

**CDSSES 2020****IV International Scientific Conference "Competitiveness and the development of socio-economic systems" dedicated to the memory of Alexander Tatarkin****EMOTIONAL STATE OF REGION'S RESIDENTS DURING THE EMERGENCY PANDEMIC OF CORONAVIRUS**

Diana Tsiring (a), Irina Ponomareva (b)\*

\*Corresponding author

(a) Chelyabinsk State University, 129, Kashirinykh Br. St., Chelyabinsk, Russia, l-di@yandex.ru

(b) Chelyabinsk State University, 129, Kashirinykh Br. St., Chelyabinsk, Russia, ivp-csu@yandex.ru

**Abstract**

In light of the emergence of the coronavirus disease 2019 (COVID-19), which swept the whole world, and its spread, which received the status of a pandemic, the governments of most countries of the world have introduced restrictive measures of a social and economic nature, which can generally be described as an extreme situation. The pandemic is spreading around the world in different ways. The countries entered a pandemic situation at different times, which proceeded in each territory in its way: there are countries with a greater generalization of the disease among the population, a more severe symptomatic course, a high mortality rate, and vice versa, states with a low percentage of cases and a more significant number of recovered. The heterochronism of the development of the pandemic in the world is experienced differently by individual countries' inhabitants. Following the dynamics of the pandemic situation's development, states introduce appropriate restrictions that have both economic and socio-psychological consequences for people. Citizens experience incredible stress and tension. Therefore, the study's purpose was to study the emotional state of the region's inhabitants at various stages of the emergency coronavirus pandemic. The results obtained indicate the peculiarities of the psycho-emotional state of residents of different regions depending on the phase of the pandemic, and the specifics of the subjective experience (expectations of the future, adherence to the self-isolation regime, readiness for economic changes) of the situation of an emergency COVID-19 pandemic.

2357-1330 © 2021 Published by European Publisher.

*Keywords:* COVID-19, emotional state, extreme situation, pandemic, psychological well-being

## **1. Introduction**

The pandemic situation associated with the new coronavirus infection has led to the destruction of the familiar life-world and the impossibility of realizing life plans under imposed conditions (Pervichko et al., 2020). The current pandemic has a high-stress potential, as it threatens the life and health of the population (Kharlamenkova et al., 2020). Long-term preservation of the pandemic situation, its global scale, as well as the significance of changes in the daily life of every person, leads to a cumulative stress effect (Enikolopov et al., 2020). Measures of an epidemiological response (restriction of freedom), together with an infectious disease (method and rate of transmission of infection, the possibility of asymptomatic course), lead to an increase in anxiety, fear, depression (Arden & Chilcot, 2020). Such psychological ill-being of the population, being in a negative psycho-emotional state, cannot contribute to positive dynamics in the fight against the pandemic (Wang et al., 2020). Fear of infection and fear of death cannot be the only reason for implementing anti-pandemic measures (Skotnikova et al., 2020). The opposite effect occurs - a decrease in fear since this fear is intensively used. "When fear becomes dysfunctional and a feeling of helplessness accompanies anxiety, this contradiction is resolved by underestimating the likelihood and severity of the threat," says Nestik (2020). Underestimating the psychological consequences only exacerbates the situation, leading to an increase in infections with coronavirus infection.

## **2. Problem Statement**

The problem is that the focus of attention when introducing measures to combat the spread of coronavirus infection is economical and political, but not socio-psychological factors of the pandemic.

## **3. Research Questions**

The pandemic situation associated with the new coronavirus infection COVID-19 is considered an extreme uncontrolled life situation, requiring significant adaptation resources. Managing this situation without considering psychological factors, relying only on economic factors, leads to total mistakes, particularly to an increase in morbidity and, consequently, high mortality. We posed the following research questions:

### **3.1. Does the subject's psychological state depend on the phase of the pandemic in the region of residence?**

The answer to this question is vital for making timely management decisions based not only on economic rationality but also on society's psychological state.

