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Effect of the COVID-19 Pandemic on Anxiety Level, Patient Approach and Oropharyngeal Examination in Family Medicine Outpatient Clinics: A Nationwide Descriptive Study in Turkey

Aile Hekimliği Polikliniklerinde COVID-19 Pandemisinin Anksiyete Düzeyi, Hasta Yaklaşımı ve Orofarengeal Muayene Üzerine Etkisi: Türkiye Genelinde Tanımlayıcı Bir Araştırma

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ÖZ

Amaç: COVID-19'un ruh sağlığı üzerindeki etkilerine ilişkin çok sayıda yayın bulunmasına rağmen, bu etkilerin hekimlerin hastalara yaklaşımını nasıl etkilediğine ilişkin veriler sınırlıdır. Bu çalışmada aile hekimliği (AH) polikliniklerine üst solunum yolu enfeksiyonu belirtileri ile başvuran hastaların fizik muayenesine aile hekimlerinin yaklaşımı, etkileyen faktörler ve aile hekimlerinin anksiyete düzeyi ile ilişkisinin değerlendirilmesi amaçlandı.
Araçlar ve Yöntem: 19.03.2022-25.04.2022 arasında aile hekimlerine sosyodemografik bilgiler, farklı yaşlardaki üst solunum yolu enfeksiyonu semptomları olan hastalara hekimlerin yaklaşımını değerlendiren olası vaka senaryoları ve Koronavirus Anksiyete Ölçeği'ni içeren online anket formu gönderildi.
Bulgular: Çalışmaya toplam 376 aile hekimi dahil edildi. Aile hekimleri, pandemi öncesi üst solunum yolu enfeksiyonu semptomlarıyla başvuran hastaların %99'una orofarenks ve solunum sistemi muayenesi yaptıklarını bildirmişti. Ancak pandemiyle birlikte hastayı muayene öncesi COVID-19 test merkezine yönlendirmek gibi kaçınma davranışlarının arttığı, orofarenks ve akciğer muayenelerinin daha düşük oranlarda yapıldığı bildirilmiştir. Koronavirus Anksiyete Ölçeği skorlarına göre aile hekimlerinin %5.1'inde tedavi gerektirebilecek düzeyde koronavirüs ile ilişkili işlevsiz anksiyete mevcuttu. Orofaringeal muayene, dil basacağı kullanımı ve akciğer oskültasyonu anksiyete grubunda daha düşüktü (sırasıyla p=0.002; p=0.012; p<0.001).
Sonuç: Aile hekimlerinin Koronavirus Anksiyete Ölçeği skorları düşük olmasına rağmen, koronavirüs ilişkili anksiyetesi mevcut olan hekimlerde daha fazla olmak üzere, farklı yaş gruplarında orofarengeal muayene oranlarının azaldığı belirlendi. Pandemi sonrasında fizik muayeneden kaçınma davranışının devam etmesini önlemek için hekimlerin biyopsikososyal iyilik halleri desteklenmeli ve ihtiyaçları belirlenmelidir.

Anahtar Kelimeler: aile hekimliği; fizik muayene; SARS-CoV-2

ABSTRACT

Purpose: Although numerous publications on the effects of COVID-19 on mental health exist, limited data exists on how these effects affect physicians' approaches to patients. This study aimed to evaluate family physicians' (FPs) approach to the physical examination of patients who applied to family medicine (FM) outpatient clinics with upper respiratory tract infection (URTI) symptoms, the influencing factors, and the relationship with FPs' anxiety levels.
Materials and Methods: An online questionnaire form containing sociodemographic information, probable case scenarios evaluating the physicians' approach to patients with URTI symptoms at different ages, and the Coronavirus Anxiety Scale (CAS) sent to FPs between 19.03.2022-25.04.2022.
Results: The study included a total of 376 FPs. FPs reported conducting oropharyngeal and respiratory system examinations in 99% of patients presenting with URTI symptoms before the pandemic. However, avoidance behaviors such as directing patients to COVID-19 testing centers before examination increased during the pandemic, leading to lower rates of oropharyngeal and lung examinations. According to CAS scores, 5.1% of FPs exhibited coronavirus-related dysfunctional anxiety levels requiring treatment. Oropharyngeal examination, use of tongue depressors, and lung auscultation were significantly lower in the anxiety group (p=0.002, p=0.012, p<0.001, respectively).
Conclusions: Although FPs' mean CAS scores were low, it was determined that oropharyngeal examination rates of different age groups of patients were decreased, particularly among physicians experiencing coronavirus-related anxiety. To prevent the continuation of avoidance behaviors from physical examinations post-pandemic, it is crucial to support the biopsychosocial well-being of physicians and identify their needs.

