

Depressive disorders among long-term care residents in the face of isolation due to COVID-19 pandemic

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Summary

Aim. The main aim of this study was to assess the effects of social and familial isolation due to COVID-19 on the mental well-being of patients staying in a residential medical care facility and evaluation of the effectiveness of therapeutic measures.

Methods. The study was conducted among the patients of a residential medical care facility (58 patients). A short form of the Geriatric Depression Scale (GDS) was used to assess the severity of depressive disorders. The number of medical and psychological interventions during the individual months of isolation was also compared.

Results. In February 2020, when there was no isolation, 87.9% of the study group did not suffer from depression compared to 72.4% during the period of full isolation. After introducing controlled methods for contacting loved ones, the number of individuals with no depressive symptoms increased again. A mean of 1.76 medical and 0.23 psychological interventions per one patient were conducted during the period of full isolation.

Conclusions. The number of medical and psychological interventions was higher during the period of full isolation compared to months without compulsory isolation. After the introduction of full isolation, the scores in the GDS were significantly higher, which means that the residents were at a higher risk of depressive disorders than in the months without isolation.

Key words: depression, loneliness

Introduction

According to the World Health Organization, depression is one of the main causes of work incapacity. Depression affects over 350 million people worldwide, including 10% of Poles [1]. Research [2-5] has shown an increasing incidence of depression in developed countries, especially among older people. It is estimated that about 20% of the global population over 65 years of age are affected [6]. Depression is the most common mental disorder of old age after dementia. It is also the second leading cause of disability after coronary heart disease in the general population [7].

A significant problem is the small number of older people who are treated for depression in relation to the number of people who have symptoms of depression. It is estimated that various forms of treatment (psychotherapy, pharmacotherapy, psychological intervention) are used only in 30-40% of older people who present with the symptoms of depressive mood disorders [3, 5, 8, 9]. This results from a difficult diagnostic process. Multiple symptoms, such as insomnia, fatigue and withdrawal, are perceived by the patients and their families as part of the natural aging process and are not reported to medical personnel. Psychosocial factors typical of old age (e.g. retirement, death of a spouse, limited interpersonal contacts) also pose a diagnostic difficulty [5, 8, 9]. A similar situation is seen for biological factors, such as family history of depression or the presence of chronic non-infectious diseases (stroke, neurodegenerative diseases, diabetes, deficiency diseases, some cancers) [10].

Aging is a multifaceted process involving the physical and mental spheres. The pace of ageing is individual for each human being. Changes in every sphere of life occur during the period of old age. The process of adaptation to changes is stressful; however, it can also be a source of satisfaction owing to the support and closeness of the family. Living alone, not being in touch with family and friends are among the most serious problems for older people.

Loneliness is associated with no or limited interpersonal contacts. Maintaining interpersonal relationships is one of the basic factors of successful aging [11, 12]. As already mentioned, old age is perceived as a process of involution of the whole organism, which is closely related to multimorbidity, which ultimately leads to disability [13]. Gerontology distinguishes between loneliness and isolation. Social isolation is defined as long-term isolation, lack of participation in social life, poor creation of a social role and an inability to establish physical contact with the society [12, 13]. Loneliness is the psychological aspect of social isolation, a feeling of isolation despite physical possibility to contact other people. Furthermore, loneliness may be classified not only as caused by the physical lack of people, but also as loneliness among people, which is associated with impaired communication [14, 15].

