Michalczak Magdalena, Zielonka Milena, Bojarczuk Katarzyna, Smoleń Agata. Health assessment of patients over 65 in selected hospital wards. Journal of Education, Health and Sport. 2018;8(9):1681-1698 eISNN 2391-8306. DOI http://dx.doi.org/10.5281/zenodo.1438787
http://ojs.ukw.edu.pl/index.php/johs/article/view/6122

The journal has had 7 points in Ministry of Science and Higher Education parametric evaluation. Part b item 1223 (26/01/2017).
1223 Journal of Education, Health and Sport eissn 2391-8306 7

© The Authors 2018;
This article is published with open access at Licensee Open Journal Systems of Kazimierz Wielki University in Bydgoszcz, Poland
Open Access. This article is distributed under the terms of the Creative Commons Attribution Noncommercial License which permits any noncommercial use, distribution, and reproduction in any medium, provided the original author (s) and source are credited. This is an open access article licensed under the terms of the Creative Commons Attribution Non commercial license Share alike. (http://creativecommons.org/licenses/by-nc-sa/4.0/) which permits unrestricted, non commercial use, distribution and reproduction in any medium, provided the work is properly cited.

The authors declare that there is no conflict of interests regarding the publication of this paper.

Received: 02.08.2018. Revised: 18.08.2018. Accepted: 15.09.2018.

Health assessment of patients over 65 in selected hospital wards

Magdalena Michalczak[1], Milena Zielonka[2], Katarzyna Bojarczuk[1], Agata Smoleń[1]

[1]Chair and Department of Epidemiology and Clinical Research Methodology, Medical University of Lublin, Poland

[2]Department of Pediatric Allergy, University Children's Hospital in Lublin, Poland

ABSTRACT

Introduction: Aging is currently a process that is progressing significantly, in which modern medicine and leading a healthy lifestyle are important factors. Unfortunately, age is most often associated with a deteriorating state of health. The gradual reduction of biological reserves in people over 65 years of age reduces the response to pathogens and triggers the simultaneous occurrence of symptoms characteristic of aging.

Objective: Assess the health of patients over 65in selected hospital wards.

Materials and methods: The study was conducted among 142 patients over 65 years of age, who were hospitalized in the following wards: Neurology, Rheumatology, Endocrinology and Internal Medicine,at*SamodzielnyPublicznySzpitalKliniczny nr 4 w Lublinie*[Independent Public Clinical Hospital No. 4 in Lublin] and *1 WojskowySzpitalKliniczny z Poliklinika w Lublinie*[Military Clinical Hospital No. 1 with the Polyclinic in Lublin]between December 2015 and May 2016.

Results: Better performance is statistically more common for people below 75 years of age, living alone, taking 1-2 medication(s),as well as not having neurological/rheumatic diseases or mental disorders. Lower scores, indicating better functional capacity in each of the areas, were recorded for younger people.

Conclusions:

1. Functional capacityin patients over 65 with relation of basic life activities differs significantly.
2. Patients over 65 who are in selected hospital wards are mostly at varied risk of falling and risk of malnutrition.
3. Mental and psychiatric state is normal in most patients over 65 years of age.
4. Patients show reduced functional capacity in all NOSGER areas.
5. Health status in respondents is significantly affected by: old age, systematic intake of 5 and more medications per day, as well as neurological/rheumatic diseases and mental disorders.

Key words: patients over 65, health status

INTRODUCTION

Aging is currently a process that is progressing significantly, in which modern medicine and leading a healthy lifestyle are important factors. Unfortunately, age is most often associated with a deteriorating state of health. The gradual reduction of biological reserves in people over 65 reduces the response to pathogens and triggers the simultaneous occurrence of symptoms characteristic of aging. Geriatric care is there to provide appropriate assistance to such persons, so that they can maintain bio-psycho-social capacity for as long as possible and so that they do not need to rely on others in their daily functioning [1].

Every patient aged 65 is an individual case in terms of health status. Recognizing a disease is then no longer enough to provide the patient with the optimal conditions in terms of functional capacity (sometimes referred to as functional capabilities).Comprehensive geriatric assessment (CGA) is aimed at determining the health status of a patient over 65 years of age and at detecting any psychological, physical and functional conditions that might affect their performance. When carried out properly, CGA is the right way to plan care for an elderly person, providing an opportunity to either improve health or retain its current status for as long as possible [2].

Aging is a process directly correlated with the person's age, consisting in reduction of functional reserves of particular organs, which in turn hinders the proper maintenance of homeostasis in the body. Anyone from 65 to 75 years old is considered young old, while late old age starts at 75 [3].

The aging process is different for everyone, driven by many factors which influence the changes that occur in the elderly person's body, such as: diseases, intake of medications, and socioeconomic factors.

Aging is a natural stage in the life of every human being. It involves changes in the body and leads to a reduction in functional reserves, which affect the performance of individual organs. The decrease in body performance first shows after 35 years of age, but the rate of changes varies between individuals, being conditioned by a number of factors such as lifestyle, genetic factors, and environmental impact [4].

