

Mental state of elderly people aged 80 and over in the context of selected demographic traits as well as their efficiency in terms of activities of daily living

Stan psychiczny seniorów w wieku 80 lat i starszych w kontekście wybranych cech demograficznych oraz sprawności w realizacji czynności życia codziennego

Wioletta Janecka, Mariola Głowacka, Adrianna Frydrysiak, Beata Szlendak, Kornelia Kędziora-Kornatowska, Marzena Kikolska, Dawid Pilewski, Maciej Stodki

¹ Department of Integrated Healthcare The State University of Applied Sciences in Płock

² Laboratory of Clinical Skills and Medical Simulation Ludwik Rydygier Collegium Medicum in Bydgoszcz Nicolaus Copernicus University in Toruń

³ Center of Postgraduate Education for Nurses and Midwives in Warszawa

⁴ Department and the Clinic of Geriatrics Ludwik Rydygier Collegium Medicum in Bydgoszcz Nicolaus Copernicus University in Toruń

Abstract

Introduction. The occurrence of inverse relations between elderly people's levels of cognitive functions and the exacerbation of their depression means that the use of the MMSE scale in health services for the elderly needs to be propagated. **The aim of the study.** The occurrence of inverse relations between elderly people's levels of cognitive functions and the exacerbation of their depression means that the use of the MMSE scale in health services for the elderly needs to be propagated. **Material and methods.** 100 elderly people (67% of whom were women and 33% were men) aged 80-99 from the city and borough of Płock (58%) and the borough of Mała Wieś (42%) participated in the research. The research was based on the Mini Mental State Examination (MMSE). The statistical analysis was done with the use of U Mann-Whitney's test, Chi-square Pearson's test as well as Chi-square test with Yates's amendment. **Results.** Women were better than the men at giving the current year (49.3%; $p = 0.03815$); the current season of the year (56.7%; $p = 0.01772$); the current month (58.2%; $p = 0.02653$); the current date (50.8%; $p = 0.02732$) and their current place of living: the country (65.7%; $p = 0.00130$), the city (58.2%; $p = 0.02653$) and the floor (53.7%; $p = 0.01105$). The elderly people's concentration and ability to count ($p = 0.03120$) as well as their sense of time with reference to the current year ($p = 0.02778$) depended on their place of living. **Conclusions.** The correlation between the elderly people's cognitive function levels and their self-care efficiency confirms the validity of the common use of MMSE for securing nursing and prophylactic health services in order to minimise the risk of depression and self-care disorders. (Gerontol Pol 2018; 26; 258-264)

Key words: mental state, senior, functional ability

Streszczenie

Wstęp. Występowanie odwrotnej zależności między poziomem funkcjonowania poznawczego seniorów a nasileniem u nich objawów depresji wymaga popularyzacji zastosowania skali MMSE w świadczeniach zorientowanych na tę populację. **Cel badania.** Ocena stanu psychicznego seniorów w wieku 80 lat i starszych w zależności od ich wieku, płci, miejsca zamieszkania oraz wydolności w realizacji czynności życia codziennego. **Materiał i metody.** W badaniu uczestniczyło 100 seniorów w wieku 80-99 lat z Miasta i Gminy Płock (58,0%) oraz Gminy Mała Wieś (42,0%). W badaniu wykorzystano Krótką Skalę Oceny Stanu Psychicznego (MMSE, od ang. Mini-Mental State Examination). Do analizy statystycznej uzyskanych wieków zastosowano: test U Manna-Whitneya, test Chi-kwadrat Pearsona oraz test Chi-kwadrat z poprawką Yatesa. **Wyniki.** Oceniając stan psychiczny seniorów wg skali MMSE analizowano orientację w czasie i miejscu, zapamiętywanie,