Keywords: family medicine; physical examination; SARS-CoV-2

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INTRODUCTION

Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus.[1] On March 11th, 2020, when the first case of COVID-19 was detected in Turkey, the World Health Organization (WHO) declared COVID-19 as a pandemic due to its spread and severity.[2] As of December 2023, more than 1.7 million cases and 101000 deaths due to COVID-19 have been reported in Turkey.[3] The disease is mainly transmitted by droplets and presents with symptoms of non-specific upper respiratory tract infections such as cough, sore throat, and high fever.[1,2,4] In the outpatient setting, it is known that physical examination, in addition to a comprehensive medical history, helps to narrow the differential diagnosis or, in most cases, to make the diagnosis. However, a specific head and neck examination has not been defined for COVID-19.[5,6] The diagnosis is finalised after studying the nasopharyngeal swab samples through "polymerase chain reaction (PCR)", a molecular test. However, in some cases, people can still be infected despite negative PCR results one after the other.[7] In addition, the pandemic has triggered many psychiatric problems, such as panic disorder, anxiety, depression, and post-traumatic stress disorder in individuals.[8,9] In these uncertainties, physicians have remained vulnerable to mental health problems due to the high risk of infection and the fear of spreading the virus to their families, friends, or colleagues.[10,11] There is limited data in the literature on how these effects affect physicians' approach to patients.

This study aimed to evaluate family physicians' (FPs) approach to the physical examination of patients who applied to family medicine (FM) outpatient clinics with upper respiratory tract infection symptoms, the influencing factors, and the relationship with the anxiety level of physicians.

MATERIALS and METHODS

Ethical Approval and Official Permissions

After the approval of the Republic of Turkey Ministry of Health Scientific Research Platform and Hatay Mustafa Kemal University Non-Interventional Research Ethics Committee (17.03.2022/ Decision no:02), permission for the scale to be used was obtained. Informed consent was obtained from all participants before the anonymously answered questionnaire, where participation was voluntary.

Data Gathering Form

The questionnaire form consisted of 3 parts. In the first part, 11 questions on sociodemographic information (age, gender, marital status, workplace and position, years in the profession and family practice, having children, vaccination status, COVID-19 transmission history, COVID-19 history in family, personal protective equipment (PPE) preferences) were questioned. In the second part, the approach of the physicians (examining the oropharynx and respiratory system according to COVID-19 PCR results) was evaluated over probable cases of different ages (5-, 30-, and 80-year-old patients with complaints of malaise, cough, fever, myalgia, and headache for four days). In the last part, the "Coronavirus Anxiety Scale (CAS)" was used, which was developed by Lee,[12] and the Turkish Validity-Reliability was conducted by Evren et al..[13] Each item of the CAS is rated on a 5-point scale from 0 (not at all) to 4 (almost every day) based on experiences (feeling dizzy, paralysed, having stomach or sleeping problems) over the past two weeks. The optimised cut-off score of the CAS is ≥ 9 (90% sensitivity, 85% specificity, Cronbach's alpha coefficient: 0,80).[12,13] Those who scored nine and above from the participants were evaluated as having "dysfunctional anxiety". This form of scaling is consistent with the Diagnostic and Statistical Manual of Mental Disorders-5's (DSM-5) intersectional symptom scale. Infectious Diseases, Paediatrics, Ear, Nose and Throat, and Chest Diseases specialists were consulted while creating paediatric, adult and geriatric patient case questions.