In Poland, like in other European countries, an advancing aging process has been observed. In 1931, 4.8% of the population were over 65, but that percentage rose to 12% in 1999. In 2013, the population of Poland was 38.5 million, of which 5.7 million were people over 65 years of age, which is approximately 15%. The increase in the percentage of people over 65 is related to the rise in life expectancy and the falling birth rate [5].

The aging process is associated with a gradual deterioration of individual organs and systems, which is caused by the passage of time. This means that people over 65 years of age have more difficulties maintaining homeostasis in the event of disruption of the body's function or damage to its structure. Old age is marked by an increased susceptibility to multiple morbidities [6].

The aging process follows an individual course, relative to the individual rate of changes occurring in each person's body as well as the individual rate of changes in particular organs [7].

In the elderly, changes that occur in the musculoskeletal system concern all its elements (muscles, bones, joints), further prompted by the deterioration of the nervous system which affects deep sensation and therefore the positioning of organs inside the body [8].

In people who lead a sedentary lifestyle, muscle mass is reduced by 1% annually. When comparing muscle mass in a person aged 30-40 with a person aged 80-90, the difference can reach up to 50%. Physical activity can reduce the rate of this process by 50%. The reduction in muscle mass is also the result of weight loss. Older people have less muscular strength, their physical stamina is weaker when performing intense exercise for a short period of time. This is related to the loss of fast-twitch fibers which are capable of oxy-glycolytic metabolism [9].

Joints also change by becoming stiff and more susceptible to injuries, therefore indicating a greater risk of degenerative deformities. This is caused by a decrease in the quality of building material and a decrease in the amount of water within articular cartilages [10].

The senses which are most severely affected in the aging process are sight and hearing, whose acuity is markedly reduced.

Presbyopia is long-sightedness caused by loss of elasticity of the lens of the eye and the limited capacity of accommodation.

Presbycusis refers to changes that occur in the hearing organ during the aging process, especially bilateral hearing loss of higher-frequency sounds [11].

Changes that affect hearing acuity occur in the external and internal part of the ear, that is, in the auditory tract and auditory nerve (cochlea) and the central nervous system's auditory centers and pathways [12].

The performance of the respiratory system in people over 65 is primarily dependent on their lifestyle, environmental impact and medical history. The factor that alters and affects the respiratory system is also age, where typical changes include:

Chest stiffness caused by decreased joint mobility in the chest area and a decrease in the strength and mass of respiratory muscles. Fast muscular fatigue is one of the elements of reduced tolerance to physical exertion [13].

Vital capacity (VC) - the difference in air filling of the lungs after maximum exhalation - is reduced, which is due to the increased residual volume (RV) of the air in the lungs after maximum inhalation. RV doubles in individuals aged 30-40 and 70-80. This is the result of reduced lung elasticity and it may potentially lead to emphysema [14].

Also the number of neurons decreases throughout the aging process, although this does not affect the proper functioning of the brain, which is conditioned instead by the body’s ability to transmit signals between individual cells. With age, as a result of the decrease in nerve cells, new connections are formed which level out increasingly fewer cells. Cognitive functions change little with the passage of time, but memorization is impaired and recent memory deteriorates [15].

The neurological system in people over 65 is burdened by a slow impulse conduction, which means that reflexes are decelerated. Peripheral sensation is also reduced, especially deep sensation. Due to these changes, older people are more likely to fall [16].

Kidneys undergo changes in the aging process, in which their weight is reduced by 25-30%, and so is their volume and size. The number of active nephrons decreases as well. A healthy person should have 2-3 million active nephrons, where absent nephrons are replaced with the

remaining ones so as not to disturb homeostasis. This, however, is associated with an excessive burden on the body [17]. As a result of loss of active nephrons, filtration performs worse due to the reduced filtration surface. Between 30 to 80, glomerular filtration can be reduced by as much as 50%.

Renal function is assessed by means of the evaluation of the increase in creatinine, a parameter which stays within the norm in elderly people despite their impaired renal function. The reason for this is a partial reduction in muscle mass, thus reducing creatinine concentration by 5-10% in people aged 80 compared to those who are in their 40s [18].

Kidney function is also reduced by changes that occur in the area of kidney tubules, whose ability to dilute and concentrate urine decreases. The concentration of electrolytes in the serum is limited. Kidney capacity is reduced to regulate the acid-base balance [19].

