

The impact of COVID-19 pandemic on urology residency in Turkey: a nationwide survey

COVID-19 pandemisinin Türkiye'deki üroloji asistanlığındaki etkisi

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Özet

Amaç: Hayatın her alanını etkisi altına alan Covid-19 pandemisi, akademik ve sağlık hizmetlerini de derinden etkilemiştir. Daha önce pandeminin Türkiye'deki üroloji asistanlarının akademik ve sağlık hizmetleri üzerindeki etkilerine ilişkin herhangi bir değerlendirme yapılmamıştır. Biz çalışmamızda bunu değerlendirmeyi amaçladık.

Gereç ve Yöntemler: Anket dört ana başlıkta (eğitim ve araştırma faaliyetleri, sağlık hizmetlerinde çalışma koşulları, sosyal-psikolojik etkiler ve kişisel sağlık) toplam 31 sorudan oluşmakta ve Temmuz-Ağustos 2020 tarihleri arasında gerçekleştirilmiştir. Türkiye'de 89 üroloji eğitim merkezi olup, bunların 76'sı (%85,4; 38 üniversite ve 38 devlet hastanesi) anketi doldurmuş ve geri dönmüştür.

Bulgular: Asistanların ortalama haftalık eğitim saatleri azaldı (2,43±2,46 saatten 1,3±1,8 saate; p=0,00) ve 67 merkez (%88,15) web seminerleri ve video konferans gibi yeni teknolojileri kullandı.

Haftalık araştırma faaliyetlerine ayrılan süre de pandemi sırasında azaldı (2,15±2,54 saatten 1,8±1,93 saate; p<0.001). Üniversite hastaneleri araştırma faaliyetlerini artırırken (%9,9) devlet hastanelerinde ise azaldı (%44). Haftalık ortalama poliklinik saati 86.23±86.54'ten 37.22±19.88'e (p<0.001) geriledi ve devlet hastanelerinde (%63.61) üniversite hastanelerine (%42.41) göre daha yüksekti (p<0.05). Pandemi öncesi döneme göre haftalık ameliyat sayısında önemli bir azalma gözlemlendi (40.7±24.25'ten 14,3±16.44'e; p<0.001). Ayrıca 74 merkez (%97,36) acil ürolojik vakaları

Abstract

Objective: The Covid-19 pandemic, which affects all areas of life, has also deeply affected academic and health services. There has previously been no assessment of the effects of the pandemic on the academic and health services of urology residents in Turkey, for this purpose, a survey was conducted.

Material and Methods: The survey consisted of a total of 31 questions under four main topics (education and research activities, working conditions in health services, social-psychological effects, and personal health) and was carried out between July-August 2020. The survey was 89 urology training centers in Turkey; among them, 76 (85.4%; 38 universities and 38 state hospitals) completed and returned the questionnaire.

Results: The average weekly education hours decreased (2.43±2.46 hours to 1.3±1.8 hours; p=.00) and 67 centers (88.15%) used new technologies such as webinars and videoconferencing.

The time devoted to weekly research activities also decreased during the pandemic (2.15±2.54 hours to 1.8±1.93 hours; p<0.001). However, university hospitals increased their research activities (9.9%), while state hospitals decreased (44%). The average weekly outpatient clinic hours decreased from 86.23±86.54 to 37.22±19.88 (p<0.001) and the regression was higher in state hospitals (63.61%) compared to university hospitals (42.41%) (p <0.05). A significant decrease was observed in the number of operations per week compared to the pre-pandemic period (from

The study was approved by Gaziosmanpaşa Training and Research Hospital Clinic Investigations Ethic Committee (Approval No: 2020-116, Date: 2020/06/23). All research was performed in accordance with relevant guidelines/regulations, and informed consent was obtained from all participants.

uygulamaya devam ettiğini, 41 merkez (%53,9) toplam çalışma saatlerinin azaldığını, 72 merkez (%94,7) ise üroloji dışı alanlarda Covid poliklinikleri veya hizmetleri gibi çalıştığını bildirdi.