### **3.2. Is the psycho-emotional state of the region's inhabitants related to the content of their expectations of the consequences of the pandemic, changes in life plans, and adherence to the self-isolation regime?**

The answers to these questions will demonstrate the psychological impact of an extreme pandemic situation and its consequences on the psychological state of the population, the readiness to comply with sanitary and epidemiological standards, and accept inevitable changes.

#### **4. Purpose of the Study**

The study investigates the psycho-emotional state of the region's inhabitants at various stages of the emergency coronavirus pandemic.

#### **5. Research Methods**

As a research method, we used a questionnaire developed by the Federation of the Italian Psychological Society (Dr. Vito Tummino, Dr. Isabel Fernandez, Dr. Fulvio Frati, Prof. Lorraine Mangione, Dr. Pinluigi Palma and Prof. Phil Zimbardo), aimed at assessing the emotional state in situations of an emergency coronavirus pandemic. A questionnaire aimed at identifying both sociological parameters (gender, age, social status) and identifying the nature of the expectations of the consequences of the pandemic, the characteristics of the attitude towards the pandemic situation. To verify the hypotheses, the mathematical statistics methods are used: descriptive statistics and the mathematical method of comparing samples, the Mann – Whitney U-test. We used Google forms to collect data (Boyko et al., 2019). The study involved 156 people, including 92 people living in the Chelyabinsk region, 16 people from the Central region of the Russian Federation, 28 people from the Siberian region of the Russian Federation.

#### **6. Findings**

Psychological diagnostics of the psycho-emotional state took place in different periods. So, residents of the Chelyabinsk region and the Central region filled out questionnaires in May 2020. According to Rospotrebnadzor data, the Central Region of the Russian Federation (in particular Moscow) was at the peak of an intensive increase in the incidence. The Chelyabinsk Region was beginning to enter a phase of intensive growth. Residents of the Siberian region answered questions about their psycho-emotional state in June 2020. The Siberian Region (in particular, the Krasnoyarsk Territory and the Republic of Khakassia) were distinguished during this period by a relatively favorable epidemiological situation.

A comparative analysis of residents' emotional state in a regional isolate demonstrates some specific features (table 1).

**Table 1.** Average indicators of the psycho-emotional state of residents of different regions of the Russian Federation

Index	Ural region	Central region	Siberian region
Psycho-emotional state	11.27	10.81	11.11

Residents of Russian regions experience emotional states of varying intensity at various stages of the coronavirus emergency pandemic, expressed in such indicators as the intensity of anxiety states, mental anxiety and psychological stress, and somatic anxiety (physical problems caused by anxiety) and psychological tension in general. A comparison of the indicator of psycho-emotional state indicates the absence of differences between the respondents.

The average values of the psycho-emotional state indicators in the situation of a coronavirus infection pandemic in the studied regions of Russia (Ural, Central, Siberian regions) do not differ significantly. However, the epidemiological situation in the regions is different. Residents of the Central region of Russia (in particular, Moscow, St. Petersburg) in a situation of intensive growth still demonstrate a more favorable psycho-emotional state than respondents from the Chelyabinsk region and Siberia. Perhaps there is a connection between regional measures to combat coronavirus infection, state support for the economic sphere. It can be assumed that the Chelyabinsk region residents and Siberia's dire state is associated with the fear of lack of control over the economic consequences that will occur after the pandemic, with negative expectations of an economic outcome. Next, we tested this assumption using the example of the Chelyabinsk region.

We studied in detail the factors associated with the psycho-emotional state of the residents of the Chelyabinsk region, such as changes in life plans in connection with the pandemic, expectations of the consequences of the pandemic, expectations of changes in the economic situation.

We found differences in the psycho-emotional state associated with life plans changes due to the pandemic ( $p = 0.019$ ). Table 2 shows the psycho-emotional state indicators in the Chelyabinsk region residents with varying degrees of changes in life plans.