The digestive tract is not subject to major changes with age compared to other systems, but it is not left entirely unaffected either. Nutrition problems in elderly people are conditioned by a number of factors, which are:

− a decrease in liver mass (by 30%) and its ability to regenerate. Lipofuscin (an aging dye) is accumulated in hepatocytes which impairs liver function, and as a result, hinders the metabolism of medications. Upon reaching the age of 30-35, the hepatic blood flow also decreases, which further reduces the ability of elderly people to metabolize medications [20];

− weaker intestinal muscle contractions that lead to constipation;

− smaller absorption area and weaker intestinal blood supply lead to lower absorption of nutrients. On the other hand, liposoluble vitamins, i.e. vitamin A, are better absorbed. The activity of some enzymes, including lactase which participates in the digestion of carbohydrates, is reduced [21];

− presbyesophagus is a concept that determines changes in esophageal motility occurring as a result of the aging process;

− gastric acidity is reduced, the mucous membrane and smooth muscle are subject to atrophy;

− an increased risk of tooth wear (loss of dental hard tissues) and consequent teeth lossis a major issue for elderly people, making it difficult to chew and swallow large bites of food. It is often a reason for diet changes and may cause malnutrition. It is also influenced by age-related dry mouth [22].

OBJECTIVE

Assess the health of geriatric patients in selected hospital wards.

MATERIALS AND METHODS

A questionnaire was the tool used in theresearch.

The research tools used in the study are:

- the ADL scale,
- the NOSGER (Nurses' Observation Scale for Geriatric Patients)

Katz index (ADL - Activities of Daily Living); this scale assesses basic life activities. It consists of six questions addressed to the respondent regarding the independent performance of the following daily life activities:

- bathing,
- dressing,
- eating,
- toileting (independence in using the toilet),
- transferring (the ability to get out of bed or chair and move a short distance, within the same room),
- continence.

It takes 2 to 4 minutes to complete the scale. The patient can choose between two answers, *yes* or *no*, and is given 1 point upon confirming his fitness for a given activity. Thus, the maximum number of points is 6, where:0-2 pts means significant incapacity and inability to function independently, 3-4 pts means moderate incapacity where partial assistance is required in performing basic activities, and 5-6 pts means the person is functional.

The NOSGER consists of 30 questions pertaining to six areas. These are:

- activities of daily living [ADL],
- instrumental activities of daily life [IADL],
- mood,
- memory,
- social behavior,
- disturbing behavior.

5 questions are assigned to each of the areas and for each question the patient can receive from 1 to 5 points, that is, 5-25 points per area. More points meansworse bio-psycho-social health of the elderly respondent. The minimum number of points to be obtained is 30, while the maximum is 150.

The study was conducted among 142 patients over 65years of age, who were hospitalized in the following wards: Neurology, Rheumatology, Endocrinology and Internal Medicine, at *SamodzielnyPublicznySzpitalKliniczny nr 4 w Lublinie* [Independent Public Clinical Hospital No. 4 in Lublin] and *1 WojskowySzpitalKliniczny z Poliklinik̨ą w Lublinie* [Military Clinical Hospital No. 1 with the Polyclinic in Lublin] between December 2015 and May 2016. A statistical analysis based on the computer software STATISTICA v. 10.0 (StatSoft, Poland) was run for the collected material. Analyzed parameters were determined using cardinality and percentage points. Chi-square (χ^2) of homogeneity was used to assess the existence of differences in the evaluation of improvement in health. A 5% significance level (error of inference) was assumed.

RESULTS

The assessment of the health status of patients over 65 in selected hospital wards, including demographic variables and the ADL and NOSGER scales, are presented in Tables 1 to 5.

Table 1. *Comparison of functional capacityin respondentsusing the ADL scale by sex, age, marital status, occupation, living arrangements, number of medication taken, neurological diseases, endocrine diseases, cardiovascular diseases, rheumatological diseases, and mental disorders.*

Socio-demographicvariables		ADL			Total	Statistical analysis
		Functionalpersons	Moderatelydysfunctional	Significantlydysfunctional		
Sex	Female	33	12	35	80	
		41,3%	15,0%	43,8%	100,0%	
	Male	28	9	25	62	χ^2=0,227
		45,2%	14,5%	40,3%	100,0%	p=0,893
Age	Below 75 yearsold	44	11	16	71	
		62,0%	15,5%	22,5%	100,0%	**χ2=25,065**
	Above 75 yearsold	17	10	44	71	**p<0,001**
		23,9%	14,1%	62,0%	100,0%	
Marital status	Single	27	11	34	72	
		37,5%	15,3%	47,2%	100,0%	
	In a relationship	34	10	26	70	χ2=1,890
		48,6%	14,3%	37,1%	100,0%	p=0,389
Occupation	Physical	27	13	36	76	
		35,5%	17,1%	47,4%	100,0%	χ2=3,708