uwagę i liczenie, przypominanie i nazywanie, powtarzanie, wykonywanie poleceń, pisanie, prakcję konstrukcyjną. Kobiety częściej niż mężczyźni poprawnie określały aktualne: rok (49,3%; $p = 0,03815$), porę roku (56,7%; $p = 0,01772$), miesiąc (58,2 %; $p = 0,02653$), datę (50,8%; $p = 0,02732$) oraz miejsce pobytu: kraj (65,7%; $p = 0,00130$), miasto (58,2 %; $p = 0,02653$) i piętro (53,7%; $p = 0,01105$). Natomiast uwaga i liczenie ($p = 0,03120$) oraz orientacja co do aktualnego roku ($p = 0,02778$) zależały istotnie statystycznie od miejsca zamieszkania. **Wnioski.** Wzajemna zależność między poziomem funkcjonowania poznawczego a wydolnością samoopiekuńczą osób starszych potwierdza zasadność powszechnego stosowania MMSE w planowaniu zabezpieczenia świadczeń opiekuńczych i działań profilaktycznych w zakresie zminimalizowania ryzyka depresji oraz deficytów samopielegnacyjnych. (*Gerontol Pol* 2018; 26; 258-264)

Słowa kluczowe: stan psychiczny, senior, sprawność funkcjonalna

Introduction

The occurrence of inverse relations between elderly people's levels of cognitive functions and the exacerbation of their depression means that the use of the MMSE scale in health services for the elderly needs to be propagated. The MMSE scale is a common tool which is easy and cheap to use in terms of differentiating elderly people's levels of cognitive functions [1,2]. Apart from enhancing preliminary diagnostics, the scale can also facilitate treatment monitoring, especially in the case of dementia patients [3-5]. Population ageing [6] has been observed to be interrelated with multiple morbidities and various chronic diseases [7]. The following diseases are the most frequently diagnosed ones: Alzheimer's disease, conditions occurring after cerebral strokes, Parkinson's disease, multiple sclerosis, circulatory system diseases, motor organ diseases, nervous system diseases [8].

The aim of the study

The purpose of the study is to assess the mental condition of elderly people aged 80 and over depending on their age, sex, place of living and efficiency in terms of everyday activities.

Materials and methods

100 elderly people (67% of whom were women and 33% were men) aged 80-99 from the city and borough of Płock (58%) and the borough of Mała Wieś (42%) participated in the research. The average age of the participants was 86, the women being one year younger than the men on average. The research was conducted between June 2017 and March 2018; the elderly people had been selected randomly and asked to give their consent in writing. The participants were informed about the idea behind the research, their voluntary participation and their right to resign from participating in the research at any time without any consequences. The

research was based on the Mini Mental State Examination (MMSE); its results were correlated with the results of the assessment of the elderly people done according to the following scales: Instrumental Activities of Daily Living (I-ADL) according to Lawton, Duke OARS Assessment of IADL, and Activities of Daily Living (ADL) according to Katz. The statistical analysis was done with the use of U Mann-Whitney's test, Chi-square Pearson's test as well as Chi-square test with Yates's amendment.

Results

While assessing the mental state of the elderly people according to the MMSE scale, we analysed their sense of time and place, memory, concentration, ability to count, remember and name things, to recall things, follow orders and write as well as their constructive praxis. As for their sense of time, the elderly people were asked to give the current year, the current season of the year, the current month and the current day (Which day of the week/What date is it today?). 24 women (50.8%) and 24 men (72.7%) were diagnosed with disorders affecting their sense of time with reference to the current year; this was statistically significant ($p = 0.03815$). This correlation also applied to the current season of the year ($p = 0.01772$), the current month ($p = 0.02633$) and the current date ($p = 0.02732$); it did not apply to the current day of the week ($p = 0.07368$). While analysing the elderly people's sense of time with reference to the current year depending on their place of living, we found the correlation to be statistically significant ($p = 0.02778$); 19 city inhabitants and 23 people living in the countryside had the sense of time with reference to the current year. The elderly people's place of living did not affect their sense of time with reference to the current season of the year ($p = 0.07322$), the current month ($p = 0.2957$), the current date ($p = 0.1067$) or the current day of the week ($p = 0.6341$) (Table I).

