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Assessment of Neurogeriatric Patients by Means of the NOSGER

Ocena pacjentów neurogeriatrycznych za pomocą skali NOSGER

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Abstract

Introduction. One of the fundamental objectives of care of elderly patients is the detection of risk factors that impair their abilities to continue their independent lives. Thus, preventive and therapeutic measures are of considerable significance as they could prevent an increase in disabilities and seniors' dependence on others.
Aim. The aim of the study was to assess patients in neurological wards by means of the Nurses' Observation Scale for Geriatric Patients (NOSGER).
Material and Methods. The study sample comprised 113 elderly patients treated in neurological wards in hospitals in Lublin. The research material was collected applying the NOSGER.
Results. Having assessed the patients with the NOSGER, the results for the entire group averaged out at 54.43±18.96 points. The surveyed patients functioned best in the domain of disturbing behaviour (8.12±2.92 points). They were assessed slightly worse in terms of memory (8.38±4.39 points), activities of daily living (ADL) (8.55±3.56 points) and mood (8.80±3.21 points). The greatest deficits were reported in social behaviour (10.17±4.54 points) as well as instrumental activities of daily living (IADL) (10.42±4.61 points).
Conclusions. The researched group of elderly inpatients treated at neurology wards was characterised by a relatively good level of performance. The elderly presented the greatest deficits in the domain of instrumental activities of daily living (IADL) as well as social behaviour. Their age and marital status significantly affected biopsychosocial activity of the surveyed group of patients. **(JNNN 2017;6(1):20–25)**
Key Words: the NOSGER, neurogeriatric patient, patient assessment

Streszczenie

Wstęp. Jednym z podstawowych zadań opieki nad pacjentem w wieku podeszłym jest wykrywanie czynników ryzyka wpływających na upośledzenie zdolności do samodzielnego życia oraz taki kierunek działań profilaktycznych i leczniczych, który za pobiegałby narastaniu niesprawności i uzależnieniu osób starszych od innych.
Cel. Celem badań było dokonanie oceny skalą NOSGER pacjentów przebywających w oddziałach neurologicznych.
Materiał i metody. Badaną grupę stanowiło 113 pacjentów w podeszłym wieku hospitalizowanych w oddziałach neurologicznych lubelskich szpitali. Materiał badawczy zebrano za pomocą skali NOSGER (Nurses' Observation Scale for Geriatric Patients).
Wyniki. Dokonując oceny pacjentów skalą NOSGER uzyskano wynik dla całej grupy na poziomie średniej 54,43± 18,96 pkt. Najlepiej badane osoby funkcjonowały w zakresie zachowań zakłócających (8,12±2,92 pkt.). Nieco gorzej oceniono ich w zakresie pamięci (8,38±4,39 pkt.), aktywności codziennego życia (8,55±3,56 pkt.) oraz w zakresie emocji (8,80±3,21 pkt.). Największe deficyty stwierdzono u badanych w zakresie zachowań społecznych (10,17±4,54 pkt.) oraz instrumentalnych aktywności codziennego życia (10,42±4,61 pkt.).
Wnioski. Badana grupa pacjentów w podeszłym wieku, przebywających na oddziałach neurologicznych cechowała się dość dobrym poziomem sprawności. Osoby starsze największe deficyty wykazywały w zakresie instrumentalnych

czynności codziennego życia oraz relacji społecznych. Wiek i stan cywilny istotnie różnicowały sprawność biopsychospołeczną badanej grupy pacjentów. **(PNN 2017;6(1):20–25)**
Słowa kluczowe: skala NOSGER, pacjent neurogeriatryczny, ocena stanu pacjenta

Introduction

Elderly individuals present a varied level of functional performance. Its loss usually occurs in a certain order: first, impairment of an ability to perform complex activities is observed and then, deficits in performing the simplest activities are noticed.

