

# Significance of Anthropometric Parameters in the Development of Post-COVID-19 Depression

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**Abstract** The information about depression in humans after COVID-19 is given in this article. The obtained statistical scientific results showed that more than 80% of patients who underwent COVID-19 developed depression. Based on our experience, we researched significance of anthropometric parameters and gave our recommendations to patients how to get out of depression after COVID-19 in the concluding part of the article.

**Keywords** Depression, Post-COVID-19 depression, Anthropometric parameters, Physiology, COVID-19

## 1. Introduction

Coronavirus causes depression in 80% of clients of psychologists - this is noted by the experts themselves. According to analysts, people have even lost interest in lovely holidays. People suffering from depression themselves talk about constant fatigue and a lack of desire to communicate with any person who might talk about the coronavirus [1,2,3,4].

Depression is a leading cause of disability globally. Accordingly, depressive symptoms and clinically-significant depression in post-COVID-19 syndrome may have severe implications as it relates to quality of life outcomes [5,6,7,8,9,10].

Recent reviews have investigated the neuropsychiatric sequelae of COVID-19, but to our knowledge, none have reported on the frequency of depression, specifically, in accordance with post-COVID-19 syndrome [11,12,13,14]. Notwithstanding, studies reporting on the survivors of the severe acute respiratory syndrome (SARS) pandemic in 2003 have indicated the presence of depression for up to 12 months following hospital discharge. Thus, it may be hypothesized that depression is a significant outcome among survivors of coronavirus infections. Taken together, there is a need to characterize the relationship between depression and post-COVID-19 depression [16,17,18].

## 2. Purpose of the Research

The purpose of this research is to synthesize the extant

evidence reporting on the frequency and factors associated of depression in post-COVID-19.

## 3. Methods

This review was updated throughout the writing process. Methods adhere to the Preferred Reporting Item for Systematic Reviews and Meta-Analyses (PRISMA) guidelines [15].

## 4. Results and Discussion

Depression is a global disorder affecting an estimated 3.8% of the population, including 5% of adults and 5.7% of those over 60 years of age (1). Worldwide, about 280 million people suffer from depression (1). Depression is different from normal mood swings or short-term emotional responses to difficult situations in everyday life. Depression can be a serious illness, especially if it recurs periodically and is moderate or severe. In such cases, depression leads to great suffering, reduced performance or school performance, and difficulties in family life. In the most severe cases, depression can lead to suicide. Every year, over 700,000 people worldwide commit suicide. Suicide is the fourth leading cause of death among young people aged 15-29.

Despite the existence of known and effective treatments for mental disorders, more than 75% of people in low- and middle-income countries receive no treatment (2). Factors hindering effective treatment include lack of resources, lack of trained health workers and social stigmatization of people with mental disorders. In all countries, regardless of income level, people with depression often go undiagnosed, and too often the diagnosis is made in those who do not have depression but who are prescribed antidepressants nonetheless.

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Depression can be psychogenic and endogenous. The first type is psychogenic depression, which develops due to external factors as a reaction to a strong stressful event in a person's life, for example, the death of a loved one, the loss of a favorite job, the failure of an important exam, or a difficult financial situation.

Traumatic events from childhood can lead to an increased risk of depression: physical abuse, the departure of a parent from the family, bullying from peers or older people. Frustrating factors can also lead to depression, for example, staying at home for a long time in quarantine, because of which we cannot do our favorite things (travel, for example).

The second type is endogenous depression, which develops as a result of a neurochemical imbalance in the brain. Scientists believe that the cause of endogenous depression is a lack of serotonin, dopamine and norepinephrine in the brain. There are other physiological causes of depression, such as prolonged lack of sunlight and lack of D vitamins.

*80% of psychologists' clients complain of depression due to coronavirus*

The second wave of restrictions due to the coronavirus provoked depressive moods in people around the world. A study conducted by the US National Science Foundation showed that among young people aged 18 to 24, almost half have symptoms of depression, according to the Common Health portal.

According to the researchers, among the 2,000 people surveyed, one in ten reported that thoughts of suicide came to their minds more often than before the pandemic. The survey was conducted in several stages from April to November 2020.

In China, a similar study conducted in October among a thousand local residents aged 18 to 35 showed that about 80% of those surveyed suffer from depression due to the coronavirus. In Europe, average life satisfaction has fallen to record low levels over the past 40 years, McKinsey & Company researchers note.

80% patients are worried about the coronavirus. But among them, only half are worried about their health and are really afraid of getting sick. Most of the clients are suffering from the inability to earn a normal income amid cuts due to the pandemic, and also worry about relationships with spouses, parents and children who are going through a crisis during each stage of self-isolation".

*General depression* in society and rising unemployment affect consumer behavior. For example, the Russians have completely lost interest even in the attributes of the New Year, which are popular at all times.

I don't attend any classes that I used to go to with pleasure, I have changed in behavior and communication, I have become more closed and silent. I don't want to talk to anyone, because the topic of the hated coronavirus will inevitably pop up in the conversation, which just finishes it off. The only thing I think about is how to get out of all the debts that I had to collect after I was fired from work" says Feruzabonu,

28, a resident of Tashkent.