There was no considerable influence of the elderly people's place of living on their sense of place

Table I. Sense of time according to the MMSE scale and the 80+ people's sex and place of living

| Domains according to MMSE scale | Sense of time and place [What is the current year?] | Sense of time and place [What is the current season of the year?] | Sense of time and place [What is the current month?] | Sense of time and place [What is the date today?] | Sense of time and place [What is the day today?] |
|-------------------------------------|---|---|--|---|--|
| Points according to MMSE | 0 | 1 | 0 | 1 | 0 |
| | 1 | 0 | 1 | 0 | 1 |
| Depending on sex | | | | | |
| Women | 34 | 33 | 29 | 28 | 39 |
| Men | 24 | 8 | 22 | 21 | 11 |
| p | 0.03815 | Chi2 Yates | 0.01772 | Chi2 Pearson | 0.02653 |
| | | | | 0.02732 | Chi2 Yates |
| | | | | 0.1067 | Chi2 Pearson |
| | | | | 0.06341 | Chi2 Pearson |
| Depending on place of living | | | | | |
| City/town | 39 | 19 | 34 | 31 | 27 |
| Countryside | 19 | 23 | 17 | 18 | 24 |
| p | 0.02778 | Chi2 Pearson | 0.07322 | Chi2 Pearson | 0.2957 |
| | | | | 0.1067 | Chi2 Pearson |
| | | | | 0.06341 | Chi2 Pearson |

Table II. Sense of place according to the MMSE scale and the 80+ people's sex and place of living

| Domains According to MMSE scale | Sense of time and place [What country are we in now?] | Sense of time and place [What province are we in now?] | Sense of time and place [What city/town are we in now?] | Sense of time and place [Where are we now?] | Sense of time and place [Which floor are we on now?] |
|-------------------------------------|---|--|---|---|--|
| Points according to MMSE | 0 | 1 | 0 | 1 | 0 |
| | 1 | 0 | 1 | 0 | 1 |
| Depending on sex | | | | | |
| Women | 23 | 44 | 36 | 31 | 36 |
| Men | 22 | 10 | 24 | 21 | 11 |
| P | 0.00130 | Chi2 Pearson | 0.7096 | Chi2 Yates | 0.02653 |
| | | | | 0.07125 | Chi2 Pearson |
| | | | | 0.01105 | Chi2 Yates |
| Depending on place of living | | | | | |
| City/town | 28 | 30 | 39 | 31 | 24 |
| Countryside | 17 | 25 | 21 | 18 | 24 |
| P | 0.4391 | Chi2 Pearson | 0.08238 | Chi2 Pearson | 0.1194 |
| | | | | 0.1681 | Chi2 Pearson |
| | | | | 0.35 | 23 |
| | | | | 19 | 22 |

Table III. Memory, concentration, counting, remembering and naming according to the MMSE scale and the 80+ people's sex and place of living

