



Opinions of citizens of the Czech Republic on the role of nurses in primary care during the COVID-19 pandemic

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Abstract

Introduction and Objective. In spite of the general current decrease in COVID-19 incidence, the epidemiological situation on the territory of the Czech Republic is still unfavourable. Nurses play an essential role in the fight against this disease.

Materias and method. A non-standardized questionnaire was used to discover the expectations regarding nursing care provided during the COVID-19 pandemic. The sample of respondents was constructed using quota selection. The sample consisted of 1,815 respondents.

Results. The study identified a significant correlation between the age of respondents and the method used to contact general practitioners ($p < 0.001$). The oldest respondents (65+) more likely contacted GPs by phone. Respondents with basic education used outpatient services more often before than during the pandemic ($p < 0.05$). The behaviour of nurses was considered as professional and accommodating. The oldest respondents (65+) reported nurses did not to make them feel rushed. Other age groups rated nurses more critically ($p < 0.01$). Respondents, especially women, described the psychological burden on nurses during the COVID-19 pandemic as demanding ($p < 0.01$). Women, more than men, reported that nurses lacked protective equipment during the pandemic ($p < 0.05$). The use of an online system was significantly influenced by respondent education ($p < 0.001$). Respondents with lower education were less likely to welcome this option.

Conclusions. Due to the persisting COVID-19 incidence on the territory of the Czech Republic, citizens' opinions of the position of nurse in primary care in the period of COVID-19 pandemics need to be known. The behaviour of nurses was considered to be accommodating and satisfactory.

Key words

primary care, nurses, general practitioners, citizens, COVID-19

INTRODUCTION

Currently, the epidemiological situation in the Czech Republic is still not good, although the overall number of cases has decreased. Community transmission prevails and the risk of further spreading of the disease is still very high. The COVID-19 pandemic affected people in many areas of life, including work, relationships, and freedoms. It required adaptation to changes and measures taken to fight the pandemic. Fear, anxiety, insecurity, apprehension, feelings of isolation, sadness, anger, and guilt – were all felt in connection with the COVID-19 pandemic. This is even more true for health workers who have had to deal with the disease on a daily basis [1, 2]. During the pandemic, the demands on

health professionals multiplied, and nurses experienced more than most feelings of helplessness and an inability to control the situation [3]. Nurses played a crucial role in the fight against COVID-19 and, as a result, often developed stress, feelings of helplessness, and fears of being infected. These feelings were reinforced by public pressure and a media that presented health professionals as heroes. The increased media interest and the many frustrating questions from patients and relatives added additional stress. The stress was further exacerbated by impaired communication, poor quality of available information, increased telephone communication, and efforts to find alternative ways to communicate with patients and their loved ones; all were unusual situations for which nurses were not fully prepared [4]. Communication is an essential feature of nursing. Good communication skills are needed to participate in the education, prevention, screening, monitoring, and direct care of COVID patients [5, 6]. The need to strengthen and develop communication strategies across health professions and teams, including

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telehealth, was highlighted by Wittenberg et al. [7] in their literature review. They noted the need to develop strategies designed for nurses and social workers, especially when the impetus for conversation is based on the needs of patients or loved ones [7].

Nurses are frequently exposed to infections as well as the potential to transmit the infection to loved ones or patients [6, 8, 5].

According to the WHO, 70% of health care workers are women (WHO, © 2022), with women representing 90% of the global nursing power; thus, nursing is a highly gendered profession [9]. This often led to a clash of roles, namely private vs. professional life. During the pandemic, role conflict was most often related to childcare due to the closure of childcare facilities. While some facilities were open to the children of health professionals, there were other problems, such as limited operating hours, distance from the place of residence, or facility closures for epidemiological reasons. Due to the multiple commitments which general nurses often have, they often neglect themselves while helping others, which can lead to mental and physical health problems for nurses and problematic staffing situations in health care facilities [10].

The COVID-19 pandemic caused primary health care services (GPs and general nurses) to dramatically and quickly change their traditional service delivery models. There was a significant shift to telephone triage and consultation for problems related to COVID and unrelated illnesses. However, despite the upheavals, the main objective remained patient-centred care [11].