In a similar state - 36-year-old Guzal from Kashkadarya region. Depression becomes a common thing for many, but in 2020 there are much more reasons to feel it. "Today, a new form of intimacy is when you see a person without a mask. We do not have any support and the ability to predict our future, and this gives rise to a lot of anxiety. We went through distance education, celebrated birthdays and weddings in Zoom. If you add up the entire volume of changes to which our psyche has adapted in just six months, it becomes surprising why everyone has not plunged into depression yet" says Guzal.

At the same time, sometimes depression even turns out to be a symptom of the coronavirus. So, according to 35-year-old Mukhabbat, in early November she woke up with severe pain in her muscles.

"My whole body hurts, well, I think I did a good yoga session the day before. On the second day everything hurts too. Great, I think, here it is, the power of yoga, no Zumba or strength training made the muscles hurt like that, although, it would seem, what did we do there in particular? On the third day, I wanted to die," says Mukhabbat.

The woman attributed her condition to the autumn blues and continued to do her usual things. Only now the feeling of weakness and bad mood did not let go.

"Of course, I didn't even think about the coronavirus. After all, I didn't have at all: cough, runny nose, temperature, low saturation, breathing difficulties, loss of taste. For a while, my body hurt a lot, I didn't have the strength to get up in the morning, but there was weakness, constant fatigue, and all the time I wanted to die" the woman complains.

A few days later, Mukhabbat lost her sense of smell and had a strange sensation of emptiness in her nose. And then the antibody test, which friends advised me to take, showed a positive result. "The therapist said that I am now healthy, had been ill, and I have a lot of antibodies," sums up the Muscovite.

It's not easier to fight depression and abroad

Shared their depressed mood and Uzbek living abroad. So, according to 32-year-old Anvar, who moved to Russia, a depressive state has inevitably haunted his since March.

"I can't find a reason to go wash my hair and take care of myself in general, I wear stained clothes, old clothes are stretched, I suffer from insomnia, I am tormented by anxiety. If you know someone who is sad right now, don't be offended that they don't have the strength for you right now. Just support. So we will defeat illnesses, and losses, and even November" the guy said to us.

Anvar's mood is shared by a resident of Bukhara, 27-year-old Feruzbek. "Although the second wave of self-isolation is much easier than the first, the mood is still at zero. No desire to go out, see anyone, do anything. I switched to remote work at work just to be at home and hear less about the virus. It's a strange feeling, it's never happened before. I went to the doctor, he diagnosed me with depression. I refused the pills, I don't know how to save myself" the guy

complained.

An even more mixed range of feelings is now experienced by US residents, who, in addition to large-scale problems with the coronavirus, had to endure the election of a new president. Moreover, everyone's favorite holiday Thanksgiving Day on November 26 was also held under conditions of restrictions, which knocked down a lot of Americans and Russians living in the States.

"It seems that the virus will never end. And it is not at all clear what to do with your life and how to save the mood, which has been gone for several months. And it seems to be so beautiful around, and in the policy of change, and there is some kind of movement around, and you don't even want to move," 25-year-old Alina, who moved to New York two years ago.

Schedule, isolation from the news and rest will save you from depression

We asked psychologists to give some advice to those who are now having a hard time getting out of depression. First of all, in order to improve the emotional system, it is worth strengthening personal stress resistance, they say.

"Busy, fullness of the day is an effective practice for preventing negative emotional states. Among household chores, it is useful to make time for yourself. Regularly ignoring the realization of available desires leads to dissatisfaction with life in general. Planning things for the record is useful because the result can be seen. Also, regular physical activity is a powerful antidepressant" the psychologist is sure.

Psychologist Anastasia Ksenofontova advises not to plunge headlong into the information flow, which is now overloaded with coronavirus.

"Daily numbers and statistics will continue to only increase anxiety rather than reduce it. To do this, you can choose one or two information resources that you trust and which you will check for new information. You can also limit the absorption of information by time - choose a certain period of time during the day in which you read the news" the specialist notes.

To prevent depression, it is also worth separating productive anxiety from unproductive. As Anastasia Ksenofontova notes, even if you really want to worry, you need to separate what you can influence from what you definitely cannot. In addition, it is also helpful to take more time for yourself.

"Give yourself more sleep and physical activity. Take more breaks, alternate classes according to the degree of difficulty, take time to relax and be with yourself" concluded the psychologist.

## 5. Symptoms and Forms

A depressive episode is characterized by a decrease in mood (expressed as sadness, irritability, feelings of emptiness) or loss of interest in any activity for most of the day, almost every day, for at least two weeks in a row.

A number of other symptoms may be present, including decreased concentration, abnormal guilt or low self-esteem, lack of faith in the future, thoughts of death or suicide, sleep disturbances, changes in appetite or body weight, and feeling very tired or low on energy.

In certain cultural contexts, mood changes can often be expressed in the form of somatic symptoms (eg, pain, fatigue, weakness) in some people. At the same time, such somatic symptoms are not associated with any other pathological condition.

