

Research article

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Psychological Characteristics of Attitudes Towards Dangers Among Healthcare Professionals Working and Not Working with COVID-19 Patients

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Abstract

Introduction. The COVID-19 pandemic has posed many challenges for the present day healthcare system related to the quality of care of COVID-19 patients. Therefore, healthcare professionals must recognize dangers and adequately respond to them in time. This paper represents a first effort in identifying the psychological characteristics of attitudes towards dangers among healthcare professionals working and not working with COVID-19 patients.

Methods. A sample of 246 respondents varying in gender and age took part in this study, including 106 healthcare professionals from the city of Cherepovets (Vologda Region) and the city of Ivanovo (Ivanovo Region). The types of attitudes towards dangers, the need for experiencing a sense of danger, and the need for safety were identified using original questionnaires developed by the authors. The ϕ^* criterion – Fisher's angular transformation (Fisher's criterion) was used for data processing.

Results. Gender-related differences in the level of threat sensitivity and in the types of responding to dangers were found in groups of healthcare and non-healthcare professionals. Among healthcare professionals, the number of those exaggerating the importance of threats decreased significantly (from 30 % to 14.15 %) and the number of those with an ambiguous type of responding increased (from 17.14 % to 30.19 %). Compared to healthcare professionals not working with COVID-19 patients, those treating and caring for COVID-19 patients showed a decrease in threat sensitivity (from 57.69 % to 27.78 %) and an increase in the need for safety (from 28.85 % to 64.81 %) and in the need for ensuring safety (from 57.69 % to 79.63 %). The differences were significant.

Discussion. The results can be readily used in the process of selecting physicians and nurses for working under conditions associated with the COVID-19 pandemic and under other epidemiological conditions.

Keywords

danger, threat, safety, attitude towards dangers, threat sensitivity, responding to danger, need for safety, healthcare professionals, patients, coronavirus infection

Highlights

- The ability to adequately respond to dangers is an important personal trait of healthcare professionals required during the COVID-19 pandemic.
- Significant differences in attitudes towards dangers were found in the groups of healthcare professionals working and not working with COVID-19 patients.
- Healthcare professionals working with COVID-19 patients show a decrease in threat sensitivity and an increase in the need for safety.

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Introduction

Life and danger are two inseparable phenomena. No living creature can live its life in absolute safety. Starting from birth humans constantly face various kinds of threats at all levels of their individual and personal organization. Danger is anything that can harm a living creature. Threat is an assessment of danger probability. Researchers note that individuals' representations of danger and safety are 'intersubjective'; they are products of social construction, collective agreement, and socialization (Simpson, 1996). The objective environment provides only inconsistent and ambiguous information, leaving enough room for socially constructed beliefs and assessing objects, events, or conditions as dangerous or safe. Therefore, the development of a technology for assessing threats (Steinberg, 2005) and a scientific framework for differentiating them according to different types and levels (Stevens & Vaughan-Williams, 2019) becomes especially important.

Safety of living beings (and we are primarily interested in humans) undoubtedly depends on how they relate to dangers. According to the classical definition by V. N. Myasishchev, attitude is "an integral system of individual, selective, conscious personal associations with various aspects of objective reality. This system follows from the entire history of human development; it represents individual experience and determines individual actions and feelings" (Myasishchev, 2011, p. 7). From this perspective, the attitude towards dangers may be defined as individuals' ability to detect danger signals to make a choice of adequate or inadequate ways of responding to threats. In psychological literature such an ability to detect danger signals is defined as threat sensitivity.

Let us describe these two parameters of individuals' attitudes towards dangers.

Threat sensitivity is the susceptibility of living creatures, including humans, to danger signals; it is defined as a system of cognitive, affective, and behavioral responses to stimuli that may pose a danger to individuals (Denefrio & Dennis-Tiwary, 2020). Threat sensitivity actualizes a mechanism of vigilance (Warm, Finomore, Vidulich, & Funke, 2015). Threat sensitivity is a personal trait that mediates the influence of external conditions on individuals' feeling of security (Kharlamenkova,

2013). Threat sensitivity is organically incorporated into the structure of sentinel behavior (Eindor, 2014).

