

Patients' preferences: Comparing the quality of medical services before and during the COVID-19 pandemic

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Abstract

During the COVID-19 pandemic, an increasing number of infections and a need for medical consultations forced the society to implement remote forms of contact with patients. The aim of this study was to analyze the experiences and preferences of patients regarding the doctor-patient relationship. A quantitative study was conducted using the CAWI technique. The study involved 1011 adult patients who were consulted by their family physicians. The patients generally declared unfavorable changes regarding their access to medical services. While comparing the experiences before and during the pandemic, most patients (70.3%) revealed that they had difficulties accessing their family physicians. Many patients (83.1%) preferred a personal visit as a form of consultation. Identification of the constraints relating to the COVID-19 pandemic can contribute to optimizing the health care system, particularly the organization of remote medical consultations.

Key words: COVID-19, doctor–patient relations, health care sector, patient satisfaction

Słowa kluczowe: COVID-19, relacje lekarz–pacjent, satysfakcja pacjenta, sektor ochrony zdrowia

Introduction

The COVID-19 pandemic has changed many aspects of people's lives around the world. The health care systems faced new challenges that have not yet been known. According to data collected by the Johns Hopkins University School of Medicine, more than 490 million people contracted COVID-19 worldwide and more than 6 million

people died [1]. In Poland, the number of cases reached almost 6 million and the number of deaths exceeded 115 thousand [1]. According to the Polish Economic Institute, in 2020 there were 58,500 excess deaths, which resulted in excess mortality of 13.9% [2].

The extent of new cases directly translated into the functioning of the health care system. There was a significant increase in demand for medical consultations [3].

In order to meet the new challenges and minimize the risk of viral transmission in patients and health care professionals, the organization of medical services needed to be modified. Remote forms of contact were widely adopted, which limited direct interactions between patients and physicians [4]. New forms of contact included video meetings, phone calls, and email correspondence [3].

The change in the form of contact and the problems caused by the COVID-19 pandemic translated into asymmetric dynamics between patients and medical personnel. Some studies have shown that during the COVID-19 pandemic, the doctor-patient relationship improved and public confidence in doctors increased [5, 6]. Chang J. et al. revealed in their studies that Chinese patients preferred video consultations, although telephone consultations were most commonly adopted. Both methods were favorably evaluated by the patients [7]. Other patient preferences for services provided during the COVID-19 pandemic were shown in some studies. Patients using emergency services positively evaluated the attitude of the medical personnel, but they were critical of the time they waited for medical assistance [8].

The aim of our study was to analyze the patients' experiences and preferences regarding the doctor-patient relationship during the COVID-19 pandemic. We wanted to know whether the changes in the health care system that occurred during the pandemic affected patients' evaluation of the quality of medical services provided by family physicians.

Materials and methods

Aim and objectives

Our study was focused on the evaluation of selected aspects of medical services by comparing the experiences of patients before and during the COVID-19 pandemic. We were particularly interested in the impact of patients' fear of a possible COVID-19 infection and health concerns on the evaluation of medical services.

Study design

We conducted a quantitative study using our own research tool and the computer-assisted web interview (CAWI) technique. This article presents the analysis of our results for sixteen questions, including four independent variables.

Setting

The fieldwork phase of our study lasted from July 7 to November 30, 2021. We carried out the survey using a specialist service to help eliminate missings (blank responses) and farming (multiple surveys by a single respondent).

We used social media, national patient organizations, and medical institutions to reach our respondents. We asked patients to review the purpose of our study and to

complete the form. The link to the questionnaire was advertised on the Internet, it was also disseminated by health care professionals.

Participant identification

The study included adults who used services provided by their family physicians during the COVID-19 pandemic. The study group consisted of 1011 subjects. In the study, we obtained an over-representation of females, individuals with higher education, and people under the age of 35.

Ethical considerations

The independent Bioethics Committee for Research at the Medical University of Gdansk (NKBBN/517/2021) gave a positive opinion on the project and the research tool. Participation in the study was voluntary and at any stage of the project the participants had the opportunity to opt out from the study. We did not collect or process any sensitive data during the study.

