

Evaluation of the functional efficiency of seniors using the NOSGER scale

Ocena sprawności funkcjonalnej seniorów skalą NOSGER

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Abstract

Introduction. *Assessment of the functioning of an elderly person in the home environment is very important because it is the basis for determining the need for support that seniors and their carers need.* **Aim.** *The aim of the study was to assess the functional efficiency of seniors using the NOSGER scale.* **Material and methods.** *The study included 112 seniors living in the Lubelskie Voivodeship. The age of the respondents ranged from 75 to 90 years (mean 82.1 years). The research material was collected using the NOSGER scale (Nurses' Observation Scale for Geriatric Patients).* **Results.** *The surveyed group of seniors in the assessment of the NOSGER scale obtained a result at the average level of 67.25 points. The respondents functioned best in the activities of everyday life (average 9.00 points). The largest deficits were found in social behavior (13.25 points).* **Conclusions.** *The examined group of seniors showed limitations in functional efficiency. The greatest deficits in functioning occurred in the field of social behavior and the smallest in the scope of activities of daily living. The level of education and self-assessment of health significantly differentiated the functional efficiency of seniors. (Gerontol Pol 2022; 30; 229-233) doi: 10.53139/GP.20233101*

Keywords: seniors, geriatrics assessment, NOSGER scale

Streszczenie

Wprowadzenie. *Ocena sprawności funkcjonowania osoby starszej w środowisku domowym jest bardzo ważna, ponieważ stanowi podstawę do określania zapotrzebowania na wsparcie, jakiego potrzebują seniorzy i ich opiekunowie.* **Cel.** *Celem badań była ocena sprawności funkcjonalnej seniorów za pomocą skali NOSGER.* **Materiał i metody.** *Badaniami objęto 112 seniorów zamieszkałych na terenie województwa lubelskiego. Wiek badanych był w przedziale 75-90 lat (średnia 82,1 lat). Materiał badawczy zebrano za pomocą skali NOSGER (Nurses' Observation Scale for Geriatric Patients).* **Wyniki.** *Badana grupa seniorów w ocenie skalą NOSGER uzyskała wynik na poziomie średniej 67.25 pkt. Najlepiej badani funkcjonowali w zakresie aktywności codziennego życia (średnia 9.00 pkt.). Największe deficyty stwierdzono natomiast w zakresie zachowań społecznych (13.25 pkt.).* **Wnioski.** *Badana grupa seniorów wykazywała ograniczenia w sprawności funkcjonalnej. Największe deficyty funkcjonowania występowały w zakresie zachowań społecznych a najmniejsze w zakresie aktywności codziennego życia. Poziom wykształcenia oraz samoocena stanu zdrowia istotnie różnicowały sprawność funkcjonalną seniorów. (Gerontol Pol 2022; 30; 229-233) doi: 10.53139/GP.20233101*

Słowa kluczowe: seniorzy, ocena geriatryczna, skala NOSGER

Introduction

Currently, the standard of care for the elderly is to conduct a comprehensive geriatric assessment. Comprehensive geriatric care is a multidimensional, multidisciplinary diagnostic process used to collect data on the medical, social and functional capabilities and limitations of the elderly [1].

Comprehensive geriatric assessment gives the best results when used in people at risk of functional loss. Its recipients are mainly people with “great geriatric problems”. This assessment should be part of training addressed to all geriatric care practitioners. A comprehensive geriatric assessment proves the benefits in terms of improving the health of the elderly [2].

Assessment of the functioning of an elderly person in the home environment is very important because it is the basis for determining the need for support that seniors and their carers need [3].

Objective

The aim of the study was to assess the functional efficiency of seniors using the NOSGER scale.

Materials and Methods

The research included 112 seniors living in the Lubelskie Voivodeship. The research was conducted in accordance with ethical principles. The subjects gave their informed and voluntary consent to participate in the research. The age of the respondents was in the range of 75-90 years (mean 82.1 years old). table I presents the characteristics of the surveyed people.