Regardless of the term used, both loneliness and social isolation are caused by many diseases and disorders, and, at the same time, they are a factor predisposing to diseases. Undoubtedly, depression is one of them. Many scientific reports have

shown that there is a strong interplay between illness and loneliness – not only an illness contributes to loneliness, but loneliness can be a source of morbidity among the elderly [12-15]. People leading a solitary lifestyle reduce their lifespan by an average of up to 30% compared to those with similar genetically-determined diseases, the same eating habits and physical activity, but a richer social life [16]. Depression in old age is primarily caused by the lack of prospects for a favorable change in the situation or a consequence of an accumulation of negative events. As a result, an individual loses control over their own life and withdraws into themselves, which is referred to as the circle of self-destructive thoughts and behaviors [17]. Depression of the elderly belongs to the “major geriatric problems”, i.e. a group of diseases considered in clinical medicine as priorities that are well known and require a very sensitive response [18]. However, due to the aforementioned specificity of the elderly group, both the diagnosis of the problem and its effective treatment pose difficulty [12, 13]. Faleńczyk et al. [19] found that “although the problem of depression is seen in 5-30% of the elderly, symptom interpretation itself is difficult due to the fact that those affected by the disease rarely communicate their needs and are reluctant to talk about the problem” [19, p. 495].

The dependency of the elderly is an important aspect in determining the scale of loneliness-associated depression. For example, the scale of disability in Poland is continuously growing, as confirmed by the reports of the Central Statistical Office [20]. Research has shown that 30% of people over 60 years of age and 60% of people over 80 years of age require constant third-party assistance [19, 20]. According to current estimates, the demand for long-term care is expected to increase to 4 million people by 2030 [21, 22]. Proper long-term care for the elderly and disabled should not be limited to nursing care, but should also provide the patient with good mental comfort in order to prevent the development of certain disorders [23, 24].

The primary goal of nursing care facilities is to ensure the safety of their residents, even if this involves certain restrictions. Of particular importance are actions taken in emergencies, where the dynamic development of these situations is health – and life-threatening. Undoubtedly, such situations include SARS-CoV-2 pandemic and COVID-19 disease.

COVID-19 and therapeutic measures taken in the Residential Medical Care Facility

In connection with the spreading COVID-19 epidemic, in order to protect patients and minimize the risk of disease in the facility, special precautions were introduced in February 2020: the amount of disinfectants was increased, personal protective equipment (masks, disposable aprons, gloves) was ordered, restrictions were imposed on family contacts with residents followed by a total ban on visits. Precautions were also taken to protect against the entry of the virus along with personal belongings brought

by families (clothes, cosmetics, hygiene products, food). Each of these items (brought from outside) was subject to 24-hour quarantine in a specially designated place.

The therapeutic work system was reorganized. Each of the residents could use the help of a psychologist (in the form of consultation, after reporting the need for psychological intervention) and 3 occupational therapists (available to patients during working hours). The prolonged isolation from families and the observed deterioration of mental state forced the need to use new forms of contact with families. Conversations using an instant messenger service (Skype) and traditional forms of communication (writing letters) were introduced in April. “Meetings through the glass” and “A Photo for The Senior” program were introduced in May. These new methods of communication are described below.

a. Instant messenger services

Communication via instant messengers was the first possibility of (indirect) communication between families and facility residents during the epidemic. Anyone willing to use this form of contact had a certain video call date scheduled. There were no restrictions on the number of calls per week; however, the time of one call was limited to 20 minutes for organizational reasons. The conversations took place in a specially designed room, ensuring privacy and intimacy. Residents who knew how to use a laptop made the connection on their own, and those who needed help were provided with the assistance of occupational therapists. Access to additional loudspeakers and a microphone was provided (especially for patients with hearing impairment and those with a low-volume voice) to increase communication comfort. Initially, this form of communication was used only by walking patients and wheelchair users able to reach the room with the laptop. Afterwards, calls were also made in residents’ rooms (by moving the laptop with the speaker to the resident’s room) to avoid excluding bedridden patients from this form of contact.

b. Writing letters

A simple method of communication known to all residents. It was used both for patients with reduced cognitive performance and those without cognitive impairment. Residents could ask health care assistants, therapists or a psychologist for help in writing their letters. Initially, this method attracted a lot of interest, especially in combination with art therapy (preparation of Easter cards), but with time, writing letters was almost completely replaced by video calls and “meetings through the glass”.

