The Journal of Neurological and Neurosurgical Nursing
Pielęgniarstwo Neurologiczne i Neurochirurgiczne

Wydawnictwo Państwowej Akademii
Nauk Stosowanych we Włocławku
ul. Mechaników 3, pok. 20
87-800 Włocławek

eISSN 2299-0321 ISSN 2084-8021
https://apcz.umk.pl/PNIN

DOI: 10.15225/PNN.2025.14.4.3 JNNN 2025;14(4):165–170 **Original**

# Influence of Selected Sociodemographic and Health Factors on the Prevalence of Depression in the Elderly

## Wpływ wybranych czynników socjodemograficznych i zdrowotnych na występowanie depresji u osób w podeszłym wieku

**Małgorzata Dziechciaż**

The Institute of Health, Angelus Silesius Academy of Applied Sciences, Wałbrzych, Poland

### Abstract

**Introduction.** Depression is part of the so-called grand geriatric syndromes, which have a significant impact on the daily life of older people.
**Aim.** The aim of this study is to assess the prevalence of depression in elderly people living in a rural environment and to demonstrate the relationship between selected sociodemographic, health and functional disability variables and the prevalence of depression.
**Material and Methods.** The study involved 329 women, 175 men aged 66 to 94 years (avg. 77.41) living in a rural environment in one of the Podkarpackie municipalities. The research was conducted by means of a diagnostic survey and direct observation. The following research tools were used: Geriatric Depression Rating Scale (GDS), Abbreviated Mental Test Score (AMTS), Barthel Scale, Lawton Scale and an original interview questionnaire.
**Results.** Normal emotional state as assessed by the GDS scale was found in 299 study participants. Moderate depression was detected in 151 study participants and severe depression in 45. Statistical analysis showed that moderate depression was more common in women than in men ($p<0.05$) and normal state less common ($p<0.01$). In addition, a correlation was found between the age of the respondents, education, number of diseases and independence in performing basic and complex life activities and the occurrence of depression (<0.001).
**Conclusions.** Depression was present in almost two-fifths of the surveyed elderly rural residents. Sociodemographic factors influencing the prevalence of depression in elderly people living in rural areas were female gender, older age and low educational level. In addition, greater severity of depressive symptoms was present in subjects with circulatory insufficiency, atherosclerosis, Parkinson's disease, prostatic hypertrophy, Alzheimer's disease and post-stroke. The presence of depression in elderly people living in rural areas significantly affected their functional and cognitive decline.
**(JNNN 2025;14(4):165–170)**
**Key Words:** depression, older people, rural environment

### Streszczenie

**Wstęp.** Depresja wchodzi w skład tzw. wielkich zespołów geriatrycznych, mających istotny wpływ na życie codzienne osób w starszym wieku.
**Cel.** Celem pracy jest ocena występowania depresji u osób w podeszłym wieku mieszkających w środowisku wiejskim oraz wykazanie zależności pomiędzy wybranymi zmiennymi socjodemograficznymi, zdrowotnymi i niesprawnością funkcjonalną a występowaniem depresji.
**Materiał i metody.** Badaniami objęto 329 kobiet, 175 mężczyzn w wieku od 66 do 94 lat (śr 77,41) mieszkających w środowisku wiejskim na terenie jednej z gmin podkarpacia. Badania przeprowadzono metodą sondażu diagnostycznego i obserwacji bezpośredniej. Zastosowano narzędzia badawcze takie jak: Geriatryczna Skala Oceny Depresji (GDS), Skrócony Test Sprawności Umysłowej (AMTS), Skala Barthel, Skala Lawtona oraz autorski kwestionariusz wywiadu.
**Wyniki.** Prawidłowy stan emocjonalny w ocenie skalą GDS stwierdzono u 299 uczestników badania. Depresję umiarkowaną wykryto u 151 badanych osób, a depresję ciężką u 45. Analiza statystyczna wykazała, że u kobiet częściej niż u mężczyzn występowała depresja umiarkowana ($p<0,05$), a rzadziej stan prawidłowy ($p<0,01$). Ponadto stwierdzono,

