

Covid-19 Peritraumatic Distress In Russian Sample: Suffering Vs personality Growth

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Abstract.

Research in the field of psychological health during the Covid-19 pandemic plays an important role in determining the general stress level and identifying the need for psychological helping. The numerous data all over the world claim that people need for support during the ongoing crisis. Therefore, there is an increasing need for rapid identification of individuals suffering psychologically for more effective and purposeful interventions and systematic assistance to the patients without psychiatric disorders. A similar tool for identifying and monitoring the assessment of the level of distress specific to Covid-19 is the Covid-19 Peritraumatic Distress Index (CPDI) developed by researchers at the Shanghai Mental Health Center (Qiu et al, 2020), It was also tested in Iran, Italy, India, Germany, Spain. The Covid-19 Peritraumatic Distress Index was adapted in Russia in 2020 by the Department of Psychological Helping and Resocialization of the Psychology Faculty at Lomonosov Moscow State University (under the supervision of prof. M. Sh. Magomed-Eminov). Subjects: 463 people, including 66 patients of medical institutions repurposed for the treatment of COVID-19. Results. The Russian-language version of the questionnaire presented in the article has high reliability-consistency (Cronbach's α -0.87). The factor structure includes five factors. The convergent validity of the technique shown by its connection with the severity of traumatic tendencies of avoidance and invasion (according to the diagnostic criteria of post-traumatic stress disorder). CPDI is supposed to be effective brief instrument for diagnosing and modelling the strategies of helping and psychological support for various population groups involved in continuing pandemic crisis. Authors propose cultural-activity and meaning approach to personality work with his\her own traumatic experience to resist distress, but also show courage, resilience, personality growth.

Keywords: Covid-19, Peritraumatic Distress Index, extreme situation, stressors, concern, anxiety, psychometric indicators, negative, neutral and positive consequences of an extreme situation, coping, personality work.

Introduction

The COVID-19 epidemic has caused serious threats to the physical health and life of people as a whole. It has also raised a wide range of psychological problems, such as panic disorder, anxiety and depression [4 — 7; 9; 10; 11; 14; 15; 21; 22; 29; 30]. The main purpose of the Peritraumatic Distress Index Russian version adaptation was to measure the prevalence and severity of distress for the population of the Moscow mega polis (Russian Federation) and to ensure the development and implementation of appropriate state policies in the field of mental health for an effective and efficient solutions. The initial study [24], was the first nationwide large-scale study of psychological distress among the Chinese

population during the rapid COVID-19 epidemic. Data collection began on January 31, 2020, the day when WHO declared the New SARS-CoV-2 in China a public health emergency of international importance. The Siuvo intelligent psychological system used for the survey: respondents answered questionnaires online using QR codes in open access. The questionnaire included relevant diagnostic criteria for specific phobias and stress disorders specified in the International Classification of Diseases (ICD in the 11-th revision) and expert opinions of psychiatrists on manifestations of anxiety, depressive states, specific phobias, as well as demographic data of respondents. The COVID-19 Peritraumatic Distress Index (CPDI) measured the frequency of anxiety, depression, specific phobias, cognitive changes, avoidance and compulsive behavior, physical symptoms and loss of social functioning over the past week, ranging from 0 to 100 points. Scores between 28 and 51 indicate a mild or moderate distress, a score of ≥ 52 indicates a serious disorder. Psychiatrists from the Shanghai Mental Health Center checked the reliability of CPDI (Cronbach's α CPDI = 0.95 ($p < 0.001$)). Almost 35% of respondents had severe psychological distress (29.29% had scores on the index in the range from 28 to 51, and 5.14% of respondents' scores were ≥ 52). The analysis showed that the CPDI indicator is associated with a person's gender, age, education, occupation and region. Female respondents showed a significantly higher level of distress ($M (SD) = 24.87 (15.03)$) than men ($21.41 (15.97)$, $p < 0.001$). The authors show that women are much more vulnerable to stress and are more likely to develop post-traumatic stress disorder. People under the age of 18 had the lowest CPDI ($M (SD) = 14.83 (13.41)$); persons aged 18 to 30 years or over 60 years had the highest CPDI ($M (SD) = 27.76 (15.69)$ and $27.49 (24.22)$, respectively). People with higher education, as a rule, experienced more distress. Labor migrants had the highest level of distress ($M (SD) = 31.89 (23.51)$, $F = 1602.501$, $p < 0.001$). The CPDI index of respondents in the middle region of China (including Hubei, the center of the epidemic) was the highest (average value (SD) $30.94 (19.22)$, $F = 929.306$, $p < 0.001$), since this region was most seriously affected by the epidemic. Working adults in the most affected areas of China had worse health conditions, experienced more suffering and lower life satisfaction. The study in China also showed that the level of distress decreases significantly over time. That is explained by effective prevention and control measures taken by the Chinese government, especially nationwide quarantine, medical care and directed support from the world community, other effective measures (such as public education, strengthening individual protection, medical isolation, movement control, reducing the number of meetings).