Variables

We compared the obtained data with socio-demographic variables and the results were statistically significant. We analyzed the influence of age, education, and questions concerning health and fear of COVID-19, on patients' evaluation of medical services before and during the COVID-19 pandemic.

We analyzed twelve closed questions, which were treated as dependent variables. Those included some aspects of medical services – communication with the physician, the course of the visit, and the functioning of the registration for medical services, as well as patients' preferences regarding the form of medical consultation. We also focused on the patients' access to their physician and the ordered tests, as well as on how the results and further treatment were discussed.

Statistical considerations

For statistical analysis, we used Statistica v. 13.3. When examining the relationships between variables, we applied Pearson's chi-squared test, assuming the statistical significance level of $p < 0.05$.

Results

The study included 1011 patients from all over the country (Table 1). The responses of all subjects were included in the study and analyzed.

	Categories	N (%)
Sex	female	850 (84.1)
	male	155 (15.3)
	I don't want to answer	6 (0.6)
Age	18–35	532 (52.6)
	36–45	233 (23.1)
	46–55	149 (14.7)
	56–65	62 (6.1)
	66 and over	35 (3.5)
Education	elementary school	4 (0.4)
	middle school	3 (0.3)
	vocational training	34 (3.3)
	high school	394 (39)
	university	576 (57)
Marital status	single	412 (40.8)
	married	520 (51.4)
	widowed	15 (1.5)
	divorced	64 (6.3)
Area of residence	rural	180 (17.8)
	town with population < 50k	168 (16.6)
	town with population 50k to 150k	143 (14.1)
	city with population 150k to 500k	223 (22.1)
	city with population > 500k	297 (29.4)
Type of medical service	family physician in the clinic	869 (86)
	family physician in private office	260 (25.7)
	family physician – visit to the clinic	174 (17.2)
	family physician – home visit	22 (2.2)
Number of visits or consultations during the pandemic	up to 7	822 (81.3)
	8 and more	189 (18.7)
Payer	NFZ	773 (76.5)
	private insurance company	94 (9.3)
	self-pay visit	144 (14.2)

Table 1. Test group characteristics (N = 1011)

Source: own study.

The impact of the COVID-19 pandemic on the evaluation of selected aspects of medical services

We wanted to make a comparative analysis of patients' evaluation of selected aspects of medical services. For this purpose, we asked the respondents to evaluate selected categories in terms of organization of access to tests and physicians, the course of a visit, and communication with the physician.

The patients generally reported unfavorable changes in access to medical services. According to the respondents, there were usually no changes regarding the course of a visit. Interestingly, one in five patients assessed the punctuality of their visit better than before the pandemic (Table 2).

By analyzing the relationship between the independent variables and patient responses, we found several statistically significant relations. Most commonly (23.2%), men declared no difference in access to their physician during the pandemic (15.3%; statistics: $\chi^2 = 6.282$, $df = 2$, $p = 0.043$). Patients with tertiary education complained less (28.2%) about a decrease in physician punctuality (32.9%; statistics: $\chi^2 = 8.485$, $df = 3$, $p = 0.037$). Patients over 56 more often (59.8%) claimed that the satisfaction with the visit did not change during the pandemic (50.8%; statistics: $\chi^2 = 13.668$, $df = 3$, $p = 0.003$). However, they reported a deterioration in the effectiveness of treatment over that period less frequently (28.9%) than patients between 18 and 55 years of age (41.7%) ($\chi^2 = 6.449$, $df = 2$, $p = 0.04$).

Categories	Easier during the pandemic	Harder during the pandemic	No changes	Not applicable
	N (%)			
Easy to register with the physician	96 (9.5)	620 (61.3)	286 (28.3)	9 (0.9)
Waiting time for an appointment	121 (12)	556 (55)	316 (31.3)	18 (1.8)
Access to physician	67 (6.6)	711 (70.3)	225 (22.3)	8 (0.8)
Access to tests ordered by the physician	49 (4.8)	501 (49.6)	415 (41)	46 (4.5)
Punctuality (time of visit compared with appointed time)	213 (21.1)	309 (30.6)	467 (46.2)	22 (2.2)
Satisfaction with visit	77 (7.6)	379 (37.5)	522 (51.6)	33 (3.3)
Quality of communication with physician	76 (7.5)	429 (42.4)	492 (48.7)	14 (1.4)
Effectiveness of offered treatment	35 (3.5)	322 (31.8)	608 (60.1)	46 (4.5)
Discussion of test results	56 (5.5)	376 (37.2)	522 (51.6)	57 (5.6)
Discussion of further treatment	45 (4.5)	371 (36.7)	536 (53)	59 (5.8)
Physician's engagement in treatment	60 (5.9)	376 (37.2)	539 (53.3)	36 (3.6)

Table 2. Comparison of evaluation of selected aspects of medical services (N = 1011)

Source: own study.

