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Original research article

Anxiety and depression in Moravian-Silesian older adults: prevalence and associated factors

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Abstract
Objectives: The main objective was to determine the prevalence of depression and anxiety in older adults living in the Moravian-Silesian region.
Methods: Empirical data was collected using a set of questionnaires and a personal data form. These tools were the Geriatric Scale of Depression, the Inventory of Geriatric Anxiety, the OPQoL-brief questionnaire, the Rosenberger Self-Esteem Scale, and the Social Support Questionnaire. A total of 935 older adults participated in the research.
Results: Depression symptoms were found in 17.2% of older adults and anxiety symptoms in 22.8%. A correlation was shown between a higher prevalence of depression and anxiety and between the number of diseases and low social support. A higher prevalence of depression was also associated with older age ($r = 0.162$, $p = 0.039$). Older adults with depression and anxiety also showed a lower quality of life ($r = –0.529$, $p < 0.001$; $r = –0.362$, $p < 0.001$), lower self-assessment ($r = –0.464$, $p < 0.001$; $r = –0.429$, $p < 0.001$), and little social support ($r = –0.260$, $p < 0.001$; $r = –0.211$, $p < 0.001$).
Conclusion: Depression and anxiety in older people is underdiagnosed and treated in primary care settings, although it significantly affects morbidity and quality of life in affected persons.

Keywords: Anxiety; Depression; Older people; Quality of life; Self-esteem; Social support

Introduction

Population ageing is a global phenomenon and has significant consequences, both social and economic. Rudnicka et al. (2020) identifies population ageing as the world's biggest socio-demographic and medical challenge.

The increase in the elderly population is also linked to the increase in the incidence of mental disorders (Andreas et al., 2017). According to the WHO (2023), more than one fifth of adults aged 65 and over suffer from a mental disorder. Andreas et al. (2017) found that half of adults aged 65 to 84 have experienced a mental disorder during their lifetime. Mood and anxiety disorders are among the most prevalent mental disorders in the elderly (Andreas et al., 2017) and play a significant role in morbidity, including higher deaths from suicides (Petrova and Kwhostikova, 2021). It was also found that the presence of depression worsens the outcomes of other chronic diseases and negatively affects the quality of life (de Sousa et al., 2017).

Geriatric depression (GD) is considered one of the most common geriatric psychiatric disorders (Sjöberg et al., 2017) and a significant risk factor for disability and mortality in elderly patients, which negatively affects the lives of the elderly (Ghobsin et al., 2020). The presence of depression negatively affects the course of many acute and chronic diseases, such as fractures and injuries, stroke, Parkinson's disease, or chronic pain (Schmitz and Brandt, 2019; Štětkářová, 2013; Zis et al., 2017).

Based on data from the WHO (2023), it is estimated that the incidence of depression in older adults is between 10–20%. Although depression is a common psychiatric disorder in the elderly, it is estimated that in up to half of cases it is not recognized and diagnosed.

In recent years, there has been a strong emphasis on the diagnosis of anxiety, which according to some authors ranks as a very common psychological disorder in old age, and for this reason it has received a lot of attention (Mendez-Lopez et al., 2022; Thakur and Varma, 2023). High levels of anxiety in older people are associated with cardiovascular and cerebrovascular disease (Petrova and Kwhostikova, 2021), reduced cognitive function (Santabárbara et al., 2019), sleep disorders (Dragioti et al., 2017), and health-damaging behaviors (Castellanos-Perilla et al., 2022; Forlani et al., 2014). Based on past research, the prevalence of anxiety disorders in the community is estimated to be between 1.2% and 15% among seniors (Andreescu and Lee, 2020; Welzel et al., 2019).

Depression and anxiety are the most common mental illnesses of the elderly. In addition to the impact on mental

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life and reduced quality of life, the disease is also associated with higher healthcare costs (Thakur and Varma, 2023). Access to mental health care and the stigma surrounding it can also create barriers for older adults who need treatment. Mental health in older adults often slips under the radar because it goes unidentified or unnoticed. Due to the high prevalence of depression and anxiety among the elderly, necessary preventive measures are needed to ensure early detection and diagnosis of these mental illnesses (Salvi, 2017). Primary health services for the health of older individuals play the most important role in early detection (Thakur and Varma, 2023).