As for the ways of responding to situations of danger, here the basis is the fight–flight–freeze system (Gray, 1978; Donahue, 2017). Both a human and any other living creature react to danger by fighting, flighting, or freezing (for example, by hiding or pretending to be dead). Individuals develop their own individual ways of responding to dangers in the process of socialization. In many ways, the choice of these types of responding depends on individuals' ideas of danger and safety, which are largely determined by age and gender (Kharlamenkova, 2015; Smirnova, 2020), as well as the negative valence (consequence) of an event and the assessment of the likelihood of its occurrence (Kotik, 1994).

In the broadest sense, three ways of individual responding to dangers and threats are as follows: (a) *adequate responding* as the ability to use defensive behaviors developed in society without either exaggerating or understating dangers, (b) *exaggeration of the importance of threats* (anxious responding), (c) and *understatement of the importance of threats* (ignoring) (Maralov, Sitarov, Kudaka, Maralova, & Koryagina, 2020).

Individuals' attitudes towards dangers are determined by needs for experiencing a sense of danger and needs for safety (Horney, 1993; Maslow, 2012) influenced by self-preservation instinct inherent in all living creatures, the environment, and life experience. Four types of such needs are related to danger, safety, thrill seeking, and ensuring safety. The individual structure of these needs determines the uniqueness of individuals' attitudes towards dangers. Among various dangers, diseases that can threaten both an individual's life and health, and his/her psychological and social well-being play a special role. Those that manifest themselves as epidemics or even pandemics have the greatest damage. Currently, the world community has faced with the COVID-19 pandemic, which has affected almost everyone and, one way or another, has changed people's lives and the traditional system of relationships. The number of research papers on various aspects of life and behavior of individuals during the COVID-19 pandemic has considerably increased. Numerous studies have focused on characteristics of individuals' attitudes towards COVID-19 (Zhong et al., 2020; Roy et al., 2020) and the influence of universal values and resilience on these attitudes (Wolf, Haddock, Manstead, & Maio, 2020; Odintsova, Radchikova, & Stepanova, 2020), developed detailed recommendations on how to behave during the pandemic and self-isolation (Drapkina et al., 2020), analyzed the conditions under which the COVID-19 pandemic may lead either to social order (observance of measures taken by the authorities to combat the pandemic) or social disorder (resistance to such measures and the emergence of overt conflict) (Reicher & Stott, 2020). Special attention is paid to frontline healthcare professionals fighting against COVID-19. First, researchers are interested in how well-prepared healthcare industry and healthcare professionals are to work with COVID-19 patients (Valsan, Thomas, Kuttichira, Valsan, & James, 2020; Elhadi et al., 2020). The impact of negative working conditions on healthcare professionals' psychological states, manifested in increased anxiety, fear, depression, and emotional burnout is of equal importance (Dolzhenkova, Kamneva, Safonov, & Dzappala, 2020; Wang et al., 2020). Thus, working with COVID-19 patients poses an increased danger for physicians, nurses, and all the medical staff. This explains the need for a special study of the characteristics of healthcare professionals' attitudes towards dangers in comparison with the characteristics of such attitudes towards dangers among healthcare professionals not working with COVID-19 patients. We should note that this issue has not been sufficiently studied by the present.

These considerations prompted us to conduct a special study *aimed* at identifying psychological characteristics of attitudes towards dangers among healthcare professionals working and not working with COVID-19 patients, in comparison with attitudes towards dangers among non-healthcare professionals. In this case, we understand psychological characteristics of attitudes towards dangers as the level of threat sensitivity and the choice of a particular type of responding to dangers (adequate, exaggerating dangers, or understating dangers).