c. “Meetings through the glass”

The effectiveness of conversations over the Internet encouraged the search for further therapeutic solutions. Despite the undeniable advantages of video calling (no direct contact, no risk of infection, an opportunity to talk and see family), the residents complained about the lack of possibility of close and direct contact with their families. Therefore, conversations through the glass were proposed. The pos-

sible impact of this communication method on the mental state of the residents was considered. Concerns were raised that meeting with family without the possibility to show feelings in a physical way (greeting, hugging, holding hands) may have the opposite effect than originally assumed. Despite these concerns, the medical and therapeutic team (with the approval of the management) decided to implement this form of meetings. There were no restrictions on the number of meetings per week, and the duration of meeting was 25 minutes. The residents met with their families on two sides of a glass door. This method allowed to see each other; however, a barrier of physical contact was maintained, which prevented the possibility of infection. The conversations were carried out over the telephone with a speakerphone. The telephone and the meeting place were disinfected after each meeting. The meetings were held in a place ensuring peace and privacy. At the resident's request, a psychologist could participate in the communication.

d. "A Photo for The Senior"

The above-mentioned forms of communication were used by the vast majority of residents. However, expectations regarding the number of meetings and internet conversations, and the time capabilities of residents' family members turned out to be a problem. All programs were carried out between 10:00 AM and 03:00 PM, which limited contact with families whose members worked during these hours. This situation was particularly difficult for patients who were visited on a daily basis before closure of the facility (isolation) and for patients with neurocognitive disorders. The problem was solved by implementing reminiscence therapy, i.e. joint viewing of photographs and discussing their significance for patients. Family members were asked to bring family souvenirs and photographs. This method gained special significance in the Alzheimer's disease center, where patients talked about the souvenirs using long-term and autobiographical memory resources, with no need to use semantic memory. When implementing this method of maintaining family ties, the focus was placed on the patients' preserved competences (memory resources, sense of aesthetics, emotional competences) and the availability of the method, as it could be used without the presence of close relatives.

The main aim of this study was to assess the effects of social and familial isolation due to COVID-19 on the mental well-being of patients staying in a residential medical care facility, as well as to assess the effects of therapeutic actions taken by the personnel of the facility on the mental state of residents measured with the Geriatric Depression Scale.

Materials and methods

The study was conducted in one of the Polish residential medical care facilities (the Silesia Province) in the period from February to May 2020.

The study group included 58 patients.

Residential medical care facility resident status in the period from at least February to May 2020, and psychophysical condition enabling participation in the study were the inclusion criteria. Individuals who became residents of the facility later than in February or whose cognitive functions prevented questionnaire completion were excluded from the study.

The participation was voluntary. The patients were informed about the purpose of the study and the methods used. Patients whose cognitive functioning enabled them to make an informed decision gave their independent consent to participate in the study; in the case of patients with moderate to severe dementia (where there were doubts as to the informed decision), a double consent was required – expressed by the patients themselves and their guardians. The study was conducted after obtaining an approval of the Head of the facility.

The standardized Geriatric Depression Scale (GDS) composed of 15 questions (Geriatric Depression Scale short form, GDS-SF) was used in the study. The GDS-SF was completed four times (in each month of the study). The scale was developed by professor Jerome A. Yesavage and his team in 1983. The GDS is a screening tool used to assess the severity of depressive symptoms in elderly patients. The original version consists of 30 yes/no questions. The questions used in the questionnaire were selected from a pool of 100 questions assessing various mental manifestations of depression. Questions with the highest correlation coefficient with the overall score were left in the final version of the questionnaire [25].

The GDS is available in many languages. Many short versions of this scale have been developed. GDS-SF (short form) or GDS-15, which includes 15 questions, is considered one of the most popular and reliable versions. Due to its short form, it is recommended for both healthy individuals and those with neurological disorders. According to the authors' assumptions, the respondents should complete the questionnaire on their own. However, assistance of another person or answering the questionnaire by phone is also allowed [26].