Aims

The main objective was to determine the prevalence of depression and anxiety in older adults living in the Moravian-Silesian region, establish the association between depression, anxiety, and other selected factors, and to identify risk and protective factors associated with these conditions.

Materials and methods

Study design

We adopted a cross-sectional survey design.

Setting and sample

We used a convenience sampling strategy to recruit participants.

The research group consisted of seniors who were approached through various organizations (e.g., community centers), libraries, or the Center for the Promotion of Healthy Ageing of the University of Ostrava Medical Faculty. The research group included people living in a separate household in the community who were 60 or more years of age and were cognitively intact (no diagnosed dementia, ability to sign an informed consent form). The ability to complete the questionnaire in the Czech language and consent to the research were also criteria for inclusion in the research group. The size of the research group was 935 persons. Data were collected during the period 2021–2022 in the Moravian-Silesian Region. At the end of 2023, there were 245.4 thousand people aged 65 and over in the Moravian-Silesian Region. Of this number, a full 20.7 thousand were aged 85 and over. The population of the region is old. Women generally live longer than men. The life expectancy of women at the age of 65 is 18.9 years in the region, while it is only 15.2 years for men. The consequence of the average longer life of women is the fact that more than 51% of women in the region over 65 years of age are widowed, while there are only about 14% of elderly widowers. Almost a quarter of all households in the Moravian-Silesian Region are households of senior citizens and almost half are households of individuals (Czech Statistical Office, 2023).

Instruments

Empirical data was collected using a set of questionnaires and a personal data form. These tools were the Geriatric Scale of Depression, the Inventory of Geriatric Anxiety, the OPQoL-brief questionnaire, the Rosenberger Self-Esteem Scale, and the Social Support Questionnaire. All tools are available in the Czech version. They included information on the study and instructions on filling in the questionnaires. The questionnaires took 15 to 20 minutes to complete.

The Geriatric Scale of Depression (GDS-15, Sheikh and Yesavage, 1986) is conceived as a questionnaire in which an individual answers yes or no to each question. Therefore, a maximum of 15 points can be scored on the questionnaire. The officially reported boundary scores used in foreign studies, which tend to be adopted by Czech authors, are: 0–5 normal mood, 6–10 mild depressivity, 11+ severe depressivity. GDS has also been validated in the Czech Republic (Heissler et al., 2020).

The Inventory of Geriatric Anxiety (GAI, Pachana et al., 2007) was created for easy administration in any context using 20 items related to feelings and phenomena that occurred in the last week, along with a focus on the current state. Thus the maximum is 20 points, where a score above 8/9 points indicates the presence of more severe anxiety, and a score above 10/11 is considered the cut-off for generalised anxiety disorder (Pachana et al., 2007). GAI has also been validated in the Czech Republic (Heissler et al., 2018).

The OPQoL-shortened version (Bowling et al., 2013), consisting of 13 statements, was used to measure quality of life. The score ranges from 13–65 points, and the higher it is the better the quality of life. The OPQoL-shortened version was validated in the Czech Republic (Bužgová et al., 2022).

Self-esteem was measured using the Rosenberg Self-Assessment Scale – RSES (Rosenberg, 1965). If a respondent achieves a score of 15–25 on RSES, this is normal self-esteem and a score of less than 15 indicates low self-esteem. This scale was analysed by Blatný and Osecká (1994).

Social support was evaluated using the Social Support Questionnaire – short form (SSQ6) developed by Sarason et al. (1987). This tool measures perceived social support and has six items. The SSQ6 method primarily emphasizes the perception of social support, which according to the author of the questionnaire is more important than its actual course.

Health-related characteristics: Self-perceived health status was measured by asking "How do you generally describe your health compared to other people your age?" with the possibilities to answer: "good", "adequate", and "bad or very bad". The number of chronic diseases was selected from a list of 11 common diseases.

Data analysis

Descriptive statistics were used to describe demographic characteristics. For each item, the basic statistical characteristics were calculated for the whole sample, for men/women, and by age.

The significance of the differences in the selected indicators of depression and anxiety for different groups was tested by calculating a simple linear correlation (Spearman correlation coefficient) and a chi-square by testing at the level of critical statistical significance – 0.05.

Logistic regression was used to assess the relationship between individual factors and the appearance of anxiety and depression. The odds ratio (OR) with 95% confidence interval (95% CI) was calculated both for individual factors alone (crude OR) and for the overall logistical regression model (fully adjusted OR – adjust. OR).