zależność pomiędzy wiekiem badanych, wykształceniem, liczbą chorób oraz samodzielnością w wykonywaniu podstawowych i złożonych czynności życiowych a występowaniem depresji (<0,001).
**Wnioski.** Depresja występowała u niemal dwóch piątych badanych mieszkańców wsi w podeszłym wieku. Czynnikami socjodemograficznymi wpływającymi na występowanie depresji u osób w podeszłym wieku mieszkających na wsi były: płeć żeńska, starszy wiek oraz niski poziom wykształcenia. Ponadto większe nasilenie objawów depresji występowało u badanych z niewydolnością krążenia, miażdżycą, chorobą Parkinsona, przerostem gruczołu krokowego, chorobą Alzheimera i po przebytym udarze mózgu. Występowanie depresji u osób w podeszłym wieku mieszkających na wsi znacząco wpływało na pogorszenie ich sprawności funkcjonalnej i poznawczej. **(PNN 2025;14(4):165–170)**
**Słowa kluczowe:** depresja, osoby w podeszłym wieku, środowisko wiejskie

## Introduction

Depression is one of the most common mental disorders affecting a subpopulation of the elderly.

A common image of depression in the elderly is somatic symptoms, e.g.: pain, gastrointestinal distress, dyspnoea. Another picture of depression in the elderly may be psychotic symptoms such as hallucinations and delusions and symptoms that may suggest dementia.

Among the risk factors for depression in the elderly, various authors mention widowhood, loneliness, economic and social deterioration, multimorbidity, functional disability, dependence on others, change of residence, use of certain medications, among others [1–4].

Depression in the elderly goes unrecognised in about 40% of cases, and its symptoms are often confused with those of physiological ageing or mistakenly considered as symptoms of somatic diseases. As a result, depression in the elderly is very often left untreated, which can consequently lead to death by suicide [5].

The aim of this study was to assess the prevalence of depression in elderly people living in a rural setting and to demonstrate the relationship between selected sociodemographic, health and functional disability variables and the prevalence of depression.

## Material and Methods

The research was conducted using the direct interview technique. Standardised research tools used in geriatrics and described in the Polish and world literature, as well as the author's interview questionnaire, were used to complete the research tasks.

Research tools:

1. Geriatric Depression Scale (GDS) — is used for screening assessment of emotional state. It assesses the subject's mood over the past 2 weeks. The GDS can be used in a full version that assesses 30 characteristics and a shortened version that assesses 15 characteristics. The abbreviated version of the GDS was used in this study, with a maximum score of 15. The higher the score obtained, the higher the likelihood of depression. A score of 0 to 5 points indicates a normal emotional state, 6 to 10 points for moderate depression, 11 to 15 points for severe depression [6–8].
2. Barthel Index — is used to assess performance in basic life activities. A maximum of 100 points can be obtained on this scale. A higher number of points indicates independence in performing basic living activities [9].
3. The Lawton Instrumental Activities of Daily Living (IADL) scale is used to assess independence in complex activities of daily living. The maximum number of points that can be obtained with this scale is 24. A decreasing number of points indicates a lower level of independence in performing complex activities [10].
4. Abbreviated Hodkinson Mental Test Score (AMTS) — used to screen for cognitive performance. A maximum score of 10 can be achieved on the test. A score between 10 and 7 indicates normal cognitive status [9].
5. The author's interview questionnaire was used to assess data such as age, gender, education, housing conditions, family relationships and the presence of chronic diseases, visual and auditory functioning.

The study was carried out in a rural municipality in the Podkarpackie Voivodeship. The study involved 329 women and 175 men over 65 years of age in their home environment.

The statistical tests used in this study are: Kendall's tau test, Kolmogorov–Smirnov test, Pearson's chi-square ($\chi^2$) test, Kruskal–Wallis test, Dunn's post hoc test. A value of $p<0.05$ was taken as a sufficient level of significance.Statistical calculations were made using the statistical package STATISTICA 6.0 PL.

## Results

The study group consisted of 329 (65.28%) women and 175 (34.72%) men aged between 66 and 94 years (mean age of subjects — 77.41 years; SD=6.60; Me=78; mean age of women — 78.05 years; SD=6.50; Me=78; mean age of men — 76.19 years; SD=6.65; Me=76).