In March 2020, Iran became one of the most affected countries, except for China, with a high mortality rate (7.6%). The Covid-19 outbreak in Iran aggravated by the current US sanctions against Iran, led to direct or indirect difficulties in prevention and diagnosis. The article on CDPI adaptation [16] presents empirical data on the level of distress and its predictors in adult Iranians during the Covid-19 pandemic (1,058 adults from all 30 provinces of Iran). CPDI in Iranian adults ($M = 34.54$; $SD = 14.92$) was significantly higher than in Chinese adults ($M = 23.65$, $SD = 15.45$) [24]. It was evident that the predictors

in Iran differed from those in China. In Germany [18], the average CPDI score for the sample (Mean = 21.9, SD = 12.6), which is lower than the original Chinese data, and even lower in Italy (M = 18.61, SD = 12.20) [13]. The findings on the difference in predictors of distress indicate the need to study the factors of psychological health in different countries during the Covid-19 pandemic in order to effectively identify and check those who are more vulnerable psychologically.

The purpose of presented work is to develop and test the Russian version of the Questionnaire - COVID-19 Peritraumatic Distress Index.

Material and methods.

The method of the Covid-19 Peritraumatic Distress Index (CPDI) [24], validated on 52,000 people of the adult population of China and tested on Iranian (1058 people from 30 provinces), as well as on Italian, German, Indian [17], Spanish [23] samples. The test of the impact of stressful events (Impact of Event Scale), adapted by M. Sh. Magomed-Eminov [3]. The Post-Traumatic Growth of personality Inventory – PTGI (Tadeshi and Calhoun [31] in the adaptation of M. Sh. Magomed-Eminov [3].

Russian version of the Scale - COVID-19 Peritraumatic Distress Index (CPDI) adaptation procedure consisted of the following stages: initial translation from English to Russian, reverse translation (from Russian into English) and translation examination. The specialists in the field of extreme psychology, psychological Helping and resocialization (MSU) prepared the text in Russian. Then they corrected the statements, and examined the final version of the questionnaire. After identifying the non-working items, they reformulated the items with the participation of 5 experts and 10 subjects (not psychologists). The study was held among patients and medical staff of hospitals repurposed for the treatment of COVID-19. We evaluated the psychometric indicators of the questionnaire. The primary analysis of the distribution of points, reliability and internal structure of the method was carried out. At this stage, indicators of descriptive statistics were calculated, reliability and consistency of points were identified, correlations and factor analysis was carried out. The connections of socio-demographic characteristics (gender, age, education) with the indicators of the CPDI were revealed; the convergent validity of the methodology was evaluated.

Study participants. 463 participants took part in the study; of them, men -22.8 % (n = 105) and women -77.2% (n = 358). The age range was from 18 to 83 years, the average age was 24.86 years (SD =11.35). Educational status: 4.3% (n = 28) of respondents with secondary education, 15 % – n = 69) - with higher education, 79 % (n = 364) incomplete higher education (students and graduates of universities). Marital status: single-84.2 % (n = 389); married-15.7 % (n = 74).

