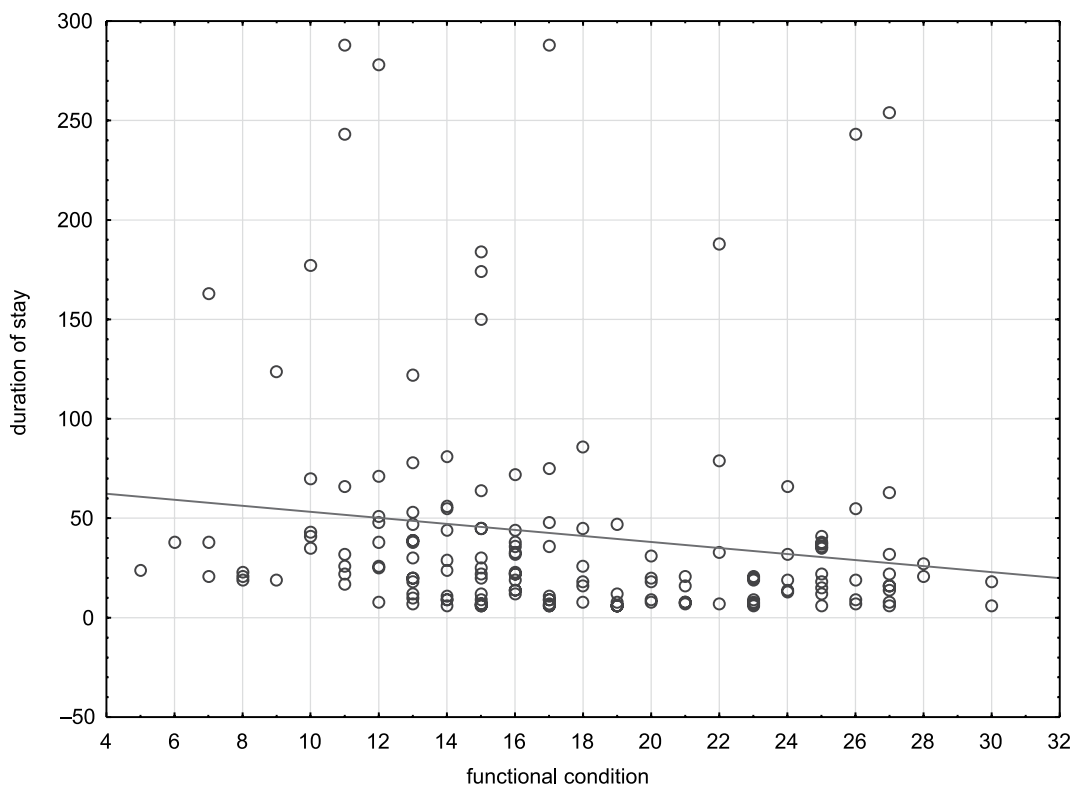
There is, however, a slight but significant coefficient of correlation between functional condition and the duration of stay ($r = -0.297$; $p = 0.000$), (**Figure 1**). Patients who stayed in a care facility for a longer time displayed a milder functional condition dysfunction. An important statistical correlation ($r = -0.866$; $p = 0.00$) was confirmed (**Figure 2**) between functional condition and mobility, as it was established that the increase in functional condition impairment is accompanied by the decrease in mobility.

Discussion

According to some authors, functional condition (functional competence) is understood as self-efficacy and independence in daily life [21, 22]. It is conditioned by many factors which include, among others, physical, intellectual and sensory performance [21]. Specialist literature gives access to research findings which confirm the correlation between the occurrence of limitations in