Asistanlar için 10 merkez (%13.15) çocuk bakımı, 55'i (%72.36) konaklama, 18'i (%23.68) ulaşım sağladı fakat 33 merkez (%43.42) kişisel koruyucu donanımdan yoksundu. 26 merkez (%34.21) komorbiditesi olan çalışanlarına izin verdi. Asistanlar 57 merkezde (%75) yeterli cerrahi vaka olmamasından, 73 merkezde (%96.05) Covid-19'un ailesine bulaşmasından ve 34 merkezde (%44.73) ailelerini korumak için evlerinden taşınmış olmasından endişe duyuyorlardı. Ayrıca 25 merkezde (%32.89) asistan izole edilmiş, 54 merkezde (%71.85) hastalık sorgusu (şüphe) nedeniyle sürüntü alınmıştır. Asistanlara 14 merkezde (%18.42) Covid-19 teşhisi konuldu.

Sonuç: Bu araştırma, Covid-19 pandemisinin yaşamın tüm alanlarını etkilediği gibi üroloji asistanlarının akademik (eğitim ve araştırma), sosyal ve psikolojik yaşamlarında da ciddi olumsuzluklara neden olduğunu göstermiştir.

Anahtar Kelimeler: COVID-19, asistanlık, pandemi, üroloji eğitimi, cerrahi eğitim

40.7±24.25 to 14.3±16.44; p<0.001). In addition, 74 centers (97.36%) reported that they continued to perform emergency urological cases and 41 centers (53.9%) reported that the total working hours decreased, but 72 centers (94.7%) reported that they were employed in non-urology areas such as Covid outpatient clinics or services.

For the residents, 10 centers (13.15%) provided childcare, 55 centers (72.36%) provided accommodation, and 18 centers (23.68%) provided transportation, but 33 centers (43.42%) lacked protective personal equipment and 26 centers (34.21%) gave leave to employees with comorbidity. Residents were concerned about not having enough surgical cases in 57 centers (75%), the transmission of Covid-19 to their family in 73 centers (96.05%), and in 34 centers (44.73%), they had moved away from their homes to protect their families. Furthermore, residents were isolated in 25 centers (32.89%) and swabs were taken in 54 centers (71.85%) due to the query (doubt, suspicion) of illness. Residents were diagnosed with Covid-19 in 14 centers (18.42%).

Conclusion: This survey has shown that as the Covid-19 pandemic affects all areas of life, it also causes serious negatives in the academic (educational and research), social, and psychological lives of urology residents.

Keywords: COVID-19, residency, pandemic, urology training, surgical training

INTRODUCTION

A highly contagious new strain of the coronavirus family (SARS-Cov-2) causing respiratory system infections and high mortality rates was discovered in December 2019 in Wuhan, China (1). The Covid-19 epidemic quickly spread around the world in February and March, and World Health Organization (WHO) officially declared it as a pandemic on March 11, 2020 (2). The first cases in Turkey were announced in March, and the virus spread to affect the entire health system, as was the case in many other countries (3). Throughout this process, a number of precautions were taken, such as increasing intensive care unit capacity, postponing elective surgeries, decreasing outpatient clinic hours, and assigning large numbers of doctors to the treatment of Covid-19 patients regardless of their area of specialty (3). These changes in health institutions had a significant impact on residents in urology. Therefore, a large-scale assessment regarding the effects of the pandemic on academic development and the health services provided by the residents in urology became necessary. This study, which to our knowledge,

is the first to assume this task, aims to investigate the impact of the pandemic on academic activities (education & research), working conditions, psychosocial factors, and the personal health of urology residents in Turkey.

MATERIAL AND METHODS

After receiving the approval letter from the ethics committee of Gaziosmanpasa Training and Research Hospital (with number of 116), this survey study was conducted during June and August 2020 on residents in urology at the 89 centers providing urology training in Turkey. The survey consisted of four main sub-sections: academic activities (education & research), working conditions in health services, psychosocial factors, and personal health. An anonymous survey was created using Google Forms and was announced to departments of urology via email by the Turkish Association of Urology. One resident from each department was asked to complete the questionnaire (Figure 1).