Data Collection

The questionnaire was created through Google Forms and sent to the participants via FM e-mail groups, WhatsApp groups, and social media platforms between 19.03.2022 and 25.04.2022, and reminded three times with one-week intervals. All questions had to be answered for the survey response to be recorded. Filling out the survey took between 10-15 minutes.

Sample Size

The sample size was calculated as 318 with a 50% frequency, a 5% margin of error and a 95% confidence interval with the Epi Info program, assuming that there are approximately twenty thousand FPs working in Turkey and that the dysfunctional anxiety associated with COVID-19 frequency of FPs is 30%. Data collection was continued until 20% more participants were reached than the sample size calculated to increase the study's reliability, and 381 FPs completed the questionnaire. Five questionnaires with incomplete and inconsistent answers were excluded from the study, and the study was conducted with 376 FPs.

Statistical Analysis

Data analysis was done using the IBM SPSS 26.0 (SPSS Inc., Chicago, IL, USA) package program. For the analysis of categorical data, Pearson's chi-squared test was used. For quantitative data, after determining the suitability of normal distribution with the Kolmogorov-Smirnov test, Unpaired t-test and One-way ANOVA test (Post-Hoc Bonferroni test) or Mann-Whitney U test and Kruskal Wallis One-way Analysis of Variance (Post-Hoc Tamhane's test) were used. A value of $p<0.05$ was considered statistically significant.

RESULTS

The study involved 376 FPs. Table 1 presents the sociodemographic characteristics of the participants. The median age of the participants was 32 years. The most commonly used personal protective equipment (PPE) was surgical masks (37.8%), followed by masks combined with face shields (36.7%). The percentage of FPs who had not received COVID-19 vaccination was 1.9% (n=7). The most preferred vaccination combination was two doses of Sinovac-CoronaVac and two doses of Pfizer-BioNTech, chosen by 43.6% of the participants.

Table 1. Sociodemographic characteristics of the participants.

Characteristics	**Median (Min-Max)**
Age	32.0 (26-65)
Experience in Family Practice (years)	4.2 (1-15)
Professional Experience (years)	7.0 (1-42)
	% (n)
Gender	
Female	54.5 (205)
Male	45.5 (171)
Title	
Resident Doctor (University Hospital)	21.8 (82)
Resident Doctor (Training and Research Hospital [TRH])	10.6 (40)
Contracted FM resident (CFMR)*	4.5 (17)
FM Specialist (FMS)	40.4 (152)
General Practitioner (GP)**	22.6 (85)
Having children	47.3 (178)
Having had COVID-19	
Yes	54.3 (204)
No	45.7 (172)
FPs whose first-degree relatives have had COVID-19	73.9 (278)
FPs whose first-degree relatives died due to COVID-19	3.5 (13)
Using of PPE before the COVID-19* **	
Yes	40.4 (152)
No	59.6 (224)
Using of PPE during the pandemic* **	
Surgical mask	37.8 (142)
Mask + Face shield	36.7 (138)
N95 mask (and equivalents)	24.2 (91)
Not using	1.3 (5)

*CFMR is a form of specialisation training supported by the government to increase the number of FMS in Turkey, in which GPs working in Family Healthcare Centers (FHCs) receive an average of 3 months of rotation training per year at a University Hospital or a TRH. At the end of 6 years, they earn the title of FMS.
**In this study, physicians who graduated from medical school and worked in the FHCs without any specialisation training in FM were called GPs.
***PPEs used during oropharyngeal system examinatio

Table 2 (Probable case questions). "When a 5-year-old female patient/30-year-old male patient/80-year-old female patient applies with complaints of malaise, cough, fever, myalgia, and headache for four days, please tick the options that suit your approach, considering the PPE you use in your daily practice."