| Domains according to MMSE scale | Memory | | | Concentration and counting | | | | | Remembering | | | Naming | | | | | |
|-------------------------------------|---------|----------------|----|----------------------------|---------|----------------|----|---|-------------|----|--------|----------------|---|----|--------|----------------|----|
| | 0 | 1 | 2 | 3 | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 0 | 1 | 2 |
| Points according to MMSE | 0 | 1 | 2 | 3 | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 0 | 1 | 2 |
| Depending on sex | | | | | | | | | | | | | | | | | |
| Women | 23 | 13 | 8 | 23 | 33 | 12 | 10 | 3 | 0 | 9 | 34 | 22 | 1 | 10 | 21 | 10 | 35 |
| Men | 17 | 3 | 3 | 9 | 24 | 1 | 1 | 0 | 1 | 5 | 23 | 1 | 3 | 5 | 18 | 1 | 13 |
| <i>P</i> | 0.2088 | U Mann-Whitney | | | 0.1061 | U Mann-Whitney | | | | | 0.2432 | U Mann-Whitney | | | 0.1116 | U Mann-Whitney | |
| Depending on place of living | | | | | | | | | | | | | | | | | |
| City/town | 26 | 10 | 10 | 12 | 38 | 7 | 8 | 1 | 0 | 4 | 35 | 16 | 1 | 6 | 23 | 7 | 27 |
| Countryside | 14 | 6 | 2 | 20 | 19 | 6 | 4 | 2 | 1 | 10 | 22 | 8 | 3 | 9 | 16 | 4 | 22 |
| <i>P</i> | 0.05795 | U Mann-Whitney | | | 0.03120 | U Mann-Whitney | | | | | 0.2638 | U Mann-Whitney | | | 0.7260 | U Mann-Whitney | |

Table IV. Repeating, following instructions, writing and constructive praxis according to the MMSE scale and the 80+ people's sex and place of living

| Domains according to MMSE | Repeating | | Following instructions | | | | Writing | | Constructive praxis | |
|-------------------------------------|-----------|--------------------------|------------------------|----------------|---|----|---------|--------------------------|---------------------|--------------------------|
| | 0 | 1 | 1 | 2 | 3 | 4 | 0 | 1 | 0 | 1 |
| Points according to MMSE | 0 | 1 | 1 | 2 | 3 | 4 | 0 | 1 | 0 | 1 |
| Depending on sex | | | | | | | | | | |
| Women | 35 | 32 | 33 | 2 | 7 | 25 | 39 | 28 | 43 | 24 |
| Men | 22 | 10 | 18 | 1 | 6 | 7 | 24 | 8 | 27 | 5 |
| <i>P</i> | 0.1200 | Chi ² Pearson | 0.3383 | U Mann-Whitney | | | 0.1612 | Chi ² Yates | 0.06739 | Chi ² Yates |
| Depending on place of living | | | | | | | | | | |
| City/town | 37 | 21 | 32 | 2 | 8 | 16 | 37 | 21 | 42 | 16 |
| Countryside | 20 | 22 | 19 | 1 | 5 | 17 | 26 | 16 | 28 | 14 |
| <i>P</i> | 0.1069 | Chi ² Pearson | 0.2638 | U Mann-Whitney | | | 0.8469 | Chi ² Pearson | 0.5359 | Chi ² Pearson |

with reference to their country ($p = 0.4391$), province ($p = 0.08238$), city/town ($p = 0.2957$), home address ($p = 0.1194$) or floor ($p = 0.1681$). However, there was considerable influence of their sex on their sense of place with reference to the floor they lived on ($p = 0.01105$), their city/town ($p = 0.02653$) and their country ($p = 0.00130$) (Table II).

As far as memorising three words was concerned, 22 women (32.8%) and 9 men (27.3%) as well as 12 city inhabitants (20.7%) and 20 people living in the countryside (47.6%) were successful. Two words were successfully remembered by 8 women (11.9%) and 3 men (9.1%) as well as 10 city inhabitants (17.2%) and 2 people living in the countryside (4.8%). One word was remembered by 13 women (19.4%) and 3 men (9.1%) as well as 10 city inhabitants (17.2%) and 6 people living in the countryside (14.3%). 23 men (34.3%), 17 women (51.5%) as well as 26 city inhabitants (44.8%) and 14 people living in the countryside (33.3%) were not able to remember any word, which was not statistically significant, though. The elderly people's concentration and the ability to count did not depend on their sex in a statistically significant way, either ($p = 0.1061$). However, they did depend in a statistically significant way on their place of living ($p = 0.03120$). Their abilities to repeat instructions, remember, name, and write as well as their constructive praxis were not significantly affected by their sex or place of living ($p = 0.2432 / p = 0.2638$, $p = 0.1116 / p = 0.7260$, $p = 0.1200 / p = 0.1069$, $p = 0.3383 / p = 0.2638$, $p = 0.1612 / p = 0.8469$, $p = 0.06739 / p = 0.5369$ respectively). The phrase "ani tak, ani nie, ani ale" ("neither yes, nor no, nor but") was not repeated at all or repeated incorrectly by 35 (52.2%), 22 (66.7%), 37 (63.8%) and 20 (47.6%) people respectively. As for the instructions, the majority of the elderly people were able to follow the 'Please pick up the piece of paper with your left/right hand' instruction. The majority of the people failed to copy a sentence in writing (39 women, 24 men, 37 city inhabitants and 26 people living in the countryside). The elderly people were most successful in coping a picture (24 women, 5 men, 16 city inhabitants and 14 people living in the countryside) (Table III, Table IV).