Data were analysed using SPSS version 22 for Windows (SPSS, Inc. Chicago, IL, USA). Non-normally

distributed variables were expressed as medians (with minima to maxima) and qualitative variables as numbers and percentages. Kolmogorov-Smirnov test was used for normality. Educational, research, outpatient clinic hours and operation numbers before and after pandemic were compared using Wilcoxon Signed rank test. Comparative differences were considered statistically significant when $p < 0.05$.

RESULTS

The data were collected from 7 geographical regions, 41 cities, and 76 departments (38 university hospitals, 38 research and training state hospitals of the Health Ministry) responded (Figure 2). The response rate was 85.4%. The age of 92.1% of the participants was between 20 and 30, and 84.2% were in the first two years of their residency. The results are summarized in tables.

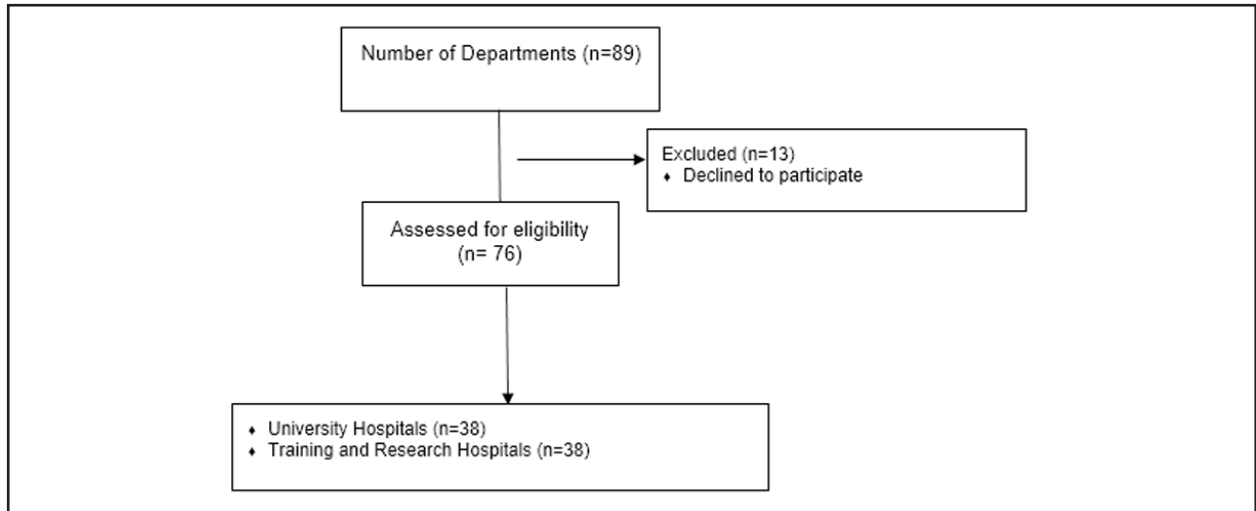


Figure 1. Flowchart of the survey



Figure 2. Coverage of the survey: 41 cities, 7 geographic region

Table 1. Participant Characteristics (n:76)

Age (years±SD)	28.35±7.11
Level of training	
First year	41.5%
Second year	43.9%
Third year	10.1%
4-5 years	4.5%
Response rate	85.4%
Geographic Region	
Marmara Region	38.1%
Aegean Region	10.5%
Mediterranean Region	10.5%
Central Anatolian Region	15.7%
Black Sea Region	14.4%
Eastern Anatolian Region	7.8%
Southeastern Anatolian Region	5.2%
Redeployed to Covid-19 clinics	94.7%
Decrease in overall total working hours	53.9%
Performed emergent urological cases	97.3%
Stopped elective surgeries	86.9%
Adequate access to PPE	56.6%
Access to childcare services	13.1%
Availability of accommodation options	72.3%
Use transportation support	23.6%
Allow staff with comorbidity to go on leave	34.2%
Anxiety about training	75%
Fears of infecting their family members	96.1%
Moving out of their houses	44.7%
Swab for Covid-19	72.85%
Ill with Covid-19	18.42%

Table 2. The effects of Covid-19 pandemic on academic activities and working conditions