During a depressive episode, the patient experiences significant difficulties in personal relationships, family life, social contacts, education, work, and/or other important areas of life.

Depending on the number and severity of symptoms, as well as their impact on a person's daily life, there are mild, moderate and severe depressive episodes.

There are several types of affective disorders:

- an isolated depressive episode (i.e. the first and only depressive episode in a person's life);
- recurrent depressive episodes (i.e. a history of at least two depressive episodes);
- bipolar disorder, in which depressive episodes alternate with phases of manic symptoms, including euphoria or irritability, high activity or bursts of energy, and other manifestations such as verbose speech, "jumping ideas", inflated self-esteem, reduced sleep duration, distractibility, and impulsive recklessness behavior.

## 6. Risk Factors and Prevention

Depression results from a complex interplay of social, psychological, and physiological factors. An increased risk of developing depression is observed in people who have experienced life shocks (eg, unemployment, loss of a loved one, psychological trauma). In turn, depression can lead to increased levels of stress and functional impairment, which only aggravates the life of the patient and, as a result, depression itself.

The relationship between depression and physical health has been established. Thus, cardiovascular disease can lead to depression, and depression, in turn, can cause cardiovascular disease.

Prevention programs have been proven to reduce the prevalence of depression. Effective community interventions to prevent depression include school-based programs designed to develop positive coping skills in children and adolescents. Working with parents of children with behavioral problems can help reduce depressive symptoms in parents and improve the condition of their children. Physical activity programs for older adults may also be effective in preventing depression.

In recent years, the number of people with depression has been on the rise. This is due to two factors. The first factor is the growing awareness of the population about mental health, more and more people are trying to take care of their mental

state. If earlier “the people” believed that depression was purely from idleness, now people are beginning to understand that this is a disease that needs to be treated with the help of doctors. As a result, the rate of people turning to specialists is increasing - statistically, the number of patients with depression is increasing.

The second factor in the increase in the prevalence of depression is the coronavirus pandemic. Depression can occur both during illness and after suffering COVID-19. This is due to many reasons. The news background is full of information about the increase in morbidity, complications and deaths from COVID. Therefore, due to such news, which is broadcast daily, the mental health of patients with coronavirus is constantly at risk, including an increased risk of developing a depressive state.

Depression in people with coronavirus may appear not only from the awareness of possible complications and death. COVID-19 is also a very neurotoxic virus that disrupts certain processes in the brain. Coronavirus impairs the circulation of serotonin, a neurotransmitter responsible for mood. In this case, depression occurs as a complication in the structure of the post-COVID syndrome. Sometimes depression is so deep and severe that a person has thoughts of suicide, some even make direct attempts to commit suicide.

## 7. Diagnosis and Treatment

There are a number of effective treatments for depression.

Depending on the severity and nature of the history of depressive episodes, the patient may be offered psychological therapy, such as behavioral activation, cognitive behavioral therapy, and interpersonal psychotherapy, and/or drug treatment with antidepressants, such as selective serotonin reuptake inhibitors (SSRIs) and tricyclic antidepressants (TCAs). Other medications are used to treat bipolar disorder. Health care providers should consider the potential adverse side effects of antidepressants, the availability of psychological or medical treatment options (availability of trained professionals and/or accessibility of therapy to the patient), and individual patient preferences. Various formats of psychological therapy may be considered, including individual and/or group face-to-face psychological treatment by specialists or lay therapists working under the supervision of a physician. For mild depression, antidepressants are not the first line of treatment. They should not be used to treat depression in children or considered as first-line therapy in adolescents, and antidepressants should be used with extreme caution in adolescents.

## 8. WHO Activities

WHO Mental Health Action Plan 2013-2030 contains a description of the necessary steps to organize appropriate care for people suffering from mental health disorders, including depression.

Depression is one of the priority diseases in the WHO Mental Health Gap Action Program (mhGAP). The goal of the program is to help countries scale up services for people with mental, neurological and substance use disorders by involving non-mental health professionals in patient care.

WHO has developed brief guidelines for the provision of psychosocial support by lay workers in individual or group therapy. An example is the Managing Problems Plus (PM+) manual, which contains information on techniques such as behavioral activation, stress management, problem management, and strengthening social support. In addition, Group Interpersonal Therapy (IPT) for Depression provides guidance on group treatment for depression. Finally, Healthy Thinking covers the use of cognitive behavioral therapy in the treatment of perinatal depression.

## 9. Conclusions

This systematic review suggests a high frequency of clinically-significant depression and depressive symptoms associated with post-COVID-19 syndrome.

The severity of COVID-19 and cognitive impairment in the acute phase of the disease are not associated with worsening depressive symptoms in post-COVID-19 syndrome.

Experts advise sleeping at least eight hours a night, making time for hobbies, de-stressing with books or your favorite movies, and spending time with friends and family whenever possible.

Vitamin D and vitamin B12 (cyanocobalamin), but the dose should be selected together with your doctor, since uncontrolled intake of vitamins can lead to side effects.

Remember that depression is not a death sentence - depression is successfully treated and prevented.

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