Experts. Five experts, professional psychologists, qualified specialists in the field of psychological helping took part in the translation of the COVID-19 IPD, its correction and examination of the compliance of statements.

Data collection procedure. The Russian version of CPDI was tested in May-June 2020 (66 subjects aged 19-83 years [9]. The participants of this stage of the study were patients and medical staff of the Moscow clinical hospital, among whom were people who had been ill or were suffering from COVID-19. At this stage, the respondents filled out the questionnaire forms in writing. The study was continued in October-December 2020, 397 subjects, university students participated in it. According to the requirements of the on-line learning, the data were collected in electronic form.

Data processing procedure. The methods of nonparametric statistics (Spearman's ρ , Mann-Whitney U criterion) were used in the processing. The reliability assessment was carried out based on determining the internal consistency of the methodology issues (the Cronbach's alpha coefficient). Data processing was carried out in the program SPSS Statistics 28.0.0.0 (190).

Results Reliability-consistency. Reliability-the consistency of the methodology, determined using the Alpha-Kronbach criterion, is 0.87 in the total sample, which indicates its high reliability (Table No. 1).

Table No. 1. Reliability indicators of the COVID-19 peritraumatic distress Index (CPDI) questionnaire. The total index of peritraumatic distress

Var	N	min	max	M	SD	α Kronbach
Total Index CPDI	463	,0	74,0	25,57	14,05	0,87

All items of the COVID-19 IPD significantly correlate with the overall score (,45 - ,79, $p < ,01$). The analysis of these data indicates the presence of highly significant relationships (at $p\text{-level} < 0.01$) between individual items of the questionnaire with each other and with the overall score of the CPDI. The study analyzed data on the severity of COVID-19 IPD (Table No. 1).

Table No. 2 Average values and standard deviations of SDI points (n=463)

Points	M (SD) (n=463)
Compared to usual, I feel more nervous and anxious	1,650 (1,36)
I feel insecure and bought a lot of goods, such as medications, sanitizer, gloves, masks, and/or other home supplies	1,030(1,17)
I feel empty and helpless no matter what I do	1,291(1,37)
I feel sympathetic to the Covid-19 patients and their families. I feel sad about them.	2,727(1,22)
I feel helpless and angry about people around me, such as the governors and media	2,284 (1,39)

I am losing faith in the people around me	1,037(1,29)
I collect information about Covid-19 all day. Even if it's not necessary, I can't stop myself	,331(,73)
I will believe the Covid-19 information from all sources without any evaluation	,329(,75)
I would rather believe in negative news about Covid-19 and be skeptical about the good news	1,301(1,25)
I am constantly sharing news about Covid-19 (mostly negative news)	,133(,41)
I avoid watching Covid-19 news, since I am too scared to do so	,611(,98)
I am more irritable and have frequent conflicts with my family	,881(1,19)
I feel tired and sometimes even exhausted	1,881(1,47)
Due to feelings of anxiety, my reactions are becoming sluggish.	1,019(1,25)
I find it hard to concentrate	1,723(1,45)
I find it hard to make any decisions	1,385(1,390)
During this Covid-19 outbreak, I often feel dizzy, have back pain, or chest discomfort	,585(1,02)
During this Covid-19 outbreak, I often feel stomach pain, bloating, or other stomach discomforts	,485(,98)
I feel uncomfortable when communicating with others	1,170(1,35)
Recently, I rarely talk to my family	,739(1,64)
I cannot sleep well. I always dream about myself or my family being infected by coronavirus	,261(,67)
I lost my appetite	,483(,98)
I have constipation or frequent urination	2,217(1,49)
Total score	25,56(14,05)

