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ORIGINAL PAPER

Impacts of the Covid-19 pandemic on the lives and work of nurses

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Abstract

Aim: The study aimed to describe nurses' roles, map their views, knowledge, and experiences, and clarify the factors influencing their work and personal life during the Covid-19 pandemic in the Czech Republic. *Design:* A descriptive and cross-sectional design was used for the study. *Methods:* A representative sociological survey was conducted. A non-standardized questionnaire was used to collect data; the primary objective was to survey nurses' views, knowledge, and experiences gained during the Covid-19 pandemic and identify essential issues that must be addressed before the next pandemic. The questionnaire contained a total of 57 questions. The sample was constructed by quota sampling; the criteria for inclusion in the sample were the respondents' gender, age, and region. These characteristics were established as representative. The sample consisted of 1,197 nurses. *Results:* The most commonly reported factor influencing the work of nurses during the Covid-19 pandemic was fear of transmitting the infection (63.6%). Fear of the unknown (59%) and increased workload (54.7%) were also frequently reported to be strong influencers. The responses of nurses were statistically significantly influenced by the type of medical facility in which they worked ($p < 0.05$) and where they worked during the Covid-19 pandemic ($p < 0.001$). Most respondents (89.6%) said Covid-19 represented increased physical and mental burdens. Almost the same proportion of respondents (88.4%) felt Covid-19 affected their social lives, and 76.7% reported that it also affected their personal lives. *Conclusion:* Healthcare facility management should ensure sufficient personal protective equipment (PPE) is available before pandemics and pay close attention to the needs of staff regarding psychological counselling and crisis intervention during pandemics.

Keywords: Covid-19 pandemic, nurses, personal life, risk factors, working life.

Introduction

The global Covid-19 pandemic put all healthcare systems under pressure and placed unprecedented demands on healthcare providers worldwide. Healthcare professionals, especially nurses, were at the forefront of patient care during the pandemic. Therefore, nurses were vital in controlling and preventing the virus and its complications. Liu et al. (2020) reported that during the Covid-19 pandemic, nurses vowed to fight, taking responsibility, focusing on their duties, and showing professional dedication. Nurses' work during the pandemic was similar to their regular work, but there was more visibility and awareness of it during this period.

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While practicing their profession, nurses were constantly exposed to the potential risk of infection or disease transmission to loved ones or patients (Sharma et al., 2020). The high workload, high patient expectations (Carpenter et al., 2022), and lack of time and energy for psycho-hygiene were signifiers of mental stress for nurses (Sharma et al., 2020). The rapid arrival of the Covid-19 pandemic found most nurses worldwide professionally, physically, and emotionally unprepared to manage the workload of caring for patients with Covid-19 (Fernandez et al., 2020). Depression, anxiety, and perceived stress during the pandemic were reported by one- to two-thirds of nurses and other health professionals, and it is no exaggeration to refer to breathing disorders as a second epidemic resulting from the Covid-19 pandemic (Hossain et al., 2020).

Benfante et al. (2020) examined the psychological impact of Covid-19 trauma and stress symptoms

in nurses. The prevalence ranged from 7.4% to 35%, depending on the region. Risk factors for developing trauma and stress symptoms were identified as female, younger age, lack of work experience, lack of social support, lack of protective equipment, exposure to infected persons, and insomnia. Zhang et al. (2020) noted a relationship between younger age and long working hours without rest and high levels of stress and burnout symptoms. Providing for their families also appeared particularly problematic for nurses. Providing care for children, their own elderly relatives, and pets were among the factors that reduced nurses' ability to participate in emergency management during the pandemic (Dlouhý et al., 2022). The role of the mother is described in a meta-analysis of 59 clinical trials (Kisely et al., 2020) that evaluated stressors during previous pandemics (ebola, influenza etc.). Harry et al. (2022) reported that the need to provide childcare was associated with a doubling of the intention to reduce work hours and a 28 % higher probability of leaving the healthcare system in the United States of America. Having their school-aged children provided for during lockdown was considered by Czech nurses to be a critical factor in helping to reduce uncertainty and workload during a pandemic (Shivairová et al., 2023). These factors negatively affected nurses' mental health and increased the risk of developing burnout syndrome (Hu et al., 2020; Šupínová et al., 2022). Galanis et al. (2021) reported that nurses experienced high rates of burnout during the Covid-19 pandemic, and that several sociodemographic, social, and occupational factors influenced burnout. The Covid-19 pandemic was a significant challenge for nurses worldwide, and lessons learned from the first wave were essential for developing better strategies for future waves.