The elderly people's mental state was not correlated with their age ($p = 0.8657$), sex ($p = 0.07422$) or place of living ($p = 0.05258$). However, assessing their particular mental abilities according to MMSE, we found out that the elderly people's sex determined their sense of time and place in a statistically significant way. The women were better than the men at giving the current year (49.3%; $p = 0.03815$); the current season of the year (56.7%; $p = 0.01772$); the current month (58.2%;

$p = 0.02653$); the current date (50.8%; $p = 0.02732$) and their current place of living: the country (65.7%; $p = 0.00130$), the city (58.2%; $p = 0.02653$) and the floor (53.7%; $p = 0.01105$). The elderly people's concentration and ability to count ($p = 0.03120$) as well as their sense of time with reference to the current year ($p = 0.02778$) depended on their place of living in a statistically significant way; 12.1% and 32.8% of the city inhabitants as well as 14.3% and 54.8% of the people living in the countryside were positively assessed. The elderly people's mental state was correlated in a statistically significant way with their efficiency in terms of everyday activities assessed according to Lawton's ADL scale ($r = 0.7014$ $p = 4.424E-16$), the IADL scale ($r = 0.7379$ $p = 2.001E-18$) and Katz's ADL scale ($r = 0.7466$ $p = 4.815E-19$) (Table I, Table II, Table III, Table IV).

Discussion

The demographic changes which are taking place both home and abroad result in our attention being focused on elderly people [6]. The people whose average age was 86 were particularly difficult to assess due to their multiple morbidities and various chronic diseases [7]. They majority of the people referred to the following conditions as their main diseases: Alzheimer's disease (18%), conditions occurring after cerebral strokes (8%), Parkinson's disease (6%) and multiple sclerosis (6%). Pitek has proven that people aged 75-89 most often suffered from circulatory system diseases (N-21; 88%), motor organ diseases (N-20; 83.3%), and nervous system diseases (N-15; 63%). In this case, the total percentage is not 100 due to polypragmasia [8].

The MMSE scale can be a tool for differentiating elderly people's cognitive function levels [1,2]. It can also facilitate treatment monitoring in the case of dementia patients [3]. It is easy and cheap to use [4,5]. Our research showed no statistical significance as far as the correlation between sex and MMSE results were concerned. However, the women got more correct answers than the men while answering the questions concerning the current month, year, season, date, city/town, country or floor. The women's average score was 17 points on the MMSE scale (median: 2-23), whereas the men's average score was 5 points (median: 1-20). Padykuła et al. assessed 80 people aged 76.05 ± 7.73 years hospitalised at non-invasive treatment wards. On the MMSE scale they got the average of 26.17 ± 2.23 points; the women's scores were explicitly higher in all the categories. They proved that cognitive disorders occurred more frequently with age and the frequency did not depend on

the patients' sex [9]. In the research done by Chorążyczewska et al., 57.7% of the women and 50% of the men got positive results on the MMSE scale; 19.2% of the women and 16.7% of the men were diagnosed with cognitive function disorders, excluding dementia. 23.1% of the women and 33.3% of the men were diagnosed with dementia [10].

