

# Influence of Individual-Typological Characteristics on the Formation of Depressive Symptoms during Distance Learning in Conditions of Self-isolation and COVID-19: On the Example of DSMU Students

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**Abstract:** The article presents an analysis of population studies in various areas of scientific knowledge during a pandemic. The data on the consequences, course and impact of the pandemic on various living standards of the population are provided. As a result of considering various data obtained in the course of studying various aspects of distance learning, both positive and negative, it was concluded that the main disorders during forced self-isolation are associated with the mental health crisis of the young generation in the conditions of Covid-19. The above data show a tendency for a wide range of disorders from social maladjustment to neuroses and psychosomatic disorders. In accordance with the hypothesis of this study that the personality characteristics of students and the period of self-isolation and other quarantine measures affect the formation of predictors of mental health disorders in the form of the occurrence of depressive symptoms of various severity, we used three methods to test it in the experimental part of the work: PHQ9 test, K. Leonhard - G. Shmishek and an individual typological questionnaire (ITQ) by L.N. Sobchak. In the course of the study, it was revealed that during the period of self-isolation, most of the students showed signs of depressive symptoms, which mainly have signs of mild depression, and the severity of its course (reliability at the level  $p = <0.001$ ) is influenced by the individual typological qualities of the personality of students.


## 1 INTRODUCTION


Online education is likely to become the main form of education by 2025. The problem is not that distance education as an alternative form of education is unacceptable in our learning environment. The sudden shift from traditional classrooms and face-to-face learning to online learning has resulted in a very different learning experience for students and educators. It was not successful for all students.


I. E. Sokolovskaya in 2020 conducted a study on the features of socio-psychological adaptation in distance learning, during which data were obtained that only 13 % of students experience complete emotional well-being with this type of education. According to Yu.R. Petkov, among the main problems of distance learning, there are problems

with motivation, the quality of the service system and the lack of staffing, which slows down the adaptation processes of students in the transition to distance education.

In the same year, we conducted a survey of DSMU students, which allowed us to obtain similar data and the result of which it was revealed that about 80 % of students have a negative attitude to distance education, and more than 50 % have difficulties in distance education, both educational and psychological, bordering on stress. Having studied the health of students during the pandemic, I.E. Sharova concluded that it is impossible to arrange a health-preserving environment with virtual learning. A student breaks away from real life, loses socialization (live communication), is in a virtual environment and, under these conditions, is deprived of the opportunity to think and make conclusions

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independently, which affects his/her mental abilities, such as the ability to feel, emotion, which is even worse – these circumstances force him/her to withdraw into his/her own world.

The inadequacy of such forms of education leads to personal perversions and impaired socialization, loss of social skills.

Education is not only the process of obtaining information as a result of learning, but also the development of abilities, unlocking the potential of students and preparing them to become a successful member of society.

Prolonged stay in a confined space is unsafe for the psyche. This is due to the fact that forced isolation in conditions of a tense information background can cause mental disorders and even severe forms of depression. The concern of psychologists and psychiatrists, causes academic stress for students, its impact on their academic performance, and, therefore, on health, as due to the lack of online/distance learning experience, students with low socioeconomic status become more susceptible to stress during this pandemic due to continuing difficult conditions such as lack of access to Internet resources (such as computers and Internet connection).

According to E. Yang, during the peak of the spread of Covid-19, the number of requests for psychological help increased and the requests were caused by anxiety-depressive symptoms. Interesting study is presented by D.V. Sochivko, who developed the author's methodology Reaction to Frustration of Self-Isolation, where, according to the data presented, it can be concluded that frustration during self-isolation is delayed and will still backfire, if not in behavioral models, it will act as a trigger in the event of a confluence of favorable negative factors. One of the parameters that emerges when launching depth effects is the question of the characteristics of temperament, which is presented in the first paragraph of the methodology. The same opinion is shared by Iranian scientists Zandifar A., Badrfam R., whose studies during the pandemic noted an increase in the number of mental disorders, confirming the studies by Dong L., Bouey J., conducted in China and designated as a mental health crisis population during the period of self-isolation and warned about the consequences of this crisis. Studies conducted in Japan by Qiu J., Shen B., Zhao M., et al ... revealed an increase in anxiety and stress in the population associated with COVID-19.