SCENARIOS / ANSWERS	5-year-old		30-year-old		80-year-old	
	YES %(n)	NO %(n)	YES %(n)	NO %(n)	YES %(n)	NO %(n)
1. **Before the pandemic,** I would always examine the oropharynx and respiratory system in such a patient.	99.2 (373)	0.8 (3)	98.7 (371)	1.3 (5)	98.9 (372)	1.1 (4)
2. **First,** I refer the patient for the COVID-19 PCR test; if the result is negative, I will examine her/him.	37.8 (142)	62.2 (234)	55.1 (207)	44.9 (169)	48.7 (183)	51.3 (193)
3. If the patient has completed the recommended COVID-19 vaccination schedule, I would examine without a negative COVID-19 PCR result.*	55.6 (209)	44.4 (167)	48.4 (182)	51.6 (194)	53.5 (201)	46.5 (175)
4. If the patient has had COVID-19 infection before, I would examine without a negative COVID-19 PCR result.	55.3 (208)	44.7 (168)	48.1 (181)	51.9 (195)	53.5 (201)	46.5 (175)
5. I would do an oropharyngeal inspection without a negative COVID-19 PCR result.	68.1 (256)	31.9 (120)	48.9 (184)	51.1 (192)	54.0 (203)	46.0 (173)
6. I would examine the tonsils and oropharynx with a tongue depressor without a negative COVID-19 PCR result.	63.0 (237)	37.0 (139)	42.0 (158)	58.0 (218)	48.1 (181)	51.9 (195)
7. I would auscultate the lungs without a negative COVID-19 PCR result.	77.9 (293)	22.1 (83)	60.6 (228)	39.4 (148)	68.1 (256)	31.9 (120)

* For the 5-year-old case, the completion of the recommended vaccination schedule of the parents/caregiver was used in the scenario.

Table 3. Coronavirus anxiety scale results.

How often have you experienced the following activities over the last 2 weeks?		Not at all	Rare, less than a day or two	Several days	More than 7 days	Nearly every day over the last 2 weeks
1.	I felt dizzy, lightheaded, or faint, when I read or listened to news about the coronavirus.	291	50	31	4	0
2.	I had trouble falling or staying asleep because I was thinking about the coronavirus.	289	47	28	11	1
3.	I felt paralyzed or frozen when I thought about or was exposed to information about the coronavirus.	332	25	17	1	1
4.	I lost interest in eating when I thought about or was exposed to information about the coronavirus.	320	31	14	9	2
5.	I felt nauseous or had stomach problems when I thought about or was exposed to information about the coronavirus.	307	34	24	9	2

Average CAS score of participants: 1,4±3,0 (minimum:0, maksimum:17)
*The results are shown as the number of participants (n) who agree with the propositions.

When asked about their approach to probable cases of different ages, 37.8% (n=142) of FPs indicated they would refer the 5-year-old case for PCR testing without examination, while 55.1% (n=207) would do the same for the 50-year-old case, and 48.7% (n=183) for the 80-year-old case. Further details are provided in Table 2.

The median CAS score of the participants was 0 (min:0, max:17, mean:1.4±3.0). While 66.8% (n=251) of the FPs scored 0 and did not show any signs of anxiety for COVID-19, 5.1% (n=19) of the FPs had a level of dysfunctional anxiety that could require treatment with a score of 9 or higher (Table 3). The rate of dysfunctional anxiety was higher in single FPs compared to married FPs (p=0.028). GPs and CFMRs had a significantly higher mean CAS score than FMSs (p=0.009).

When the approach of FPs to probable cases was compared, for the 5-year-old case, referral of the patient for the PCR sampling without examination was significantly higher in the dysfunctional anxiety group (p=0.004). In addition, oropharyngeal inspection, using a tongue depressor, and lung auscultation were lower in the dysfunctional anxiety group (p=0.002; p=0.012; p<0.001, respectively). No significant correlation was found between examination behaviours and CAS scores in probable cases aged 30 and 80 (p>0.05).

DISCUSSION

The study was completed with 376 FPs, 20% above the targeted sample. Even if there are potential changes in practice reflected in society and healthcare systems due to the decreased severity of COVID-19 and no longer defined

as a Public Health Emergency of International Concern,[2] this research, which is the first nationwide study conducted during the pandemic and investigating the effect of the pandemic on the patient approach in FM outpatient clinics, is still of importance. Looking at probable case scenarios, while oropharynx and respiratory system examinations were performed at 99% levels in all age groups before the pandemic, serious decreases in these rates were observed during the COVID-19 pandemic and examination avoidance behaviours of FPs increased.