The statistical programme SPSS, v. 24.0 was used for data analysis.

Results

Participant characteristics

The research group consisted of 935 older adults, 225 males, and 710 females. The average age of the older adults was 72.1 years (SD = 6.5, min–max: 60–89). The further sociodemographic composition of the population is shown in Table 1.

Depression symptoms were found in 17.2% of older adults and anxiety symptoms in 22.8%. The results are shown in Table 1.

Table 1. Sociodemographic characteristics of respondents

	N	%
Age		
60–74 years	609	65.1
≥75 years	326	34.9
Gender		
Male	225	24.1
Female	710	75.9
Marital status		
Single	27	2.9
Married	455	48.7
Divorced	162	17.3
Widower	291	31.1
Occupation		
Yes	154	16.5
No	781	83.5
Living arrangements		
Alone	380	40.6
With spouse/partner	455	48.7
Children	100	10.7
Faith, religion		
Yes, affiliates to church	295	31.6
Yes, doesn't affiliate to church	243	25.9
No	381	40.8
Not stated	16	1.7
Subjective health assessment		
Very good	237	25.4
Good	568	60.7
Bad, very bad	130	13.9
Diseases		
Cardiovascular (yes)	458	49.0
Oncological (yes)	68	7.3
Diabetes mellitus (yes)	161	17.2
Endocrinological (yes)	136	14.5
Respiratory (yes)	120	12.8
Gynaecological (yes)	30	3.2
Urological (yes)	142	15.2
Sensory (yes)	220	23.5
Musculoskeletal (yes)	390	41.7
Neurological (yes)	86	9.2
Mental (yes)	77	8.2
Loss of a loved one in the last year		
Yes	248	26.5
No	543	58.1
Not stated	144	15,4
GDS		
0–5 points	774	82.7
6–10 points	122	13.1
11 or more points	39	4.1
GAI		
0–8 point	722	77.1
9 or more points	213	22.8

Note: GDS – Geriatric scale of depression: 0–5 normal mood, 6–10 mild depression, 11+ severe depression, GAI – Inventory of geriatric anxiety: 0–8 no anxiety, 9+ anxiety.

Correlation between depression and anxiety and selected factors

We found a link between depression and anxiety and selected factors. The Spearman correlation coefficient showed a link between a higher incidence of depression and anxiety and between the number of conditions and low social support. Patients with a higher number of conditions were more likely to have depression and anxiety. A higher incidence of depression was also associated with older people ($r = 0.1626$, $p = 0.039$).

Older adults with depression and anxiety also showed a lower quality of life ($r = –0.5297$, $p < 0.001$; $r = –0.3627$, $p < 0.001$), a lower self-assessment ($r = –0.4642$, $p < 0.001$; $r = –0.4290$, $p < 0.001$), and low social support ($r = –0.2600$, $p < 0.001$; $r = –0.2116$, $p < 0.001$) (Table 2).

Table 2. Correlation between anxiety and depression with selected factors

	Depression (GDS-15)		Anxiety (GAI)	
	r	*p*	*r*	*p*
Quality of life OPQoL_brief	–0.529	**<0.001**	–0.362	**<0.001**
Self-assessment (RSMS)	–0.464	**<0.001**	–0.429	**<0.001**
Age	0.162	**0.039**	0.063	0.569
Number of diseases	0.298	**<0.001**	0.220	**<0.001**
Social support	–0.260	**<0.001**	–0.211	**<0.001**

Note: Spearman correlation coefficient.

Evaluation of GDS and GAI by selected factors

Table 3 presents the social health-related characteristics of the participants and their percentages in each category of depression and anxiety scores. Significant relationships were found between depression and assessment of subjective health (bad and very bad) ($p = 0.000$), life in solitude ($p = 0.032$), experience of loss of a loved one in the last year ($p = 0.027$), and employment ($p = 0.019$).

The results also showed that there were statistically significant differences in the incidence of anxiety. Anxiety occurred more frequently in older adults who rated their subjective health as very poor and bad ($p = 0.000$) and who had experienced the loss of a loved one in the last year ($p = 0.009$).

We also used logistic regression to identify factors that influence the occurrence of depression. Table 4 shows the results of the crude OR score, where the individual factors were tested separately. Almost all the factors studied were confirmed to be statistically significant, except for age in the 70–79 age group and gender. The fully adjusted model only shows a statistically significant relationship between depression and subjective health assessments, the number of illnesses (3 or more), and employment. Other factors are not statistically significant in the fully adjusted model.