One of the fundamental tasks of care of elderly patients involves detecting risk factors that impair their abilities to lead independent lives. Therefore, preventive and therapeutic measures that could hamper the development of inactivity and dependence of the elderly on others are of considerable significance [1]. Occurrence of concomitant somatic diseases and cognitive impairments are major difficulties in care of an elderly patient. Chronic diseases that hinder day-to-day functioning of an individual are common in this group of patients [2].

The aim of the research was to assess patients treated in neurological wards using the Nurses' Observation Scale for Geriatric Patients (NOSGER).

Material and Methods

The study encompassed 113 elderly patients treated in neurological wards in hospitals in Lublin. The patients gave their informed consent to participation in the research. Detailed description of the surveyed individuals is depicted in Table 1.

The research material was collected on the basis of the NOSGER. The scale enables seniors' carers to carry out a prompt and easy assessment of physical, mental and social condition of a patient. The scale consists of six dimensions: memory, instrumental activities of daily living (IADL), activities of daily living (ADL), mood, social behaviour and disturbing behaviour. The values of the scale range from 1 (always) to 5 (never). A patient can obtain from a minimum of 30 points to a maximum of 150 points. The greater the number of points achieved in the course of observation, the worse the condition of a patient. Validation research of the NOSGER bore out that this is a well-accepted instrument with high internal consistency and reliability as well as high correlation of results in all the six dimensions in comparison with the results obtained by means of other assessment tools [3–7].

The material collected was analysed statistically. A significance level of $p<0.05$ was estimated, which

Table 1. Socio-demographic characteristics of the studied group

Variable	%
Gender	
Female	51.00
Male	49.00
Age	
65–74 years old	59.00
75–90 years old	41.00
Marital status	
Single	34.00
Married	66.00
Education	
Elementary	12.00
Vocational	25.00
Secondary	36.00
Higher	27.00
Living	
With family	90.00
Alone	10.00
Place of residence	
Urban area	57.00
Rural area	43.00

indicated statistically significant differences or dependencies.

Results

Having assessed the patients with the NOSGER, the result for the entire group averaged out at 54.43±18.96 points. The surveyed individuals functioned best in the domain of disturbing behaviour (8.12±2.92 points). They were assessed slightly worse in the dimension of memory (8.38±4.39 points), activities of daily living (ADL) (8.55±3.56 points) as well as mood (8.80±3.21 points). The greatest deficiencies were observed in social behaviour (10.17±4.54 points) and instrumental activities of daily living (IADL) (10.42±4.61 points).

Having analysed the assessment of those patients in relation to their age, it was found that individuals of an older age group functioned significantly worse (65.06± 18.97 points) in comparison with a younger group (47.13±15.21 points). This difference was also present

in all the dimensions of the NOSGER. A statistical analysis conducted showed a significant difference between the patients' age and their condition (Table 2).

The next stage of the research involved the determination of the patients' performance depending on their gender. In the general assessment, women (52.85±18.81 points) scored higher in comparison with men (56.03±19.14 points). Women also presented better performance in all the dimensions of this scale. No statistically significant difference between the results of the NOSGER and gender was observed (Table 3).

The research also involved patients' assessment in relation to their marital status. Married individuals scored 51.98±18.35 points of the NOSGER. Single patients functioned worse with an average of 59.26±19.44 points. Married people were also assessed better in all the dimensions of the scale, whereas single ones functioned better in the domain of disturbing behaviour (8.02±2.74 points). A statistically significant difference between the analysed groups was observed both in the general scale and in the subscales (with the exception of mood and disturbing behaviour) (Table 4).