Table I. Characteristics of the research pool

Variable		%
Gender	Female	60.70
	Male	39.30
Marital status	Widow	67.70
	Married	32.30
Education	Elementary	75.00
	Vocational	14.30
	Secondary	10.70
Self-assessment of health	Good	17.00
	Average	53.50
	Bad	29.50

The research material was collected using the NOSGER scale (Nurses' Observation Scale for Geriatric

Patients). This scale makes it possible to assess the biological, mental, mental and social condition of an elderly person. It contains 30 questions and covers 6 areas: activities of daily living, instrumental activities of daily living, moods and emotions, destructive/disruptive behaviors, social behaviors, and memory. Each area contains a scale from 1 to 5. The patient can score a minimum of 30 points and a maximum of 150 points. The higher the number of points, the worse the patient's condition [4-7].

Statistical analysis

Statistical analysis of the obtained material was performed. In order to point out a statistically significant difference or dependence, $p \leq 0.05$ was accepted as the level of significance. The Mann-Whitney U test and Kruskal-Wallis test were used in the calculations.

Results

The surveyed group of seniors in the assessment of the NOSGER scale obtained a result at the average level of 67.25 points. The respondents functioned best in the activities of everyday life (average 9.00 points). The largest deficits were found in social behavior (13.25 points). A detailed assessment of the respondents using the NOSGER scale is presented in table II.

Table II. Evaluation of seniors by NOSGER scale (mean and standard deviation)

NOSGER dimension	Men	SD
NOSGER	67.25	23.22
ADL	9.00	3.00
IADL	12.75	4.50
Mood	11.78	3.99
Disturbing behaviour	10.03	2.58
Social behaviour	13.25	4.88
Memory	10.42	4.79

The fitness of the surveyed seniors depending on their gender was also analyzed (table III). The results showed that men presented better fitness (64.45 points) compared to women (69.05 points). However, a statistically significant difference occurred only in terms of IADL and Disturbing behavior.

In the next stage of the research, the assessment of seniors depending on their marital status was analyzed. The widowed subjects were characterized by better functional efficiency compared to seniors remaining in a relationship (67.78 points vs. 66.11 points). However, this difference was statistically significant only in the area of ADL and IADL (table IV).

Table III. NOSGER vs. Gender

NOSGER dimension	Female		Male		Statistical analysis	
	Mean	SD	Mean	SD	Z	p
NOSGER	69.05	18.37	64.45	18.85	1.523	0.127
ADL	9.00	2.99	9.00	3.04	-0.141	0.887
IADL	13.35	5.00	11.81	3.44	2.058	0.039
Mood	11.94	3.26	11.54	4.94	0.716	0.473
Disturbing behaviour	10.41	2.37	9.45	2.80	2.501	0.012
Social behaviour	13.41	4.67	13.00	5.22	0.381	0.703
Memory	10.94	4.73	9.63	4.84	1.784	0.074

Z- Mann-Whitney U test

Table IV. NOSGER vs. Marital status

NOSGER dimension	Widowed		Maride		Statistical analysis	
	Mean	SD	Mean	SD	Z	p
NOSGER	67.78	17.87	66.11	20.31	0.495	0.620
ADL	9.68	3.20	8.66	2.43	-2.065	0.038
IADL	13.36	4.62	11.44	4.00	2.102	0.035
Mood	12.05	3.59	11.22	4.72	1.101	0.270
Disturbing behaviour	10.11	2.65	10.00	2.45	-0.003	0.997
Social behaviour	13.47	4.47	12.77	5.69	1.001	0.316
Memory	10.88	4.29	10.21	5.76	-0.003	0.997

Z- Mann-Whitney U test

Table V. NOSGER vs. Education

NOSGER dimension	Elementary		Vocational		Secondary		Statistical analysis	
	Mean	SD	Mean	SD	Mean	SD	H	p
NOSGER	71.09	18.35	58.50	15.22	52.00	12.73	14.906	0.0006
ADL	9.57	3.09	7.50	2.12	7.00	1.47	12.850	0.001
IADL	13.61	4.60	11.00	2.63	9.00	3.07	12.791	0.001
Mood	12.57	3.43	9.75	5.90	9.00	2.25	13.625	0.001
Disturbing behaviour	10.38	2.75	10.00	1.34	8.25	1.47	11.867	0.002
Social behaviour	13.76	4.92	12.50	4.53	10.66	4.37	4.491	0.105
Memory	11.19	5.11	9.50	2.58	6.33	1.30	15.010	0.0006