In February 2020, in China, Huang Y., Zhao N. conducted an Internet survey, during which 7 thousand respondents were interviewed. According to

the results of this study, it was found that signs of generalized anxiety disorder were found in 35.1 %, sleep disorders – in 18.1 %, and signs of depression – in 20.1 %.

Study by M.Yu. Sorokin and E.D. Kasyanov during a pandemic and forced self-isolation revealed the peculiarities of psychological reactions characteristic of this time and came to the conclusion that a post-like stage of secondary manifestations of self-isolation still awaits us.

The negative consequences of quarantine, affecting the psyche of people, are quite dangerous and can persist even 3 years after self-isolation and be a predictor of symptoms of other disorders. D.I. Ostrovsky and T.I. Ivanova is a very relevant study and came to the conclusion that at present it is important to study the mental state of students in the changed conditions. Quarantine measures are a thing of the past; students return to normal life. However, it is already possible to make cautious predictions about the long-term consequences of prolonged isolation. Forced self-isolation negatively affects their emotional state and contributes to symptomatic manifestations of severe depressive conditions, anxiety, neurosis and PTSD, and students in this situation are at risk. I.V. Koltsov, and V.V. Dolganin pointed out long-term post-covid stress and the impossibility of getting out of it without the use of special rehabilitation measures and medical and psychological support of students during the period of self-isolation.

These conditions can negatively affect individual and collective psychological health, therefore, it is necessary to plan and develop effective strategies to reduce the negative psychological consequences associated with a pandemic.

## 2 STUDY METHODS

The aim of this study was to study the individual-typological characteristics and psychological characteristics of the personality of students, which contribute to the formation of depressive symptoms of various severity during a pandemic and forced self-isolation. The main empirical components of this study took place in three stages, which included testing according to various indicators during the period of students coming out of self-isolation.

The study was carried out on the basis of the Dagestan State Medical University. Achievement of the set goal was subject to the informed consent of the students. The empirical base of the study was 208 students. The age group of the investigators ranged

from 19 to 21 years old. The distribution of the sample by gender was equalized.

The mental health examination procedure reflected the presence of symptoms of depression, for the level of which we used the Russian-language version of the PHQ9 screening test recommended by the National Medical Research Center for Therapy and Preventive Medicine.

The procedure for the study of personal characteristics was carried out using the questionnaire of dominant character traits of K. Leonhard - G. Shmishek designed to diagnose the type of accentuation of the personality character. Psychological personality traits were studied by means of an individual-typological questionnaire by L.N. Sobchak (ITQ).

Statistical analysis was performed using SPSS 20 for Windows.

### 3 STUDY RESULTS

To determine depressive symptoms, we used the Russian-language version of the PHQ9 depression screening test. Its advantages are ease of use and linguistic adaptation. It has 5 scales, depending on the number of points of which the severity of the depressive state is distributed:

- from 1 to 4 - absent
- from 4 to 10 - no intervention required
- from 11 to 15 - requires minimal escort
- from 16 to 20 - requires a visit to a doctor
- from 21 to the threshold - requires medical attention and medication.

In our study, we defined the distribution of the first scale data as the absence of signs of depression. The second and third scales as the presence of signs of mild depression. Scores on the fourth scale were associated with moderate severity of depression. The distributions on the fifth scale were assigned to the risk category for severe depression.

The presence of the severity of depression at this stage shall have shown the number of students whose quality of life worsened and there were certain emotional disorders, expressed by depressive symptoms. The quantitative data obtained with PHQ 9 was distributed as follows. 43 students (20.68 %) had no signs of depression. Signs of mild depression were observed in 126 students ( 61. 00 %). A moderate severity of the depressive state was observed in 37 students (17.32 %). Signs of a severe depressive state were diagnosed in two students (1 %)

The data obtained allowed us to divide the total sample into three groups according to the severity of depressive symptoms.

Therefore, from this population sample, we formed a sample set of three groups of students to test our hypothesis that individual-characterological personality traits correlate with the level of depression and the severity of its course during forced self-isolation.

The first group of students consisted of 39 students with moderate and severe levels of depression. The second group consisted of 45 students with signs of mild depression. The third group was formed of 43 students who showed no signs of depression.

The first and second groups of students were experimental, and the third — control one. All three groups of students were equal in terms of gender and age.

The next stage of the study was carried out with three groups of students and consisted in the study of the personal characteristics of students for the study of which we used:

- questionnaire of dominant character traits of K. Leonhard - G. Shmishek, designed to diagnose the type of accentuation of the personality character;
- an individual typological questionnaire (ITQ) to assess the psychological characteristics of a person.

