



Patients' preferences – evaluation of teleconsultations during the COVID-19 pandemic

Preferencje pacjentów: ocena telekonsultacji w czasie pandemii COVID-19

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Abstract

Introduction and Objective. The COVID-19 pandemic caused necessary changes to the health care system in terms of the organization and treatment of patients. Remote forms of medical consultations were widely introduced to minimize the risk of viral transmission. The aim of the study was to assess patients' opinions about teleconsultations during the COVID-19 pandemic regarding the doctor-patient relationship and communication.

Materials and method. The study was conducted using a quantitative method with the CAWI technique, involving 1,011 adult patients consulted by their family physicians. Pearson's chi-squared test was used to calculate statistical correlations for $p < 0.05$.

Results. Overall, 46.4% of the respondents favourably evaluated the quality of communication during teleconsultations, while 28.2% of patients expressed negative opinions. A positive assessment of the quality of teleconsultation correlated with male gender, higher education, and living in large cities. As much as 43.3% of patients reported concerns about the doctor's lack of attention experienced during remote consultations. As many as 33% (N = 290) of the respondents reported that remote consultations resulted in a re-evaluation of their trust in the doctor.

Conclusions. Communication barriers during teleconsultations may lead to a limited understanding of the doctor's message and recommendations. Their elimination and improved communication with patients can be an effective way to improve the level of service and facilitate access to family doctors' services. The results can contribute to improving the functioning of health institutions, improving the quality of services, and increasing patient satisfaction.

Key words

Patient Satisfaction, Physician-Patient Relations, Remote consultation, COVID-19, Pandemics

Streszczenie

Wprowadzenie i cel pracy. Pandemia COVID-19 spowodowała konieczność wprowadzenia zmian w systemie ochrony zdrowia, organizacji i leczenia pacjentów. W celu zminimalizowania ryzyka transmisji wirusa powszechnie wprowadzono zdalne formy wizyt lekarskich. Celem naszych badań było poznanie opinii pacjentów na temat telekonsultacji w czasie pandemii COVID-19 w kontekście relacji i komunikacji z lekarzem.

Materiał i metody. Badanie przeprowadzono metodą ilościową za pomocą techniki CAWI. Wzięło w nim udział 1011 dorosłych pacjentów, którzy korzystali z konsultacji lekarzy rodzinnych. Do analizy zależności statystycznych użyto testu χ^2 Pearsona, przyjmując wartość $p < 0,05$.

Wyniki. 46,4% ankietowanych pozytywnie oceniło jakość komunikacji z lekarzem podczas telekonsultacji, 28,2% pacjentów wyraziło negatywne opinie w tym obszarze. Pozytywna ocena jakości telekonsultacji korelowała pozytywnie z płcią męską, wyższym wykształceniem i miejscem zamieszkania w dużym mieście. 43,3% pacjentów zgłosiło obawy związane z deficytem uwagi ze strony lekarza, czego doświadczyło podczas wizyty zdalnych. Aż 33% respondentów ujawniło, że konsultacja na odległość stała się przyczyną reedukacji ich zaufania do lekarza.

Wnioski. Bariery komunikacyjne pojawiające się podczas wizyt realizowanych w formie telekonsultacji mogą mieć istotny wpływ na ograniczenie rozumienia treści i zaleceń lekarskich. Ich eliminacja oraz podniesienie jakości komunikacji z pacjentami może okazać się efektywnym sposobem podniesienia poziomu obsługi oraz ułatwienia dostępu do usług lekarzy rodzinnych. Uzyskane wnioski mogą przyczynić się do poprawy funkcjonowania instytucji ochrony zdrowia, poprawy jakości usług i wzrostu satysfakcji pacjentów.

Słowa kluczowe

COVID-19, pandemia, satysfakcja pacjenta, relacja lekarz-pacjent, konsultacje zdalne

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INTRODUCTION

In January 2020, the World Health Organization (WHO) identified COVID-19 as a high risk to international public health [1]. Following this decision, the governments of countries worldwide began to take steps to change the way people live. In the short term, quarantine, isolation, and epidemiological surveillance became common requirements. Health checks were carried out at border crossing points, mass events were cancelled and public services closed. Next, a ban on gatherings and restrictions on movement were introduced [2].

The COVID-19 pandemic forced changes in the health care system, its organization, and the treatment of patients. Remote forms of medical consultation were introduced in many countries to minimize the risk of viral transmission [3]. Before the pandemic, telemedicine was generally used as a tool for monitoring patients with chronic diseases. Solutions dedicated to diabetic, cardiac, or nephrology patients were used to monitor their health on an ongoing basis [4–6].

