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Research Article

Family physicians' opinions on examination fear and telemedicine during the pandemic

Aile hekimlerinin pandemi döneminde muayene fobisi ve online görüntülü muayene hakkındaki görüşleri

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Abstract

Introduction: During Covid-19 pandemic, many hospitals closed their outpatient clinics because of the high number of inpatients and individuals turned to their family physicians for medical care. In this study, we aimed to evaluate the opinions of family physicians regarding examination phobia and telemedicine video examinations during the pandemic.

Methods: This was a single-centered, cross-sectional study. The participating physicians completed a questionnaire with 28 questions including their sociodemographic data, whether they performed examination during the pandemic, telemedicine knowledge and opinions on telemedicine. Statistical analysis was conducted using SPSS 20 software package and statistical significance was set at $p<0.05$.

Results: 364 family physicians participated in our study and 163 of them (44.8%) reported hesitation while examining patients, with the majority (53.8%; n=196) expressing anxiety about oropharyngeal examinations. 211 of them (58%) reported having knowledge of telemedicine. The majority of family physicians thought that follow-ups and prescriptions for chronic diseases, repeat prescriptions, and post-treatment control examinations could be performed online whereas pregnant, postpartum, infant, and child follow-ups could not. While 40% (n=146) didn't want to provide services via video/telephone examination, 32.7% (n=119) wanted to and 27.2% (n=99) undecided. 86.8% (n=316) of them believed that telemedicine video/telephone examination could result in legal problems. Participants estimated that less than 25% of their daily patients were suitable for telemedicine, and that less than 25% had access to the necessary technology. However, 55.8% (n=203) of family physicians believed that patients would be interested in telemedicine, and 59.6% (n=216) thought that providing such services would increase their workload. Being undecided about providing services through telemedicine was more common among women (p=0.029), while unwillingness to provide online services increased with age and years of occupation (p=0.024, p=0.004, respectively).

Conclusion: Telemedicine, which has come to the forefront with the development of technology today, was seen as an opportunity to reduce contact with patients during the pandemic. However, our study found that family physicians believed that telemedicine services would increase their workload and that a large portion of society was not ready for this system.

Keywords: Telemedicine, telehealth, covid 19, family physician.

Öz

Giriş: Covid-19 pandemisinde birçok hastane yatan hasta yoğunluğundan polikliniklerini kapatmış ve bireyler tıbbi gereksinimleri için aile hekimlerine yönelmiştir. Bu çalışmada, pandemi sürecinde aile hekimlerinin muayene fobisi ve online görüntülü muayene hakkındaki görüşlerini değerlendirmeyi amaçladık.

Yöntem: Bu çalışma, tek merkezli ve kesitsel nitelikte bir çalışmadır. Hekimlere sosyodemografik verilerinin değerlendirildiği sorular ile tarafımızca hazırlanan pandemide muayene durumları ile online muayene hakkında bilgi durumu ve hekimlerin online muayene hakkında görüşlerini sorgulayan 28 sorudan oluşan bilgi formu uygulandı. $p<0,05$ istatistiksel olarak anlamlı kabul edilerek, istatistiksel analizde SPSS 20 paket programı kullanıldı.