Table 5 shows the results of the crude OR score, where individual factors that influence the incidence of anxiety were tested separately. Almost all factors studied were confirmed to be statistically significant, except for age in the 70–79 age group, gender, and cohabitation. The fully adjusted model only shows a statistically significant relationship between anxiety and subjective health assessment (poor) and the number of diseases (3 or more). The other factors were not statistically significant in the fully adjusted model.

Table 3. Assessment of GDS and GAI according to selected factors (%)

	GDS				GAI		
	0–5	6–10	11 and more	*p*	0–8	9 and more	*p*
Subjective health assessment							
Very bad, bad	56.2	31.7	14.2	**0.000**	57.5	42.5	**0.000**
Good	84.7	12.5	2.8		77.5	22.5	
Very good	93.0	4.8	2.2		86.8	13.2	
Faith, religion							
Yes, affiliates to church	81.4	15.3	3.4	0.412	75.6	24,4	0.336
Yes, doesn't affiliate to church	83.5	13.2	3.3		75.7	24.3	
	83.0	13.0	4.0		79.8	20.2	
Gender							
Male	78.9	14.8	6.3	0.118	78.5	21.5	0.625
Female	83.9	12.5	3.5		76.9	23.1	
Living arrangements							
Alone	78.4	16.1	5.5	**0.032**	75.5	24.5	0.442
With spouse/partner	85.5	10.7	3.8		79.2	20.8	
Marital status							
Single	81.5	18.5			74.1	25.9	
Married	86.1	13.9		**0.020**	77.3	22.7	0.770
Divorced	83.9	16.1			80.3	19.7	
Widower	77.3	22.7			26.3	23.7	
Loss of a loved one in the last year							
Yes	78.6	16.5	4.9	**0.027**	72.6	27.4	**0.009**
No	86.2	10.5	3.3		80.8	19.2	
Occupation							
Yes	85.7	11.4	2.9	**0.019**	80.0	20.0	0.079
No	82.0	13.5	4.5		76.4	23.6	

Note: GDS – geriatric depression scale, GAI – geriatric anxiety inventory.

Table 4. Factors influencing the incidence of depression in older adults – crude score and logistic regression model

	Individuals factor			Model*		
Factor Category	Crude OR	95% CI	*p*	Adjusted OR	95% CI	*p*
Subjective health assessment						
Very good	1**			1**		
Good	2.40	(1.37–4.18)	**0.002**	2.61	(1.19–5.74)	**0.017**
Bad, very bad	11.21	(6.02–20.89)	**<0.001**	8.96	(3.63–22.12)	**<0.001**
Number of diseases						
0–1	1**			1**		
2	1.97	(1.15–3.38)	**0.014**	1.69	(0.85–3.37)	0.133
3–4	2.78	(1.68–4.60)	**<0.001**	1.98	(1.02–3.83)	**0.043**
5 and more	7.17	(4.12–12.49)	**<0.001**	3.17	(1.50–6.70)	**0.003**
Age						
60–69	1**			1**		
70–79	1.20	(0.80–1.78)	0.379	0.84	(0.50–1.40)	0.498
80+	2.40	(1.44–4.02)	**0.001**	0.84	(0.42–1.66)	0.612
Marital status						
Male	1**					
Female	0.72	(0.49–1.05)	0.084	0.74	(0.45–1.21)	0.232
Living arrangements						
Alone	1**					
With someone	0.70	(0.54–0.93)	**0.012**	0.72	(0.51–1.00)	0.053
Occupation						
Yes	1**					
No	2.38	(1.31–4.32)	**0.005**	3.05	(1.31–7.10)	**0.010**
Loss of a loved one						
No	1**					
Yes	1.70	(1.15–2.50)	**0.008**	1.38	(0.88–2.15)	0.163

Note: OR – odds ratio, * fully adjusted model, ** reference category.