Considering the anatomical viral distribution of COVID-19 in the nasopharynx and mucosal airways, head and neck examinations require more careful preparation and protection, especially for healthcare workers (HCWs) at high risk of exposure.[4] In our study, more than half of the participants stated that they did not use PPE in the pre-pandemic period. This rate decreased significantly during the COVID-19 period, and the most frequently used PPE was a surgical mask, which was recommended as the first choice by the Turkish Ministry of Health.[14]

A systematic review conducted in 2021 shows that the rate of HCWs who tested positive for COVID-19 was 51.7%.[15] While the rate of infection reported among HCWs at the beginning of the pandemic in Turkey was 52.3%, in our study, 54.3% of FPs were found to have had COVID-19 infection.[16] While the rate of those who had at least two vaccine doses in Turkey was 85.7%, this rate was 97.6% in our study.[17] This high rate has been associated with HCWs being the first group to be vaccinated against COVID-19 in Turkey and physicians supporting the vaccine more than other healthcare professionals.[18,19]

In our study, 19 FPs scored nine or higher in CAS (dysfunctional anxiety that may require treatment), while the CAS score of the vast majority was 0 (median:0, min:0, max:17). The fact that the study was conducted at a time when the effect of the pandemic was decreasing may have caused most physicians to have a CAS score of 0. At the beginning of the pandemic, in a study conducted by Evren et al. on the general population in Turkey in May 2020, the mean CAS score was 6.66±2.65; this score was found to be 7.94±3.92 in HCWs who encountered COVID-19 positive patients.[13] At the end of the first year of the pandemic, in February 2021, the average CAS score was 0.77±2.32 in the study conducted on the general population in Turkey; similarly, in a study conducted with students, the mean CAS score was found to be 1.06±2.24.[20,21] In light of this information, the low CAS scores in our study were not surprising considering the increasing vaccination rates, the number of cases that tended to decrease, and the start of the normalisation process.[3,17] In our study, the average CAS score was higher in CFMRs and GPs, the physicians working in Family Healthcare Centers (FHCs). FHCs have faced extra workloads as the first point of application during the pandemic, such as COVID-19 patient follow-up, monitoring of patients coming from abroad during the 14-day quarantine, daily questioning of symptoms with telemedicine applications, and COVID-19 vaccination.[22,23] On the other hand, continuing preventive health services, non-communicable disease follow-up, and implementing the National Immunisation Programme may have caused physicians to feel under pressure.[24,25]

It is predicted that physical examinations will decrease substantially after the pandemic. Even before the pandemic, it was known that in some cases, physicians did not apply the traditional physical examination or applied it incompletely and only used the patient's history and many medical tests in their decision-making.[26] Our study found that 61.3% of FPs avoided examining patients with suspected COVID-19. Considering the frequency of asymptomatic carriers, limiting close physical contact and physical examination with the patient is understandable. Still, it is known that careful medical history taking and a problem-focused physical examination have an essential role in the patient-physician relationship and exclude differential diagnoses.[5,26]

While it was observed that the approach to the needs of adults aged an average of 40 and 80-90 in health services was similar, in our study, FPs showed a similar physical examination approach to adult and geriatric age groups but less avoidance behaviour in paediatric cases.[27,28] This situation might be associated with the fact that the duration of paediatric education in undergraduate medical education is at least three times longer than that of geriatric education so that physicians feel more confident about paediatric patient management, the low rate of

hospitalisation in paediatric COVID-19 cases, and the fact that children are primarily asymptomatic.[28,29] According to the definition of WONCA (World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians), FM discipline should deal with all health problems regardless of age, gender, or other patient characteristics.[30] However, our study shows that age is an important determinant in patient approach during the pandemic.