Aim

The study aimed to describe nurses' roles during the pandemic, identify the factors that most influenced their work activities, and map their care. A sub-objective was to identify the most critical factors affecting the professional and personal life of nurses working during the Covid-19 pandemic in the Czech Republic.

Methods

Design

A descriptive and cross-sectional design was used for this study. A representative sociological survey was conducted.

Sample

The sample consists of 1,197 nurses. The sample was constructed by quota sampling; the criteria for inclusion of respondents in the sample were the respondents' gender, age, and region. These characteristics were established as being representative.

The sample parameters were constructed based on data from the Institute of Health Information and Statistics at the Ministry of Health of the Czech Republic, valid as of 19 August 2021. The sample size corresponded to a confidence level of 95%, and the error interval (Margin error – Confidence interval) was 3%.

Data collection

A non-standardized questionnaire was used to collect data, the main objective of which was to map the views, knowledge, and experiences of nurses gained during the Covid-19 pandemic and to identify essential issues that must be addressed before the next pandemic. The questionnaire contained a total of 57 questions and was the result of the operationalization of objectives and hypotheses. These were defined based on a theoretical-empirical analysis of the problem under study. An important starting point was the interviews conducted in the qualitative part of the study with nurses and doctors in outpatient and inpatient care, focusing on the impact of the Covid-19 pandemic on their work and lives. These interviews were used to identify the key areas to be targeted in the quantitative research and the key issues that needed to be addressed. The first version of the questionnaire was constructed based on their operationalization. Its validity was verified using the assessment of experts and target research participants (face and content validity). Content and construct validity was also confirmed through a pre-survey performed using a sample of 128 respondents in which not only the wording and clarity of the questions were assessed, but also the coverage of areas of nurses' work and life that may have been affected by the Covid-19 pandemic and their relevance. Construct validity was also tested by a concurrent test of the data obtained from the pre-survey, aimed at identifying the expected correlations between the selected variables. The internal consistency of the standard scales of each question block (reliability) was measured by Cronbach's alpha test in the preliminary survey. The final form of each question battery was determined based on its results. The internal consistency values for each battery of questions ranged from 0.731 to 0.873, indicating a high level of internal consistency.

The questionnaire consisted of a section containing sociodemographic characteristics and a section relating to the impact of the pandemic on the work and life of nurses in outpatient and inpatient care. This section was covered by separate closed, semi-open, and open-ended questions; key areas were covered by comprehensive batteries of closed-ended projective questions in statements addressing each topic with response options in the form of a standard four-point scale ("I completely agree"; "I somewhat agree"; "I somewhat disagree"; and "I completely disagree") expressing the level of agreement with the information. Questions focused on: factors affecting nurses' work during the Covid-19 pandemic; perceived changes in nurses' personal and professional lives; and the impact of the Covid-19 pandemic in the emotional domain – predominantly negative feelings, lifestyle changes, and support for nurses during the Covid-19 pandemic (e.g. the question regarding perceived changes in nurses' personal and work life during the Covid-19 pandemic had a range of responses including: increased body burden, changes in social life, changes in private life, changes in family life, physical changes in health, changes in mental health, reassessment of priorities in life, reflections on leaving the workplace, a completed departure from the workplace, and departures of colleagues).

Individual batteries of questions were analyzed by calculating the mean values for each sub-question in the battery and then comparing them, and by calculating the total scores for each battery and then analyzing their possible relationships with selected characteristics in the questionnaire.

Our field survey was conducted using standardized guided face-to-face interviews with the respondents. The field survey was conducted throughout the Czech Republic from September 16, 2022, to October 5, 2022. Data collection was provided by 210 professional interviewers from research company INRES-SONES, v.o.s.

Initially, 1,341 randomly selected nurses were approached by the interviewers requesting an interview. One hundred forty-four nurses, i.e., 10.7% of those approached, declined to be interviewed, leaving 1,197 (89.3%) participants.

The sample included nurses working in both outpatient and inpatient care. The parameters of this sample were derived from the overall population of nurses in the Czech Republic. The sample of nurses was constructed so that its structure corresponded to the composition of the overall population in terms of age, gender, and region (i.e., where they worked within the Czech Republic).