Table 5. Factors influencing anxiety incidence in older adults – crude score and logistic regression model

Factor Category	Individuals factor			Model*		
	Crude OR	95% CI	*p*	Adjusted OR	95% CI	*p*
Subjective health assessment						
Very good	1**			1**		
Good	1.92	(1.25–2.96)	**0.003**	1.55	(0.92–2.60)	0.102
Bad, very bad	4.88	(2.88–8.27)	**<0.001**	2.52	(1.27–5.02)	**0.009**
Number of diseases						
0–1	1**			1**		
2	1.75	(1.10–2.78)	**0.018**	1.52	(0.88–2.62)	0.130
3–4	286	(1.86–4.38)	**<0.001**	2.09	(1.24–3.51)	**0.006**
5 and more	4.67	(2.82–7.73)	**<0.001**	2.51	(1.32–4.77)	**0.005**
Age						
60–69	1**			1**		
70–79	1.22	(0.86–1.73)	0.276	0.87	(0.57–1.33)	0.516
80+	1.94	(1.20–3.13)	**0.007**	0.93	(0.51–1.71)	0.816
Marital status						
Male	1**			1**		
Female	1.10	(0.76–1.58)	0.625	1.46	(0.92–2.31)	0.112
Living arrangements						
Alone	1**			1**		
With someone	0.86	(0.67–1.09)	0.202	0.90	(0.68–1.19)	0.445
Occupation						
Yes	1**			1**		
No	1.60	(1.01–2.53)	**0.046**	1.51	(0.85–2.67)	0.157
Loss of a loved one						
No	1**			1**		
Yes	1.59	(1.12–2.27)	**0.009**	1.35	(0.92–1.98)	0.125

Note: OR – odds ratio, * fully adjusted model, ** reference category.

Discussion

According to the WHO (2023), approximately 10%–20% of seniors suffer from mental disorders. Previous studies suggest that data on the prevalence of depression in the elderly vary widely across the European Union (Andreas et al., 2017; Arias-de la Torre et al., 2021; Hansen and Slagsvold, 2017; Santomauro et al., 2021). In other studies, the prevalence of geriatric depression ranged between 17%–35%, with a higher incidence found in southern, central and eastern countries, as opposed to western European or Scandinavian countries (Horackova et al., 2019). In our study, 17.2% of older adults were diagnosed with depression using the GDS questionnaire. Considerable heterogeneity in the prevalence of depression in older adults can be explained by differences in study design, sample selection, socio-economic-demographic characteristics, geographic location, cultural differences, as well as assessment tools used in various studies.

Welzel et al. (2019) report a prevalence of anxiety in older adults of 14%. Other authors report the presence of anxiety among 14%–17% of older adults (Canuto et al., 2018). Anxiety was detected in 22.8% of our older people sample using the GAI questionnaire. Yan et al. (2022) found a prevalence of anxiety of 14% in elderly patients with COVID-19, and 85% in older adults with chronic illness. Chronic diseases such as hypertension, heart disease, diabetes and osteoarthritis can cause great inconvenience in the daily life of older adults, and suffering from these chronic diseases has been found to be a significant factor leading to depression and anxiety in older adults (Bi et al., 2021). In old age, the measurement of anxiety may be complicated by more barriers than in younger age groups. For example, because of the higher likelihood of physical problems and illness. Anxiety also often manifests itself as physical symptoms in the elderly (Forlani et al., 2014), and anxiety disorders may thus be insufficiently diagnosed and treated (Andreescu and Lee, 2020; Andreescu and Varon, 2015).

In our investigation of the research, a link was shown between the incidence of depression, anxiety and a lower quality of life, lower self-esteem, and low social support. Also, in other studies (Kim, 2021; Robb et al., 2020; Sánchez-Moreno and Garraldo-Peralta, 2022) high use of social support was found to be a protective factor for anxiety and depression in older adults.

Self-assessment is another important factor of psychological well-being. In our study, older adults with symptoms of depression and anxiety showed a lower self-assessment. The study by Šare et al. (2021) shows similar results. Various models can be found in the literature explaining the interrelationship between self-assessment and anxiety and depression. Low self-assessment is considered a risk factor for depression and anxiety in the vulnerability model. The longitudinal study by Sowislo and Orth (2013) confirmed the effect of the vulnerability model and shows that the effect of self-assessment on depression is significantly stronger than the effect of depression on self-assessment (Orth and Robins, 2013; Šare et al., 2021).

The results also showed that the incidence of depression and anxiety was associated with a reduced quality of life. These results are consistent with previous studies conducted on

the older population (Pascut et al., 2022). The same findings are presented in the study of Ribeiro et al. (2020), where the authors confirm the well-established influence of depression symptoms on quality of life, and also mention the important role of anxiety and the need to pay more attention to this condition.