	Before	After	p value
Research hours per week (±SD)	2.15±2.54	1.8±1.93	.00
Education/Seminar hours per week (±SD)	2.43±2.46	1.3±1.8	.00
Number of surgeries per week (±SD)	40.7±24.25	14.3±16.44	.00
Urology outpatient clinics hours per week (±SD)	86.23±86.54	37.22±19.88	.00

1. Education and Research Activities

Of the 76 departments, 22 reported that they had suspended all research and 46 centers that they had suspended all education activities after the pandemic had begun. The average number of educational hours per week was observed to decrease from 2 (0-25) hours to 0 (0-35 hours; $p < 0.001$), and this decrease was more drastic in the state hospitals (62%) compared to university hospitals (27.57%) ($p < 0.001$). However, 10 of these departments (4 university hospitals, 6 state hospitals) reported that they had not had any educational hours prior to the pandemic either. On the other hand, 10 departments reported an increase in educational activities and 67 departments (88.15%) were observed to use new technologies such as distant learning and video conferencing.

The number of weekly hours devoted to research also decreased with the pandemic (1 (0-45) hours to 0 (0-55) hours; $p < 0.001$). However, university hospitals were seen to increase their research activities (9.9%) while a decrease was evident in the state hospitals. A significant number of these departments ($n = 27$, 35.52%; 9 university hospitals and 18 state hospitals) reported that they had not engaged in any research activities prior to the pandemic.

2. Working Conditions in Patient Health Care

The weekly hours for urology outpatient clinics were observed to decrease from 86.23 ± 86.54 hours to 37.22 ± 19.88 hours ($p < 0.001$), and this decrease was larger in university hospitals (42.41%) compared to the state hospitals (63.61%) ($p < 0.001$). Weekly surgery numbers were also reported to decrease significantly (37,5 (9-165) to 10 (0-90), $p < 0.001$), which was more evident in state hospitals in comparison to university hospitals (77.02% vs 52.05%, $p < 0.01$). Furthermore, 74 departments (97.36%) reported that they continued to undertake emergency urology cases. There were three university hospitals which preserved their work routines, and elective urology services continued in 10 departments (8 university of hospitals, 2 state hospitals). When weekly work hours were surveyed, 41 departments (53.9%) reported a decrease in overall hours, but 72 departments (94.7%) reported working in non-urology areas such as outpatient and inpatient Covid centers.

3. Psychosocial Factors

When the services provided by the institutes to residents during the pandemic were evaluated, 10 departments (13.15%) reported access to childcare services, 55 departments (72.36%) reported the availability of accommodation options, and 18 departments (23.68%) were able to use transportation support. However, 33 departments (43.42%) reported a shortage of personal protective equipment (PPE). Some departments (34.21%) were reported to allow staff with comorbidity to go on leave. When asked about the psychological effects of the pandemic, 57 departments (75%) reported anxiety about falling behind in terms of their surgical training, fears of infecting their family members were evident in 73 departments (96.05%), and 34 departments (44.73%) reported that they had moved out of their homes to protect their families.

4. Personal Health

In terms of the effects of Covid 19 on their personal health, 25 (32.89%) departments reported having residents who were isolated due to the possibility of infection, 54 departments (71.85%) reported that their residents were tested for the same reason, and there were residents diagnosed with Covid-19 in 14 departments (18.42%). Among the departments who participated in the survey, there were not any residents who had lost their lives.

DISCUSSION

The COVID-19 pandemic has affected all areas of life. The health care system had come to a standstill with the high level of hospital admissions in many countries. The unknown aspects of the disease, such as the symptoms, treatments, and potential complications caused a global crisis. To deal with the many outpatient visits and intensive care patients, guidelines were prepared by medical associations which suggested the classification of all cases as urgent/non-urgent or deferrable/non-deferrable. As a result, delays to all non-urgent operations and procedures, until the crisis has been brought under-control, aims to minimize the spread of the virus and free up healthcare professionals and hospital beds (4, 5).

This study, with its focus on the effects of COVID-19 on the urology residents in terms of their academic development, occupational conditions, psychosocial factors, and personal health, is a first in Turkey. The pandemic has had deep impacts on the urology residents of Turkey due to significant changes taking place in their lives. As is the case for many countries, the rise of COVID-19 incidences resulted in nearly all urology residents who participated in the study (94.7%) working outside their field by serving in COVID-19 outpatient and inpatient clinics as well as intensive care units. Similarly, studies conducted in United States and Europe have reported the rate of mandatory assignment to be above 80% (6, 7).