The maximum score is 15. The score is interpreted as follows [27]:

- 0-5 – no depression
- 6-10 – moderate depression
- 11-15 – severe depression.

Data on the number of medical and psychological interventions in the following months were taken from consultation reports. The number of medical and psychological appointments was presented in the form of the number of visits per month per one person (the number of patients in the facility varied in the individual months).

Statistica (version 13.3, StatSoft) was used for statistical analysis of the data obtained. The Shapiro-Wilk test was used to determine the normality of distribution of the individual items; analysis of variance (ANOVA), the NIR test, Tukey's test and the

Friedman ANOVA analysis were used to assess the correlations between these items. A p-value of 0.05 was considered statistically significant.

Results

The study group included 58 residential medical care facility residents, with women accounting for 70.7% of the group. The mean age was 84.14 years (Table 1).

The results of the screening test, carried out using the MMSE (Mini-Mental State Examination), suggest the occurrence of severe, moderate and mild dementia in 24.1%, 27.6% and 20.7% of the study group, respectively; cognitive disorders without dementia were confirmed in 17.2% of residents, and a normal MMSE score was obtained by 10.4% of patients (Table 1).

Table 1. Study group characteristics

Metric data		N	%
Average age of the group	=84.14 (\pm 7.24) years	-	-
Sex	Women	41	70.7
	Men	17	29.3
Length of stay in a long-term care institution	1-6 months	12	20.7
	7-12 months	9	15.5
	13 – 24 months	18	31
	>24 months	19	32.8
Degree of dementia (MMSE scale)	Normal MMSE score	6	10.4
	Cognitive disorders without dementia	10	17.2
	Mild dementia	12	20.7
	Moderate dementia	16	27.6
	Severe dementia	14	24.1

A total of 20.7% of patients were staying in the facility for the 1-6 months preceding the study, 15.5% of patients were staying in the facility for 7-12 months, 31% for 13-24 months, and 32.8% for 2 years preceding the study (Table 1).

The patients were assessed for the severity of depression using the GDS questionnaire. The interpretation of results showed that 87.9% of residents did not suffer from depression in February 2020, when there was no isolation, compared to 72.4% in March (full isolation), with up to 25.9% of patients with moderate depression. After introducing controlled methods for contacting family members and friends, the number of individuals with no depressive symptoms increased again, reaching 77.6% in April and 86.2% in May (Table 2).

Table 2. Number of people without depression, with moderate and severe depression according to the GDS questionnaire in individual months

Month	No depression N (%)	Moderate depression N (%)	Severe depression N (%)
January	51 (87.9%)	6 (10.4%)	1 (1.7%)
February	42 (72.4%)	15 (25.9%)	1 (1.7%)
March	45 (77.6%)	13 (22.4%)	0 (0%)
April	50 (86.2%)	8 (13.8%)	0 (0%)

The average number of points obtained by the study group in the GDS questionnaire in February – before the epidemic – was 2.55, in March – during the full isolation period – was 3.74, in April – after the introduction of the first methods of communication with loved ones – fell to 3.33, and in May – after applying subsequent communication methods – was 2.9. A statistically significant relationship was found between the mean GDS score and the level of isolation ($p < 0.001$) (Table 3).