Chronic care was often postponed, the consequences of which will manifest long after the COVID crisis ends. From a holistic primary care perspective, the COVID-19 pandemic and the measures taken to manage it will profoundly impact psychological and socio-economic well-being for quite some time. This impact is already visible in vulnerable people and will continue to be felt in the medium and long term. For this reason, this study investigated the opinions of respondents in the Czech Republic regarding the role performance of primary care nurses in the Czech Republic during the COVID-19 pandemic.

MATERIALS AND METHOD

The research was designed as a sociological study based on the project called 'The nurse's role and care in a pandemic' and used research instruments. A non-standardized questionnaire was used to collect data regarding the opinions of the respondents of the Czech Republic regarding the role performance of primary care nurses during the pandemic. The level of awareness, its sources, experience with the availability of general practitioner outpatient clinics, experience with the organization of care and the quality of services provided, and the frequency of use of general practitioner outpatient services, were all examined. The study also investigated the prevailing attitudes towards nurses working in the clinics of general practitioners from the perspective of Czech citizens. The questionnaire included 80 questions.

The study was carried out using a standardized, guided face-to-face interview between the interviewer with the respondent. The final form of the questioning sheet was determined based on pre-research results. Data collection was carried out by 206 professional interviewers (INRES –

SONES, v.o.s.) throughout the Czech Republic. The actual field survey was conducted during March 2022. The research was anonymous, participation was voluntary, and the survey did not include any contentious ethical issues.

Sample. The sample of respondents was constructed using quota selection so that its structure corresponded to the composition of the population of the Czech Republic in terms of regions, gender, and age. These features were determined to be representative. The calculation was performed using Raosoft software entering the size of the basic sample of Czech population 15+ according to the data of the Czech Statistical Office in force on 31 December 2022. Confidence level of 99% and confidence interval or margin of error of 3% were used for the calculation. As part of the investigation, 2,017 randomly-selected respondents were approached by interviewers with a request for an interview on the role of nurses during the COVID pandemic. Of those approached, 202 respondents (10.0%) refused to be interviewed. The final sample consisted of 1,815 respondents.

The respondents' classification was based on the regions of the Czech Republic which were established in 2001, and in comparison to population demographics, the deviation did not exceed 0.1%. The starting point for sample construction were the electoral districts, from which a random selection of districts was made. The dataset was sorted by region and number of eligible voters in ascending order. Using the Complex Samples module, a sequential selection was made with steps calculated according to the number of eligible voters in the district (the number of eligible voters is a 'Measure of Size' in the PPS Systematic selection method), thus guaranteeing the same probability of inclusion for each voter. A selection was made for each region separately (the region was a stratification variable) and produced a representative representation of all regions. The required number of selected districts in individual regions was calculated proportionally, according to the number of eligible voters in the region. Subsequently, quota regulations were prepared based on the requirement to distribute respondents by gender and age (source data – gender and age: CZSO 2020).

The data were statistically processed using SASD 1.5.8 (Statistical Analysis of Social Data) and SPSS software. Tables of the 1st level of classification and pivot tables of the 2nd level of classification for selected indicators were prepared. The degree of dependence of the selected characters was determined using the chi², t-test, and independence test; other test criteria were used according to characteristics and the type of classification.

Outcomes – Socio-demographic features. Regarding gender, the group consisted of 890 (49.0%) men and 925 (51.0%) women, which matches the population of the Czech Republic aged 15 years and over. In terms of relative frequencies, a maximum deviation of 0.1% was found in the sample relative to the population, which means that the research is representative of the population of the Czech Republic aged 15 and over in terms of gender. Regarding the population's age distribution, the sample deviation did not exceed 0.1%; thus, the research is representative of individual age groups for the Czech population aged 15 and over. Other signs for which representativeness was not monitored but were examined, were marital status, employment, and education. Regarding

Table 1. Composition of the sample of respondents by gender, age, marital status, employment, and education