Preferences and patient evaluation of medical consultations

When asked, most patients (83.1%, N = 840) preferred a personal visit as the form of medical consultation. However, 14.1% (N = 143) of the respondents were in favor of the phone consultation, while only 2.8% (N = 28) preferred an online meeting or a video call with their physician.

Statistical analysis revealed that patients with tertiary education (80.4%) preferred a personal visit less often (86.7%; statistics: $\chi^2 = 6.966$, $df = 1$, $p = 0.008$). They also reported less frequently (5.9%) an improvement of the physician's engagement in treatment during the pandemic (6%; $\chi^2 = 11.094$, $df = 3$, $p = 0.011$). More frequently (43.1%), in turn, they expressed a deterioration in the effectiveness of treatment during the pandemic (37%; $\chi^2 = 6.984$, $df = 2$, $p = 0.03$).

Younger patients (76.3%) more often than older patients (over 56 years of age) declared harder access to the physician during the pandemic (73.2%; $\chi^2 = 8.521$, $df = 2$, $p = 0.014$).

Concerns with a disease as a modulator of patient evaluation

Nearly half of the patients we asked reported that they were afraid of a COVID-19 infection (46.8%, N = 473). This type of fear proved to be correlated with the evaluation of certain aspects of medical services.

Patients who were more concerned about contracting COVID-19 (34.3%) declared that the effectiveness of treatment had not deteriorated during the COVID-19 pandemic compared to people who were not afraid of the disease (30.9%) or who were indifferent (23.3%; statistics:

$\chi^2 = 9.917$, $df = 4$, $p = 0.042$). The patients who were more afraid of COVID-19 (55%) declared satisfaction with visits during the pandemic compared to those who were not afraid of the disease (44.3%) and those indifferent (54.2%; statistics: $\chi^2 = 15.877$, $df = 6$, $p = 0.014$). Those who were more likely to be affected by COVID-19 (23.3%) claimed that registration for medical services was more effective during the pandemic than those who were not afraid of the disease (20.1%) and those who were indifferent (15%; statistics: $\chi^2 = 18.377$, $df = 4$, $p = 0.001$).

We asked the patients to express the frequency of concerns about their own health in the self-descriptive question. Overall, 19.9% (N = 201) of the respondents admitted that they frequently thought about their own health. As many as 45.3% (N = 458) reported frequent thoughts. Rare (12.6%, N = 128) and very rare (2.4%, N = 24) worries about their own health were reported by much fewer respondents. For the rest of the patients (19.8%, N = 200), it was difficult to estimate the level of their own concerns.

The answers of the patients who were concerned about their health more often (40.8%) correlated with the view of worsening treatment by the doctor during the visit ($\chi^2 = 27.603$, $df = 12$, $p = 0.006$). The patients who were worried about their health also more often (42.3%) claimed that the way they discussed the test results was worse during the pandemic, compared to those who almost never (25%) or rarely (32%) were concerned about the quality of their own health, as well as those who did not think about it frequently (36.7%; statistics: $\chi^2 = 22.05$, $df = 12$, $p = 0.037$).