According to our *hypothesis*, there are differences in attitudes towards dangers between healthcare and non-healthcare professionals, as well as between healthcare professionals working and not working with COVID-19 patients. These differences may be found at the level of threat sensitivity and in the choice of types of responding to them.

Methods

A sample of 246 respondents varying in gender and age took part in this study, including 140 non-healthcare professionals (56 males; 84 females; mean age = 38.5 years) working at various enterprises and organizations in the city of Cherepovets (Vologda Region), 54 healthcare professionals (physicians and nurses) working with COVID-19 patients at two specialized institutions in the city of Cherepovets (Vologda Region) and the city of Ivanovo (Ivanovo Region) (20 males, 34 females, mean age = 34 years), 52 healthcare professionals from a number of medical institutions in Cherepovets and Ivanovo, who do not work with COVID-19 patients (21 males, 31 females, mean age = 35 years). The survey was conducted anonymously in 2020; the subjects specified only their gender, age, and specialty.

The original questionnaires developed by the authors were as follows: (a) the Inventory for Assessing Threat Sensitivity, (b) the Inventory for Assessing Types of Responding to Dangerous Situations, and (c) the Inventory for Assessing Needs for Safety and Danger.

The Inventory for Assessing Threat Sensitivity (Maralov, Malysheva, Nifontova, Perchenko, & Tabunov, 2012) consists of 12 items modeling real typical situations. Each task of the inventory includes the wording of a statement and four answer options (e.g., "Excessive vigilance is not characteristic of me", "I think that he that fears every bush must never go a-birding"). The subjects need to choose the option that best suits them. The scores received for all the items are summed up. A final score characterizes the level of individual threat sensitivity. The authors developed a scale for converting raw scores into stens.

The Inventory for Assessing Types of Responding to Dangerous Situations (Maralov, Malysheva, Smirnova, Perchenko, & Tabunov, 2012) consists of 17 items modeling human behavior in real standard situations that may pose a threat. For example, "Approaching an unregulated pedestrian crossing (zebra crossing), (a) I immediately cross the street, because I have an advantage for movement (i.e., danger ignoring); (b) I wait when there are no cars close to either the right or the left (i.e., danger exaggerating); (c) I cross the street only when I am sure that the drivers see me and start to slow down (i.e., adequate responding); and (d) I didn't think about it (i.e., ambiguous responding)". All the items are structured in a similar way. For each type of responding a total score was calculated. Raw scores were converted into stens.

The Inventory for Assessing Needs for Safety and Danger (Maralov, Kudaka, Smirnova, Perchenko, & Tabunov, 2016) consists of 15 items identifying the need for experiencing a sense of danger (5 items), the need for experiencing a sense of safety (5 items), and the need for ensuring safety (5 items). A total score for each need was calculated as the sum of scores for five

statements that diagnose it. Raw scores were converted into stens.

The methods of mathematical statistics and the φ^* criterion – Fisher’s angular transformation (Fisher’s criterion) were used for data processing; 7–10 sten scores indicated high levels of the parameters.

Results

Let us turn directly to the analysis of the main results of the study. First, let us answer the question whether there are differences in the attitudes towards dangers between healthcare and non-healthcare professionals. Table 1 presents the results of the comparative analysis.

Table 1 Comparison of the parameters of attitudes towards dangers between healthcare and non-healthcare professionals						
	Non-healthcare professionals			Healthcare professionals		
	Males n/%	Females n/%	Total n/%	Males n/%	Females n/%	Total n/%
Threat sensitivity						
High level	15/26.79	31/36.91	46/32.86	13/31.71	32/49.23	45/42.45
Types of responding to dangerous situations						
Adequate	34/60.71	27/32.14	61/43.57	21/51.22	24/36.92	45/42.45
Anxious (exaggeration of the importance of threats)	5/8.92	37/44.05	42/30.00	4/9.76	11/16.92	15/14.15
Ignoring (understatement of the importance of threats)	9/16.07	4/4.76	13/9.29	6/14.63	8/12.31	14/13.21
Ambiguous	8/14.30	16/19.05	24/17.14	10/24.39	22/33.85	32/30.19