**Table 2.** Comparative analysis of indicators of psycho-emotional state with various changes in life plans

Changing life plans	N	Indicator of psycho-emotional state
By cardinal changes in life plans	46	14.02
Minor changes in life plans	39	9.92
No changes in life plans	11	4.55

As shown in Table 2, most of the 46 people (48% of the sample) affected cardinal changes in life plans. This sample of respondents demonstrates the highest psycho-emotional tension ( $M = 14.02$ ). This means that citizens were not ready for such adjustments in their life plans, and they need professional psychological assistance. 39 people (40% of respondents) had minor changes in planning. Their emotional state is well-being, and finally, 11 people (12% of respondents) have no changes, which means they are in the most favorable psycho-emotional state (Rasskazova et al., 2020).

The Chelyabinsk region's psycho-emotional state's differences were also obtained, depending on the content of generalized expectations of the pandemic consequences (Table 3).

As can be seen from Table 3, most of the subjects (43%) demonstrate optimistic expectations of the future, and, as a consequence, have the most favorable psychosocial state ( $M = 8.02$ ). These results are consistent with a study conducted in collaboration with sociologists from the Center for Social Design "Platform" and OMI. Researchers have identified one of the types of attitudes towards the pandemic - optimists. They are characterized by higher trust in social institutions and confidence that they contribute to the common cause (Stankovska et al., 2020).

21% of respondents have pessimistic expectations of the pandemic's consequences and the direst state ( $M = 19.55$ ). Perhaps this category of citizens needs psychological help. This sample of respondents is characterized by such psychopathological symptoms as an increased interest and desire to track information about COVID-19, contacts with people from epidemiologically dangerous regions, a negative coping style, and a low level of social support (Yu et al., 2020).

Paying attention to the majority of respondents, we can note that these results indicate that, despite the expectation of drastic changes in the near future, the majority of residents of the region expect a favorable outcome of events. Respondents believe that the pandemic will end positively (table 3).

**Table 3.** Comparative analysis of indicators of psycho-emotional state with different expectations of the consequences of the pandemic

<b>Waiting for the effects of the pandemic</b>	<b>N</b>	<b>Indicator of psycho-emotional state</b>
Optimistic expectation ("Everything will be fine and even better")	41	8.02
Neutral expectation ("Nothing will change")	35	10.34
Pessimistic expectation ("A pandemic situation will change my life for the worse")	20	19.55

The uniqueness of the situation under study is that the pandemic has affected all economic spheres of human life Stankovska et al. (2020). The effectiveness of measures taken to prevent and combat coronavirus infection depends on how it is reflected in the subjective perceptions of various categories of citizens (Sorokin et al., 2020a). Thus, the results obtained when comparing the psychoemotional state of residents of the Chelyabinsk region depending on the content of expectations of economic changes caused by the pandemic are of particular interest (table 4).

We analyzed the expectations of citizens regarding changes in the economic situation in their lives, whether they expect positive changes, negative changes, or whether their economic well-being will remain unchanged after the end of the pandemic (see table 4). So, 33% of respondents are worried that the economic situation will change insignificantly (N = 19) or significantly for the worse (N = 7), and it is they who demonstrate the highest indicators of psycho-emotional stress. Expectations of negative consequences and uncertainty can cause stress, and uncertainty of the future is experienced negatively and causes tension (Horesh & Brown, 2020). Residents of the Chelyabinsk region as an industrial region of Russia in the context of the spread of coronavirus infection are more concerned about the economic outcome of the pandemic. Given that we got no differences in emotional status between respondents who have and do not adhere to the modes of isolation (P = 0,318), it can be concluded that the residents of the Chelyabinsk region are more likely to concern the economic crisis, decline in income, economic prosperity in General, the threat of coronavirus infection. Respondents to a lesser extent are characterized by the fear of Contracting the infection and more concerned about economic changes.

Accordingly, it can be assumed that the active actions of these citizens will be aimed at stabilizing and improving their economic situation, despite the measures taken to combat the spread of coronavirus infection. An extreme manifestation of this trend may be the complete disregard of measures aimed at combating the spread of coronavirus infection.