Discussion

One of the important changes during the COVID-19 pandemic was the modified operation of ambulatory care

centers leading to an increase in the number of telephone consultations [9]. The remote contact form has influenced the doctor-patient relationship. The political and epidemiological situation exacerbated the social fear of a COVID-19 infection. Many patients presented to emergency departments which resulted in a need for reorganization of hospitals and emergency departments, e.g. in Italy [10]. In Greece alone, thirteen hospitals were transformed into facilities dedicated to COVID-19 patients. Outpatient visits to specialists were canceled on a large scale, leaving a margin for patients requiring urgent care. The functioning of the health care system was reduced and many private offices closed [11]. The governments' efforts to care for COVID-19 patients, who often further burdened already overburdened health care systems, raised concerns about patients who require continuous access to medical care. Sudden changes in the functioning of health care facilities made the health care systems face new challenges and look for unconventional ways of providing medical services. The consequences of the COVID-19 pandemic in terms of medical service delivery inspired us to conduct a comparative study on the evaluation of health care system performance. Plentara R. et al. in work from 2015 shows that access to family doctors was positively assessed by patients in Poland [12], while according to most participants (70.3%) in our study, the access to the physician worsened. This is confirmed by the report of Polish Ombudsman for Patients' Rights from January to September 2020, which reveals that the number of patients complaints regarding difficulties in accessing primary health care services has increased significantly compared to previous years [13]. More than half of the respondents declared that during the COVID-19 pandemic they experienced difficulties registering for an appointment (61.3%) and accessing ordered tests (49.6%). The waiting time was extended (55%). The obtained results are opposite to similar studies carried out in China. In their analysis, Y. Zhou et al. concluded that the quality of medical services during the COVID-19 pandemic improved. Patients in China declared that their confidence in doctors increased during the pandemic [5, 6]. This discrepancy may result from socio-cultural and political differences. In Western countries, studies revealed more varied assessments. S. Aguirre et al. indicated that the level of satisfaction with communication and empathy of the ED physicians did not decrease despite the pandemic [14]. J. Torales et al. show the link between the COVID-19 pandemic and the negative evaluation of the doctor-patient relationship regarding psychiatric treatment [15]. Many studies describe the negative consequences of the pandemic in terms of mental health and emotional stability for both doctors and patients [16, 17]. This context shows that the perception of how a health care system functions largely depends on the local (national) organization and its efficiency. From this point of view, it seems to us that the perspective of the social structure may also be an important modulator of patients' evaluation.

In our study, men more often declared that there was no difference in access to the doctor during the COVID-19 pandemic compared with women ($p = 0.043$). Their opinion may have been influenced by significantly fewer visits

compared with women who accounted for 60.6% of all medical consultations [18]. In the USA, similar trends were observed. According to the report by the American Academy of Family Physicians in cooperation with the Cleveland Clinic, as many as 90% of women regularly visit their doctor, while for men the rate is only 62%. Men most often declared that they visited their doctor only when they were seriously ill [19].

Our analysis also showed the influence of age on satisfaction and evaluation of treatment effectiveness. Patients over 56 more often claimed that their satisfaction with the visit did not change during the COVID-19 pandemic ($p = 0.003$). Less frequently than those between ages 18 and 55, they noticed a deterioration in the effectiveness of treatment ($p = 0.04$). Many studies showed similar trends in the evaluation by younger patients who are more critical than older patients [20, 21]. Higher levels of satisfaction in older patients may be affected by the fact that they are suffering from chronic illnesses, and visits to the family doctor are usually similar and focused on continued therapy. Younger patients, on the other hand, often require an initial diagnosis, which involves multiple studies, it can be stretched over time and is linked to the level of mental uncertainty [22]. Younger patients were more likely than older patients to see that access to visits was restricted (76.3%). For this reason, a significant number of them presented to the ED to speed up the contact with the physician and to make a diagnosis [23]. This is an important area that may indicate the need for family physicians to improve their diagnostic processes, which would reduce the number of inadequate ED visits and thus reduce their burden.

In our study, we asked the patients to evaluate some aspects of medical services (Table 2). Exactly 46.2% of the patients reported that they felt that the pandemic had no impact on the time of scheduled visits. Also, 21.1% of those asked noted an improvement in punctuality during the pandemic. On the other hand, 30.6% were of the opposite opinion. The increasing number of telephone consultations during the COVID-19 pandemic may have an impact on the study results (in some health care centers, teleconsultation was the only form offered to patients) [24, 25]. The study by R. Harrison showed that the punctuality of teleconsultations was better evaluated compared to personal visits at the hospital clinic [26]. In the study by R.E. Powell analyzing the experience of patients taking telephone consultations in a large municipal health care system, 46.7% of the patients declared that due to teleconsultations they saved between 1 and 3 hours and 40.8% more than 3 hours [27]. We can, therefore, feel that the common form of remote contact improved the organization of health care facilities in certain aspects and increased patient comfort.