Analysis of the convergent validity of the IPD. In the study, the correlation coefficient of Ro Spearman was used to analyze the relationship of the CPDI with the indicators of traumatic tendencies of the Impact of Event Scale, adapted by M. Sh.Magomed-Eminov [2]. A significant relationship was revealed $\rho = .567$ ($p < .01$), which indicates the possibility of delayed traumatic reactions developed in the shadow of peritraumatic distress caused by various factors. In the second series of the study, which was

conducted in the fall of 2020 (in 6 months after the announcement of the pandemic), the relationship of CPDI with the data of the questionnaire for Post – Traumatic personality growth-PTG (Tadeshi and Calhoun, adapted by M. Sh. Magomed-Eminov [2]) was studied. A significant relationship was revealed $\beta = .103$ ($p < .05$). These data suggest the possibility of overcoming the negative impact of peritraumatic distress in terms of the transformation of values, beliefs of the individual, its growth and development.

Table No. 3 The relationship of COVID-19 CPDI indicators with gender, education, COVID-19 disease and family status of respondents.

Variables	n	M	SD
	463	25,56	14,05
Gender			
male	105	20,43	12,34
female	358	27,08	14,11
Education			
secondary	28	24,39	14,88
Higher unfinished	364	25,94	14,00
Higher	69	24,00	13,49
Marital status			
single	389	25,28	14,01
married	62	26,92	13,42
divorced	8	20,38	14,35
Widow\	3	42,33	13,65
COVID-Disease			
Infected	93	28,17	14,17
Non-infected	367	24,84	13,87
COVID in relatives			
Болели	235	27,42	14,38
Не болели	228	23,58	13,32
Series			
Episode 1 (May-June 2020)	66	27,13	14,52
Episode 2 (October-December 2020)	397	25,31	13,91

Table No. 4 Analysis of differences (using the Mann-Whitney criterion) of CPDI indicators in the 1st and 2nd series of the study

Series	n	M	SD	P-level
Episode1 (May-June2020)	66	27,13	14,52	.261
Episode2 (October-December 2020)	397	25,31	13,91	

Statistical analysis of the CPDI did not reveal any differences in the severity of the CPDI in series 1 and 2 (Table No. 4).

Table No. 5 Analysis of gender differences in CPDI indicators using the Mann-Whitney criterion

Gender	n	M	SD	P-level
Male	105	20,43	12,34	.001
Female	358	27,08	14,11	

The statistical analysis carried out using the Mann-Whitney criterion allows us to assert that there are gender differences in CPDI indicators (Table 4). According to our data, the indicators of peritraumatic distress in women are significantly higher on average than in men ($p < .001$). The results obtained are consistent with the data of the Chinese sample, where the level of peritraumatic distress is also higher in women ($M (SD) = 24.87 (15.03)$ vs. $M (SD) = 21.41 (15.97)$, $p < 0.001$) in men.

Table No. 6. Correlation analysis using the Ro Spearman criterion of CPDI indicators with age, family and educational status

Variables	Po	P-level
Age	,034	,468
Education	-,025	,592
Marital status	,051	,269

The study analyzed the relationship of COVID-19 CPDI indicators with the age of the subjects, the educational and family status of the respondents (Table No. 6). There was no significant reliable relationship between these indicators.

Table No. 7. Correlation analysis using the Ro Spearman criterion of CPDI indicators with the presence of COVID disease in the respondents themselves or the disease in a close environment

Variables	β	P-level
COVID-Disease	,104*	,026
COVID in close ones	,121**	,009

Our study revealed a link between the presence of COVID-19 disease both in the respondent himself, and in his relatives and significant persons of the immediate environment, and the severity of the peritraumatic distress index (Table No. 7). The survivors of the COVID-19 contraction are characterized by higher indicators of the index of peritraumatic distress than for those who are not ill and have not encountered the disease in their family environment.