H – Kruskal -Wallis test

Table VI. NOSGER vs. Self-assessment of health

NOSGER dimension	Dobre		Przeciętne		Złe		Statistical analysis	
	Mean	SD	Mean	SD	Mean	SD	H	p
NOSGER	60.00	18.58	59.40	17.69	81.25	7.54	33.136	0.000
ADL	8.66	2.99	8.00	2.57	10.62	2.82	16.856	0.0002
IADL	10.33	4.69	10.60	2.96	16.00	3.00	38.878	0.000
Mood	8.66	2.14	10.86	3.94	14.75	3.12	27.940	0.000
Disturbing behaviour	11.00	1.70	9.40	3.12	10.75	1.58	8.305	0.015
Social behaviour	12.66	6.40	11.46	4.52	16.75	2.77	26.647	0.000
Memory	8.66	4.69	9.06	4.83	12.37	1.96	24.151	0.000

H – Kruskal -Wallis test

The research also analyzed the assessment of seniors' fitness depending on their education (table V). The best efficiency in the field of biopsychosocial functioning was demonstrated by people with secondary education (average 52.00 ± 12.73 points). In individual component areas, people with secondary education were also rated the best. The statistical analysis carried out showed a significant relationship between the education of the respondents and the assessment of their efficiency in all the examined areas (except for the area of Social behavior).

The study also attempted to determine how the fitness of seniors is shaped depending on their self-assessment of their health. People assessing their health as good obtained better results in terms of functional fitness (60.00 points) compared to people with average (59.40 points) and poor (81.25 points) health condition. This difference, both in the overall assessment and in individual areas, was statistically significant (table VI).

Discussion

Independent functioning in everyday life is related to the possibility of self-service and self-care. Self-care is all activities that are undertaken to maintain good health. These activities include not only taking care of your health by following medical recommendations, but also a healthy lifestyle. Changes in the body related to the aging process and existing diseases can significantly hinder independent functioning in everyday life [8].

In our own research, it was found that in the assessment of the NOSGER scale, seniors obtained an average score of 67.25, which may indicate deficits in functional efficiency. Research conducted by Luttenberger et al. [9] in nursing and care facilities in Bavaria among elderly people with dementia allowed to determine the efficiency of patients at the level of 77.70 points. Worse results, however, are presented by studies of people staying in social welfare homes. In the study by Kościelna and Kołat [10], seniors staying there were rated at the average level of 82.47 points. At the same time, in the research by Ulatowska et al. [11], seniors staying in a nursing home in Gniezno showed a high degree of functional efficiency. The best results in the assessment of seniors were obtained by Kawalec-Kajstura et al. [12]. Geriatric patients in their studies obtained a mean score of 46.71 points in the assessment of the NOSGER scale.

In own research, it was found that both in terms of physical and mental fitness, men functioned better. The results of other studies conducted using the NOSGER scale [13,14] showed that women had a higher level of functional fitness. Also, research by Bogusz et al. [15]

showed that women were characterized by better functional efficiency.

In own research, it was found that married people showed higher efficiency. On the other hand, widowed people were slightly less able. This relationship is also confirmed by the results of other studies [14]. On the other hand, completely different results were obtained in studies conducted in nursing homes. In the above studies, married seniors showed the lowest level of functional efficiency compared to single and widowed people [16].

The analysis of own research clearly showed the impact of education on the fitness level of the surveyed people. The best results were obtained by people with secondary education, while the least fit people with primary education. Research by Rybka et al. [17] also showed that education significantly affects the level of fitness of the elderly. The results of their research showed that people with higher education are more efficient in the basic activities of everyday life than people with basic education. The dependence of fitness on education is also confirmed by studies by Haor et al. [18] where the fitness of the elderly increased with the increase in the level of education.

Our research has shown that the self-assessment of health affects the functional efficiency of the subjects. In the research of Nowicki et al. [19] it has been shown that the degree of fitness affects the self-assessment of health.

The geriatric assessment differs from the typical medical assessment as it also includes non-medical aspects, emphasizing the functional capacity and quality of life of the senior by involving a multidisciplinary team (e.g. doctor, nurse, dietitian, social worker and therapists). Such an assessment method often gives a more complete and realistic picture of the medical and psychosocial problems of an elderly person [20].

Conclusions

The examined group of seniors showed limitations in functional efficiency. The greatest deficits in functioning occurred in the field of social behavior and the smallest in the scope of activities of daily living. The level of education and self-assessment of health significantly differentiated the functional efficiency of seniors.

Conflict of interest

None

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