Distribution of dominant character traits when using the questionnaire (K. Leonhard - G. Shmishek) showed a combination of the following types of accentuations:

In the first group of students (with moderate severity of depression), the distribution of accentuations was distributed according to the following types: anxious ( $78.47 \pm 3.95$  %), emotive ( $63.15 \pm 4.99$  %), dysthymic ( $56.41 \pm 3.96$  %), stuck ( $53.78 \pm 5.21$  %).

In the second group of students (with mild signs of depression), the distribution of accentuation types was somewhat different, and such types as emotive ( $71.49 \pm 3.99$  %), stuck ( $61.49 \pm 5.1$  %), anxious ( $47.21 \pm 4.1$  %), demonstrative ( $41.34 \pm 4.9$  %), hyperthymic ( $32.22 \pm 4.9$  %).

The distinctive characteristics of the control group in relation to the subjects of the comparative (experimental groups) were the absence of accentuations ( $91.00 \pm 5.01$  %).

### 4 DISCUSSION OF RESULTS

Signs of a severe depressive state were found in 2 girls out of 208 who took part in the testing. Most of

the surveyed students — 126 out of 208 surveyed, which is 62 %— still have symptoms of mild depression with a large advantage of girls. There were no signs of depression in 43 (20.68 %) students out of 208, most of whom were young men. Therefore, the presence of depressive symptoms of various severity levels during a pandemic and forced self-isolation was recorded in 79, 32 % of students. At the same time, 20.68 % of students have no depressive symptoms.

The distribution of character accentuations affecting the occurrence of depressive symptoms of various severity showed the presence of statistically significant differences in personality characteristics (at  $p = <0.001$ ).

The general characterological features of the personality of students with severe and moderate severity of depressive states to the group of students are the course of depressive symptoms, which is represented by a milder form, were the presence of such types of character accentuations as –emotive type (63.15 % to 71.49 %) – high rates as in the first group of subjects and the second one.

The anxious type is higher in the first group than in the second one (from 78.47 % to 47.21 %). The stuck type is higher in the second sample than in the first one (from 61.49 % to 53.48 %).

Distinctive features were: for the first group – dysthymic type (56.41 %) not identified in the second group and demonstrative (41.34 %) with a hyperthymic type (32.22), which was not present in the first group.

We determined the psychological characteristics of the personality using the individual typological questionnaire of L.N. Sobchak (ITQ), which was carried out only with the first two groups of samples.

The first group of subjects was characterized by the presence of emotional susceptibility and pessimism in assessing the prospects, they are labile, prone to rigid fixation on anxiety factors, introverted and have communication problems that enhance the formation of depressive symptoms.

In the second group of subjects, there were both common and distinctive psychological traits in comparison with the first group of students and were distributed as follows – they are also anxious, sentimental, prone to emotional involvement, labile, but unlike the first group of subjects, they are characterized by extraversion, which in combined with dysthymia and demonstrativeness during the period of self-isolation leads to a decline in mood and frustration.

In the course of a comparative analysis of the individual-typological characteristics of the

personality of students who tend to fall into a depressive state during the period of forced self-isolation, it was revealed that formation of depressive symptoms is characterized by the dominance of the following personal properties: a high level of sentimentality, anxiety, lability of the nervous system, with a significantly pronounced tendency to rigidity. Wherein, the lack of communication during the period of forced self-isolation as a situational factor in formation of socio-psychological maladjustment increases mental stress during this period and leads to frustration, contributing to the bifurcation of depressive symptoms, determined by the individual typological characteristics of the individual.

## 5 CONCLUSION

Currently, there is a need to study post-covid manifestations and their impact on the mental health of the younger generation. The intensity of aggressive outbursts in recent years proves that the consequences of a pandemic are determined not only by the penetration of the virus into the human body. The purpose of this paper was to study the personality characteristics of students and the effect of self-isolation and other quarantine measures on the mental health of students to determine the targets of psychotherapeutic work and further rehabilitation measures, as well as to determine the relationship of character accentuations with various indicators of psychological well-being, expressed in an increase in depressive symptoms during the period of self-isolation.

The analysis of the data obtained allows us to conclude that most of the students during a pandemic and forced self-isolation have mental health disorders, expressed by mild depressive symptoms, the formation of which is influenced by the personality type, contributing to the aggravation of the psychopathological state.

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