Among respondents, the most frequently indicated response regarding marital status was 'married', chosen by just over half of respondents (N=259; 51.39%). There were 233 (46.23%) widowed people. Nine survey participants (1.79%) responded that they were 'single'. In addition, there were 2 people (0.40%) divorced and 1 separated (0.20%) among the survey participants.

Analysis of the educational level of the respondents showed that the vast majority of them had incomplete primary education (N=260; 51.59%;) followed by primary (N=161; 31.94%), vocational (N=65; 12.90%) and secondary (N=14; 2.78%). Only 4 (0.79%) respondents had tertiary education. At a statistically significant level, women were more likely than men to declare an incomplete primary education ($p<0.001$).

The source of livelihood for the majority of respondents (N=486; 96.43%) was a pension, and for the rest a disability pension (N=18; 3.57%). Only one person (0.20%) declared that, in addition to their pension, their source of livelihood was their job. More than half of the respondents (51.98%) submitted that the benefits they receive are not always sufficient for their current needs, and for 5.95% of the respondents they were insufficient. In contrast, 42.06% of respondents reported that the benefits they receive are fully sufficient for their needs

Housing conditions were rated as very good by 142 (28.17%) respondents, as good by 234 (46.43%) respondents, as average housing conditions were indicated by 119 (23.61%) respondents and as bad by 9 (1.79%) respondents.

The majority of respondents (N=329; 65.28%) lived with their family or spouse (N=117; 23.21%). There were 57 (11.31%) respondents living alone and 1 (0.20%) living with strangers. Statistical analysis showed that women were more likely than men to live alone ($p<0.001$).

Assessment of the presence of depression using the Geriatric Depression Rating Scale showed that respondents' scores ranged from 0 (57; 11.31%) to 15 points (4; 0.79%). The arithmetic mean score for the whole group was 4.91 (Me=4). It was not possible to test the emotional state in nine respondents (1.79%) — in eight cases the reason was lack of contact and in one case refusal to take the test.

Normal emotional state (0 to 5 points on the GDS assessment) was detected in 299 survey participants (59.33% of all respondents). Moderate depression (6 to 10 points on the GDS assessment) was detected in 151 respondents (29.96%). On the other hand, scores between 11 and 15 allowed severe depression to be detected in 45 respondents (9.09%).

### *Sociodemographic Data and Prevalence of Depression*

A comparison between men and women in terms of the number of points scored on the GDS scale showed that women scored more on average (5.36 vs 4.08), indicating a worse emotional state for women than for men ($p<0.001$).

Both the majority of women and men had a normal emotional state (56.04% vs 68.60% respectively). Scores characteristic of moderate depression were present in 33.75% of the female and 24.42% of the male participants, while criteria for severe depression were met by 10.22% of the females and 6.98% of the males. A chi-square test analysis showed no differences between the two sexes in the prevalence of major depression ($p<0.10$). However, it was found that women were significantly more likely to be moderately depressed ($p<0.05$) and less likely to be normal ($p<0.01$).

Analysis by Kendall's tau test showed a positive correlation between the age of the subjects and their scores on the GDS scale ($\tau=0.2321$; $p<0.001$). As the subjects aged, their emotional state worsened.

The lowest (3.93) mean score on the GDS scale, falling within the range of normal emotional state, was obtained by married subjects. Worse scores with a mean falling in the range of moderate depression were obtained by widowed (5.85) and single (8.56) subjects. The observed relationships were statistically significant ($p<0.01$).

A statistically significant relationship was found between education level and scores on the GDS scale ($\tau=–0.2321$; $p<0.001$). The emotional state of respondents with higher education were better than those with lower education.

The lowest mean score (4.13) on the GDS scale, which was within the range of normal emotional state, was obtained by respondents who declared that the benefits they received met their current needs. A slightly higher score (4.59) was obtained by respondents for whom benefits were not sufficient. On the other hand, the highest average number of points on the GDS scale (5.48) was obtained by the group of people who did not always manage to satisfy their current needs with the benefits they received. The differences described were statistically significant ($p<0.01$).