Table 1

Comparison of the parameters of attitudes towards dangers between healthcare and non-healthcare professionals

	Non-healthcare professionals			Healthcare professionals		
	Males n/%	Females n/%	Total n/%	Males n/%	Females n/%	Total n/%
Total	56/100	84/100	140/100	41/100	65/100	106/100
Needs for danger, safety, and ensuring safety (high level)*						
Need for danger	3/5.36	4/4.76	7/5.00	6/14.63	12/18.46	18/16.98
Need for safety	30/53.57	49/58.33	79/56.43	18/43.90	32/49.23	50/47.17
Need for ensuring safety	49/87.50	71/84.52	120/85.71	30/73.17	43/66.15	73/68.87

Note: * The sum for all needs is not equal to 100 %, because the same individual may have different types of needs expressed; in addition, needs may be not clearly expressed in some individuals.

As can be seen in Table 1, 32.86 % of non-healthcare professionals and 42.45 % of healthcare professionals showed high threat sensitivity. The differences are statistically insignificant ($\varphi^* = 1.54$, insignificant). At the same time, in both groups the level of threat sensitivity is slightly higher among female respondents. In the group of non-healthcare professionals – 36.91 % of females and 26.79 % of males ($\varphi^* = 1.26$, insignificant); in the group of healthcare professionals – 49.23 % of females and 31.71 % of males ($\varphi^* = 1.8$, $p \leq 0.05$). Thus, in both groups of subjects, high threat sensitivity varies from 27 % to 49 %. Significant differences were found only in the group of healthcare professionals, where women showed a higher level of threat sensitivity compared to men.

As for the choice of types of responding in dangerous situations (Table 1), among non-healthcare professionals 43.57 % of respondents react adequately, 30 % of respondents tend to exaggerate dangers, 9.29 % of respondents tend to ignore dangers, and 17.14 % of respondents demonstrate an ambiguous type of responding. In the group of healthcare professionals, 42.45 % of respondents react adequately, 14.15 % of respondents exaggerate dangers, 13.21 % of respondents ignore dangers, and 30.19 % of respondents demonstrate an ambiguous type of

responding. A noteworthy fact is that in the group of non-healthcare professionals, women are more likely to exaggerate the dangers (44.05 %) than men (8.92 %); the differences are statistically significant ($\varphi^* = 4.91$, $p \leq 0.001$). Men ignore dangers more often (16.07 %) than women (4.76 %), which is also statistically significant ($\varphi^* = 2.22$, $p \leq 0.05$). Healthcare professionals differ significantly from non-healthcare professionals in the following two parameters: (a) exaggeration of dangers, which is significantly lower among healthcare professionals than among non-healthcare professionals (14.14 % and 30 %, $\varphi^* = 3.02$, $p \leq 0.01$), especially among women (16.92 % and 44.05 %; $\varphi^* = 4.42$, $p \leq 0.001$) and (b) ambiguous type of responding (30.19 % of healthcare professionals and 17.14 % of non-healthcare professionals, $\varphi^* = 2.42$, $p \leq 0.01$), which is typical for both men and women.

Let us consider the structure of danger and safety needs in both groups (Table 1). In general, we should state that it is quite optimal for adults. The need for ensuring safety dominates, ranging from 66 % to 87 %. The need for safety ranges from 43.9 % to 56.43 %. The need for danger is weakly expressed (from 4.76 % to 18.46 %). Nevertheless, some differences were found here as well. The need for danger is more often characteristic of healthcare professionals (16.98 %) than in representatives of other professions (5 %). The differences are statistically significant ($\varphi^* = 3.1$, $p \leq 0.01$), and it can be even more pronounced in female healthcare professionals (18.46 %) than in male healthcare professionals and female non-healthcare professionals ($\varphi^* = 2.30$, $p \leq 0.01$ and $\varphi^* = 2.79$, $p \leq 0.01$). The need for safety was somewhat more pronounced among non-healthcare professionals than among healthcare professionals (56.43 % and 47.17 %). However, the differences were insignificant. The same goes for the need for ensuring safety. It is pronounced among 85.71 % of non-healthcare professionals and 68.87 % of healthcare professionals. We obtained statistically significant differences here ($\varphi^* = 3.17$, $p \leq 0.001$).