	Mental	34	8	24	66	p=0,157
		51,5%	12,1%	36,4%	100,0%	
Livingarrangements	Alone	18	3	4	25	
		72,0%	12,0%	16,0%	100,0%	
	With family	43	18	56	117	**χ^2=11,066**
		36,8%	15,4%	47,9%	100,0%	**p=0,004**
Number of medicationstaken	1-2	25	0	0	25	
		100,0%	,0%	,0%	100,0%	
	3-4	27	13	14	54	
		50,0%	24,1%	25,9%	100,0%	**χ^2=66,727**
	5 and more	9	8	46	63	**p<0,001**
		14,3%	12,7%	73,0%	100,0%	
Neurologicaldiseases	Yes	22	12	47	81	**χ^2=22,054**
		27,2%	14,8%	58,0%	100,0%	**p<0,001**
	No	39	9	13	61	
		63,9%	14,8%	21,3%	100,0%	
Endocrinediseases	Yes	35	16	44	95	
		36,8%	16,8%	46,3%	100,0%	χ^2=4,438
	No	26	5	16	47	p=0,109
		55,3%	10,6%	34,0%	100,0%	
Cardiovasculardiseases	Yes	44	15	50	109	
		40,4%	13,8%	45,9%	100,0%	χ^2=2,521
	No	17	6	10	33	p=0,284
		51,5%	18,2%	30,3%	100,0%	
Rheumatologicaldiseases	Yes	25	11	38	74	
		33,8%	14,9%	51,4%	100,0%	**χ^2 =6,055**
	No	36	10	22	68	**p=0,048**
		52,9%	14,7%	32,4%	100,0%	
Mentaldisorders	Yes	6	1	16	23	
		26,1%	4,3%	69,6%	100,0%	
	No	55	20	44	119	**χ^2 =8,687**
		46,2%	16,8%	37,0%	100,0%	**p=0,013**

It was found thatpeople aged below 75, living alone and taking 1-2 medication(s), having no neurological/rheumatic diseases or mental disorders, have statistically better functional capacity.

Table1. *Comparison of NOSGER vs. marital status*

NOSGER - scales	Marital status	N	Average	Standard deviation	Mann-Whitney U Test	
ADL	Single	72	13,8889	7,64633	-1,738	0,082
	In a relationship	70	11,5571	7,08261		
IADL	Single	72	15,1389	7,04174	**-2,079**	**0,038**
	In a relationship	70	12,8000	6,52442		
Mood	Single	72	13,7361	6,28881	**-2,977**	**0,003**
	In a relationship	70	10,8857	5,64799		
Memory	Single	72	12,5417	7,32147	**-2,633**	**0,008**
	In a relationship	70	9,5429	6,00407		
Socialbehavior	Single	72	14,1667	7,34272	**-2,412**	**0,016**
	In a relationship	70	11,4857	6,53806		
Disturbingbehavior	Single	72	12,4028	6,58564	**-2,374**	**0,018**
	In a relationship	70	10,0429	5,23211		
NOSGER	Single	72	81,8750	40,82665	**-2,527**	**0,012**
	In a relationship	70	66,3143	35,37441		

Lower results, and therefore better functionality in each area, were obtained by respondents who are in a relationship, except for the ADL scale.

Table2. *Comparison of NOSGER vs. living arrangements*

NOSGER - scales	Livingarrangements	N	Average	Standard deviation	Mann-Whitney U Test	
ADL	Alone	25	9,4400	7,07743	**-2,827**	**0,005**
	With family	117	13,4444	7,35368		
IADL	Alone	25	10,6400	6,63250	**-2,729**	**0,006**
	With family	117	14,7009	6,73164		
Mood	Alone	25	10,8000	6,35085	-1,391	0,164
	With family	117	12,6581	6,05885		
Memory	Alone	25	8,8800	6,91207	**-2,070**	**0,038**
	With family	117	11,5299	6,77288		
Socialbehavior	Alone	25	10,6400	7,11149	-1,956	0,051
	With family	117	13,3162	6,99217		
Disturbingbehavior	Alone	25	9,4400	6,17846	**-2,174**	**0,030**
	With family	117	11,6239	5,98234		
NOSGER	Alone	25	59,8400	39,53024	**-2,317**	**0,020**
	With family	117	77,2735	38,22768		

Respondents living alone showed better functioning in the area of activities of daily living, instrumental activities of daily living, memory, disturbing behavior and the overallNOSGER result.

Table 3. *Comparison of NOSGER vs. age*

NOSGER - scales	Age	N	Average	Standard deviation	Mann-Whitney U Test	
ADL	Below 75y.o.	71	9,1549	5,71126	**-6,034**	**<0,001**
	Above 75y.o.	71	16,3239	7,26788		
IADL	Below 75 y.o.	71	10,5070	5,38217	**-6,004**	**<0,001**
	Above 75 y.o.	71	17,4648	6,44278		
Mood	Below 75 y.o.	71	9,7465	4,99061	**-5,094**	**<0,001**
	Above 75 y.o.	71	14,9155	6,10093		
Memory	Below 75 y.o.	71	7,6338	4,62984	**-6,244**	**<0,001**
	Above 75 y.o.	71	14,4930	7,01198		
Socialbehavior	Below 75 y.o.	71	9,6479	5,69736	**-5,649**	**<0,001**
	Above 75 y.o.	71	16,0423	6,87529		
Disturbingbehavior	Below 75 y.o.	71	8,5493	4,24530	**-5,263**	**<0,001**
	Above 75 y.o.	71	13,9296	6,41054		
NOSGER	Below 75 y.o.	71	55,2394	28,82879	**-6,132**	**<0,001**
	Above 75 y.o.	71	93,1690	38,55089		

Younger people obtained lower results, and thus, better functioning in each area.