The best scores on the GDS scale (3.29), indicating a normal emotional state, were obtained by respondents rating their housing conditions as very good. Scores on this scale deteriorated progressively, taking mean values of 5.04 (rating 'good'), 6.21 ('average') and 10.00 ('bad'). All differences were statistically significant ($p<0.01$).

In the study population, those living alone in the GDS scale assessment had the worst mean scores on the GDS scale (8.09), falling within the range of moderate

depression. These scores were significantly worse (p<0.01) than those of people living with spouses (4.55) or family (4.50).

### *Health Situation and Prevalence of Depression*

It was found that significantly higher scores on the GDS scale indicating of greater severity of depressive symptoms were obtained by participants with circulatory insufficiency and atherosclerosis (p<0.001), Parkinson's disease and prostatic hypertrophy (p<0.01) and Alzheimer's disease and post-stroke (p<0.05) (Table 1).

### *Performing Basic and Complex Activities of Daily Living and the Prevalence of Depression*

Kendall's tau test analysis showed an inversely proportional correlation between the subjects' GDS scale scores and Barthel scale scores (τ=–0.4100; p<0.001). It was found that as the subjects' emotional state worsened, their independence in performing basic activities of daily living decreased.

Analysis by Kendall's tau test also showed an inversely proportional correlation between the subjects' GDS scale scores and Lawton's scale scores (τ=–0.4227; p<0.001). This suggests that there is a relationship between worsening emotional state and a decline in functional performance in complex activities of daily living.

Kendall's tau test analysis showed an inversely proportional correlation between the subjects' GDS scores and AMTS scores (τ=–0.4291; p<0.01). As the respondents' emotional state worsened, their cognitive performance worsened.

## Discussion

Maintaining autonomy and independence in older people is a positive determinant of the ageing process, whereas loneliness, widowhood and lack of family support lead to increased morbidity, and loss of independence. This contributes to a dependence on others and a lack of self-determination, which in turn severely disrupts the emotional functioning of the elderly [11].

Depression is a very serious problem for the elderly, adversely affecting daily functioning and contributing to increased mortality in this subpopulation [1].

Depression is estimated to occur in approximately 40% of older people with dementia residing in care facilities [12].

In the present study, the presence of depression was found in 39.39% of the subjects. Moderate depression affected 30.30% of the subjects, while severe depression affected 9.9% of the subjects. There was a correlation between advancing age, poorer performance in basic and complex life activities and worsening emotional performance in the study subjects. The emotional state of women was also found to be significantly worse than that of men.

Very similar results were obtained in the PolSenior study, in which depression was found in 29.7 per cent of respondents aged 65 and over, significantly more often in older age categories and in people with poorer

**Table 1.** Prevalence of disease entities and results on the GDS scale

| Disease entity | Respondents with diagnosed disease | | | Respondents without the disease concerned | | | p |
|---|---|---|---|---|---|---|---|
| | N | $\bar{x}$* | SD | N | $\bar{x}$* | SD | |
| Arterial hypertension | 387 | 4.84 | 3.74 | 108 | 5.18 | 4.12 | >0.10 |
| Circulatory insufficiency | 214 | 5.87 | 3.86 | 281 | 4.19 | 3.63 | <0.001 |
| Stroke | 40 | 6.70 | 4.03 | 455 | 4.76 | 3.77 | <0.05 |
| Atherosclerosis | 141 | 6.40 | 4.26 | 354 | 4.32 | 3.47 | <0.001 |
| Bronchial asthma | 41 | 5.20 | 3.23 | 454 | 4.89 | 3.87 | >0.10 |
| Diabetes | 113 | 5.27 | 3.74 | 382 | 4.81 | 3.84 | >0.10 |
| Osteoarthritis | 308 | 5.07 | 3.70 | 187 | 4.65 | 4.01 | <0.10 |
| Parkinson's disease | 9 | 8.00 | 3.64 | 486 | 4.86 | 3.81 | <0.01 |
| Alzheimer's disease | 5 | 11.80 | 2.95 | 490 | 4.84 | 3.77 | <0.05 |
| Tumours | 12 | 4.25 | 3.17 | 483 | 4.93 | 3.84 | >0.10 |
| Prostatic hypertrophy** | 60 | 5.42 | 4.02 | 112 | 3.36 | 3.48 | <0.01 |
| Other | 115 | 4.43 | 3.64 | 380 | 5.06 | 3.87 | >0.10 |

N — number of observations; $\bar{x}$ — mean; SD — standard deviation; p — level of statistical significance; *arithmetic mean of the GDS scale scores; **only male cases were analysed

performance of basic life activities, and more often in women than in men [13].