**Table 4.** Comparative analysis of indicators of psycho-emotional state with different expectations of changes in the economic situation

<b>Expectations of changes in the economic situation</b>	<b>N</b>	<b>Indicator of psycho-emotional state</b>
No, it won't change at all	32	9.72
Will change slightly for the better	19	7.32
Will change slightly for the worse	25	<u>15.36</u>
Will change significantly for the better	13	6.6 2
Will change significantly for the worse	7	<u>23.14</u>

## 7. Conclusion

Residents of the regions, experiencing an extreme situation associated with a pandemic of the new coronavirus disease, experience increased anxiety, stress, negative expectations of the future, and psychological tension. These psychological problems of the region's inhabitants are also associated with personal situations, particularly with a change in life plans, with expectations of economic changes and the consequences of the pandemic in general (Sorokin et al., 2020b). State efforts to combat coronavirus infection were aimed primarily at solving medical and economic problems. However, the degree of

psychological tension of the population dropped out of the focus of attention, which sometimes turned into social tension (increased aggressiveness, local conflicts, a large number of manifestations of deviant behavior). The resources of psychological services that could have been directed to reduce or neutralize citizens' psychological tension are not connected to the state (regional) response in the emerging pandemic of the coronavirus (COVID-19). The expectations of the future, changes in life plans, changes in the population's economic situation after the pandemic, and the influence of these factors on citizens' psycho-emotional state are not taken into account.

The results demonstrated the differences in the respondents' psycho-emotional well-being, depending on the pandemic phase (Gritsenko et al., 2020). Secondly, the differences in citizens' psycho-emotional well-being depend on the pandemic's adjustments in their life plans. 20% of the residents were not ready for changes. Therefore, they demonstrate pessimistic expectations and an unfavorable psycho-emotional state. Thirdly, residents of the Chelyabinsk region are more concerned about the pandemic's economic consequences than the threat of infection. As a result, residents of the region are making efforts to stabilize their economic position, ignoring self-isolation, compliance with measures to prevent infection with coronavirus infection. This means that the fear of contracting coronavirus infection is decreasing. It leads to an increase in the region residents' incidence, and therefore to the leveling of the region's measures to combat the pandemic.

Thus, ignoring the pandemic's socio-psychological factors only exacerbates the situation, leading to an increase in infection. It is necessary to learn lessons from this extreme situation. When such events unfold, include a block of measures of a socio-psychological nature in the form of extended emergency psychological assistance, psychological counseling of the population, and psychologists' involvement in the work of the media. It will help reduce psychological tension, obtain data on psychological factors of the course of the pandemic.

As prospects for further research, we can note the possibility of re-studying the psycho-emotional state of the inhabitants of the regions participating in the study and studying coping behavior in a situation of an emerging pandemic.

## Acknowledgments

The authors express their gratitude to the President of the Federation of the Italian Society of Psychology, Dr. Vito Tummino, for the provided psychodiagnostic questionnaire "Psycho-coronavirus" and the invitation to participate in a cross-cultural study to assess the psycho-emotional state in the situation of a coronavirus infection pandemic.

## References

- Arden, M. A., & Chilcot, J. (2020). Health psychology and the coronavirus (COVID-19) global pandemic: A call for research. *British journal of health psychology*, 25(2), 231–232. <https://doi.org/10.1111/bjhp.12414>
- Boyko, O. M., Medvedeva, T. E., Enikolopov, S. N., Vorontsova, O. Yu, Kazmina, Kuznetsova, S. O., & Efremov, A. G. (2019). Using web-based data collection (Google-forms) for the exploration of the self-harm. *Medical psychology in Russia: electronic scientific journal*, 11(6). <http://mprj.ru>