On the basis of the analysis of the results, it can be assumed that according to the NOSGER, individuals with higher education (52.09±18.45 points) functioned best, those with secondary education (53.80±20.25

Table 2. NOSGER vs. Age

NOSGER Dimension	65–74		75–90		Statistical analysis	
	Mean	SD	Mean	SD	t	p
Memory	6.97	3.28	10.43	4.98	-4.45	0.000
IADL	8.71	3.77	12.91	4.61	-5.29	0.000
ADL	6.97	2.70	10.84	3.41	-6.71	0.000
Mood	8.01	3.09	9.93	3.06	-3.25	0.001
Social behaviour	8.59	3.39	12.45	5.10	-4.83	0.000
Disturbing behaviour	7.86	3.03	8.47	2.73	-1.09	0.027
NOSGER	47.13	15.21	65.06	18.97	-5.55	0.000

Student's t-test

Table 3. NOSGER vs. Gender

NOSGER Dimension	Male		Female		Statistical analysis	
	Mean	SD	Mean	SD	t	p
Memory	8.67	4.58	8.08	4.21	-0.71	0.477
IADL	10.67	4.65	10.17	4.59	-0.57	0.564
ADL	8.69	3.53	8.40	3.40	-0.43	0.663
Mood	8.83	3.08	8.75	3.36	-0.13	0.889
Social behaviour	10.58	4.64	9.75	4.49	-0.97	0.333
Disturbing behaviour	8.55	3.10	7.68	2.68	-1.59	0.114
NOSGER	56.03	19.14	52.85	18.81	-0.88	0.375

Student's t-test

Table 4. NOSGER vs. Marital Status

NOSGER Dimension	Married		Single		Statistical analysis	
	Mean	SD	Mean	SD	Z	p
Memory	7.92	4.03	9.28	4.96	1.70	0.04
IADL	9.80	4.46	11.65	4.70	2.13	0.03
ADL	7.96	3.42	9.71	3.57	2.66	0.007
Mood	8.41	3.12	9.55	3.28	1.74	0.08
Social behaviour	9.73	4.58	11.02	4.47	1.79	0.03
Disturbing behaviour	8.16	3.02	8.02	2.74	-0.09	0.927
NOSGER	51.98	18.35	59.26	19.44	2.02	0.04

Mann–Whitney U test

points) functioned slightly worse and the ones with elementary education (56.82±18.16 points) functioned worst. Individuals with higher education functioned best also in the domain of activities of daily living (ADL) (7.70±3.43 points), disturbing behaviour (7.83±2.09 points), instrumental activities of daily living (IADL) (9.22±4.60 points) as well as in social behaviour (9.96±4.65 points). The group of patients with secondary education functioned best in the domain of memory (7.87±3.93points) and mood (8.53±3.40 points). No statistically significant difference between the education and the level of performance of the surveyed patients was observed (Table 5).

In the course of the research, findings of the NOSGER assessment were also compared in correlation with selected scales for comprehensive geriatric assessment. Correlations between the NOSGER and the Barthel Index (BI), Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL), Geriatric Depression Scale (GDS) as well as Abbreviated Mental Test Score (AMTS) were depicted in Table 6; they assess functional and psychosocial activity of the surveyed patients. A statistical analysis showed dependency between the analysed scales and the NOSGER; thus, the NOSGER is confirmed to be a reliable instrument for assessing the elderly (Table 6).

Table 5. NOSGER vs. Education

NOSGER Dimension	Elementary		Secondary		Higher		Statistical analysis	
	Mean	SD	Mean	SD	Mean	SD	F	p
Memory	9.00	5.06	7.87	3.93	8.22	4.03	0.69	0.502
IADL	11.31	4.54	10.43	4.57	9.22	4.60	1.84	0.162
ADL	9.34	3.60	8.39	3.52	7.70	3.43	1.94	0.147
Mood	8.80	3.21	8.53	3.40	9.12	3.00	0.29	0.743
Social behaviour	10.31	3.83	10.17	5.23	9.96	4.65	0.05	0.950
Disturbing behaviour	8.04	3.16	8.39	3.23	7.83	2.09	0.32	0.721
NOSGER	56.82	18.16	53.80	20.25	52.09	18.45	0.58	0.561