Thus, the structure of the parameters of attitudes towards dangers is generally similar in the groups of healthcare and non-healthcare professionals. At the same time, healthcare professionals are much less likely to exaggerate the dangers, especially women, and more often choose an ambiguous type of responding to threats. In addition, healthcare professionals have a somewhat less pronounced needs for safety and ensuring safety in comparison to the group of non-healthcare professionals; there are more individuals with a pronounced need for danger. However, additional analysis showed that this need is more often combined with the need for ensuring safety. This indicates that such healthcare professionals can take dangers observing precautions.

Let us turn to the differences in the structure of attitudes towards dangers between healthcare professionals working and not working with COVID-19 patients. Table 2 shows the results.

First, there is a significant decrease in threat sensitivity in the group of healthcare professionals working with COVID-19 patients, compared to physicians and nurses who do not work with such patients. In general, the decrease is from 57.69 % to 27.78 % ($\varphi^* = 3.16$, $p \leq 0.001$), from 47.62 % to 15 % ($\varphi^* = 2.33$, $p \leq 0.01$) for men and from 64.53 % to 35.29 % for women ($\varphi^* = 2.39$, $p \leq 0.01$).

The analysis of the types of responding in danger situations showed that the structure of these types is largely identical in both groups – an adequate and ambiguous types of responding prevail. Both exaggeration and understatement (ignorance) are not characteristic of healthcare professionals. The main difference is observed in men. In the group of male healthcare professionals not working with COVID-19 patients, 61.9 % prefer adequate ways of responding to dangers. Only 40 % of male healthcare professionals working with COVID-19 patients demonstrated adequate

types of responding to dangers. In the first group, 14.29 % of the subjects demonstrated ambiguous types of responding to dangers; in the second group, ambiguous types of responding to dangers were characteristic of 35 % of the subjects. However, the statistical differences in both cases turned out to be insignificant ($\varphi^* = 1.41$, insignificant and $\varphi^* = 1.57$, insignificant). In this case, we only observe a certain tendency towards a decrease in adequate responding and an increase in ambiguous types of responding.

Table 2

Comparison of the parameters of attitudes towards dangers between healthcare professionals working and not working with COVID-19 patients

	<u>Healthcare professionals not working with COVID-19 patients</u>			<u>Healthcare professionals working with COVID-19 patients</u>		
	Males n/%	Females n/%	Total n/%	Males n/%	Females n/%	Total n/%
Threat sensitivity						
High level	10/47.62	20/64.52	30/57.69	3/15	12/35.29	15/27.78
Types of responding to dangerous situations						
Adequate	13/61.90	11/35.48	24/46.15	8/40.00	13/38.23	21/38.89
Anxious (exaggeration of the importance of threats)	1/4.76	6/19.36	7/13.46	3/15.00	5/14.71	8/14.82
Ignoring (understatement of the importance of threats)	4/19.05	3/9.68	7/13.46	2/10.00	5/14.71	7/12.96

Table 2
 Comparison of the parameters of attitudes towards dangers between healthcare professionals working and not working with COVID-19 patients