- Enikolopov, S. N., Boyko, O. M., Medvedeva, T. I., Vorontsova, O. Yu., & Kazmina O. Yu. (2020). Dynamics of psychological responses at the initial stage of the COVID-19 pandemic. *Psychological and pedagogical research*, 12(2), 108–126. <https://doi.org/10.17759/psyedu.2020120207>
- Gritsenko, V. V., Reznik, A. D., Konstantinov, V. V., Marinova, T. Yu., Khomenko, N. V., & Izrailovits, R. (2020). Fear of coronavirus disease (COVID-19) and basic beliefs of the individual. *Clinical psychology and special education*, 9(2), 99–118. <https://doi.org/10.17759/cpse.2020090205>
- Horesh, D., & Brown, A. D. (2020). Traumatic stress in the age of COVID-19: A call to close critical gaps and adapt to new realities. *Psychological Trauma: Theory, Research, Practice, and Policy*, 12(4), 331-335. <https://doi.org/10.1037/tra0000592>
- Kharlamenkova, N. E., Bykhovets, Yu. V., Dan, M. V., & Nikitina, D. A. (2020, May 13). *Perezhivaniye neopredelennosti, trevogi, bespokoystva v usloviyakh COVID-19* [Experiencing uncertainty, anxiety, and anxiety in the conditions of COVID-19]. [http://www.ipras.ru/cntnt/rus/institut\\_p/covid-19/kommentarii-eksp/har-1.html](http://www.ipras.ru/cntnt/rus/institut_p/covid-19/kommentarii-eksp/har-1.html)
- Nestik, T. (2020, June 23). Coronavirus: challenges to individuals, society, and the state. <https://psy.su/feed/8338/>
- Pervichko, E. I., Mitina, O. V., Stepanova, O. B., Konyukhovskaya, Yu. E., & Dorokhov, E. A. (2020). Perception of COVID-19 by the Russian population in the context of the 2020 pandemic. *Clinical psychology and special education*, 9(2), 119–146. <https://doi.org/10.17759/cpse.2020090206>
- Rasskazova, E. I., Leontiev, D. A., & Lebedeva, A. A. (2020). Pandemic as a challenge to subjective well-being: anxiety and coping. *Counseling Psychology and Psychotherapy*, 28, 90-108. <https://doi.org/10.17759/cpp.2020280205>
- Sorokin, M., Kasyanov, E., Rukavishnikov, G., Makarevich, O., Neznanov, N., Lutova, N., & Mazo, G. (2020a). Structure of anxiety associated with the COVID-19 pandemic in the Russian-speaking sample: results from on-line survey. *Bulletin of RSMU*, 3, 77–84. <https://doi.org/10.24075/vrgmu.2020.030>
- Sorokin, M. Yu., Kasyanov, E. D., Rukavishnikov, G. V., Makarevich, O. V., Neznanov, N. G., Lutova, N. B., & Mazo, G. E. (2020b). Psychological reactions of the population as a factor of adaptation to the COVID-19 pandemic. *V.M. Bekhterev review of psychiatry and medical psychology*, 2, 87-94. <https://doi.org/10.31363/2313-7053-2020-2-87-94>
- Stankovska, G., Memedi, I., & Dimitrovski, D. (2020). Coronavirus COVID-19 disease, mental health and psychosocial support. *Society Register*, 4(2), 33-48. <https://doi.org/10.14746/sr.2020.4.2.03>
- Skotnikova, I. G., Egorova, P. I., Ogarkova (Dubinskaya), Yu. L., & Zhiganov, L. S. (2020). Psychological features of experiencing uncertainty in the covid-19 Epidemic. *Social and economic psychology*, 5(2), 245-268. <https://doi.org/10.38098/ipran.sep.2020.18.2.008>
- Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 Corona Virus Disease (COVID-19) epidemic among the general population in China. *International Journal of Environmental Research and Public Health*, 17(5), 1729. <https://doi.org/10.3390/ijerph17051729>
- Yu, H., Li, M., Li, Z., Xiang, W., Yuan, Y., Liu, Y., & Xiong, Z. (2020, March 31). Coping Style, Social Support and Psychological Distress in the General Chinese Population in the Early Stages of the COVID-2019 Epidemic. *The Lancet*. <http://doi.org/10.2139/ssrn.3556633>