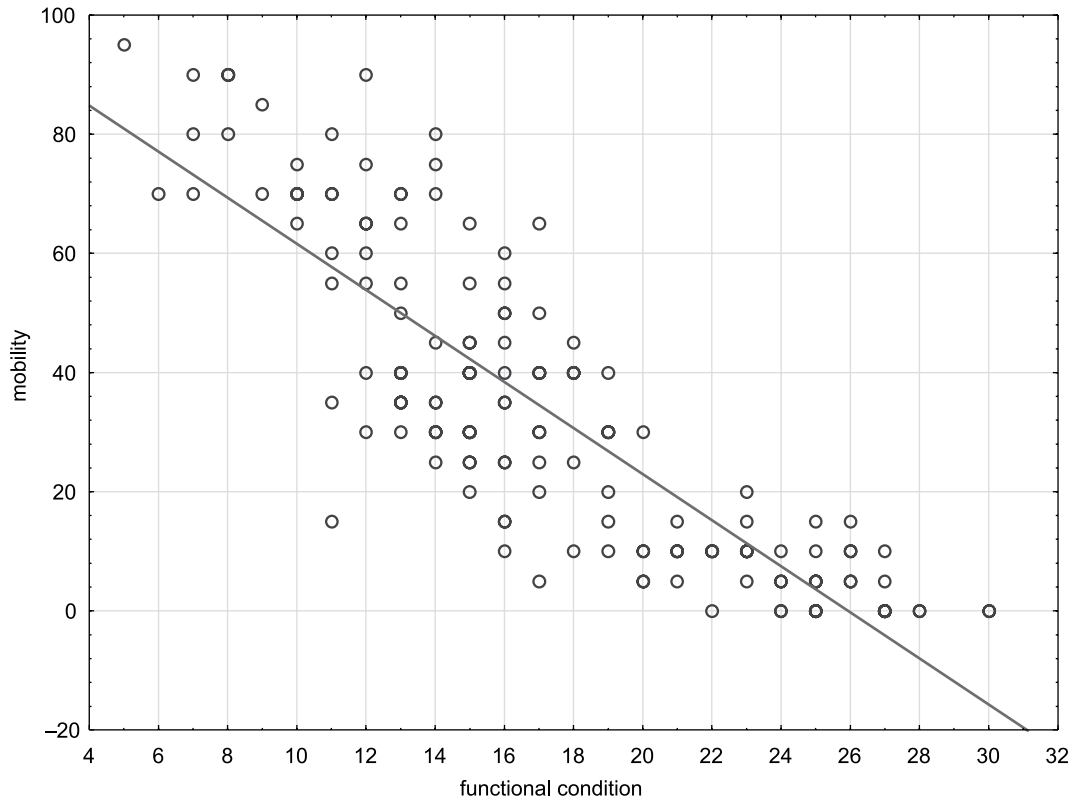
daily performance and lower physical or cognitive ability, as well as with the chosen demographic and social variables [21, 23–27]. Own research confirms the correlation between mobility and functional condition of the participants in the study. However, there is no correlation between age or gender of the participants and the increase in the dysfunction of the functional condition. It is possible, that the lack of this correlation resulted from the low number of the members of the study group; in particular, the low number of men. These correlations were confirmed in another study which was conducted in a geriatric clinic and in social welfare homes on the territory of the towns of Bydgoszcz and Koronowo. The results show that the older the person, the more deteriorated their mobility in daily life is [25]. In the same way, a study carried out among the residents of the social welfare home in Olsztyn on their subjective opinion about their health condition showed that mobility limitations are more frequent among older people than the younger ones [26]. In turn, research conducted among a group of 130 patients from care facilities in Western Poland showed not only a correlation between age and mobility, but also between gender and mobility. Having carried out an assessment by means of the Barthel Index, the authors proved that women obtained a lower average score than men, which means that they were less mobile in terms of daily activity performance and had more deficiencies in this respect, thus displaying greater need for

Figure 1. Correlation between functional condition and the duration of stay



Source: Author's own elaboration.

Figure 2. Correlation between functional condition and mobility



Source: Author's own elaboration.

nursing care. The people belonging to the 65 to 74 age group, on the other hand, were characterized by a lower degree of disability than people aged between 75 and 89 [27]. Other research conducted among a group of 292 patients from the rural environment who were the residents of caring facilities, showed that the quality of life of the participants reached the lowest estimate in terms of physical domain, while health condition was a significant factor in shaping the quality of life of the patients. [28]. Research carried out in the Geriatric Department and the Geriatric Clinic of Collegium Medicum in Bydgoszcz shows that medical and health factors which had impact upon the functional condition assessed on the FACIT-F scale comprised the following: the risk of developing decubitus ulcer, the occurrence of decubitus ulcer, body mass index, type of illness, self-assessment of health condition as well as simple and complex daily activity performance index. The authors noticed that the persons who obtained more points on the FACIT-F scale performed better when it comes to simple and complex daily activities [29]. It is also interesting to examine the results of the analysis of the descriptions of patients under long-term nursing care. On the basis of the analysis of 575 qualification cards for this form of care, it was demonstrated that almost half of the inmates were fully dependent in terms of basic daily activities and obtained 0 points on the Barthel Index [30].

The results of own research findings, as well as the results of other authors, reveal that the essential problem limiting the performance of persons being under long-term care, geriatric care is caused by mobility impairments, while the aim of care provided to this group should be targeting at maintaining the highest possible level of independence and quality of life. What is more, research conducted so far has been highlighting the sense of undertaking activities aiming at the improvement of physical fitness in the context of improving daily performance [21], as the existing scientific evidence confirms that the appropriately planned therapy including physical rehabilitation can improve independence of persons under long-term care [31].

Conclusions

1. Own research results did not reveal any interaction between age and gender, and the functional condition of the examined. It was ascertained that the increase in the impairment of functional condition is accompanied by the decrease in mobility.
2. A better understanding of the factors determining the level of functional condition deficits may improve the planning of the effective and efficient strategy for the prevention of, or slowing down in disability of inmates from long-term care facilities.

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