As a result of legislative changes in response to the pandemic, in Poland, as in many other countries [7, 8], new regulations were introduced into the health care system that focused on implementing solutions designed to prevent and effectively combat COVID-19. The new solutions introduced the possibility of providing medical teleconsultations which were intended for patients suspected of COVID-19 infection or symptomatic COVID-19. In order to reduce the risk of viral transmission, it was also possible to consult patients with chronic conditions requiring treatment and health monitoring or medical consultations. The new remote visit arrangement required the patient's preference to be taken into account as to the form of contact with the physician. The standard of health care also required proper confirmation of the patient's identity and providing confidentiality. Physicians were required to determine, based on the history and patient's medical records, whether the teleconsultation is sufficient or if the patient should present for a visit in person [9].

During the COVID-19 pandemic in Poland, teleconsultation became the main tool for patients to contact their primary care physicians. A survey was carried out commissioned by the government which showed that six out of 10 Poles had a teleconsultation over a period of three months between December 2020 – February 2021 [10]. This data was confirmed in the analysis by the 'Biostat' Research and Development Centre which showed that 43.8% of Poles used remote medical teleconsultations between 10–17 April 2020. During the COVID-19 pandemic, teleconsultation was the most popular form of health care services (11).

OBJECTIVE

The aim of the study was to analyze the patients' statements concerning teleconsultations as a form of medical consultation during the COVID-19 pandemic, and their preferences for teleconsultations as a form of medical service. The impact of the COVID-19 pandemic on patient evaluation in terms of doctor-patient relationship and communication was also of importance. Because of the serious shortage of studies analyzing patients' experiences in this area, it was considered important to analyze the evaluation of teleconsultations as a medical service from the perspective of the patients.

Validation in this field may be important for improving the organization of health care systems.

MATERIALS AND METHOD

Study Design. A quantitative study was conducted using a diagnostic survey with a computer-assisted web interview (CAWI) technique. The data was collected using the authors' own digitalized research tool, with the focus on analyzing the results of 15 questions, six of which were independent variables.

Setting. Data was collected between 7 July – 30 November 2021, using a professional service designed to collect and process e-data for the research. This eliminated the phenomenon of missings (blank responses) and farming (multiple responses by a single respondent) by automatically blocking the IP of the device when the e-questionnaire had been completed.

The study group was contacted through social media, national patient foundations, and medical institutions. The respondents were informed about the study by online advertisements or by employees of health care institutions, and asked to fill out the questionnaire by clicking the link.

Participant Identification. The study involved adults who had received health care services during the COVID-19 pandemic and remained under the care of their family physicians. In the whole study group (N = 1011), an over-representation of women (84.1%), which was typical for the CAWI technique, respondents with tertiary education (57%) and patients younger – up to 35 years of age (52.6%) was obtained. 86.6% of patients were included in the analysis. Overall, 13.2% of the respondents reported that up to the time of the study they had not used teleconsultations during the COVID-19 pandemic; therefore, their statements were not taken into account.

Ethical Considerations. The research project and the research tool were approved by the independent Bioethics Committee for Research at the Medical University ANONIMUS (NKBBN/517/2021). Each patient gave their consent to partake in the study and was asked to read the detailed information about the purpose and nature of the study during which they could withdraw their participation at any time. No sensitive data was collected in this anonymous study.

Variables. The qualitative data was compared with the continuous variables, analyzing the significant statistical differences and correlations between them. Also analyzed were the links between socio-demographic variables and two questions on health concerns and the possibility of a COVID-19 infection, and the patients' evaluation of quality and satisfaction when communicating with their doctor during teleconsultations.

The discrete variables analyzed related to nine closed questions. They related to the patients' experience with certain aspects of their relationship with their doctor during teleconsultations, namely privacy, attention given to the patient, and issues with describing their health. They also focused on the evaluation of teleconsultations as a medical service and possible benefits of such a form of medical consultation even after the pandemic.

Likert's scale was used for the question about the re-use of teleconsultation. While presenting the results, the following answers were categorized: 'strongly yes', 'yes', 'rather not', and 'definitely not' as either an affirmative or negative response.

Statistical Considerations. Statistical analysis was performed using Statistica v. 13.3 software. Pearson's chi-squared test was used to analyze the relationship between the variables, assuming statistically significant differences of $p < 0.05$.

RESULTS

In the nationwide survey, responses were collected from 1,011 respondents residing in Poland (Tab. 1). From this group, 878 patients met the inclusion criteria and were included in the analysis. More frequent (16.8%) use of teleconsultations was reported by patients with tertiary education (10.4%; statistics: $\chi^2 = 8.788$, $df = 1$; $p = 0.003$).