Sex	Absolute frequency	%
man	890	49.0
woman	925	51.0
Age	Absolute frequency	%
15–19	96	5.3
20–24	98	5.4
25–34	274	15.1
35–44	336	18.5
45–54	314	17.3
55–64	264	14.5
65 and more	433	23.9
Marital status	Absolute frequency	%
single	430	23.7
married	884	48.7
divorced	190	10.5
widower/widower	179	9.9
mate, partner, cohabitation	96	9.6
Employment	Absolute frequency	%
unemployed – in the register of the Labour Office	40	2.2
unemployed – not registered at the Labour Office	120	6.6
self-employed	161	8.9
entrepreneur	131	7.2
employee in employment	885	48.8
partial invalidity pension	33	1.8
full disability pension	47	2.6
retirement pension	349	19.2
parental leave	49	2.7
Education	Absolute frequency	%
basic	128	7.1
apprenticed, secondary education without school-leaving examination	468	25.8
secondary school with graduation	678	37.4
tertiary professional	166	9.1
higher	375	20.7

family relationships, married couples were the most common, 884 (48.7%). In terms of employment, most respondents were employed (885 (48.8%)). In terms of education, most respondents had a secondary education with a school-leaving examination (678 (37.4%)), and the least common were those with basic education (128 (7.1%)).

A significant correlation was identified between the age of respondents and the way they contacted their general practitioner (GP) for a prescription or other GP administrative task. Respondents in the oldest age group (65 and over) were significantly more likely to report that they usually visited their GP as needed, while the 15–24 years group were significantly more likely to choose the answer 'I do not know, I did not need to visit'. Those aged 45–54 years contacted doctors significantly more often in ways that did not involve seeing their GP in person.

Table 2. The ability to contact a general practitioner if necessary relative to the age

Age	yes	not	I do not know; I did not need	Value x2	Df	P
15–24 yrs						
Frequency	121	15	58			
%	9.9	5.9	17.3			
25–34 yrs						
Frequency	184	36	54			
%	15.0	14.1	16.1			
35–44 yrs						
Frequency	228	47	61			
%	18.6	18.4	18.2			
45–54 yrs						
Frequency	231	34	49	42.544	10	<0.001
%	18.9	13.3	14.6			
55–64 yrs						
Frequency	172	38	54			
%	14.1	14.8	16.1			
65 and over						
Frequency	288	86	59			
%	23.5	33.6	17.6			
OVERALL						
Frequency	1224	256	335			
%	100.0	100.0	100.0			

Those who reported contacting their GP without in-person visits ($N = 1,591$) were further asked what form the contact took. A statistically significant link was identified between age and the form of contact for administrative purposes. The oldest age group (65 and over) was significantly more likely to report having contacted their GP by phone. This form of contact was significantly more likely for this age group. The chi-squared characteristic of the independence test was 38.352 with 20 degrees of freedom, $p < 0.01$.

A significant correlation was proven between the education of respondents and the frequency of visiting their GP's outpatient services compared to the period before the pandemic. Respondents with a basic education, to a significantly greater extent reported that they used the services of a general practitioner outpatient clinic more often than before the pandemic.

A significant correlation was found between respondents' age and their opinion on whether the nurse appeared rushed, or in a hurry or not. The oldest age group (65 and over) was significantly more likely to report that their nurse did not indicate that they were rushed, while other age groups rated the nurses more critically on this issue.

A significant correlation was established between the age of respondents and their opinion on whether the nurse was interested in what they were experiencing or how they felt. The oldest age group (65 and over) was significantly more likely to report that nurses were interested in what they were experiencing or how they felt. Respondents showed a strong tendency to evaluate nurses in this area more favourably with increasing age. The chi-squared characteristic of the independence test was 33.980 with 20 degrees of freedom ($p < 0.05$).