Table 5. *Comparison of NOSGER vs. number of medications taken*

NOSGER - scales	Number of medicationstaken	N	Average	Standard deviation	Mann-Whitney U Test	
ADL	1-2	25	5,6400	1,43991		
	3-4	54	9,8519	5,93807	**65,224**	**<0,001**
	5 and more	63	18,0317	6,23716		
IADL	1-2	25	7,6000	3,21455		
	3-4	54	11,3333	5,79850	**58,305**	**<0,001**
	5 and more	63	18,7937	5,33751		
Mood	1-2	25	7,7200	3,11609		
	3-4	54	9,8704	4,38284	**46,842**	**<0,001**
	5 and more	63	16,2698	5,97091		
Memory	1-2	25	5,8000	2,50000		
	3-4	54	8,0741	4,68982	**52,711**	**<0,001**
	5 and more	63	15,7143	6,67066		
Socialbehavior	1-2	25	7,4400	3,65240		
	3-4	54	10,0741	5,67966	**49,206**	**<0,001**
	5 and more	63	17,3651	6,43905		
Disturbingbehavior	1-2	25	7,0800	2,90000		
	3-4	54	8,5000	3,94658	**51,014**	**<0,001**
	5 and more	63	15,2381	6,08200		
NOSGER	1-2	25	41,2800	15,00144		
	3-4	54	57,7037	28,80817	**60,206**	**<0,001**
	5 and more	63	101,4127	34,88536		

The best functional capacity was obtained by people taking 1-2 medications, while the worst by those who take 5 or more. Differences were observed for each area.

Discussion

Life expectancy has been on the rise in recent years. This is good information because the elderly have now more time to enjoy life and its pleasures. However, it also comes with everyday difficulties.

In connection with the aging process arising in the third decade of a person's life, the changing biological reserves in the body lead to a deterioration of the individual's bio-psycho-social state. Maintaining functional capacity is the most difficult at late old age, when even basic activities

may become a major challenge. Reduced and limited independence springs from individual factors that affect people over 65 years of age. Early detection and assessment of health through preventive programs is the correct approach for the elderly to retaining independence in daily functioning [23].

With a view to examining existing facts and assess the health of elderly patients in selected hospital wards, a research study was conducted on the health status of a selected group of geriatric patients. In the process, scales related to functional status, as well as physical, mental and psychological health, were used. 142 respondents aged from 65 to 96 participated in the study, whose results allowed to draw relevant conclusions.

The results of the tests carried out using the scale of the assessment of activity of daily living (ADL) show that bathing and dressing/undressing prove to be the most challenging. Respondents, however, have the most capacity in performing activities such as transferring (getting out of bed and moving to the armchair) and eating (consuming meals by themselves). Those who show greater capacity are under 75, live alone and take 1-2 medications per day, plus they do not have any burden in the form of neurological/rheumatic diseases or mental disorders. Individuals living alone usually enjoy good fitness, due to which functional persons accounted for 43% of respondents, with 14.8% being moderately dysfunctional and 42.3% significantly dysfunctional. However, a study by M. Bujnowska-Fedak using the ADL scale finds that results of respondents were mostly positive in patients over 65, where the majority obtained the average score of 5.78 on a scale from 0 to 6. In addition, no factors were observed that could affect this result [24]. Based on a study by Ślusarska B. et al., people over 65 are in most cases independent, while 46.5% of respondents are moderately or partially dysfunctional and 18.8% are significantly dysfunctional in terms of everyday capacity [25].

Data from the findings of research studies using the NOSGER were collected, which were presented as an arithmetic mean. The general score obtained by respondents was 74.2 pts, with the best results scored in the area of memory (11.1 pts) and disturbing behavior (11.2 pts). At the same time, elderly people showed reduced capacity inactivity of daily living (ADL)(12.7 pts), mood (12.3 pts) and social behavior(12.8 pts). The worst functioning was recorded in the area of instrumental activities of everyday living (IADL) (14 pts). Findings contained in a study by W. Fidecki et al.indicate that the overall average score is 60.41 pts, broken down as follows: disturbing behavior (8.87 pts), memory (9.58 pts), ADL (9.85 pts), mood (10.05 pts), social behavior (10.94 pts), IADL (11.13 pts) [26].

Based on a 2014 study by Fidecki W., the average value for respondents in the NOSGER was 74.76 pts, a sum aggregated from the following scores: disturbing behavior (7.83 pts), memory

(10.38 pts), mood (12.18 pts), ADL (13.19 pts), social behavior (14.42 pts), and IADL (16.74 pts) [27].

The sex of respondents did not affect the results. In a study by Fidecki W., women are found to function better than men(59.67 pts vs. 61.68 pts for men) [28].