Evaluation of selected aspects of doctor-patient relationship during teleconsultations.

In order to learn about the patients'

Table 1. Characteristics of the study group (N = 878)

Categories	N (%)	
Gender	female	745 (84.8)
	male	128 (14.6)
	I do not want to answer	5 (0.6)
Age	18 - 35	446 (50.8)
	36 - 45	217 (24.7)
	46 - 55	134 (15.3)
	56 - 65	51 (5.8)
	66 and over	30 (3.4)
Education	Elementary school	3 (0.3)
	Middle school	2 (0.2)
	Vocational training	28 (3.2)
	High school	329 (37.5)
	University degree	516 (58.8)
Marital status	single	339 (38.6)
	married	469 (53.4)
	widowed	14 (1.6)
	divorced	56 (6.4)
Place of residence	rural	156 (17.8)
	town with population < 50k	144 (16.4)
	city with population of 50k - 150k	129 (14.7)
	city with population of 150k - 500k	190 (21.6)
	city with population > 500k	259 (29.5)
Type of medical service	family physician in the clinic	770 (87.7)
	family physician in the private office	220 (25.1)
	family physician - visit in the office	153 (17.4)
	family physician - home visit	20 (2.3)
Number of visits or consultations during the pandemic	up to 7	698 (79.5)
	8 and more	180 (20.5)
Payer	National Health Fund	686 (78.1)
	private insurance company	86 (9.8)
	self-pay visit	106 (12.1)

opinions on teleconsultations, the participants were asked to evaluate the key elements of communication and relationship with their physician (Tab. 2).

Table 2. Characteristics of selected aspects of doctor-patient relationship (N = 878)

Questions describing teleconsultations	N (%)
Did you feel understood by the doctor?	Yes 566 (64.5)
	No 312 (35.5)
Did you have problems describing your health?	Yes 331 (37.7)
	No 547 (62.3)
Did you have any uncertainty about the diagnosis made by the doctor?	Yes 463 (52.7)
	No 415 (47.3)
Was the time spent with the doctor sufficient?	Yes 504 (57.4)
	No 374 (42.6)
Did you feel that you had privacy?	Yes 698 (79.5)
	No 180 (20.5)
Did you feel that your doctor was paying all of his/her attention?	Yes 498 (56.7)
	No 380 (43.3)

Statistical analysis showed the links between independent variables and the responses. Men were more likely (87.5%) than women (78.3%) to report that they were given a sense of privacy during a teleconsultation ($\chi^2 = 5.752$, $df = 1$; $p = 0.016$). More often (64.8%) than women (55.4%), they expressed positive opinions on the comments made by their doctor at the meeting ($\chi^2 = 3.94$, $df = 1$; $p = 0.047$). Patients with tertiary education less often (34%) reported problems with describing their health (42.7%); (statistics: $\chi^2 = 6.811$, $df = 1$; $p = 0.009$). The respondents aged over 56 also less frequently (23.2%) reported difficulties in describing their condition compared to people between 18–55 years of age ($\chi^2 = 7.619$, $df = 1$; $p = 0.006$). However, they more often (74.1%) felt understood by the doctor during teleconsultation, compared to people between 18–55 years of age (63.5%; statistics: $\chi^2 = 3.619$, $df = 1$; $p = 0.057$).

In a general question summarizing the evaluation of the quality of communication with the doctor during a teleconsultation, most patients reported that they assessed it well (46.4%); however, as many as 28.2% of respondents expressed negative opinions. Also, 25.4% of the patients declared a neutral opinion regarding the quality of their communication with their physician. Importantly, patients living in cities more often expressed positive opinions (47.4%), compared to patients from the countryside (41.7%; statistics: $\chi^2 = 7.407$, $df = 2$; $p = 0.025$). Patients with tertiary education more often (38.7%) than other respondents (35.2%) declared a deterioration in the physician's engagement in treatment during the pandemic ($\chi^2 = 11.094$, $df = 3$; $p = 0.011$).

Evaluation of teleconsultation as a medical service. Most of the patients who were asked (75.6%, N = 664) reported that they expected that teleconsultation as a form of medical contact would become a standard form of medical service, even after the COVID-19 pandemic.

Also assessed was whether the opinions expressed could be linked to the concerns of the patients regarding their own health assessments (Tab. 3).