A significant correlation was identified between the age of respondents and their opinion on whether the nurse showed

Table 3. The impact of education on the use of general practitioner outpatient services during COVID compared to the period before the pandemic

Education	More	The same	Less often	Value x2	Df	P
basic						
Frequency	16	70	42			
%	11.1	7.7	5.5			
apprenticed, secondary school without school-leaving examination						
Frequency	41	244	183			
%	28.5	26.8	24.1			
complete secondary school with graduation						
Frequency	40	335	303			
%	27.8	36.8	39.9			
tertiary professional				18.474	8	<0.05
Frequency	9	89	60			
%	6.2	9.8	8.9			
Higher (Bc., Mgr.)						
Frequency	38	173	164			
%	26.4	19.0	21.6			
OVERALL						
Frequency	144	911	760			
%	100.0	100.0	100.0			

Table 4. Respondents' opinions on the job performance of nurses working in a general practitioner's office relative to age (Your nurse appeared rushed or in a hurry?)

Education	I agree	I somewhat agree	I somewhat disagree	I disagree	I cannot judge	Value x2	Df	P
15–24 yrs								
Frequency	71	64	21	12	56			
%	11.2	10.2	10.0	7.9	13.7			
25–34 yrs								
Frequency	75	101	40	33	25			
%	11.8	16.1	19.1	21.9	13.2			
35–44 yrs								
Frequency	103	116	46	28	43			
%	16.2	18.4	22.0	18.5	22.6			
45–54 yrs								
Frequency	116	110	29	25	34			
%	18.2	17.5	13.9	16.6	17.9	39.749	20	<0.01
55–64 yrs								
Frequency	93	93	24	18	36			
%	14.6	14.8	11.5	11.9	18.9			
65 and over								
Frequency	178	145	49	35	26			
%	28.0	23.1	23.4	23.2	13.9			
OVERALL								
Frequency	636	629	209	151	190			
%	100.0	100.0	100.0	100.0	100.0			

positive emotions when in contact with them. Younger age groups (15 – 34 years) were significantly more likely to report that the nurse showed positive emotions when in contact with them. The chi-squared characteristic of the independence test was 40.870 with 20 degrees of freedom ($p < 0.01$).

Table 5. Evaluation of the mental stress of nurses providing care to patients during COVID-19 against the norm according to respondent gender

Sex	Demanding	Equally demanding	Less demanding	I cannot judge	Value x2	Df	P
man							
Frequency	732	68	18	72			
%	47.3	56.7	60.0	62.1			
woman							
Frequency	817	52	12	44	14.087	3	<0.01
%	52.7	43.3	40.0	37.9			
OVERALL							
Frequency	1549	120	30	116			
%	100.0	100.0	100.0	100.0			

A significant correlation was found out between gender and their assessment of the psychological burden of nurses providing care to patients during the COVID-19 pandemic, relative to pre-pandemic times. Men were significantly more likely to report that they could not assess the psychological burden on nurses, while women were significantly more likely to report that the psychological burden of nurses during the COVID-19 pandemic was probably more demanding and challenging.

Table 6. Respondent opinions, by gender, on how well informed nurses were with regard to COVID-19 during the pandemic (i.e., well informed vs. poorly informed)

Sex	Definitely yes	Some-what yes	I do not know; I cannot judge	Some-what no	Definitely no	Value x2	Df	P
Man								
Frequency	197	235	276	123	59			
%	44.4	49.5	53.3	45.9	53.6			
Woman								
Frequency	247	240	242	145	51	10.737	4	<0.05
%	55.6	50.5	46.7	54.1	46.4			
OVERALL								
Frequency	444	475	518	268	110			
%	100.0	100.0	100.0	100.0	100.0			

A significant link was identified between the gender of respondents and their opinion on nurse awareness regarding COVID-19 information during the pandemic. Women were significantly more likely to report that nurses were 'definitely lacking' this information during the pandemic.

A significant link was identified between respondents' education and their opinion on using online systems (e.g., the Internet) for communication with nurses in their GP's office. It was unequivocally true that women with lower education (basic school, apprenticeship) were significantly less likely to welcome such an option, while respondents with higher education (graduation, college, university) welcomed such an opportunity to a significantly greater extent. It can be stated that the education of respondents significantly impacted the use of online communication systems for contacting nurses in a GP's office.