Slightly different results were obtained by Wojszel and Bień in a study of rural residents of the municipality of Sokółka, in which depression affected more than half of the respondents (53.4%), also significantly more often women than men. The authors also noted that the prevalence of depression increased with advancing age, but this was not statistically significant [14].

The incidence of depression in older age was also more frequent in women than in men, as shown by many Polish and foreign researchers [4,5,15,16].

An analysis of the literature suggests that risk factors for depression in the elderly include: multimorbidity, dementia, widowhood, as well as a difficult financial situation and a low level of education [1,17].

The results presented here correspond with the reports presented above. Statistical analysis showed worse emotional state in post-stroke patients, those with circulatory insufficiency, atherosclerosis, Parkinson's disease, Alzheimer's disease and men with prostate disease. An association was also found between emotional deterioration and cognitive decline.

A positive correlation of depressive symptoms with the number of diseases present was also found by Babiarczyk et al. in a study conducted among people over 65 years of age residing in a treatment facility and 5 care facilities in the Bielsko district [5]. On the other hand, in the PolSenior study, a trend towards greater severity of depressive symptoms was found in respondents with poorer cognitive performance [13].

The study presented here showed that married respondents had the best GDS scores indicative of good emotional health, while widowed, single respondents had worse scores. It was also noted that lower education was conducive to increased depressive symptoms and that respondents for whom the benefits received were sufficient for current needs showed better emotional well-being than those for whom the benefits received were not always sufficient.

The PolSenior study also noted that better emotional fitness was found in respondents with a higher level of education and who assessed their economic situation as good or very good [13]. In turn, Babiarczyk et al. showed that depressive symptoms were significantly more frequent in divorced and widowed persons [5].

## Conclusions

1. Depression was present in almost two-fifths of elderly rural residents surveyed.
2. Sociodemographic factors influencing the prevalence of depression in older people living in rural areas were female gender, older age and low educational level.
3. Higher levels of depressive symptoms were found in subjects with circulatory insufficiency, atherosclerosis, Parkinson's disease, prostatic hypertrophy, Alzheimer's disease and post-stroke.
4. The prevalence of depression in older people living in rural areas significantly affected their functional and cognitive decline.

## Implications for Nursing Practice

Depression in the elderly is categorised as one of the so-called great geriatric problems often leading to incapacity and dependence on others. If undiagnosed and untreated, it can have serious consequences including suicide. In caring for seniors, it is extremely important to diagnose depression as early as possible and take therapeutic action. A helpful tool for screening for depression in the elderly that nurses can use successfully is the Geriatric Depression Rating Scale. The use of this tool in people over 60 years of age and especially in those with multimorbidity would allow early detection of disorders, the introduction of an in-depth diagnosis for depression and, if necessary, the implementation of appropriate treatment. Such measures would undoubtedly translate into improved quality of life for older people.

## References

[1] Radziwoń-Zalewska M. Depresja u starszych osób. W: Galus K. (Red.), *Geriatria. Wybrane zagadnienia*. Elsevier Urban & Partner, Wrocław 2007;253–257.
[2] Magierski R., Sobów T. Ból i depresja w wieku podeszłym. W: Dudek D. (Red.), *Ból i depresja*. Termedia, Poznań 2011;55–76.
[3] Dudek D., Zięba A., Siwek M., Wróbel A. Depresja. W: Grodzicki T., Kocemba J., Skalska A. (Red.), *Geriatria z elementami gerontologii ogólnej*. Via Medica, Gdańsk 2006;108–112.
[4] Dziechciaż M., Płaszewska-Żywko L., Guty E. The emotions of elderly people from the rural population. *Zdr Publ*. 2010;120(1):53–57.
[5] Babiarczyk B., Schlegel-Zawadzka M., Turbiarz A. Ocena częstości występowania objawów depresji w populacji osób powyżej 65. roku życia. *Med Og Nauk Zdr*. 2013; 19(4):453–457.
[6] Borowiak E., Kostka T. Analiza sprawności funkcjonalnej pacjenta geriatrycznego. Rola pielęgniarki w zespole geriatrycznym. W: Wieczorowska-Tobis K., Talarska D. (Red.), *Geriatria i pielęgniarstwo geriatryczne*. Wyd. Lekarskie PZWL, Warszawa 2017;99–116.
[7] Grabiec U., Depresja w starszym wieku — podstawy rozpoznawania. W: Panek A., Szarota Z. (Red.), *Zrozumieć starość*. Oficyna Wydawnicza Text, Kraków 2000;122–128.