Patients who were more likely to become infected with COVID-19 (81.9%) claimed that after the pandemic there

Table 3. Attitudes of respondents toward health concerns (N = 878)

Categories	N (%)	
How often do you think about your health?	very often	182 (20.7)
	often	403 (45.9)
	it is difficult to say	169 (19.2)
	rarely	105 (12)
	very rarely	19 (2.2)
Are you concerned about getting infected with COVID-19?	no	247 (28.1)
	neither yes nor no	211 (24)
	yes	420 (47.9)

should be opportunities for remote consultations, compared with those who were not afraid of contracting the disease (70.5%) or who were indifferent to it (69.2%; statistics: $\text{Chi}^2 = 17.314$, $\text{df} = 2$; $p = 0.000$). Also, those who almost never thought about their health, more often declared their acceptance of remote consultations as a form of contact with the doctor (84.2%; statistics: $\text{Chi}^2 = 17.781$, $\text{df} = 4$; $p = 0.001$). In turn, the most frequent negative opinions were expressed by residents of small towns and villages (71.1%; statistics: $\text{Chi}^2 = 9.342$, $\text{df} = 1$; $p = 0.002$).

More than half of the participants (51.3%, $N = 450$) declared that they would use teleconsultation in the future as a form of contact with the doctor, whereas 21.5% ($N = 189$) said they would not choose this form of contact in the future. As much as 27.2% ($N = 239$) remained undecided. The participants that feared COVID-19 more often (55.5%) declared they would use teleconsultation again, compared to those who were not afraid (47.8%) of COVID-19 infection, or who were indifferent (46.9%; statistics: $\text{Chi}^2 = 13.788$, $\text{df} = 4$; $p = 0.008$). The respondents who almost did not think about their health (68.4%) reported their willingness to use teleconsultations again more often than those who rarely (46.7%), often (53.4%), and very often (55%) were concerned with their health (statistics: $\text{Chi}^2 = 16.240$, $\text{df} = 8$; $p = 0.039$). The patients from small towns and villages less often declared their willingness (46.2%) to use teleconsultations again, compared with patients from populous urban areas (56.1%; statistics: $\text{Chi}^2 = 8.880$, $\text{df} = 2$; $p = 0.011$).

In 44.3% ($N = 389$) of cases, teleconsultation did not reduce the level of trust in the doctor; however, as much as 33% ($N = 290$) of patients reported that a remote consultation caused a re-evaluation of their trust. Other respondents (22.7%, $N = 199$) assessed this aspect of the relationship in a neutral way.

Despite the possibility of teleconsultations, women more often (76.9%) than men (71%) declared a more difficult access to the physician during the pandemic ($\text{Chi}^2 = 6.282$, $\text{df} = 2$; $p = 0.043$). Furthermore, those aged between 18–55 more often (76.3%) than older patients (over 56 years of age) reported that the COVID-19 pandemic did not facilitate access to a doctor (73.2%; statistics: $\text{Chi}^2 = 8,521$, $\text{df} = 2$; $p = 0.014$).

DISCUSSION

Although telemedicine has been used to monitor patients for more than a decade [12], it was only in 2020 that, due to the COVID-19 pandemic [13], it became one of the most rapidly developing tools in therapy [14]. The original reason for the selection of teleconsultations as a form of a visit has

now been almost forgotten, caused by a decrease in the daily number of cases and number of hospitalizations due to COVID-19 infection. Nevertheless, teleconsultations became a part of the health care system and are still preferred by some patients and doctors as a form of medical consultation. The benefits of teleconsultation include saving both the physician's and patient's time (reducing travel to medical facilities, waiting time, queuing for registration) and reducing transport costs [15–17], patient comfort and convenience, as well as improving access to health care [18, 19]. This is particularly important for patients living outside urban area, where medical facilities are often far from their place of residence [9, 20, 21]. An important use of teleconsultations was patient triage, which was introduced as a standard of care in more than 50 American health care centres [22]. This solution not only minimizes the risk of viral transmission but also significantly speeds up medical treatment for patients who require a rapid response from the health care system [23]. Despite the decline of the COVID-19 pandemic, teleconsultations remain an important part of the health care system, and benefits from this new standard of care are likely to be further developed [24].

From this perspective, learning about the opinions of patients who received teleconsultations during the COVID-19 pandemic may become important for designing effective telemedicine solutions. The presented study shows that the majority of respondents positively evaluated teleconsultations as a form of meeting with a doctor. As many as 75.6% of patients declared that they would use teleconsultation again if this form of visit remains available to them.

However, despite widespread acceptance of teleconsultation, this form of medical assistance has some limitations. Patients must be heard and understood by the doctor for effective communication [25], and 43.3% of the respondents raised concerns about the doctor's lack of attention. Analysis of medical visits provided in the form of teleconsultations revealed that both doctors and patients had a tendency to focus more on purely practical and technical aspects of the visit, which reduced their concentration on effective communication [24].