A significant correlation between respondents' education and their opinion on the type of online systems (via the Internet) that could be used for communication with a nurse

Table 7. Respondent views on the use of online systems for communication with nurses working in the office of a GP

Education	Yes	No	Value x2	Df	P
Basic					
Frequency	35	93			
%	5.3	8.1			
Apprenticed, secondary education without school-leaving examination					
Frequency	115	353			
%	17.3	30.7			
Secondary education with graduation					
Frequency	271	407			
%	40.8	35.4			
Tertiary professional education					
Frequency	66	100	56.103	4	<0.001
%	9.9	8.7			
Higher education (Bc., Mgr.)					
Frequency	177	198			
%	26.7	17.1			
ON THE WHOLE					
Frequency	664	1151			
%	100.0	100.0			

in their GP's office was not identified. As such, education did not significantly influence respondent opinions on using various forms of online communication systems with a nurse in a GP's office. The chi-squared characteristic of the independence test was 41.250 with 36 degrees of freedom ($p = 0.252$ [n. s.]).

DISCUSSION

The current times have a profound impact on the core competencies of primary care. Individual countries worldwide have been affected to varying degrees by the COVID-19 pandemic and will continue to face its consequences in the future. Although this disease has serious consequences, it is necessary to look at the big picture. This includes not only threats related to COVID-19 and other communicable diseases, but also to threats related to non-communicable diseases. One of the elements of maintaining social and economic stability is reducing the economic burden associated with these diseases. This is also the basis for various calls for better preparedness for future pandemics, as well as preparedness for the care of the chronically ill, which should not be side-lined due to a pandemic. Delaying or postponing the care of these patients (or routine preventive medicine) may, in the long term, negatively affect the health status of the population of individual countries, as well as their social and economic stability [12, 13]. Although the huge increase in patients requesting medical assistance has been addressed, changes are needed in the management of GP offices and consultation strategies. In this context, the WHO [12] mentions the need to analyze the services provided so far in primary and community care, to define services that can be interrupted or postponed without severe consequences for the health of target groups, as well as, for example, updating the registers of disadvantaged people

requiring health and social care, and developing alternative communication methods (e.g. e-health learning platforms).

In the current study, a statistically significant association was identified between the age of respondents and the form of contact with their GP for an administrative task, such as a prescription. Respondents from the oldest age group (65 and over) were significantly more likely to report contacting their GP by phone. This form of contact among respondents in this age group was significantly common. Distance consultations via telephone calls were overwhelmingly used during the pandemic. This form needs to be evaluated since, for seniors, not only personal contact with the doctor but also social contacts in waiting rooms, represent an important socializing factor [14]; however, at the same time, it is necessary to evaluate other technological possibilities. Telemedicine in the period of COVID-19 pandemics seems to represent a new opportunity for decreasing the cost associated with the care provided and for minimizing transmission of the infection. In the field of nurses and nursing care, alternative methods of communication are also appropriate, e.g. the education of patients can proceed without problems, whether it is education in the field of nutrition, the use of aids, etc. As Devi et al. [15] point out, repeated motivation also plays an essential role in health promotion and management of chronic diseases, which appears to be significant during pandemic measures due to increased subjective stress and stress anxiety.

Incurrent study poses the question to the public about the possibility of using online systems for communication with a nurse in a general practitioner's office. The use of online communication with nurses in the offices of GP's was significantly impacted by the respondents' education. Respondents with lower educations (basic, apprenticeship) were unreceptive to this option, while respondents with higher educations (graduation, college, university) were receptive. Těšínová and Dobiášová [16] stated that in the field of telemedicine, more than a third (37%) of patients engaged in patient organizations were strongly motivated to use information communication technologies when receiving health care. Nevertheless, almost a fifth (18%) of patients were concerned about distance care using ICT; they experienced knowledge and technical barrier, and were not receptive to using this type of care in the future. These conclusions are broadly consistent with those reported by Monaco et al. [17]. It turns out that technology developers are aware of the necessity of involving patients in creating such programmes in the early stages of their creation, as well as the possible discrepancies between the goals and expectations of patients vs. healthcare professionals in such programmes. Even in the context of the presented findings, an important point is to emphasize the need to specify an online system for people with disadvantages, seniors, polymorbid, etc.

A practical introduction to telehealth (online counseling or a virtual workplace in GP outpatient clinics) could help preserve the practical and caring nature of nursing [18]. Respondents in this study reported that they used the services of a GP's ambulance more often in the period before the pandemic.