F — analysis of variance

Table 6. Analysis of dependencies between the NOSGER and selected scales

Variable	Correlations						
	NOSGER	NOSGER ADL	NOSGER IADL	NOSGER Mood	NOSGER Disturbing behaviour	NOSGER Social behaviour	NOSGER Memory
BI	-0.3943	-0.5513	-0.5460	-0.1678	-0.0480	-0.2870	-0.2289
	p=0.0000	p=0.000	p=0.000	p=0.076	p=0.613	p=0.002	p=0.015
ADL	-0.3663	-0.5144	-0.5362	-0.1613	-0.0170	-0.3145	-0.1449
	p=0.000	p=0.000	p=0.000	p=0.088	p=0.859	p=0.001	p=0.126
IADL	-0.6304	-0.6873	-0.7304	-0.3402	-0.1973	-0.5733	-0.4212
	p=0.000	p=0.000	p=0.00	p=0.000	p=0.036	p=0.000	p=0.000
GDS	0.3969	0.2575	0.2890	0.4594	0.3655	0.3087	0.3008
	p=0.000	p=0.006	p=0.002	p=0.000	p=0.000	p=0.001	p=0.001
AMTS	-0.4910	-0.5187	-0.5349	-0.2954	-0.1602	-0.3621	-0.4383
	p=0.000	p=0.000	p=0.000	p=0.001	p=0.090	p=0.000	p=0.000

Discussion

Comprehensive geriatric assessment is a multi-faceted and multidisciplinary diagnostic process that aims at diagnosing patients' medical, physical and mental problems along with specifying their potential for performance as well as implementing a comprehensive

plan for taking care of them [8,9]. Moreover, systematic assessment enables the determination of progression of changes and evaluation of seniors' deficits in self-sufficiency [10,11].

The NOSGER is infrequently utilised in Polish research. Scarce findings report the application of the scale in the assessment of patients from various

backgrounds. The research conducted among 132 seniors living in their domestic environment in eastern Poland was averaged out at 54.12 points. The surveyed people functioned best in the domain of activities of daily living (ADL) and memory. The worst results were obtained in terms of instrumental activities of daily living (IADL) and social behaviour [12]. The results of our own research averaged out at 54.43 points, which is a slightly lower score than that in the aforementioned research. Our results imply that the elderly functioned worst in the domain of social behaviour and instrumental activities of daily living (IADL). Other research with the application of the NOSGER was conducted in long-term care facilities and its results averaged out at 71.04 points [13]. This proves decreased functional performance of the elderly. In that research, it was also observed that the patients functioned worst in the domain of instrumental activities of daily living (IADL) and social behaviour. Moreover, Fidecki et al. [14] examined 195 patients of social welfare homes in Lublin using the NOSGER. The patients' condition was found at a level of 60.41 points.

Independence of the elderly decreases with age. The authors' own research revealed that individuals from the older age group functioned worse in all aspects of the assessment. It was also confirmed in the research by Bartoszek et al. [15] where the eldest individuals displayed the worst self-reliant functioning. The research by other authors [16,17] demonstrated that performance of patients with a medical history of cerebrovascular accident (CVA) was worse in terms of functional activity.

The authors' own research did not confirm relations between gender of the surveyed individuals and their performance. Different results were obtained in the research by Jucha (2012) where gender significantly differentiated performance of patients with a medical history of cerebrovascular accident (CVA).

In the authors' own research, married individuals were reported to function better within the scope of physical and psychosocial activity in comparison with single respondents.

Our study did not reveal any relation between education and performance of the questioned patients in contrast to other authors' research [15].

Conclusions

The surveyed group of elderly patients treated in neurology wards was characterised by a relatively good level of performance. The elderly presented the greatest deficits in the domain of instrumental activities of daily living (IADL) and social behaviour. Age and marital status substantially affected biopsychosocial performance of the researched group of patients.

Implications for Nursing Practice

The NOSGER can be a useful instrument for assessing patients in day-to-day practice of neurology nurses. It enables prompt determination of the overall condition of an elderly patient and implementation of adequate nursing interventions.

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