Table 3. Average GDS values obtained in individual months

Month	Degree of isolation	GDS (\pm SD)	p
January	No isolation	2.55 (\pm 2.41)	<0.001
February	Full isolation – no visits	3.74 (\pm 2.65)	
March	Partial isolation – video calls, letters	3.33 (\pm 2.48)	
April	Partial isolation – video calls, letters, photos, meetings through the glass	2.90 (\pm 2.27)	

The study also assessed the mean number of medical and psychological interventions per 1 resident. A mean number of 1.25 medical and 0.08 psychological interventions were conducted in January. With the spread of the SARS-CoV-2 virus epidemic and the isolation of the residents from outsiders, the need for these interventions increased and the mean number of medical and psychological interventions per one resident in March was 1.76 and 0.23, respectively. The need for medical and psychological consultations decreased after introducing new methods for contacting with family members (video calls, letters, meetings through the glass). The mean number of medical and psychological interventions per one resident was 1.4 and 0.2 in April, and 1.17 and 0.2 in May, respectively. A relationship was demonstrated between the mean number of medical interventions and the mean number of psychological interventions ($p = 0.04$) (Fig. 1).

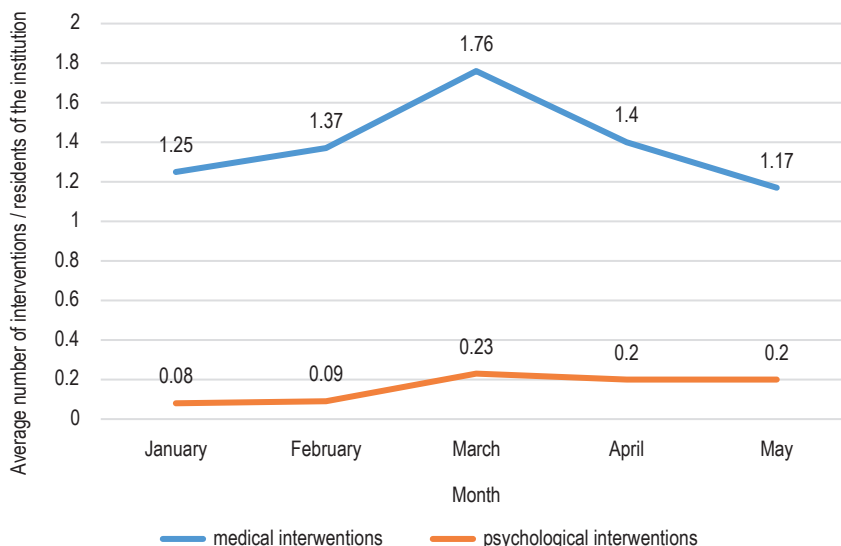


Figure 1. Average number of medical and psychological interventions per 1 person in a long-term care centre.

Discussion

The incidence of depression has increased in the last decade, affecting people around the world, regardless of age or social status. Depression in the elderly is also an important issue [2-5]. Patients staying in residential medical care facilities are a special group; however, mood disorders have not yet been thoroughly investigated in this population. Various structural, physiological, social and psychological changes have emerged over the years that have made depression in seniors a serious health issue in many countries. Loneliness and isolation are one of the factors that contribute to the development of affective disorders [5, 9].

The problem has become particularly important these days. The COVID-19 pandemic and the spread of Sars-Cov-2 virus have forced a number of actions to reduce the number of infections and minimize the risk of death. The latest publications [28-31] on COVID-19 show that this disease is particularly dangerous for people over 65 years of age and patients with multiple comorbidities. Analyses of the occurrence of COVID-19 show that the virus spreads particularly rapidly in hospitals, nursing homes and residential medical care facilities, where elderly people reside. Also, mortality rates in these healthcare facilities are the highest among all available data [28, 31].

The described situations forced measures to protect seniors against the disease; however, social isolation and increased incidence of depression turned out to be negative consequences of these interventions [32].