Bulgular: Çalışmaya 364 aile hekimi katılmış ve bunların 163'ü (%44,8) hastaları muayene ederken çekindiğini belirtirken, en çok orofarinks muayenesinden çekindiklerini belirtmişlerdi (%53,8; n=196). Çalışmamıza katılan aile hekimlerinin %58 (n=211)'i online muayeneyi bildiğini ifade etmiştir. Aile hekimlerinin çoğunluğu kronik hastalıkların takip ve reçetelerinin, reçete tekrarlarının ve tedavi sonrası kontrol muayenelerinin online muayene üzerinden yapılabileceğini, gebe, lohusa, bebek ve çocuk takiplerinin ise yapılamayacağını düşünmekteydi. Aile hekimlerinin pandemi sürecinde %40(n=146) online muayene ile hizmet vermek istemezken; %32,7 (n=119)istemekte, %27,2 (n=99)'u kararsızdı. Aile Hekimlerinin %86.8 (n=316)'i online muayenenin hukuksal sorunlara yol açabileceğini düşünmektedir. Katılımcılar günlük hastalarının %25'inden azının online muayeneye uygun olduğunu ve kullanabilecek imkanların %25'inden azının sahip olduğunu düşünmekteydi. Ancak yine de Aile Hekimlerinin %55,8'i (n=203) hastaların buna ilgi göstereceğini ve %59,6'sı (n=216) iş yükünü arttıracağı fikrindeydi. Online muayene yoluyla hizmet sunma konusunda kararsız olma kadınlar arasında daha yaygınken (p=0,029), online hizmet sunma konusundaki isteksizlik yaş ve meslek yılı ile artmaktadır (sırasıyla p=0,024, p=0,004). Pandemi döneminde hasta muayene etme fobisi bulunan aile hekimleri online muayene hizmeti vermeye daha istekliydi (p=0,007). Ancak koruyucu ekipman kullanımına dikkat etme ile online muayene hizmeti sunma arasında anlamlı bir ilişki bulunmamıştır (p=0,069).

Sonuç: Günümüzde teknolojinin gelişmesiyle birlikte ön plana çıkan online muayene, pandemi döneminde hastalarla teması azaltmak için bir fırsat olarak görülmüştür. Ancak çalışmamız, aile hekimlerinin online muayenenin iş yüklerini artıracağına inandıklarını ve toplumun büyük bir kısmının bu sisteme hazır olmadığını ortaya koydu.

Anahtar Kelimeler: Tele tıp, tele sağlık, covid 19, aile hekimliği

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Key Points

1. Family physicians believed that telemedicine services would increase their workload and that a large portion of society was not ready for this system
2. It is important to address issues related to the effectiveness of physical examination, patient privacy, technical infrastructure, and legal problems in a timely manner.
3. The effective use of telemedicine, particularly in patient follow-ups, should be a priority.

Introduction

Telemedicine is based on the use of digital technologies to provide health and education remotely and to provide the physicians to consult patients to their colleagues when necessary [1]. The World Health Organization (WHO) defines telemedicine as "the delivery of health services, where distance is a critical factor, by all health professionals using information and communication technologies for the exchange of valid information for the diagnosis, treatment and prevention of disease and injury".[2] Many definitions emphasize that telemedicine is an open and constantly evolving practice that can adapt to the changing health needs of societies, as it includes and responds to new developments in technology [2].

Telemedicine, a term first coined in the 1970s, generally refers to the use of modern science and communication technology to increase access of medical institutions, physicians and patients to health resources and medical information for the prevention, diagnosis, and treatment of disease. It is widely used in situations of major public health emergencies, continuing education of health personnel, interdisciplinary research, management and effectiveness evaluation, and public health improvement [3].

In the 1980s and 1990s, with improvements in telecommunications and video imaging infrastructure, healthcare professionals started using telemedicine as a tool for distance education and decision-making.[4] Nowadays, developed countries such as the United States of America (USA), Canada, Australia, The United Kingdom, Germany, and the Netherlands effectively use telemedicine applications in most medical specialties, including cardiology, chronic wound care, dermatology, ophthalmology, and trauma care [4,5,6].

In Turkey, The Ministry of Health initiated infrastructure studies on telemedicine applications as part of the Health Transformation Program in 2007 [7]. The most recent directive on telemedicine in our country is the "Directive on the Procedures and Principles of Tele Health Service Application" dated 2015, which covers activities related to remote medical consultation services within the Turkish Search and Rescue Region for navigational sea and air vehicles requesting health assistance [8]. Subsequently, The Ministry of Health developed a teleradiology system in order to save time and costs, which was widely adopted throughout the country as of April 1, 2019. With the common imaging system of all hospitals, it was found that approximately 65% of physicians no longer needed to order additional radiology films [7].

