

Prevalence of Cognitive Disorders and Depression in the Adjara Region, Georgia, Before and After the COVID-19 Pandemic

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ABSTRACT

Background: In 2010, 35.6 million individuals worldwide were diagnosed with dementia, and about two-thirds live in low- and middle-income countries. It caused 1.7 million deaths in 2013, compared with 0.8 million in 1990. The incidence of dementia has increased dramatically since the COVID-19 pandemic.

Objectives: This study examined how cognitive impairment and depression indicators changed before and after the COVID-19 pandemic in the Adjara region, Georgia.

Methods: The research was conducted at Clinic Medcenter in Batumi, Georgia, between 2016-2017 and 2021-2022. Before the COVID-19 pandemic, 250 patients (120 men and 130 women) aged 50 to 70 years were evaluated for depression and dementia. During the years 2021-2022, we additionally examined 200 patients (105 men and 95 women) aged 18 to 80 years at various periods of their recovery from acute SARS-CoV-2 infection: 65 patients after one to three months, 115 patients after three to six months, and 20 patients after six to twelve months of recovery from COVID-19. In addition, we used the Beck Depression Inventory to identify depression and Mini-Mental State Examination (according to NINCDS-ADRDA criteria) to diagnose dementia.

Results: In the patients examined during 2016-2017, the rate of depression was 220 (88%) cases out of 250 patients with the following distribution: (i) mild depression in 85 (38.6%) patients; (ii) moderate in 55 (25%) patients and (iii) severe depression in 80 (36.4%) patients. Cognitive disorders in the period mentioned above were detected in 200 (80%) out of 250 patients in mild form in 90 (45%) cases, in moderate form in 70 (35%) cases, and in severe form in 40 (20%) cases. Depression and variable cognitive disorders were found in all 200 patients recovering from acute SARS-CoV-2 infection.

Conclusions: According to our research, depression and dementia are much higher after the COVID-19 pandemic than before, requiring effective preventative interventions.

Keywords: Depression; Covid-19; cognitive disorders.

BACKGROUND

Dementia and depression are one of the significant challenges of modern medicine. The prevalence of dementia was 35.6 million people worldwide in 2010, and most affected people lived in low- and middle-income countries.¹⁻⁵ It caused 1.7 million death in 2013, compared with 0.8 million in 1990. However, due to common symptoms and a similar clinical picture, it is challenging to distinguish dementia from depression.²⁻⁶

During the COVID-19 pandemic, the prevalence of depression and dementia has increased dramatically. Furthermore, it is progressively growing following the pandemic, causing a 25% rise in the prevalence of depression globally.⁷

It is well known that in addition to the main clinical symptoms such as fever, headache, cough, muscle pain, sickness, anosmia, ageusia, and difficulty of breathing, acute SARS-CoV-2 infection is characterized by dizziness, headache, encephalopathy, and stroke.^{2,3,8-14}

Given the particular mechanism of damage of ACE2 receptors by SARS-CoV-2 and the prevalence of these receptors in the nervous system, the development of mental and neurological symptoms of COVID-19 disease is not unexpected.

In the present study, we aimed to evaluate the prevalence of depression and cognitive dissonance in the Adjara region, Georgia, before and after the COVID-19 pandemic.

METHODS

The study was conducted on 200 patients (105 men and 95 women aged 18 to 80) admitted to the Medical Center clinic (Batumi, Georgia) from 2021 to 2022 because of depression or dementia and at various periods of their recovery from acute SARS-CoV-2 infection: 65 patients after one to three months, 115 patients after three to six months, and 20 patients after six to twelve months of recovery from COVID-



19. In addition, the results were compared to similar data from 250 patients (120 men and 130 women aged 50 to 70) from 2016-2017.

The Beck Depression Inventory was used to identify depression and stratify disease severity (mild, moderate, or severe depression). Mini-Mental State Examination (NINCDS-ADRDA criteria) was used to diagnose dementia.

The differences between the variables were assessed by the descriptive statistics and T test. A statistical significance was taken as a $p < 0.05$.

RESULTS

Depression was found in 220 (88%) of the 250 patients evaluated between 2016 and 2017; mild depression was found in 85 (38.6%), moderate depression in 55 (25%), and severe depression in 80 (36.4%).

Cognitive disorders were found in 200 of 250 individuals (80%). A mild problem was found in 90 (45%), a moderate in 70 (35%), and severe cognitive impairment in 40 (20%) of the evaluated subjects. In addition, 215 (86.0%) patients from the pre-pandemic period had sleep-related disorders, 44 (17.6%) had suicidal thoughts, and 186 (74.4%) had decision-making issues.

Depression was found in all 200 patients evaluated in 2021-2022 years. Dementia was found in 170 (85%) of them. The distribution of sleep-related disorders, suicidal thoughts, and decision-making problems differed during recovery from acute SARS-CoV-2 infection. In the patients after one to three months of recovery from COVID-19, 117 (68.8%) had sleep-related disorders, 97 (57.1%) had suicidal thoughts, and 75 (44.1%) had decision-making problems. In the patients after three to six months of recovery from the acute SARS-CoV-2 infection, 35 (20.6%) had sleep-related disorders, 15 (8.80%) had suicidal thoughts, and 76 (44.7%) had decision-making problems. In the patients, after six to twelve months of recovery from COVID-19, the distribution of sleep-related issues, suicidal thoughts, and decision-making problems was 18 (10.6%), 58 (34.1%), and 19 (11.2%), respectively.

Table 1 represents a distribution of different symptoms and signs in 170 post-COVID-19 patients.

TABLE 1. Different symptoms and signs in 170 post-COVID-19 patients

Symptoms/Signs	Percentage
Decreased intellectual abilities	85
Difficulty in finding appropriate phrases when speaking	76
Disability of logical thinking	75
Impaired emotional control	67
Memory deterioration	65
Difficulty of information processing	35
Decreased motivation and apatheia	35
Vision deterioration	34
Difficulties of orientation	34
Urinary incontinence	25
Aberrated social behavior	15
Addiction to alcohol	15
Convulsive discharges	5

DISCUSSION

According to World Health Organization (WHO) official statistics, the prevalence of depression and dementia increased considerably during and after the COVID-19 pandemic.⁷

The findings of the present study are consistent with the previously reported global trend of rising incidence of depression and cognitive impairment.

Depression was found in 100% of post-COVID-19 patients, while the prevalence of depression was 88% in patients evaluated in 2016-2017.

Cognitive disorders were also statistically higher in patients recovering from the acute SARS-CoV-2 infection than those evaluated before the COVID-19 pandemic (85% vs. 80%, $p < 0.05$).

It is important that a high incidence of depression was detected in patients with a history of severe SARS-CoV-2 pneumonia and hypoxia.

The presence of ACE2 receptors targeted by SARS-CoV-2 may explain the high incidence of mental and neurological disorders in patients recovering from the acute phase of COVID-19.^{11,15}

CONCLUSIONS

According to our research, depression and dementia are much higher after the COVID-19 pandemic than before, requiring effective preventative interventions.

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