Table No. 8 EFA results using the principal component method (Varimax axis rotation, Kaiser normalization)

Scale points	Component					
	1	2	3	4	5	6
1	,583	,193	,238	-,094	,182	,278
2	,144	,305	,449	-,099	,555	,012
3	,794	,036	,172	,089	,033	,038
4	,091	-,041	-,006	,088	,757	,128
5	,089	-,017	,207	,134	,120	,791
6	,190	,059	,756	,041	-,022	,146
7	,019	,596	,340	,063	,282	,024
8	,070	,437	-,129	,372	,199	-,193
9	,223	,055	,451	,150	,286	,145
10	-,194	,609	,128	,155	,140	,098
11	,100	,334	-,038	,138	,472	-,021
12	,602	,297	,098	-,028	-,006	,254
13	,801	,073	,189	,103	,131	,047
14	,663	,230	,237	,168	,197	,130

15	,815	-,011	,043	,168	,066	,044
16	,742	-,033	,053	,255	,030	,079
17	,243	,152	,128	,682	,198	,141
18	,170	,119	,190	,784	-,016	,078
19	,296	,158	,642	,307	-,110	-,069
20	,352	,448	,153	-,025	-,191	,060
21	,175	,708	,020	,036	,122	,071
22	,383	,571	,014	,133	-,196	,068
23	,292	,158	-,039	,024	,017	,749

a Rotation converged in 8 iterations.

As a result of the application of the rotation method, we have identified six factors:

The first factor, which included the largest number of questions reflecting asthenia, a feeling of helplessness and indecision, anxiety, anxiety, depression, depression, a sense of isolation (14 out of 24).

The second factor: the influence of the media on negative states-infodemia (enhanced by isolation):

The third factor is social distancing, loss of trust, social responsibility, trust in official sources (including sympathy for sick people, concern about the consequences of the pandemic, their inadequate reflection by official sources).

The fourth factor: Somatic symptoms, complaints and symptomatic manifestations of anxiety.

The fifth factor: Anxiety for other people, empathy (opposite to the loss of faith in other people) and the severity of the 3 factors of social responsibility together with the data.

The point that contributes to the greatest number of factors is "I sympathize with people who have fallen ill with coronavirus and their families, I am sad...".

Discussion

The total CPDI scores for the Russian-speaking sample at the end of the first wave of the pandemic and the beginning of the second are lower than in the Iranian sample as a whole (34 points), India (29 points), but higher than the average for the Chinese sample ($M = 23.65$, $SD = 15.45$). As it is, this difference may be related to the time gap in which these studies were conducted. Chinese and Iranian data were obtained at the very beginning after the WHO announced the pandemic, Italian data were also obtained in the spring of 2020, and Russian data were gathered in June (three months after the outbreak of the pandemic) and in the fall of 2020. Probably, between the first and second waves of the

pandemic, there was some relief due to the lifting of strict quarantine measures, even euphoria, or some getting used to the everyday life of the pandemic, which could affect the nature of media reports, the degree of compliance with social protection and isolation measures, easing tension, panic moods in society.

Experienced contracting Covid-19 or no experience. In the Iranian sample, both those who were sick and those who were not sick with coronavirus, the average CDPI score was relatively high, 0.07% of the total number of respondents were sick, and 17 % doubted whether they had been ill. In the respondents of the Russian sample, where the percentage of those who were ill was higher, significant links were found between peritraumatic distress and coronavirus disease both in the respondents themselves ($p < 0.05$) and in close people. That is, people who have been ill with COVID-19 or have relatives who have suffered from the disease experience more severe distress. At the same time, significant correlations found between CPDI and the severity of Post-traumatic growth (PTG) [31]. We proposed two interpretations data in the work of 2021 [26]. The first assumption testified in favor of a high resource of overcoming, growth, development, resistance. The second is about the qualitative features of the domestic sample, it is not typical for compatriots to easily fall into panic, anxiety, concern about their own well-being and health.