Limitations

Since the number of FPs with dysfunctional anxiety in the study was unevenly distributed, a cross-table with sociodemographic characteristics could not be made. Studies in which CAS was applied to other physician groups in Turkey do not exist in the literature, limiting our discussion. Another limitation that could be mentioned is that since the survey was distributed online, it was possible that physicians who do not actively use social media and internet-based communication systems would not be able to answer the survey. Additionally, the responses were probably affected by recall bias.

Conclusions

When considering the possibility of encountering epidemics and pandemics, the continuation of biopsychosocial well-being for all physicians should be supported. We would like to emphasise the importance of physical examination for the communication that develops over time and continues for many years, especially in disciplines such as FM, which has a unique patient interview process. Determining the needs of physicians and emergency plans to ensure they work safely will prevent the behaviour of avoiding physical examination from continuing after the COVID-19 outbreak.

Conflict of Interest

The authors declare that there is not any conflict of interest regarding the publication of this manuscript.

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The summary of the preliminary results of this study was presented at the 21st International Congress of Eastern Mediterranean Family Medicine held in Adana between 12-15 May 2022, and the summary of the results of this study was presented at the 1st International Congress of Eastern Black Sea Family Medicine held in Ordu between 23-27 May 2023.

Ethics Committee Permission

Approval for this study was obtained from Hatay Mustafa Kemal University Non-Interventional Research Ethics Committee (dated 17.03.2022 and numbered 02).

Authors' Contributions

Concept/Design: NA, HSÇ, YS. Data Collection and/or Processing: NA, HSÇ. Data analysis and interpretation: YS. Literature Search: NA. Drafting manuscript: NA, HSÇ. Critical revision of manuscript: HSÇ, YS.

REFERENCES

1. Ciotti M, Ciccozzi M, Terrinoni A, Jiang W-C, Wang C-B, Bernardini S. The COVID-19 pandemic. Crit Rev Clin Lab Sci. 2020;57(6): 365-388.
2. World Health Organization (WHO). Coronavirus disease (COVID-19) pandemic. https://www.who.int/europe/emergencies/situations/covid-19#:~:text=On%205%20May%202023%2C%20more,the%20definition%20of%20a%20PHEIC. Accessed date 11 December, 2023.
3. World Health Organization (WHO). WHO Coronavirus (COVID-19) Dashboard. https://covid19.who.int/. Accessed date 04 December, 2023.
4. Struyf T, Deeks JJ, Dinnes J, et al. Signs and symptoms to determine if a patient presenting in primary care or hospital outpatient settings has COVID-19 disease. Cochrane Database Syst Rev. 2020;7(7):Cd013665.
5. Artandi MK, Stewart RW. The Outpatient Physical Examination. Med Clin North Am. 2018;102(3):465-473.
6. Chan JYK, Tsang RKY, Yeung KW, et al. There is no routine head and neck exam during the COVID-19 pandemic. Head Neck. 2020;42(6):1235-1239.
7. Hornuss D, Laubner K, Monasterio C, Thimme R, Wagner D. [COVID-19 associated pneumonia despite repeatedly negative PCR-analysis from oropharyngeal swabs]. Dtsch Med Wochenschr. 2020;145(12):844-849.
8. Duan L, Zhu G. Psychological interventions for people affected by the COVID-19 epidemic. Lancet Psychiatry. 2020;7(4):300-302.
9. Jakovljevic M, Bjedov S, Jaksic N, Jakovljevic I. COVID-19 Pandemia and Public and Global Mental Health from the Perspective of Global Health Securit. Psychiatr Danub. 2020;32(1):6-14.
10. Çevik H, Ungan M. The impacts of the COVID-19 pandemic on the mental health and residency training of family medicine residents: findings from a nationwide cross-sectional survey in Turkey. BMC Fam Pract. 2021;22(1):226.
11. Xiang YT, Yang Y, Li W, et al. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. Lancet Psychiatry. 2020;7(3):228-229.