The group consisted of 40 (3.3%) men and 1,157 (96.7%) women. Compared to the breakdown of the population by gender, the deviation did not exceed 0.3%, which means that the research sample was representative of the gender distribution of nurses in the Czech Republic. Questions about gender were formulated with sensitivity to gender and the cultural aspects of the Czech Republic. Since most Czech citizens refuse to self-identify as other than male and female, we did not include other variants in the questionnaire to avoid reduced return rates.

The deviation of the age breakdown of our sample did not exceed 0.4%. It can be stated that our sample was representative of individual age groups of nurses in the Czech Republic.

When constructing the sample of nurses by region, the number of nurses working in individual regions of the Czech Republic was taken as the primary indicator of representativeness. The regions were defined based on administrative divisions created on 1 January 2001. As part of the study, nurses from every region of the Czech Republic were approached, and their representation in our sample corresponded to the structure of the population. The deviation from the population did not exceed 0.3%; therefore, our sample was representative of the overall distribution of nurses working within the Czech Republic.

Other socio-demographic and professional features monitored in our sample could not be determined to be representative since the information systems in the Czech Republic do not record or maintain this information for nurses.

Data analysis

Statistical data processing was performed using SASD 1.5.8 (Statistical Analysis of Social Data) and SPSS 28.0 (Statistical Package for the Social Sciences). The first level of sorting and contingency tables of selected indicators of second level classifications was processed. The degree of dependence of the selected characteristics was determined using distribution normality. Based on this analysis, the data was interpreted, and the relevant tables were prepared. Kolmogorov-Smirnov and Shapiro-Wilk tests of normality were performed. Based on their results, tests were determined for further data analysis. According to the character of the distribution and the character of the variables, the Mann-Whitney U test, Spearman's correlation coefficient, Kruskal Wallis Test, and Pearson Chi-Square were used. Control analyses were performed based on ANOVA (analysis of variance). Cohen's d was used to measure substantive significance (effect size).

Results

The Composition of the sample of nurses by gender, age, marital status, education, type of medical facility, and length of work experience in healthcare is shown in Table 1.

Table 2 shows where nurses predominantly worked during the Covid-19 epidemic.

A semi-open-ended question was used to determine which factors most impacted the work of nurses during the Covid-19 pandemic. The nurses were offered 12 primary factors with the option of indicating another factor if necessary. The respondents were able to identify as many as they wanted.

The most common impacting factor reported by nurses was fear of transmitting the infection to others (63.6%). Fear of the unknown (59.0%) and an increased workload (54.7%) were also commonly reported as having a strong impact. These three factors were most frequently identified by nurses in their responses. On the other hand, the impact on their family (18.6%) and an inability to cope with personal life roles (16.5%) were among the least impactful factors. Based on an analysis of the relationships between the individual factors influencing respondents' professional life during the Covid-19 pandemic and various socio-demographic characteristics, some statistically significant associations were identified, see Table 3.

A statistically significant relationship was identified between factors influencing work during the Covid-19 pandemic and place of work / type of healthcare facility. Nurses working during the pandemic in facilities with a predominance of Covid-19 patients were significantly more likely to identify social isolation and increased workload as factors affecting their work and, to a significantly lesser extent, concerns about the effects of the pandemic. Nurses working in primary care during the pandemic were significantly more likely to identify their personal lives (impact on their families), stigmatization of healthcare workers and concerns about the effects of the pandemic, and to a significantly lesser extent, social isolation, the impact on family relationships, and increased workload.

Table 1 Composition of the sample of nurses by gender, age, marital status, education, type of medical facility, and length of work experience in health care

Items		n	%
Sex	Male	40	3.3
	Female	1,157	96.7
Age	up to 34	248	21.6
	35–44	291	24.3
	45–54	367	30.7
	55–64	222	18.5
	65 and more	59	4.9
Marital status	Single	212	17.7
	Married	633	52.9
	Divorced	191	16.0
	Widow	51	4.3
	Cohabitation	110	9.2
Education	intermediate medical	462	38.6
	tertiary professional	315	26.3
	bachelor's education	277	23.1
	master's education	130	10.9
	Other	13	1.1
Type of medical facility	primary outpatient care	235	19.6
	specialized outpatient care	149	12.5
	inpatient care	813	67.9
Length of work experience in healthcare	up to 5 years	218	18.2
	6–10 years	280	23.4
	11 and more years	699	58.4