Gender and age differences. In the Chinese sample consisting of 35.27% of men and 64.73% of women by gender, female respondents showed significantly higher psychological stress than male ($M (SD) = 24.87 (15.03)$ vs. $21.41 (15.97)$, $p < 0.001$). The Italian results were comparable to the Chinese ones: the third part of the sample had a level of distress from moderate to medium and acute. Women showed a higher level of distress, as well as in the Spanish sample [17]. Mature people from 51 to 70 years old were more resistant compared to young people. Those in social isolation were less affected by distress [13]. Respondents from Germany showed higher scores on IPD in the younger part of the sample [18]. According to the data obtained on Indian dentists (230 people), whose average score on IPD was $29.09 (15.47)$, the overall stress level from moderate to severe was close to 50%, statistically significant associations of the level of CPDI with age ($p < 0.003$), gender ($p < 0.03$), practical work experience ($p < 0.06$) and education ($p < 0.006$) were revealed [23]. When adapting the Russian-speaking sample, there was no significant correlation between the indicators of the peritraumatic distress index and the age of the subjects. At the same time, according to Chinese data, people under the age of 18 had the lowest CPDI scores ($M (SD) = 14.83 (13.41)$). Persons aged 18 to 30 years or over 60 years had the highest SDI scores ($M (SD) = 27.76 (15.69)$ and $27.49 (24.22)$, respectively) [24]. We can assume that our data on the lack of correlation of the index with age reveal the influence of the sample bias on younger study participants – the average age of Russian respondents is 24.86 years, which in this case does not contradict the data obtained for this age group in China.

The relationship with the score on the test of the impact of stressful events (Impact of Event Scale, Horowitz, 1976). The association of CPDI with the indicators of the Scale of the impact of stressful events is significant $\beta = .567 (p < .01)$ and individual trends (invasion, avoidance and hyperexcitation), coincides with the data obtained in the Italian sample [13]. This correlation may indicate the possibility of delayed psychological reactions against the background of direct manifestations of peritraumatic distress caused by various factors-psychological, socio-economic and others.

Factor structure. The five-factor structure obtained by us is quite consistent with the method of compiling the questionnaire – which initially included indicators of specific phobias and stress disorders in accordance with the CPDI (in version 11), namely: anxiety, depressive states, specific phobias, cognitive changes, avoidant and compulsive behavior, the presence of somatic symptoms, a decrease in the level of social functioning. The very inclusion of these indicators should have divided the structure of the questionnaire into several meaningful subscales. We have received interesting additional factors that were not highlighted by the authors of the scale, namely: related to infodemia, which is noted today by almost all researchers, and with social responsibility [1]. The factor analysis of the scale conducted on the Spanish sample ($N = 1094$) showed only two factors – stress and information-related [17].

Conclusions

The Russian-language version of the Covid-19 Peritraumatic Distress Index questionnaire is characterized by sufficient reliability-consistency-as in other studies on the adaptation of the methodology conducted in China, Iran, India, Germany, Italy, Spain. The factor structure, consisting of five factors, is consistent with theoretical ideas about the main stressors of the pandemic. The convergent validity of the technique is determined by its relationship with the indicators of the severity of traumatic tendencies of avoidance and invasion. Research in the development of diagnostic tools is important for solving problems in the field of mental health of people during the ongoing Covid-19 pandemic. Taking into account the limited resources on the scale of this pandemic, the psychological examination of people's distress reactions in offline and online mode allows us to identify people who are experiencing psychological problems and provide more targeted assistance to those who need it. Since the questionnaire turned out to be sensitive to gender factors, further research can be aimed at developing standards for men and women of different age groups to build effective methods of psychological assistance and support. We also assume further differentiation of distress factors, in the initial versions of the adaptation of the questioner. We are talking about the need to take into account various aspects of the current situation that contribute to distress: concerns about infection with the virus in public places and in communications, concerns about loved ones and their health, fears about possible loss of work and business, reduced income, cultural factors of growing disunity of people. We propose the cultural-activity and meaning approach to personality, to take into account not only the

resources of coping that allow people to resist distress [7; 9; 19; 20; 25; 27; 28], but also consideration of the personality work with his\her own traumatic, extreme experience, the manifestation of courage, resilience, growth and development of personality [1 -3; 20; 26].

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