	<u>Healthcare professionals not working with COVID-19 patients</u>			<u>Healthcare professionals working with COVID-19 patients</u>		
	Males n/%	Females n/%	Total n/%	Males n/%	Females n/%	Total n/%
Ambiguous	3/14.29	11/35.48	14/26.93	7/35.00	11/32.35	18/33.33
Total	21/100	31/100	52/100	20/100	34/100	54/100
Needs for danger, safety, and ensuring safety (high level)*						
Need for danger	4/19.04	8/25.81	12/23.08	2/10.00	4/11.76	6/11.11
Need for safety	7/33.33	8/25.81	15/28.85	11/55.00	24/70.59	35/64.81
Need for ensuring safety	13/61.90	17/54.84	30/57.69	17/85.00	26/76.47	43/79.63

Note: * The sum for all needs is not equal to 100 %, because the same individual may have different types of needs expressed; in addition, needs may be not clearly expressed in some individuals.

Differences were found in the structure of the needs for danger and safety. Compared to healthcare professionals not working with COVID-19 patients, those working with COVID-19 patients have a more pronounced need for ensuring safety (79.63 % versus 57.69 %, $\varphi^* = 3.72$, $p \leq 0.001$) and the need for safety (64.81 % versus 28.85 %, $\varphi^* = 5.72$, $p \leq 0.001$). The need for danger is expressed to a lesser extent (11.11 % versus 23.08 %, $\varphi^* = 2.22$, $p \leq 0.01$). These patterns are typical for both men and women.

Thus, we may conclude that the work of physicians and nurses with COVID-19 patients leads to a decrease in threat sensitivity among a number of specialists and, at the same time, as a compensatory mechanism, to an increase in the need for experiencing a sense of safety and security and the need for ensuring safety, and to a decrease in the need for experiencing a sense of danger.

Discussion

Negative conditions of working with COVID-19 patients (protective suits, masks, etc.) require a high degree of proficiency and increased responsibility of healthcare professionals. Certainly, this affects the physical, psychological, and emotional well-being of healthcare professionals. According to Zerbini, Ebigbo, Reicherts, Kunz, & Messman (2020), nurses working in COVID-19 wards reported higher levels of stress, exhaustion, and depressive mood, as well as lower levels of job satisfaction, compared to their counterparts in ordinary wards. Physicians reported similar effects regardless of their contact with COVID-19 patients. Sun et al. (2020) observed dynamics related to negative and positive emotions among nurses working with COVID-19 patients. At the first stages, negative emotions prevail; they manifest themselves in a feeling of fatigue, discomfort, helplessness, which were caused by intense work, fear, anxiety, and concern for patients and their families. At subsequent stages, as the sense of professional responsibility and self-reflection grow, positive emotions start to dominate along with negative emotions.

There is conflicting evidence regarding the impact of working under negative conditions on emotional burnout. Azoulay et al. (2020) indicated a high level of emotional burnout in intensive care unit specialists facing the COVID-19 outbreak. Dinibutun (2020), on the contrary, indicated a decrease in the level of emotional burnout in physicians working during the COVID-19 outbreak. The author explains this by the fact that physicians experience meaningfulness in their work, which leads to high satisfaction with the work itself. They also had a stronger sense of personal success as they faced the immediate results of caring for COVID-19 patients.

The results obtained in our study significantly expand the existing understanding of the characteristics of emotional responding to situations associated with treating and caring for COVID-19 patients among healthcare professionals, as well as their attitudes to dangers.

Analyzing the structure of attitudes towards dangers in non-healthcare professionals, we observed a desire to exaggerate dangers in women and to understate (ignore) dangers in men, which is explained by higher emotional sensitivity of women and confirms the results obtained in other studies (Maralov, Gura, Tatlyev, Epanchintseva, & Karavaev, 2019). Among healthcare professionals, the number of those who exaggerate dangers significantly decreases, including women. This indicates a greater ability to objectively evaluate situations among healthcare professionals, when 'panic' and exaggeration of threats may have irreversible consequences.