Bukhari et al. [2] investigated the effects of loneliness on the development or severity of depressive disorders. The study population included 60 patients with depressive disorders and 60 healthy individuals. The study confirmed the relationship between loneliness and depressed mood in both groups. Tait et al. [33] demonstrated that scores in the UCLA Three-item Loneliness Scale are strongly correlated with increased GDS scores, which means that the severity of depressive disorders increases with increasing loneliness. The study included 30 elderly patients with Parkinson's disease and was conducted at John Radcliffe Hospital, Oxford. Similar results were obtained by Faisca et al. [3], who assessed the effects of loneliness on depressive symptoms in the elderly (over 65 years of age) depending on whether they lived with their family or alone. The study showed that an increased sense of loneliness contributes to the severity of depression. Interestingly, it was shown that people who used to live with their families for a long time before living alone experienced much more severe loneliness (and increased mood disorders) than those who have long lived alone. This phenomenon may be associated with the loss of the social role of an elderly person in the life of the family and a sense of emptiness and longing for lost family and social relationships. Similar observations were made in our study. The necessity of social isolation and the sudden disappearance of family relationships contributed to the increased incidence of depression among patients. The highest severity of depression was observed in March, i.e. the first month of isolation, when no measures to maintain family bonds were taken. However, a reduction in the GDS scores was seen during the months that followed. This was associated with the implementation of various therapeutic programs allowing for contact between the residents and their family members.

Studies on the incidence of depression among the elderly and geriatric patients show significant differences between different countries, with the incidence ranging between 9% and 33% [34]. For example, epidemiological studies in Nigeria showed that 12-26.2% of elderly Nigerians may be affected [4]. In Portugal, the incidence of depressive mood disorders among people in retirement age is 11.9%, and a similar rate was reported in the United States [5, 9]. Similar findings were obtained in our study in the month when the residents functioned as usual, i.e. could be visited, were allowed to leave facility premises and could have a social life adequate for their circumstances. The incidence of depression (based on GDS) was 12.1% (moderate and severe depression in 10.4% and 1.7%, respectively). These percentage values changed throughout the months that followed, with 27.6% and 22.4% of the affected patients in March and April, respectively. This rise in depressive disorders was most likely due to severe stress associated with COVID-19 and the lack of contact with family and friends. These rates dropped in the following months, when isolation was gradually abandoned, reaching 13.8% in May.

Furthermore, it was demonstrated that the increase in depressive symptoms is accompanied by an increase in the incidence of somatic diseases [35]. According to one of the theories accounting for this phenomenon, depressive disorders may impair

immune function and promote increased inflammatory processes [36, 37]. Depression also increases the use of primary and specialist care, as well as hospitalization rates [35]. A decrease in overall quality of life and an increase in mortality due to self-destructive behaviors, but most of all due to an increase in underlying diseases are also seen in depression [35]. The diagnosis of the worsening overall condition of the affected patient poses particular difficulty. Unlike in adolescents or adults, depressive disorders in the elderly are associated with lower intensity of reported sadness or apathy, and the disease takes a more somatic form [9, 36]. Due to depression masked by other symptoms, medical visits are more frequent, and the correct diagnosis is delayed or missed [9]. This was confirmed in our study. An increased GDS score was accompanied by an increased number of medical and psychological interventions among the residents.

The issue of depression among geriatric patients attracts increasing attention of both healthcare specialists and the society. Unfortunately, no research has been found in the available literature that focuses on therapeutic activities aimed at solving the problem of loneliness and their impact on patients' mental state. The presented study attempted to fill this gap and it should initiate further research.

Conclusions

1. The frequency of medical and psychological interventions was higher during the period of total isolation compared to months without compulsory isolation.
2. The GDS score was significantly higher after the introduction of total isolation, which indicates that the risk of depressive disorders among the residents was higher compared to months without isolation.
3. The introduced therapeutic actions positively contributed to the mental state of patients, as evidenced by reduced GDS scores in the study group.
4. The study showed that social isolation is a factor predisposing to mental disorders; therefore, constant monitoring of the mental state of patients and the possibility of contact with family members should be ensured.

Acknowledgments

We express our gratitude to Mrs. Agnieszka Relidzyńska, Director of the Long Term Care Center in which the study was created, and to Dr. Iwona Cabaj-Wiater, Medical Director, for their help and motivation at every stage of the article's creation.

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