Health professionals working in USA have used telemedicine to monitor patients at home and limit the potential spread of COVID-19, especially when it was observed that many cases originated from hospitals [9]. Additionally, telemedicine treatment has become the best strategy for preventing hospitals from being overwhelmed with COVID-19 patients, while also enabling patients to recover in the comfort of their own homes once diagnosed [9].

In our country, healthcare workers have been at the forefront of the fight against the pandemic, and unfortunately, many of them have lost their lives. This situation has led to an increase in the use of personal protection measures and the avoidance of physical examinations.

During the Covid-19 pandemic, many hospitals closed their outpatient clinics due to the high number of inpatients, and individuals were unable to visit hospitals due to fear of infection. This situation led individuals to turn to family physicians, who were primarily responsible for infant, child, and pregnant follow-ups. To manage the situation, triage protocols were applied in order to distinguish emergencies from others [10]. However, as the pandemic continued to intensify, alternative forms of healthcare services were sought, and telemedicine services became an important topic of discussion.

This study aimed to evaluate the opinions of family physicians regarding examination phobia and telemedicine video examinations during the pandemic.

Methods

Population and sampling: This was a single-centered, cross-sectional study. The population of this study consisted of Family Physicians working in Istanbul, while the sample included those who agreed to participate in the study during a one-month period between March- April 2022. Participants were recruited using an online form, and only those who provided consent were included in the study.
At the time the study was planned, there were 4000 family physicians actively working in Istanbul and it was planned to include at least 350 of them, with a 95% confidence interval, in the sample for this study.

Data collection methods: Physicians were asked to complete an online information form consisting of questions related to their sociodemographic data, examination status during the pandemic, knowledge about telemedicine, and opinions about telemedicine. The questionnaire, which had a total of 28 questions, was created after a review of the literature with the goal of gathering physicians' opinions on telemedicine.

Data analysis: In the data analysis for this study, Kolmogrov-Smirrov method was used in normality analysis and it was found that the distribution of the data was not normal. The parameters used in the study were categorized as either categorical or numerical. Numerical data were expressed as mean and standard deviation, while categorical data were expressed as median and percentages.

To compare the numerical data, t-tests were utilized while chi-square tests were used to compare categorical data. A p-value of <0.05 was considered statistically significant, and statistical analysis was performed using the SPSS 20.0 (Armonk, NY: IBM Corp) package program.

Ethical Approval: Ethical committee approval was obtained from Health Science University Sisli Hamidiye Etfal Training and Research Hospital Clinical Research Ethics Committee protocol dated 22.02.2022 and numbered 3421.

Results

364 family physicians participated in the study, 66.2% (n=241) of them were female, 67.6% (n=246) of them were in the 25-35 age group, and 48.4% (n=176) of them were in their first 5 years of practice. Information on the number of examinations and precautions taken during the pandemic are evaluated (Table 1). The participants stated examination numbers decreased the most during the pandemic period whereas the workload did not change. The number of family physicians who stated that they were afraid of examining patients during the pandemic was 163 (44.8%). Mostly they were afraid of oropharyngeal examination (53.8%; n=196). 297 (81.6%) of family physicians stated that they used personal protective equipment during the examination in pandemic period.

Table 1. Number of examinations during the pandemic and answers to questions about precautions during the examination

	n	%
How has your average number of patients changed during the pandemic?		
Decreased	152	41.8
Increased	71	19.6
Unchanged	141	38.6
How has your overall workload changed during the pandemic?		
Decreased	42	11.5
Increased	47	12.9
Unchanged	275	75.6
Did you hesitate to examine patients due to the risk of transmission during the pandemic?		
Yes	163	44.8
Sometimes	58	15.9
No	143	39.3
Which organs or systems do you particularly avoid examining?		
I never do examinations	6	1.6
Perform examinations where the risk of transmission is high, such as oropharynx	196	53.8
I inspect all systems	162	44.6
Did you use personal protective equipment while performed examination during the pandemic?		
Yes	297	81.7
No	10	2.6
Sometimes	57	15.7