Our own research shows no statistically significant correlation between age and MMSE results ($r = 0.01713$ $p = 0.8657$). Chorążyczewska et al. assessed 50 people aged 65-94; 75.8% of those aged 65-69, 3% of those aged 70-74, 50% of those 75-79, and 25% of those aged 80-84 got positive results on the MMSE scale. 20.7% of the people aged 65-69 and 18.2% of those aged 70-74 were diagnosed with cognitive function disorders, excluding dementia. 75% of the people aged 80-84, 54.5% of those aged 70-74, 50% of those aged 75-79, and 3.5% of those aged 65-69 were diagnosed with dementia [10]. Also, Pardykuła et al. showed that cognitive disorders occurred more frequently with age and the frequency did not depend on the elderly people's sex [9].

The results of the present study confirm that there is no statistically significant correlation between place of living and MMSE score ($p = 0.05258$). Traczyk et al. grouped their subjects into two subgroups: nursing home patients aged 82.2 (± 7.7 years) on average, and community care centre patients aged 73.5 (± 6.3 years) on average. All the scores exceeded 24 points on the MMSE scale, which meant that the patients did not suffer from cognitive disorders or dementia [11]. Chorążyczewska et al. proved that people living in the countryside (40%) suffered from dementia more frequently than city inhabitants (25%); the same was true in the case of cognitive function disorders, excluding dementia—20% and 17.5% respectively. Chorążyczewska et al. admit that the results cannot be regarded as data concerning the whole elderly population due to the small number of subjects [10].

The present research has shown statistical significance in terms of the correlation between the MMSE scale, Lawton's ADL, Katz's ADL and IADL ($p = 4.424E-16$, $p = 4.815E-19$, $p = 2.001E-18$). In the case of MMSE, the subjects got 11.5 points on average (median: 1-22.5); Lawton's ADL—0 points (median: 0-3); Katz's ADL—

0 points (median: 0-5); IADL—0 points (median: 0-7.5). Woźniak et al. inform us that their subjects aged 70 on average got 26.8 points on the MMSE scale (SD: ± 2.3 , ME: 27) ($p < 0.0001$) [12]. Sosnowski et al. confirm that there is some correlation between MMSE and Katz's ADL scores ($R = -0.36$; $p = 0.001$) [13].

Taking into account the elderly people's functional efficiency and the factors affecting their self-reliance, we find it well-grounded to secure nursing and prophylactic health services for the elderly. The basic task which the healthcare system faces in terms of nursing the elderly is to determine as soon as possible all the factors aggravating their ability to be self-reliant [12]. General practitioners, whom patients contact first, substantially contribute to forming the right diagnosis [14]. Prophylaxis and treatment should counteract elderly people's disability and reliance on others. Self-care is what forms the basis of one's self-reliance in terms of activities of daily living [15-17].

Research shows that special attention must be paid to education. Educated young people are likely to undertake prophylactic activities which should benefit them in old age; they are likely to strive towards self-reliance throughout their lives. The healthier the elderly are, the greater advantages whole society have, healthcare costs being lower [15].

Conclusions

1. The 80+ people's age, sex and place of living did not affect their mental state significantly. The mental state of the women and people living in the countryside was better. The mental state of the elderly was correlated in a statistically significant way with their functional efficiency in terms of activities of daily living.
2. The correlation between the elderly people's cognitive function levels and their self-care efficiency confirms the validity of the common use of MMSE for securing nursing and prophylactic health services in order to minimise the risk of depression and self-care disorders.

Conflict of interest

None

References

1. Wilmańska J, Gułaj E. Ocena zaburzeń funkcji poznawczych osób starszych – próba porównania poszczególnych metod przesiewowych. *Gerontol Pol.* 2008;16(2):111-8.
2. Szczepańska J, Greń G, Woźniwski M. Zaburzenia poznawcze – istotny czynnik utrudniający fizjoterapię osób w wieku podeszłym. *Psychogeriatr Pol.* 2007;4(1):7-16.