Healthcare professionals working with COVID-19 patients demonstrated a decrease in threat sensitivity. This may be explained by the phenomenon of adaptation to threats. Adaptation may be defined as a survival mechanism for living beings (Woody & Szechtman, 2011; Mobbs, Hagan, Dalgleish, Silston, & Prévost, 2015; Duntley, 2005) and as a mechanism associated with habituation to a constantly threatening stimulus, i.e. adaptation to stress (Ababkov & Perre, 2004; Korotkova, Eremina, & Shchelkova, 2020). In our case, there is a situation of constant stress among healthcare professionals working with COVID-19 patients, when this work is accompanied by success and recovery of patients and by fatal outcomes as well. Certainly, this affects the decrease in threat sensitivity. At the same time, such a decrease in sensitivity does not lead to a decrease in the needs for safety and ensuring safety, which should be considered as a positive fact. In this study not a single physician working with COVID-19 patients had a low-level need for ensuring safety.

We should also pay special attention to the fact that healthcare professionals, regardless of whether they work with COVID-19 patients or not, are most often characterized by adequate

or ambiguous types of responding to dangers. No questions arise about adequate responding. However, ambiguous responding requires explanation. In this case, we may distinguish two subtypes of the ambiguous type of responding to dangers. In the first case, individuals do not know what to do in a particular dangerous situation; these types of responding have not yet been formed. This may be observed in adolescence and sometimes in youth. In the second case, there is a selective responding, which is just typical of adults. That is, depending on a situation individuals may use adequate, ignoring, or exaggerating types of responding. It all depends on the nature of a threat, the assessment of its negative consequences, a concrete situation, and the state of an individual.

Conclusion

Summing up the results of the study, the following conclusions can be drawn.

Attitudes towards dangers manifest themselves in threat sensitivity and in the choice of certain types of responding to them; they are determined by the structure of the needs for danger and safety.

About one third of adults are highly sensitive to threats. More than 40 % of respondents choose adequate types of responding to dangerous situations; 30 % of respondents exaggerate the importance of threats; 9 % of respondents ignore them; and 17 % of respondents have an ambiguous type of responding. Women are more likely to exaggerate threats, while men tend to ignore them. Among healthcare professionals, the number of those who exaggerate the importance of threats is significantly reduced (primarily among women) and the number of those with an ambiguous type of responding is significantly increased. In both groups, the need for safety and the need for ensuring safety dominate over the need for danger. At the same time, the need for danger is more pronounced among healthcare professionals, which, combined with the need for ensuring safety, indicates physicians' willingness to take reasonable dangers.

Physicians and nurses who work and do not work with COVID-19 patients differ in terms of threat sensitivity, as well as in the structure of the need for experiencing a sense of danger and the need for safety. The work with COVID-19 patients decreases threat sensitivity and, at the same time, actualizes the need for ensuring safety and the need for experiencing a sense of safety and security.

In conclusion, we should note that Russian physicians and nurses have a rather optimal structure of attitudes towards dangers. Unlike others they demonstrate the absence of the desire to 'panic', do not exaggerate the importance of threats, and are able to flexibly respond to situations, focusing on their knowledge and experience. At the same time, healthcare professionals working with COVID-19 patients reduce their sensitivity to threats (due to adaptation to stress) and compensate for these losses by increasing the need for ensuring safety and the need for experiencing a sense of safety and security.

The limitation of this study is related to the small sample size of the examined physicians and nurses in only two regions of Russia. Obviously, for further research in this area we need to expand the sample size. The results can be readily used in the process of selecting physicians and nurses for working under conditions associated with the COVID-19 pandemic and under other epidemiological conditions.

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V. G. Maralov conceived and planned the study, developed the design and methodology, selected the diagnostic tools, analyzed the experimental data, and prepared the manuscript for publication.

M. A. Kudaka collected and processed the experimental data, worked with the relevant literature, and presented the generalizing findings.

A. M. Pogodin collected, processed, and analyzed the experimental data.

I. I. Koryagina collected and processed the experimental data, worked with the relevant literature, and prepared the summary tables of findings.

The authors declare no conflicts of interest.