Another variable tested for in health assessment was age. People below 75 years of age obtained better results, with the average score at 55.2 pts. They excelled in the area of memory (7.6 pts), followed by disturbing behavior (8.5 pts). ADL (9.6 pts), social behavior (9.6 pts) and mood(9.7 pts) were at a similar level, while IADL was at 10.5 pts. People over 75 years of age had an average score of 93.2 pts, faring particularly poorly in IADL (17.5 pts).Respondents were found to have more capacity in the area of ADL (16.3 pts) and social behavior (16 pts), and slightly less for mood (15 pts) and memory (14.5 pts). The best results were observed in the area of disturbing behavior (13.9pts). In a study by E. Kościelna and E. Kołat. respondents were divided into three age groups, which obtained the following scores: 65-70 (65.88 pts), 71-80 (79.17 pts), and 81-90 (82.31 pts). Broken down into areas, the youngest group, i.e. 67-70 year-olds, scored as follows: disturbing behavior (7.60 pts), memory (9.04 pts), mood(9.64 pts), ADL (12.68 point), social behavior (13.04 pts), IADL (13.88 pts). In 71-80 year-olds, it was: disturbing behavior (8.86 pts), mood (10.08 pts), memory (11.81 pts), ADL (13.61 pts), social behavior (16.53 pts), IADL (18.28 pts). Finally, the group of 81-90 year-olds fared best in the area of disturbing behavior(8.97 pts), followed by mood (10.41 pts), memory (12.90 pts), ADL (14.64 pts), social behavior (16.87 pts), and lastly, IADL (18.51 pts) [29].

The next considered variable was marital status. Elderly people who were in a relationship were found to have better functional capacity (66.3 pts), scoring worse only for ADL (11.6 pts). People over 65 who were in a relationship head the fewest issues in the area of memory (9.5 pts). A similar score was recorded for disturbing behavior (10 pts) and mood (10.9 pts). Social behavior remained at 11.5 pts, while the average for IADL was 12.8 pts.

Single people were worse off than those in a relationship, having obtained an average of 89.9 pts. These people were the best at acting in the area of disturbing behavior (12.4 pts) and memory (12.5 pts). A similar level was presented in areas such as mood (13.7 pts) and ADL (13.9 pts). IADL (15.1 pts) turned out to be the most problematic to respondents.

In multiple studies by W. Fidecki, divorced respondents retained the best functional capacity (58.68 pts), similarly to widowed patients (59.71 pts). The average score for single people was 61.66 pts, while the worst functional capacity concerned people in a relationship [35]. A study by M. Wysokiński presented the following findings for single people: the overall average of 72.54 pts, broken down as follows: disturbing behavior (8.18 pts), mood (11.21 pts), memory

(11.54 pts), ADL (12.12 pts), social behavior (13.69 pts) and IADL (15.78 pts).Those in a relationship obtained the result of 60.05 pts, showing best capacity in disturbing behavior(8,29 pts) and memory (9.41 pts). In other areas, they obtained the following scores: mood(11 pts), ADL (11.35 pts), social behavior (11.58 pts), IADL (14.41 pts). Widowed people functioned slightly worse (75.64 pts), or to break it down: disturbing behavior (7.76 pts), memory (10.77 pts), mood(12.01pts), ADL (13.45 pts), social behavior (14.92 pts), IADL (16.71 pts). Divorced people scored overall the lowest (79.00 pts), a sum consisting of: disturbing behavior(9.90 pts), memory (11.80 pts), ADL (12.80 pts), mood(13.40 pts), social behavior (15.10 pts) and IADL (16.00 pts) [30].

When assessing patients using the NOSGER, it was examined whether their living arrangements (alone vs. with family) influence their health. Studies have shown that people living alone retain more functional capacity, obtaining an overall average of 59.8 pts. The best results concerned memory (8.9 pts), followed by ADL and disturbing behavior (9.4 pts), and then IADL and social behavior whose average result was 10.6 pts. People living alone scored the worst for mood (10.8 pts). On the other hand, people living with their family had worse functional capacity, with the average score of 77.3 pts, retaining most successfully memory (11.5 pts), disturbing behavior (11.6 pts) and mood(12.7 pts). However, their results were lower for the following areas: social behavior (13.3 pts), ADL (13.4 pts) and IADL (14.7 pts).

Another variable studied is the influence of diseases on the health status of patients over 65 years of age. Among the respondents, 57% suffered from neurological diseases, 69.9% from endocrine diseases, 76.8% from cardiovascular diseases, 52.1% from rheumatological diseases, and finally, 16.2% from mental disorders. Endocrine and cardiovascular diseases did not affect the results, while those suffering from neurological diseases had worse functional capacity than people without these conditions, obtaining the overall score of 87.2 pts. IADL were the most problematic for the elderly with neurological diseases (16.3 pts average), followed closely by ADL (15.4 pts). Social behavior (14.9 pts) and mood were noted to be at a similar level (14.1 points). Memory (13.3 pts) and disturbing behavior (13 pts) were the least problematic areas. In those who do not suffer from neurological diseases, the overall result was 56.8 pts: IADL (10.9 pts), social behavior (10 pts), mood(9.9 pts), ADL (9.2 pts), disturbing behavior (8, 9 pts) and memory (8 pts).