Nurses working in adult GP outpatient clinics were not used to the extent of change they experienced during the pandemic. Respondents, especially women, were significantly more likely to describe the psychological burden on nurses during the COVID-19 pandemic as more demanding than

before the pandemic. It can be said that the opinions of respondents mostly coincided with what was reported by the mass media.

Nurses faced great psychological strain due to long shifts, lack of consistent information regarding the COVID-19 pandemic, heavy workloads, and high expectations of patients [19], along with lack of protective equipment, lack of sleep, and insufficient psychological counseling [20–22,6].

Palliative care and care for people at the end of life in the home environment were also affected from the beginning. In the first ten weeks of the pandemic, there was a significant increase in community deaths, especially among people over the age of 75 [23]. In a qualitative study by Zhang et al. [24], they cite the importance of caring for nurses by understanding the psychological changes they face and ensuring quality working conditions. According to Sarwar and Sarwar [25], along with implementing disease prevention strategies, providing short- and long-term mental health support for healthcare professionals should also be provided.

Respondents from the oldest age group (65 years and over) reported the behaviours and attitudes of nurses working in GP's offices to be professional and accommodating, and the nurses did not act as if they were under stress or in a hurry. Other age groups rated GP nurse behaviour more critically, although, they still reported that nurses were interested in what patients were experiencing or how they felt. However, there was a strong tendency to evaluate nurse behaviour more favourably with increasing age of respondents. A statistically significant association was also identified between the age of respondents and their opinion about whether the nurse showed positive emotions when in contact with them. As Halata et al. [26] reported, the level of satisfaction with the work of a nurse in the GP's office has not changed significantly in recent years, and the majority of respondents expressed satisfaction with the work of the nurse (94.7%). According to Chen et al. [27], nurses provided their patients with education about the COVID-19 disease, its symptoms, and possible transmission. All was done to reduce fears of an unknown disease, to anchor standard measures and thus attenuate the spread of infection, and above all, to provide advice, help, and protection for the already seriously ill.

Especially at the beginning of the pandemic, protective equipment was poorly available. Most of the protective equipment, training, and procedures in the initial phase of the COVID-19 pandemic went to hospitals and similar institutions. Personal protective equipment is critical and essential to prevent the spread of COVID-19 in the health sector [28]. Proper and high-quality protection of health professionals not only prevents the spread of infection, but also protects the staff. The availability of appropriate protective equipment reduces burnout in healthcare professionals [29]. Respondents in the current study, especially women, reported that the nurses lacked protective equipment during the pandemic, and men were significantly more likely to report that they could not assess this issue. The nursing profession faced several new challenges related to patient care at a time marked by a high degree of uncertainty, as well as efforts to keep themselves, their loved ones, and patients safe [30].

After the first year of the pandemic, it was possible to hope that 2021 would be less traumatic. However, the pressure caused by the impact of the coronavirus continued, and waves of SARS-CoV-2 Omicron variants (BA.4; BA.5)

continued to make nursing an everyday challenge. However, the nurses gained some positives, based on the successes of the mass COVID-19 vaccination programme, collaborations between surgeries regarding the use of new technologies, and developing a better understanding of mental health and well-being in the profession.

Due to the persisting COVID-19 incidence on the territory of the Czech Republic, citizens' opinions of the nurse's position in primary care in the period of COVID-19 pandemics need to be known. So far, no study dealing with this topic has been performed in the Czech Republic.

CONCLUSIONS

Primary care nurses in GP's should learn from the COVID-19 pandemic and strengthen the clinical role and resilience of nurses to meet the conditions of the 'new normal'. In association with the changes in everyday life functioning, and in the light of fast spreading pandemics, telemedicine will become a new opportunity for decreasing the cost associated with the care provided and for minimizing the transmission of infection.

Limitations of the study. For the calculation of the sample size, a confidence level of 99% and confidence interval or margin of error of 3 % were established.

Ethical approval. The study was conducted per ethical principles and approved by the relevant Ethics Committee (No.004/2020, dated 15 June 2020).

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