In the current study it was observed that with the higher education of respondents, the rate of teleconsultation use increased, i.e. the respondents with higher education most often declared their participation in teleconsultations. Analysis also showed that patients with tertiary education, compared to those with primary or secondary education, less often reported problems describing their health. Perhaps the doctors lacked the means of communication with patients with primary or vocational training, which was reflected by the use of terminology that was not understood by the patients [25]. M. Berg et al. in their study showed that the difference in education leads to a reduced possibility of a so-called 'empathy approach' in the doctor-patient relationship [26]. By adopting it, the clinician is able to assess the problem from the patient's perspective and to show his or her understanding better. It also allows patients to trust the doctor so that they can share the most intimate details of their illness. As shown by S. White et al., during teleconsultation, patients already ask fewer questions and less often report concerns regarding the disease itself or treatment [24]; therefore, an additional reduction in trust due to differences in education can ultimately reduce the effectiveness of remote consultations for some patients.

In the current study it was also observed that in 42.6% of patients the time spent on them by the doctor was insufficient [27]. The collected data indicate that the average consultation time was less than 10 minutes, while the traditional visit takes between 15–30 minutes [28]. This may be due to the fact that teleconsultations allow doctors to better control the duration of the visit [29]. It should be noted that the form of a remote consultation excludes physical examination and is therefore dedicated to patients requiring a prescription or referral to a specialist, or ordering tests. The lack of a physical examination is an undeniable inconvenience for both doctors [30, 31] and patients, as many studies show that this reinforces patients' concerns about the accuracy of the doctor's diagnosis [27, 32, 33]. Almost half (47.3%) of the patients in the current study stated that they were uncertain of the diagnosis communicated to them by the doctor during teleconsultation. Similar experiences were reported by Chinese patients in the study by Zhou, Y. et al. [25].

In the current study, a problem which was identified by 20.5% of respondents was the lack of privacy during teleconsultations. The sense of security in the doctor-patient relationship is an important factor affecting the therapeutic relationship [34]. This is an important aspect because it allows patients to speak with their doctor honestly and openly, and doctors can gather relevant clinical information [35]. There are reports indicating that teleconsultations can make it difficult to ensure a sense of safety for patients. This may be due to the presence of a third party in the patient's surroundings during the teleconsultation [36, 37]. Moreover, some patients, and especially elderly people who account for the majority of regular medical consultations, do not always feel competent to operate the telephone or other electronic devices and, therefore, require the presence of a third party during the teleconsultation [36].

Limitations of the study. Although the current study identifies the most common issues that can reduce patient's satisfaction with teleconsultations and cause deterioration in the doctor-patient relationship, the study has a number of limitations. Because the data were collected using the CAWI technique, the study group was not representative, and a large part of the participants were contacted through social media. For those respondents, their overall assessment of teleconsultations as a new form of treatment may be much more positive compared to patients who lack computer skills. Perhaps the small number (9.2%) of patients aged over 56 could also have had a significant impact on the results obtained. This group of patients use digital media the least frequently and usually prefer direct contact with their physicians. It can be assumed that those interactions are significantly more frequent than in patients under the age of 56.

CONCLUSIONS

According to the findings of the study, when providing medical services in the form of teleconsultations it is necessary to pay attention to the form of communication and its adaptation to the cognitive abilities of the patient. Communication barriers resulting from the use of remote communication can significantly limit a patient's

understanding of the information provided by the doctor. On the other hand, teleconsultations can help reduce the costs of providing health care services; they can also improve access to medical consultations. The findings also indicate that such visits should be dedicated to patients who need prescription renewals, sick leave, referrals for consultations, or initial tests. For patients visiting doctors for diagnostic purposes, a personal visit to the office seems to be more appropriate because it allows for physical examination.

The lack of privacy during teleconsultations due to the presence of other household members was highlighted by some patients. This seems to be an important aspect and it is proposed that during patient registration for an appointment, the patient should be given a choice of the form of consultation.

These conclusions may contribute to better functioning and organization of health care centres and improved forms of medical consultation. Their implementation could improve the quality of medical services and patient satisfaction.

Ethics approval and consent to participate. The project was completed based on a bilateral agreement between the universities and was approved by the Independent Bioethics Committee for Scientific Research at the Medical University of Gdańsk (Approval No. NKBBN/517/2021). All research methods were carried out in accordance with relevant guidelines and regulations. All participants gave informed consent to participate in the study.

Availability of data and materials

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

Competing interests

The authors declare that they have no competing interests.

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