Among the family physicians who participated in our study, 58% (n=211) stated that they knew about telemedicine services. The answers to the question about the services that can be provided through telemedicine are given (Table 2). The majority of family physicians thought that follow-ups and prescriptions for chronic diseases, repeat prescriptions, and post-treatment control examinations could be performed video/telephone examination whereas pregnant, postpartum, infant, and child follow-ups could not. Participants were asked which chronic diseases can be followed up with telemedicine, and the most common answers were stated, and the answers given less frequently were stated as 'others' (Figure 1). The most common opinion was that psychiatric diseases can be followed up via telemedicine video/telephone examination. While 40% (n=146) of family physicians did not want to provide services through telemedicine during the pandemic, 32.7% (n=119) of them wanted to, and 27.2% (n=99) of them were undecided. However, when asked about the desire to perform telemedicine services outside the pandemic, the rate of those who did not want to do so increased to 42.3% (n=152), while the number of undecided remained the same 86.8% (n=316) of family physicians thought that telemedicine video/telephone examination may cause legal problems. Being undecided about providing services through telemedicine was more common among women (p=0.029), while unwillingness to provide telemedicine services increased with age and years of occupation (p=0.024, p=0.004, respectively). Family physicians who were afraid of examining patients during the pandemic period were more willing to provide telemedicine services (p=0.007). However, there was no significant relationship between paying attention to the use of protective equipment and providing telemedicine services (p=0.069).

Table 2. Responses to the questioning of services that can be provided online examination

	Can be done with telemedicine video/telephone examination		
	Yes n (%)	No n (%)	Undecided n (%)
Repeat prescriptions for chronic diseases	138(37.9)	93(25.6)	133(36.5)
Renewal of prescription for continuation of treatment	218(59.9)	68(18.7)	78(21.4)
Infants follow up	23(6.3)	305(83.8)	36(9.9)
Pregnancy follow up	46(12.6)	271(74.5)	47(12.9)
Postpartum follow up	120(33)	191(52.5)	53(14.5)
Well-child follow up	51(14.1)	274(75.4)	38(10.5)
Control examinations	156(42.8)	123(33.8)	85(23.4)