Various factors associated with geriatric depression have also been investigated in the literature, such as female gender, increasing age, lower educational attainment, marital status, low income, low self-esteem, solitude, presence of chronic disease, poor health (Lu et al., 2023; Olsen et al., 2023; Wang et al., 2022; Zenebe et al., 2021; Zhong and Xiang, 2022), or cognitive decline (Bai et al., 2020). Based on our results, a connection has also been found between older age and a higher incidence of depression. Increased age has also been identified as a risk factor in some studies (Conde-Sala et al., 2019; Olsen et al., 2023).

Our results show a link between the higher incidence of depression and anxiety and the number of illnesses. Older adults with a higher number of illnesses were more likely to show symptoms of depression. Comorbidities were found to be an important risk factor for depression, as well as affecting quality of life. In our survey, the risk of depression increases threefold in older adults who have five or more illnesses, and almost double in older adults with 3–4 illnesses. This is in line with previous studies (Vink et al., 2008; Xiaojun et al., 2018), which found that unhealthy older adults were more likely to experience anxiety and depression, while older adults without chronic illnesses generally had better overall mental health. According to Horáčková et al. (2019), the most important factors that explained the highest proportion of variations in depression were related to somatic health and physical and cognitive function.

Older adults who rated their subjective health as very bad and bad and who had experienced the loss of a loved one in the last year were the most likely to suffer from depression and anxiety. Older adults who rate their health as bad or very bad have a nine-fold higher chance of experiencing depression and a two-fold higher chance of experiencing anxiety, compared to older adults who rate their health as very good. These results are comparable to another study by Peleg and Nudelman (2021). Significant relationships have also been found between the loss of a loved one in the last year and the appearance of depression and anxiety. Grief and the experience of loss in old age have been analysed predominantly with respect to depressive symptoms (Förster et al., 2018; Schladitz et al., 2021; Stein et al., 2017), while the link between grief and anxiety in older people has not yet been sufficiently investigated. Consistent with previous findings (Welzel et al., 2019), our results support the view that the recent experience of loss in older adults may act as a risk factor for depression and anxiety in older age.

Some studies mention the role of marital status and housing patterns, where older people living without a partner, alone, or having dysfunctional families are more prone to depressive symptoms (Pilania et al., 2019). Also, in our survey, marital status was another important factor influencing the incidence of depression. We noted that widowers and unmarried older adults are the most at risk. In a study by Schladitz et al. (2021), people living alone were shown to be the most vulnerable group. Within the present study they have a significantly higher risk of depression, high burden due to grief, higher level of loneliness, and insufficient social support.

According to our findings, employment reduces the chances of seniors developing depression. These findings are in line with Lu et al. (2023), who found that being employed could lead to older adults feeling less anxious and depressed because they are able to contribute to their family and community. The study of European seniors also found that financial stress is a significant risk factor for depression (Conde-Sala et al., 2019).

Limitations of the study

The most significant limitation of this study is the sampling methods, specifically the use of a convenience sampling strategy, i.e., non-random sampling. For this reason, not all members of the population are equally likely to be selected. According to Stratton (2021), conventional sampling can be used for population and clinical research, and the associations and effects found with comfort and convenience cannot be generalized to the target population.

Since the senior population is a very heterogeneous group, random sampling across the entire older adult population is problematic. In the survey, we visited a group of elderly people who visit our mentioned centers. The proposed recommendations are intended for this group. We consider it important to support healthy aging in this group of older people and increase the likelihood of extending their active life in society. We deliberately did not include persons with cognitive impairment in the research group. The questionnaire used is not intended for these persons.

Conclusion

A higher prevalence of anxiety and depression was found in the elderly. Older age, comorbidity, and social support were associated with mental health problems in older adults. These findings suggest that governments should focus on mental health issues in older adults, raising awareness of issues related to mental health in older adults. Given that depression and anxiety in the elderly often remain underdiagnosed and untreated by health professionals, we recommend the implementation of screening programs provided in primary care for the elderly, especially those with numerous comorbidities.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy and ethical restrictions.

Ethical considerations

The study was carried out according to the provisions of the Declaration of Helsinki and was approved by the Ethics Committee of the Faculty of Medicine of the University of Ostrava (no. 14/2020). All subjects gave their informed consent for inclusion before participating in the study.

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Conflict of interest

The authors have no conflict of interest to declare.

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