Among the respondents we asked about the preferred form of long-distance consultation, only 2.8% indicated a video chat and 14.1% indicated a phone call. The distribution proved to be a bit different from the analyzes carried out in the USA. A video consultation was selected almost as often by American patients as a phone call [28]. The fact that the access of households to the Internet in Poland (92.4%) is similar to that in California (94%) indicates this

difference may be due to the lack of this form of consultation in the offer of the health care facilities [29, 30]. An analysis by A. Hoffart et al. revealed that patient satisfaction with video visits is as high as with personal visits [31].

According to our results, as many as 65.2% of patients declared that they think often or very often about their health. The answers of the respondents who were concerned about their state of health (40.8%) correlated with the evaluation of worsening discussion of treatment by the doctor during the visit and worsening of the way the study results were discussed (42.3%). Almost half of the respondents we asked reported that they were afraid of COVID-19 (46.8%). We can see that fear for one's health increases the need for a review of medical information [32, 33]. This is confirmed by a study conducted in the UK which revealed an intensification of the search for information on the COVID-19 pandemic in patients with obsessive-compulsive disorder [34]. The analysis of pregnant women during the COVID-19 pandemic showed that these patients were looking for information in response to fear and uncertainty, and were convinced that their doctor had a plan of assistance for them if they were infected with COVID-19 [35]. When analyzing the level of anxiety and the need for information with parents/carers of children waiting for a pediatric consultation, G. Kampouroglou et al. showed that higher levels of anxiety correlated with a need for more accurate information on child's surgery [36]. It seems to us that a provision of detailed medical information and an accurate presentation of the available treatment options for COVID-19 by doctors can significantly reduce the level of uncertainty and improve the quality of care in patients who demonstrate high levels of anxiety.

We realize that our study has a number of important limitations. We achieved a typical over-representation within the study group by applying the CAWI technique. Women, people aged up to 35, patients with tertiary education, and patients from large cities receiving care by their family physicians were more likely to participate in the study. The density distribution proved not to be representative of the population and, therefore, the obtained results should be compared to the distributions presented by other researchers with caution. Another important element that could influence the results is the recruitment of subjects through digital media. In those respondents, their evaluation of teleconsultations as a new form of contact with their doctor may have been positive due to their high computer skills and Internet access.

Conclusions

Our study showed that the COVID-19 pandemic, according to patients, has negatively affected some of the functional aspects of health care facility operation and patient care.

This was most probably a result of a significant increase in the demand for medical services caused by the pandemic. However, there are areas requiring attention to improve the functioning of the health system.

We propose that registration triage be introduced in order to make the registration process more effective in case of an epidemic. Initial health assessment may minimize failure to provide care to those who need it the most. Another aspect that may have a significant impact on the quality of diagnosis, but also on the level of patient service, is to suggest that patients may participate in video consultations. We believe that family physicians need educational support regarding remote communication and organization of remote consultations. The proper organization of communication can significantly reduce the risk of fear and contribute to the mental well-being of patients. It also seems to us that the effectiveness of diagnosis can be improved by adapting the amount and quality of medical information to patients' expectations.

The analysis of patient preferences may identify the most important problems in the functioning of the primary health care system. We hope that the conclusions from our study will help improve both the quality of medical services and the patients' well-being.

Declarations

Ethics approval and consent to participate

The project was completed based on a bilateral agreement between the universities and it was approved by the Independent Bioethics Committee for Scientific Research at the Medical University of Gdansk (NKBBN/517/2021). All methods were carried out in accordance with relevant guidelines and regulations. All participants gave informed consent to participate in the study.

Consent for publication

Not applicable.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

Conceptualization, all the authors, Supervision K.S., Methodology K.S., A.D., Formal Analysis, K.S., A.D, Respondent recruitment, M.D, Z.C., Writing, M.D., A.D., E.O., J.C., K.S., Literature Review and Analysis M.D., E.O., J.C., Project Administration, K.S, All the authors read and approved the final manuscript.

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