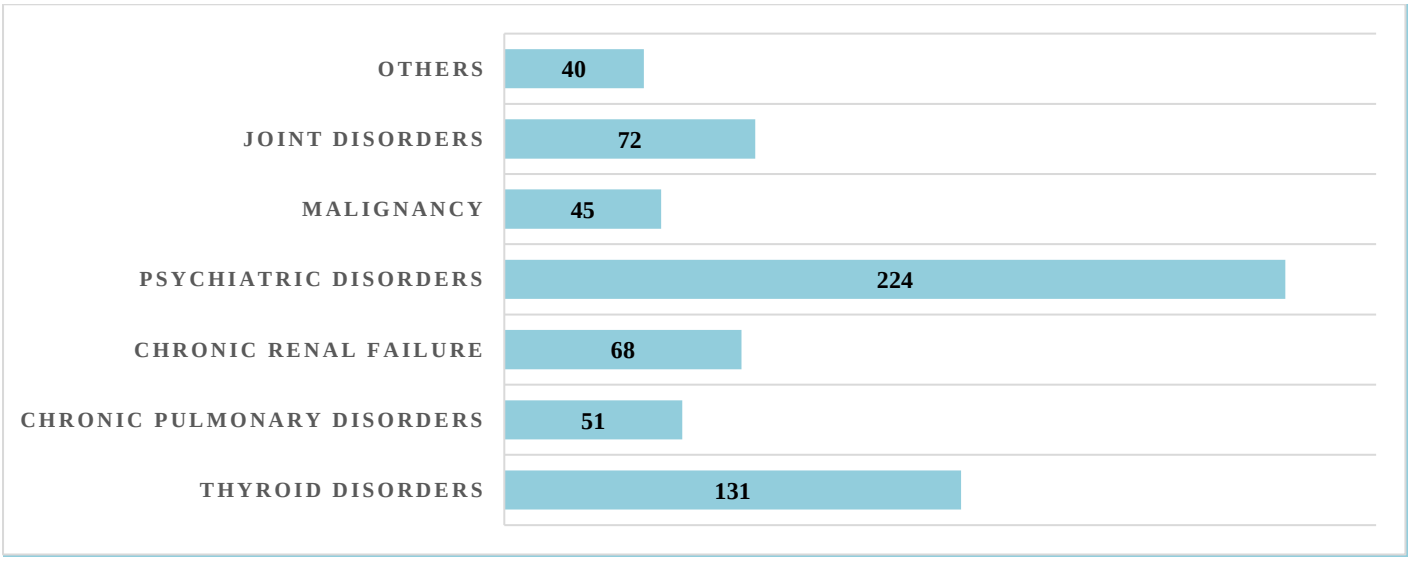

Figure 1. The opinions on which chronic diseases can be followed up with telemedicine video/telephone examination

The opinions of family physicians on the use of telemedicine services in their daily practice are given (Table 3). Participants considered less than 25% of their daily patients were suitable for telemedicine video/telephone examination, and less than 25% of them thought that they had the necessary facilities to conduct it. However, 55.8% (n=203) of family physicians thought that patients would show interest in telemedicine video/telephone examination, and 59.6% (n=216) thought that it would increase their workload.

Table 3. The opinions of family physicians on the use of telemedicine services in their daily practice

	n	%
What percentage of patients who come to you are eligible for telemedicine video/telephone examination?		
Less than 25%	221	60.7
25-50%	96	26.4
50-75%	36	9.9
More than 75%	11	3.0
What percentage of patients who come to you can use teleconsultation?		
Less than 25%	251	69.0
25-50%	90	24.7
50-75%	18	4.9
More than 75%	5	1.4
Do you think patients will show interest in telemedicine video/telephone examination?		
Yes	203	55.8
No	68	18.7
Undecided	93	25.5
How does teleconsultation affect your workload?		
Increases	217	59.6
Reduces	67	18.4
Unchanged	80	22.0

Discussion

The objective of this study was to investigate family physicians' perspectives on telemedicine services. The percentage of family physicians who knew about telemedicine video/telephone examination was 58%. This could be because telemedicine video/telephone examination has become more prominent during the pandemic period. Family physicians called the patients who were isolated at home in our country during the pandemic on the phone at regular intervals to check on them. Although they said that the number of patient visits was reduced, this could be the cause of the increase in their workload. In a study conducted in our country, 463 individuals were monitored in a Family Health Center between March 16 and May 5, 2020. 211 (45.6%) of them were categorized as those who have exposed to patients diagnosed with covid, 56 (12.1%) of them as certain cases, 168 (36.3%) as probable/suspected cases, and 28 (6%) of them as persons arriving from abroad. It was reported that they were contacted by phone while they were in isolation [11]. Individuals in home isolation were followed up by calling them between 5 to 14 times depending on their case status resulting in increased workload [12]. In another study conducted with family physicians about job strain during pandemic, workload and control sub-dimension changes increased while social support sub-dimension decreased [13].

The number of family physicians who stated that they examined patients without hesitation during the pandemic was 10 (2.5%). Those who stated that they did not perform examinations with a high risk of transmission, such as oropharynx, were 196 (53.8%). The number of family physicians who stated that they used personal protective equipment was 297 (81.6%). In publications on hesitation from patient examination during the pandemic period, it was mentioned that inspection examinations were performed, and no physical contact was made with patients [14, 15]. Again,

from the perspective of patients, studies have shown that many patients hesitated to apply to health centers during the pandemic period and even tried telemedicine examination methods [15, 16]. Although telemedicine examination seems to be a start for remote healthcare services, it cannot replace face-to-face physical examination.