[8] Pużyński S., Wciórka J. Narzędzia oceny stanu psychicznego. W: Bilikiewicz A., Pużyński S., Rybakowski J., Wciórka J. (Red.), *Psychiatria*. Tom 1, Elsevier Urban & Partner, Wrocław 2002;453–526.
[9] Kostka T. Całościowa ocena geriatryczna. W: Kostka T., Koziarska-Rościszewska M. (Red.), *Choroby wieku podeszłego*. Wyd. Lekarskie PZWL, Warszawa 2009;17–37.
[10] Kocemba J. Starzenie się człowieka. W: Grodzicki T., Kocemba J., Skalska A. (Red.), *Geriatria z elementami gerontologii ogólnej*. Via Medica, Gdańsk 2006;6–12.
[11] Bień B. Sytuacja zdrowotna osób w podeszłym wieku. W: Grodzicki T., Kocemba J., Skalska A. (Red.), *Geriatria z elementami gerontologii ogólnej*. Via Medica, Gdańsk 2006;42–46.
[12] Kołodziej W. Zaburzenia psychiczne i ryzyko samobójstwa u osób w starszym wieku. W: Nowicka A. (Red.), *Wybrane problemy osób starszych*. Oficyna Wydawnicza „Impuls", Kraków 2006;87–97.
[13] Broczek K., Mossakowska M., Szybalska A. i wsp. Występowanie objawów depresyjnych u osób starszych. W: Mossakowska M., Więcek A., Błędowski P. (Red.), *Aspekty medyczne, psychologiczne, socjologiczne i ekonomiczne starzenia się ludzi w Polsce*. Termedia Wydawnictwa Medyczne, Poznań 2012;123–136.
[14] Wojszel B., Bień B. Rozpowszechnienie wielkich zespołów geriatrycznych w populacji osób w późnej starości — wyzwanie dla podstawowej opieki zdrowotnej. *Przegl Lek*. 2002;59(4–5):216–221.
[15] Faleńczyk K., Marzec A. Opieka długoterminowa w warunkach domowych. W: Kędziora-Kornatowska K., Muszalik M., Skolmowska E. (Red.), *Pielęgniarstwo w opiece długoterminowej*. Wydawnictwo Lekarskie PZWL, Warszawa 2010;319–329.
[16] Hardy S.E., Allore H.G., Guo Z., Gill T.M. Explaining the Effect of Gender on Functional Transitions in Older Persons. *Gerontology*. 2008;54(2):79–86.
[17] Dziechciaż M., Guty E., Wojtowicz A., Filip R. Social and health care needs of elderly people living in the countryside in Poland. *Ann Agric Environ Med*. 2012; 19(4):746–750.

**Corresponding Author**:
Małgorzata Dziechciaż
The Institute of Health
Angelus Silesius Academy of Applied Sciences
Zamkowa 4 street, 58-300 Wałbrzych, Poland
e-mail: malgorzata.dziechciaz@pansjar.edu.pl

**Conflict of Interest**: None
**Funding**: None
**Author Contributions**: Małgorzata Dziechciaż[A–H]

A — Concept and design of research, B — Collection and/or compilation of data, C — Analysis and interpretation of data, D — Statistical analysis, E — Writing an article, F — Search of the literature, G — Critical article analysis, H — Approval of the final version of the article

**Received**: 9.05.2025
**Accepted**: 24.06.2025