Table 2 Where nurses predominantly worked during the epidemic / pandemic

Nurses worked most of the time	n	%
In facilities without a predominance of Covid-19 patients	563	47.0
In facilities with a predominance of Covid-19 patients	445	37.2
In primary care	189	15.8

Table 3 Relationships between factors influencing work during the Covid-19 pandemic and socio-demographic features

Factors influencing the work of nurses during the Covid-19 pandemic	Chi-squared	Independence test	Degrees of freedom
Sex	3.305	11	0.986
Age	32.720	44	0.895
Marital status	30.920	44	0.932
Education	20.642	44	0.999
Specialization in intensive care	13.547	11	0.259
Number of years of experience in healthcare	29.973	22	0.119
Type of medical facility	35.360	22	< 0.05
Type of hospital	39.183	44	0.678
A place of work during a pandemic	53.197	22	< 0.001

The impacts of the Covid-19 pandemic on the personal, social, and working lives of nurses during this period were identified through a battery of projective questions. Respondents were presented with ten basic statements, on which they commented using a standardized scale of four possible answers, which expressed their degree of agreement with the presented statements. The Cronbach alpha value for this battery of questions was 0.782, which met the requirements for a reliable scale.

Almost 90% (89.6%) of respondents expressed full or partial agreement with the statement that the Covid-19 situation had increased their physical burden. Almost the same number of respondents (88.4%) felt that Covid-19 had changed their social lives. More than three quarters (76.7%) of respondents felt that Covid-19 had changed their personal lives. These were the three most frequently identified factors by respondents. Respondents were the least likely to agree that they had left health care, had considered doing so, or that their colleagues had left health care. The calculation of the means also confirmed these results.

More precisely, the strength of perceived changes in respondents' personal and professional lives during the Covid-19 pandemic can be expressed in terms of mean values. This comparison was made possible using a standard four-level scale (i.e., responses with the choices of "I completely agree"; "I somewhat agree"; "I somewhat disagree"; and "I completely disagree") to assess the level of perceived change. We used the arithmetic mean as the key mean, where the smaller its value, the greater the degree of agreement with the statements. The magnitude of the measured mean values can be seen in Table 4.

A comparison of mean values shows that the changes most commonly perceived by the respondents were changes in social life, increased physical workload, and changes in personal life. The least mentioned changes were quitting health care, the departure of their colleagues from health care, and the contemplation of quitting health care. The variance and standard deviation values show that ratings were the most diverse regarding colleagues leaving health care.

Respondents were offered fourteen statements expressing the existence of negative feelings during the Covid-19 pandemic. Nurses expressed their position on these statements using a four-point scale, expressing their agreement or disagreement with the statement. The Cronbach alpha value for this battery of questions was 0.852, which meets the requirements for a reliable scale.

Table 4 Perceived changes in the personal and professional lives of nurses during the Covid-19 pandemic; a comparison of mean values (n = 1,197)

Changes felt	Mode	Median	Mean	Variance	SD
Increased burden on the organism	1	2	1.672	0.523	0.723
Changes in social life	1	2	1.660	0.530	0.728
Changes in personal life	2	2	1.932	0.700	0.836
Changes in family life	2	2	2.085	0.820	0.905
Changes in physical health	2	2	2.213	0.856	0.925
Changes in psychological health	2	2	2.130	0.855	0.925
Rethinking life priorities	2	2	2.065	0.808	0.899
Thinking about leaving healthcare	4	3	2.930	0.979	0.990
Quit healthcare	4	4	3.645	0.560	0.748
Departures of co-workers from healthcare	4	3	2.955	1.335	1.155

SD – standard deviation

The largest number of respondents expressed full or partial agreement with the statement that they suffered from a sense of chaos during the pandemic (80.4%). The second was a sense of physical exhaustion (77.6%), and the third was feelings of mental exhaustion (77.4%). More than three-quarters (75.5%) felt a loss of freedom, feelings of fear (73.3%), and helplessness (68.6%). Seeking professional help for feelings (20.2%), negative feelings towards unvaccinated patients (41.9%), and lack of job satisfaction (41.6%) were the three least common issues.

For confirmation, calculations of mean values were made, where the primary mean was the arithmetic mean. The smaller the mean size, the greater the degree of agreement with a given statement. The size of the measured mean values can be seen in Table 5.