Among the family physicians who participated in our study, 58% (n=211) reported that they knew about telemedicine services. Only 447 out of 5517 doctors (8.1%) were able to use the telemedicine platform, according to another study [17]. This conclusion underlines the necessity of providing training to assist doctors in providing remote medical care [18].

When asked which services could be provided online, family physicians said that follow-up and prescriptions for chronic diseases, repeat prescriptions, and post-treatment follow-up examinations could all be provided via telemedicine video/telephone examination, but follow-ups for pregnant women, puberty, infants, and children could not. This demonstrates that physical examinations are still important to physicians. The primary basis of medicine is good anamnesis and physical examination [19, 20].

However, one of the advantages of telemedicine video/telephone examinations is that they can reduce transportation costs. According to a study conducted in the USA, the average person travels 37 minutes for outpatient services and 84 minutes for clinic services [21]. On the other hand, a physician consultation takes an average of 15 minutes. In this context, telemedicine facilitates remote access to medical care for patients through web- or phone-enabled virtual consultations and may also provide financial advantages by reducing costs [21]. When family physicians were asked about the interest of the population connected to them in telemedicine video/telephone examinations, 55.8% of them thought that they would be interested; however, they believed that less than 25% of the population was suitable and available for examination. Most developing countries may not be able to fully adopt telemedicine, especially in remote and rural areas due to the low use of smart devices and poor 3G/4G internet networks [22]. Therefore, when selecting the areas where telemedicine services will be provided, special attention should be paid to the inherent characteristics of various groups of the population. Factors such as old age, low education level, and lack of experience in using digital technologies can reduce the benefits of existing digital technologies [23]. When asked about the desire to conduct telemedicine services outside of the pandemic, the rate of those who did not want to do so increased to 42.3% (n=152), while the undecided rate remained the same. 86.8% (n=316) of family physicians thought that telemedicine video/telephone could lead to legal problems, and 59.6% thought that it would increase workload. In another study, physicians expressed concerns about patient privacy policies or whether the telemedicine assessment was acceptable or met the standards required for a complete medical examination [24]. There is no fully designed legal framework to regulate the use of innovative computer technology solutions, such as telemedicine, in healthcare [25]. In many developing countries, there is a lack of legislation supporting telemedicine [26, 27]. Therefore, there is a need to provide guidelines and recommendations to educate both physicians and patients on how best to utilize telemedicine and virtual care [28]. The legal infrastructure to address these concerns needs to be put in place to address the concerns of physicians.

For patients who will use it, there are concerns about violating the confidentiality of their data, the occurrence of security gaps, and commercial exploitation that could jeopardize both informed consent and patient-clinician relationships [29, 30]. Awareness of data protection and data breach processes is essential for the smooth running of processes related to the recording and archiving of examinations.

Limitations

One of the limitations of our study is that it was conducted among family physicians working in the province of Istanbul. In future studies, it would be valuable to obtain the opinions of family physicians working in rural areas, with lower populations and providing mobile services.

Conclusion

Telemedicine, which has come to the forefront with the development of technology today, was seen as an opportunity to reduce contact with patients during the pandemic. However, our study found that family physicians believed that telemedicine video/telephone examination would increase their workload and that a large portion of society was not ready for this system. Therefore, it is important to address issues related to the effectiveness of physical examination, patient privacy, technical infrastructure, and legal problems in a timely manner. The effective use of that telemedicine services, particularly in patient follow-ups, should be a priority. To achieve this, necessary training should be organized for both patients and physicians.

For future research, researcher should consider the perspectives of doctors practicing in rural locations for a more thorough analysis. It will be possible to get more effective results by testing the telemedicine video/telephone examination application in a pilot study and getting the thoughts of the doctors who used it.

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	Author contribitions	**Author Initials**
SCD	Study Conception and Design	GZO, BGT, SOS, SBA
AD	Acquisition of Data	SOS, BGT, GZO, SBA
AID	Analysis and Interpretation of Data	BGT, SBA, SOS
DM	Drafting of Manuscript	GZO, BGT, SOS, SBA
CR	Critical Revision	BGT, GZO

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