3. Olszewska K, Pastuszek-Draxler A, Siwińska J. Znaczenie oceny sprawności poznawczej osób starszych w procesie kwalifikacji do leczenia kardologicznego metodą TAVI. *Sztuka Leczenia*. 2018;1:25-34.
4. Józwiak A, Guzik P, Wysocki H. Niski wynik testu Mini Mental State Examination jako czynnik ryzyka zgonu wewnątrzszpitalnego u starszych chorych z niewydolnością serca. *Psychogeriatr Pol*. 2004;1(2):85-94.
5. Sokołowska N, Sokołowski R, Polak-Szabela A i wsp. Porównanie skuteczności Montreal Cognitive Assessment 7.2 z Mini-Mental State Examination w wykrywaniu łagodnych zaburzeń neuropoznawczych u osób po 60. roku życia. *Doniesienie wstępne. Psychiatr Pol*. 2018;52(5):843-57.
6. Rajtar-Zembaty A, Rajtar-Zembaty A, Epa R i wsp. Związek między funkcjonowaniem poznawczym a sprawnością funkcjonalną u osób starszych. *Geriatrics*. 2016;10:78-84.
7. Białkowska J, Mroczkowska D. Specyfika rehabilitacji pacjentów geriatrycznych z wielochorobowością - opis przypadku 82-letniego pacjenta. *Geriatrics*. 2014;8:196-200.
8. Pitek E. Wielochorobowość u pensjonariuszy u osób w wieku podeszłym. *Piel Zdr Publ*. 2012;2(2):95-101.
9. Padykuła M, Kózka M. Zaburzenia funkcji poznawczych u pacjentów w wieku geriatrycznym hospitalizowanych na oddziale zachowawczym. *Probl Pielęg*. 2015;23(3):300-5.
10. Chorążyczewska E, Sapilak BJ. Częstość występowania zaburzeń funkcji poznawczych w grupie pacjentów powyżej 65 roku życia w wybranej placówce podstawowej opieki zdrowotnej z zastosowaniem testu MMSE oraz testu rysowania zegara. *Fam Med Primary Care Rev*. 2015;17(2):86-9.
11. Traczyk J, Kędzia P, Skrzek A. Jakość życia, sprawność funkcjonalna oraz występowanie ryzyka depresji u kobiet po 60 roku życia mieszkających w domach opieki społecznej i samodzielnie. *Gerontol Pol*. 2016;24:32-9.
12. Woźniak J, Królicka A, Pokryszko-Dragan A i wsp. Ocena sprawności ogólnej, funkcjonowania codziennego oraz jakości życia u chorych w podeszłym wieku z podejrzeniem zespołu otępiennego. *Psychogeriatr Pol*. 2012;9(4):149-60.
13. Sosnowski M, Chmara-Pawlińska R. Czynnościowa ocena pacjentów skalą ADL w różnych typach otępienia. *Med Rodz*. 2002;5:176-8.
14. Humięcka K, Targowski T. Trudności diagnostyczne depresji wieku podeszłego –przegląd wybranych skal skryningowych. *Geriatrics*. 2018;12:44-8.
15. Bosacka M, Józwiak A, Wieczorowska-Tobis K. Wpływ przebytych upadków na sprawność osób starszych hospitalizowanych w oddziale dziennym Psychogeriatrycznym. *Geriatrics*. 2010;4:81-5.
16. Dąbska O, Pawlikowska-Łagód K, Humeniuk E. Starość jako zjawisko (nie) medialne. *Gerontol Pol*. 2017;25:118-22.
17. Fidecki W, Rola A, Wysokiński M i wsp. Ocena geriatryczna starszych mieszkańców wsi. *Geriatrics*. 2017;11:247-52.