12. Lee SA. Coronavirus Anxiety Scale: A brief mental health screener for COVID-19 related anxiety. Death Stud. 2020;44(7):393-401.
13. Evren C, Evren B, Dalbudak E, Topcu M, Kutlu N. Measuring anxiety related to COVID-19: A Turkish validation study of the Coronavirus Anxiety Scale. Death Stud. 2022;46(5):1052-1058.
14. Türkiye Cumhuriyeti Sağlık Bakanlığı. Covid-19 Bilgilendirme Platformu: Sağlık Personeline Yönelik. https://covid19.saglik.gov.tr/TR-66260/saglik-personeline-yonelik.html. Accessed date 2 April, 2022.
15. Gholami M, Fawad I, Shadan S, et al. COVID-19 and healthcare workers: A systematic review and meta-analysis. Int J Infect Dis. 2021;104: 335-346.
16. Türk Toraks Derneği. Sağlık Çalışanları Aileleriyle Birlikte COVID-19 Hastalığına Yakalanıyor. https://www.toraks.org.tr/site/community/news/10018. Accessed date 30 May, 2022.
17. Türkiye Cumhuriyeti Sağlık Bakanlığı. COVID-19 Aşısı Bilgilendirme Platformu: Günlük Aşı Verileri. https://covid19asi.saglik.gov.tr/. Accessed date 11 December, 2023.
18. Türkiye Cumhuriyeti Sağlık Bakanlığı. Covid-19 Bilgilendirme Platformu: Aşı Uygulanacak Grup Sıralaması. https://covid19asi.saglik.gov.tr/TR-77707/asi-uygulanacak-grup-siralamasi.html. Accessed date 30 May, 2022.
19. Kader C, Erbay A, Demirel MS, et al. Evaluation of Attitudes and Behaviors of Healthcare Professionals towards COVID-19 Vaccination/Saglik Calisanlarinin COVID-19 Asilamasina Yonelik Tutum ve Davranislarinin Degerlendirilmesi. Klimik Journal. 2022;35(1): 30-36.
20. Savkin R, Oztop M, Bayrak G, Buker N. Factors affecting fear, obsession, and anxiety Associated with COVID-19: a cross-sectional study in patients admitted to University Hospital Outpatient Clinics. Erciyes Med. J.2022;44(3):263-269.
21. Uslu Y, Bektemür G, Öztürk GZ, Egici MT, Çetinkaya E. Evaluation COVID-19 and Professional Anxiety of Medical Faculty Students. Hamidiye Med. J. 2022;3(1).
22. Türk Tabipleri Birliği (TTB) Aile Hekimliği Kolu (AHEK). Aile Hekimliğinde Halkın COVID-19 Aşılanması Sürecinde Yönetim Krizi Sürüyor. https://www.ttb.org.tr/kollar/_ahek/haber_goster.php?Guid=6d94b7ac-6a1a-11eb-88fd-c02d9f991fd1. Accessed date 05 June, 2022.
23. Önal S, Kaya G. Pandemi Sürecinde Uzaktan Hasta Takibi Uygulamalarında Tele-Tıp Ve Birinci Basamaktaki Yeri. Klinik Tıp Aile Hekimliği. 2020;12(3):98-106.
24. Türk Tabipleri Birliği (TTB) Aile Hekimliği Kolu (AHEK). Aile hekimliğinde COVID-19 salgın yönetiminde sorunları büyüyor. https://www.ttb.org.tr/kollar/COVID19/haber_goster.php?Guid=cc04f5da-7bd8-11ea-a12d-7aee3f6e69c5. Accessed date 05 June, 2022.
25. Newell F. Framework for patient and public participation in primary care commissioning. England. NHS. 2016.
26. Gelfman DM. Will the Traditional Physical Examination Be Another Casualty of COVID-19? Am J Med. 2021;134(3):299-300.
27. Inouye SK. Creating an anti-ageist healthcare system to improve care for our current and future selves. Nat Aging. 2021;1(2):150-152.
28. Özger İlhan S. Mezuniyet Öncesi Tıp Eğitimi Çekirdek Programı. 2020.
29. Ludvigsson JF. Children are unlikely to be the main drivers of the COVID-19 pandemic - A systematic review. Acta Paediatr. 2020;109(8): 1525-1530.
30. WONCA Europe. The European definition of general practice/family medicine. Spain: WONCA. 2002.