People burdened with rheumatic diseases also showed worse functional capacity, with these disorders differentiating the results as follows: in the area of the overall assessment (81.2 pts), IADL (15.6 pts), social behavior (14.2 pts), ADL (14.8 pts), mood (13.3 pts), disturbing behavior (12 pts), memory (11.9 pts). Respondents who had no rheumatic diseases obtained the

overall score of 66.6 pts. Taking into account the functioning in the best areas, the following results were noted, respectively: memory (10.1 pts), disturbing behavior (10.3 pts), ADL (11.3 pts), mood (11.3 pts), social behavior (11.4 pts), IADL (12.2 pts).

Taking into account the presence of diseases and their influence on the health of elders, the worst affected persons were those with mental disorders, with an overall score of 113.5 pts. They performed markedly poorly in IADL (20.2 pts) and social behavior (20 pts). ADL (19.3 pts) and mood remained behind at a similar level (19pts), while disturbing behavior (17.5 pts) and memory (17,4 pts) were two areas that were the least problematic.

In people who did not have mental disorders, the average score was 66.6 pts. They functioned best in the area of memory (9.8 pts) and disturbing behavior (10 pts), while scoring slightly more in the area of mood (11 pts), and then ADL and social behavior (both 11.5 pts). On the other hand, they fared worst in the area of IADL (12.8 pts). In multiple studies by M. Wysokiński, persons suffering from a single disease showed better functional capacity in all NOSGER areas, while respondents suffering from two or more diseases functioned worse [31]. The next variable considered in the study of elderly people was the number of medications they were taking, which was divided into daily intakes of 1-2, 3-4, or 5 and more. People taking 1-2 medications per day showed the best functional capacity in all areas, with an overall score of 41.3 pts. ADL (5.6 pts) and memory (5.8 pts) caused them the last trouble, and a similar result was observed for: disturbing behavior (7.1 pts), social behavior (7.4 pts), IADL (7.6 pts), mood(7.7 pts), respectively.

The results of the research demonstrated that people who take 3-4 medications per day had worse functional capacity than the previously described group. Their average overall score was 57.7 pts, a sum aggregated from the following scores for each area: memory (8.1 pts), disturbing behavior (8.5 pts), ADL (9.9 pts), mood (9.9 pts), social behavior (10.1 pts) and IADL (11.3 pts).

The worst result in all areas was found in elderly patients taking 5 and more medications per day, with the overall average aggregated from all areas calculated at 101.4 pts. From worst to best in terms of functional capacity, these were: IADL (18.8 pts) and ADL (18 pts), social behavior (17.4 pts), mood (16.3 pts), memory (15.7 pts), and lastly, disturbing behavior(15.2 pts).

In a study by Burzyńska M, also involving a questionnaire, it was found that 80 out of 94 respondents experienced ailments in different body systems, which was associated with taking medications [32].

Conclusions

Based on the results of the research presented in this paper, the following conclusions can be drawn:

1. Functional capacity in patients over 65 is diverse in the area of activities of daily living.
2. Patients over 65 who are in selected hospital wards are mostly at varied risk of falling and risk of malnutrition.
3. Mental and psychological state is normal in most patients over 65.
4. Patients show reduced functional capacity in all NOSGER areas.
5. Health status in respondents is significantly affected by: old age, systematic intake of 5 and more medications per day, as well as neurological/rheumatic diseases and mental disorders.

References:

1. Bień B., Parnowski T., Duława J.: Geriatria i pielęgniarstwo geriatryczne. Wydawnictwo Lekarskie PZWL, Warszawa 2014
2. Borowicz A.M., Wieczorkowska-Tobis K.: Fizjoterapia w Geriatrii - Atlas Ćwiczeń. Wydawnictwo Lekarskie PZWL, Warszawa 2013
3. Bujnowska-Fedak M., Kumięga P., Sapilak B.: Ocena sprawności funkcjonalnej osób starszych w praktyce lekarza rodzinnego w oparciu o wybrane skale testowe. Family Medicine&PrimaryCareReview 2013, 15 (2), s 76–79
4. Burzyńska M., Kępa M., Bryła M., Maniecka-Bryła I.: Samoocena stanu zdrowia i zachowań zdrowotnych starszych mieszkańców wsi. Repozytorium Uniwersytetu Łódzkiego 2014
5. Cebulak M., Markiewicz M., Guty E.: Ocena funkcji poznawczych u chorych objętych domową długoterminową opieką pielęgniarską. Problemy Pielęgniarstwa 2014, 22 (1), s 20–26
6. Cybulski M., Krajewska-Kułak E: Opieka nad osobami starszymi Przewodnik dla zespołu terapeutycznego. Wydawnictwo Lekarskie PZWL, Warszawa 2016
7. Doroszkiewicz H., Sierakowska M., Lewko J., Ostrowska A.: Ocena stanu funkcjonalnego pacjentów geriatrycznych wyznacznikiem zakresu opieki pielęgniarskiej. Problemy Pielęgniarstwa, 2014, 22(3), s. 258-264
8. Dutkiewicz W.: Podstawy metodologii badań. Wydawca Stachurski, Kielce 2000, s. 50-52, 68-76, 87-92
9. Fedyk-Łukasiuk M.: Całościowa Ocena Geriatryczna w codziennej praktyce geriatrycznej i opiekuńczej. Geriatria i opieka długoterminowa, 2015, 1(1), s 1-5
10. Fidecki W., Wrońska I., Wysokiński M, Kulina D., Burian J., Wadas T., Augustowska-Kruszyńska K.: Próba oceny ryzyka demencji wśród osób starszych objętych opieką długoterminową. Pielęgniarstwo Neurologiczne i Neurochirurgiczne 2014, 3(3), s 97–144
11. Fidecki W., Wysokiński M., Skupiński K., Wrońska I., Kędziora-Kornatowska K, Sienkiewicz Z., Kulina D., Burian J.: Elementy całościowej oceny geriatrycznej seniorów w domach pomocy społecznej. Gerontologia Polska 2016; 24, s 26-31
12. Fidecki W., Wysokiński M., Wrońska I., Ślusarz R.: Elementy kompleksowej oceny geriatrycznej w praktyce pielęgniarskiej. Przegląd Medyczny Uniwersytetu Rzeszowskiego i Narodowego Instytutu Leków w Warszawie 2011, 2, s 205–211
13. Gauthier S.: Demencja –trafna diagnoza. Wydawnictwo lekarskie PZWL, Warszawa 2013
14. Grodzicki T., Kocemba J., Skalska A.: Geriatria z elementami gerontologii ogólnej. Via medica, Gdańsk 2007
15. Kachaniuk H.: Pielęgniarstwo integralną częścią opieki geriatrycznej. Nowy Sącz 2007
16. Kostka T, Borowiak E, Kołomecka M.: Całościowa ocena geriatryczna. Lek Rodz 2007, 12: 9-16
17. Kostka T., Koziarska-Rościszewska M.: Choroby Wieku Podeszłego. Wydawnictwo Lekarskie PZWL, Warszawa 2009
18. Kościelna E., Kołat E.: Ocena geriatryczna mieszkańców domu pomocy społecznej za pomocą skali NOSGER. Interdyscyplinarny model opieki nad osobami starszymi 2015, cz. 2, s 65-74
19. Lamer-Zarawska E.: Fizjoterapia i leki roślinne w geriatrii. Wydawnictwo Lekarskie PZWL, Warszawa 2016

20. Lenartowicz H., Kózka M.: Metodologia badań w pielęgniarstwie. Wydawnictwo Lekarskie PZWL, Warszawa 2011, str. 86-91, 97-109
21. Lewko J., Kamińska K., Doroszkiewicz H.,Talarska D, Sierakowska M., Krajewska-Kulak E.: Ocena narażenia na upadki a wydolność funkcjonalna wśród osób starszych w środowisku zamieszkania. Problemy Pielęgniarstwa 2014, 22(2), s 159–164
22. Łobocki M.: Metody i techniki badań pedagogicznych. Wydawnictwo Impuls, Kraków 2005, s. 27-32
23. Łobocki M.: Wprowadzenie do metodologii badań pedagogicznych. Wydawnictwo Impuls, Kraków 2007
24. Manthorpe J, Iliffe S.: Depresja wieku podeszłego. Wydawnictwo Lekarskie PZWL, Warszawa 2010
25. Marchewka A., Dąbrowski Z., ŻołądźJ.: Fizjologia starzenia się. Wydawnictwo PWN, Warszawa 2012
26. Muszalik M, Biercewicz M.: Pielęgniarstwo w opiece długoterminowej. Wydawnictwo Lekarskie PZWL, Warszawa 2010
27. Nowicka A.: Wybrane problemy osób starszych. Wydawnictwo Impuls, Kraków 2010
28. Pałka S.; Metodologia. Badania. Praktyka pedagogiczna. Gdańskie Wydawnictwo psychologiczne, Gdańsk 2006, s. 12
29. Pączek L., Niemczyk M.: Geriatria. Wydawnictwo Czelej, Lublin 2009
30. Plich T., Bauman T. Zasady badań pedagogicznych. Wydawnictwo Akademickie Żak, Warszawa 2010, s. 127
31. Ulatowska A., Bączyk G.: Ocena stanu odżywienia pacjentów w podeszłym wieku, umieszczonych w oddziale geriatrycznym, dokonana za pomocą skali MNA. Pielęgniarstwo Polskie 2016, 1 (59), s 30-37
32. Węglińska M.: Jak pisać pracę magisterską. „Impuls", Kraków 2007, s. 11-15, 27-29