A comparison of mean values shows that nurses suffered most during the Covid-19 pandemic from a sense of chaos, a sense of mental and physical exhaustion, and a sense of loss of freedom. Seeking professional help was the least important issue for nurses. Additionally, lack of job satisfaction and negative feelings towards unvaccinated patients were also infrequent.

Table 5 Predominant negative feelings of nurses in the emotional domain during the Covid-19 pandemic – a comparison of median values (n = 1,197)

Prevailing negative feelings	Mode	Median	Mean	Variance	SD
Feelings of defenselessness or helplessness	2	2	2.172	0.674	0.821
Feeling neglected	3	3	2.495	0.728	0.853
Feelings of chaos	2	2	1.858	0.616	0.785
Feelings of physical exhaustion	2	2	1.892	0.691	0.831
Feelings of mental exhaustion	2	2	1.889	0.712	0.844
Feelings of fear	2	2	2.088	0.702	0.838
Sought professional help for feelings	4	4	3.349	0.892	0.945
Lack of satisfaction with work done	3	3	2.675	0.762	0.873
Negative feelings towards unvaccinated patients	3	3	2.707	0.998	0.999
Awareness of the limits of your practical skills	2	2	2.434	0.757	0.858
Awareness of the limits of your knowledge	2	2	2.363	0.677	0.823
Feelings of loss of freedom	2	2	1.999	0.721	0.849
Feeling of hopelessness	2	2	2.273	0.758	0.871
Feelings of anger	3	3	2.486	0.866	0.931

SD – standard deviation

Discussion

A semi-open-ended question was used to determine what influenced nurses' work during the Covid-19 pandemic. Nurses were allowed to indicate any number of factors. The most frequently cited factor affecting nurses' work during the Covid-19 pandemic was fear of transmission of infection (63.6%). Fear of the unknown (59.0%) and increased workload (54.7%) were also frequently cited as strongly influencing factors. Nurses' responses were statistically significantly influenced by the type of health facility in which they worked ($p < 0.05$) and the location in which they worked during the Covid-19 pandemic ($p < 0.001$). Nurses working in facilities with a preponderance of Covid-19 patients during the pandemic were significantly more likely to identify social isolation and increased workload among the factors affecting their work. Most respondents (89.6%) reported that Covid-19 presented increased physical and psychological stress. Almost the same proportion of respondents (88.4%) felt that Covid-19 had affected their social life, and 76.7% said it had also affected their personal life.

Concerns about personal infection and transmission of Covid-19 to loved ones evolved during the pandemic. In the first wave of the pandemic in the spring of 2020, healthcare workers accounted for almost 10% of those infected in the Czech Republic. A similar proportion of healthcare worker infections was reported globally at that time (World Health Organization [WHO], 2020). During Covid-19, nurses worldwide worked longer hours than usual, sometimes without sufficient protective equipment (Harrington et al., 2020; Nemati et al., 2020). Some nurses became ill because of this, and some lost their lives. The International Council of Nurses (ICN) reports that up to 1,500 nurses in 44 countries and more than 20,0000 health workers worldwide lost their lives, and more than four million health workers became infected with Covid-19 (ICN, 2020). This led to a significant shortage of health workers and work overload for those who could work.

Fear of the unknown was also a strong influence. Nurses' opinion in this area was statistically significantly influenced by the type of health facility (< 0.05) in which the nurses worked and the location of their work (< 0.001) during the Covid-19 pandemic. The main stressors included a sudden change in the content of nurses' work; an increase in the volume and intensity of work; dealing with telephone inquiries, which interrupted work with patients; ethical dilemmas presented due to insufficient resources (time, staff, bed capacity); and lack of protective equipment (Maben & Bridges, 2020). Nurses working during the pandemic in facilities with a majority of patients with Covid-19 were significantly more likely to identify social isolation and increased workload among the factors affecting their work; nurses working in primary care during the pandemic were significantly more likely to indicate their own family's behavior, stigmatization of healthcare workers, and concerns about the impact of the pandemic. Increased levels of stress exposure were confirmed in a cross-sectional correlational study by Alnazly et al. (2021). Their results clearly demonstrate increased fear of the pandemic among respondents (health workers in Amman, Jordan) – especially registered nurses.

Increased workloads were reported by 54.7% of nurses, with associated physical and mental exhaustion. The most commonly reported symptoms experienced by nurses were anxiety, insomnia, stress, and depression (Latifah & Annisa, 2022). A meta-analysis of 93 studies of a total of 93,000 nurses showed that about one-third of all nurses suffered from significant emotional disturbances during the Covid-19 pandemic (excessive stress was reported by 43% of nurses in 40 studies, anxiety by 37% of nurses in 73 studies, depression by 35% of nurses in 62 studies, and sleep disturbances in 18 studies (Al Maqbali, 2021). The importance of nurses' care and the need to understand the psychological changes that occur in the context of pandemics were mentioned in a qualitative study conducted by Zhang et al. (2020). They emphasized that knowledge was essential for workers at all levels of health care. They highlighted the critical role of nurse leaders in supporting and facilitating nurses' adaptation during the pandemic. In the Czech healthcare system, information pages and contacts for trained healthcare interveners were also prepared from the first months of the pandemic (Dlouhý et al., 2022).

With regard to the negative feelings of nurses during the Covid-19 pandemic, most nurses reported that they suffered from a sense of chaos during the pandemic. Access to information and its consistency reduced the experience of anxiety (Alwani et al., 2020). Houghton et al. (2020) conducted a rapid literature review of findings from the Cochrane database at the start of the Covid-19 pandemic. They found that locally recommended practices contributed to health professionals' uncertainty if they were lengthy, ambiguous, and inconsistent with national or international recommendations. Furthermore, frequent changes in recommended practices had an adverse effect. Shenal et al. (2012) assessed the degree of exhaustion and discomfort when wearing respiratory protection for prolonged periods while performing normal workday activities. Lack of personal protective equipment (PPE) or inadequate quality of PPE was considered a significant problem by health professionals and their leaders (Houghton et al., 2020). Discomfort while wearing a respirator affected the performance of routine work activities.

According to our results, 88.4% nurses felt that Covid-19 had affected their social life, and 76.7% said it had affected their personal life. Providing care for children, their own elderly relatives, and pets were among the factors that nurses struggled with (Dlouhý et al., 2022). Adams et al. (2021) state that changing information regarding Covid-19 was a reason for families to develop specific care plans for dependent children and pets. In addition to childcare and mental health care, financial remuneration was part of basic support measures for health professionals across Europe (Williams et al., 2020). Financial remuneration, social support, and adjustments in working conditions led to a lower incidence of burnout syndrome and feelings of helplessness (Karagöl et al., 2022). Financial rewards increased the willingness of nurses to overcome the emotional difficulties associated with the profession (not only on Covid units) and reduced the likelihood of their leaving the health sector (Christianson et al., 2023). According to the WHO (2021), even now there can be no question of an end to the pandemic since individual countries are still struggling with its consequences. Given these realities, the pandemic increased the need for team care, infection control, person-centered care, and other skills that play to nurses' strengths. The WHO (2021) emphasized the need to develop strategies to prevent pandemics and develop plans to minimize their impact. It also called for the development of methods to ensure clear and transparent dissemination of information regarding pandemic diseases. It is also necessary to enlist the support of nurses' colleagues, supervisors, policymakers, local authorities, and communities to prepare for and manage pandemic situations properly.

Limitation of study

Limitations of our study include the disadvantage of using a non-standardized questionnaire, as it may sometimes have biased respondents' views. The nurses in our study expressed their attitudes, opinions, and experiences.

The strength of the study is its representativeness. The sample size corresponded to a Confidence level of 95%, and the error interval (Margin error – Confidence interval) was 3%.

Conclusion

The results show that the management of healthcare facilities should provide sufficient PPE in advance of emergencies and pay attention to psychological counseling and crisis intervention for nurses when necessary. During a pandemic, it is important to monitor the working conditions of nurses, ensure they are safeguarded from contracting somatic diseases, and monitor the psychosocial burdens of pandemics.

Ethical aspects and conflict of interest

The research was conducted according to ethical principles and was approved by the relevant ethics committee under no. 004/2020 on June 15, 2020.

The study was approved by the Ethics Committee of the Faculty of Health and Social Sciences of the University of South Bohemia in České Budějovice under no.004/2020 on June 15, 2020. The research was anonymous; participation was voluntary, and the survey contained no controversial ethical issues.

The authors declare that there were no conflicts of interest.

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Author contributions

Conception and design (SB, ICH, VT, VH, JK, DK, FD), data analysis and interpretation (SB, ICH, VT, VH, OS, ACH), drafting of the manuscript (VH, OS), critical revision of the manuscript (OS, ICH), final refinement of the article (SB, ICH).

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