Regarding the training conditions of the urology residents in Turkey, we have observed during the pandemic that structured and applied training was either put on hold or shortened in many centers. Urology clinics in Turkey reported that they had started to use distant education or video conferencing tools (88.15%), which normally had not been a part of their programs, in order to make up for the forced interruption in training. In the United States, too, these new education and training models were utilized (8,9). Despite the new methods, 75% of the urology residents in our study reported anxiety about insufficient urology training. In a study conducted in the United States, 91% of urology residents reported that there were considering discontinuing their urology training should the pandemic continue in its present conditions (10). According to a survey conducted among urology training directors, 60% of the participants thought that residents in urology were not receiving sufficient training during the pandemic, compared to the prior conditions (7).

As for the amount of time that urology residents could spare for research activities, the impact of the pandemic has been more significant in state hospitals, compared to the university hospitals, where the interruption in urological services provided more time for research. Recent study from Europe reported that 85% residents were finding more time to conduct research during the period spent away from the clinic (6). Similarly, 77% of the residents participating in another study in the United States reported having more time for research (7). Looking at the urology research in PubMed,

in 2020, there has been a significant change in the number of publications in comparison to the previous three years (2016-2019). The increase of publications in andrology, endourology, urologic infections, and urologic emergencies subsections increased by almost 30% (11).

In parallel to their academic lives, an investigation of occupational conditions of urology residents in Turkey revealed significant changes. Both applications to urology outpatient clinics and the number of elective urology surgeries have significantly decreased since the start of the pandemic. The fall in the number of clinic hours and operations have been reported to be up to 90% in other developing countries with similar economic and health parameters to Turkey and developed countries (12-21). According to our results, even though the urology outpatient services provided have decreased more significantly in university hospitals, the decrease in the number of operations is greater for state hospitals.

An evaluation of the effects of the pandemic on the psychosocial lives of urology residents has revealed that, in addition to anxieties about insufficient training, problems in obtaining protective equipment and fears of spreading the virus to family members have had a negative impact on the urology residents' psychological wellbeing. These sources of anxiety are not unique to Turkey. In the United States, almost half of the residents have been reported to have problems concerning having access to protective equipment (7). In Canada, residents were not allowed in surgery due to a shortage of protective equipment (22, 23). The fear of catching the disease and infecting family members has been reported to be common in other countries as well (7, 12-21). All these sources of anxiety affect not only the urology residents, but also the urology specialists. A study by Rajwa et. al. indicates that 57.6% of the urology specialists report feelings of worry, sadness, and fear, and 80% observed their colleagues to be negatively affected during the pandemic (16). Similar to many other countries, residents have been provided with varying degrees of accommodation, transportation, and childcare support by their affiliated institution.

In terms of the personal health of the urology residents during the pandemic, we have found that 71.85% of residents have been tested for the virus. Studies conducted in developed countries, on the other hand,

report regular tests for all health personnel (7,22,23). Of the clinics which participated in our study, 18.42% reported that one or more residents had been diagnosed with COVID-19. This percentage, for urology residents, was reported to be 3% in the United States (7). When compared with other countries, the high positive rate in Turkey may be explained by the working conditions, insufficiency of protective equipment, and mandatory service in non-urology departments.

In this study, we did not group the residents according to their years in training. We chose one resident from each clinic, and the instruments we used for evaluating psychological status were not validated. Furthermore, our survey did not include a question regarding the residents' income, and we did not receive evaluations from the training directors. All of these factors are limitations of our study to be considered in further research.

CONCLUSION

It is well-known that COVID-19 pandemic has many challenges and affects all areas of life, it also affect the lives of medical residents. The pandemic created serious negativities in terms of academic (education and research), working conditions in patient health care, psychosocial lives and personal health of urology residents in Turkey.

Conflict of Interest

The authors declare to have no conflicts of interest.

Financial Disclosure

The authors declared that this study has received no financial support.

Informed Consent

Informed consent was obtained from all individual participants included in the study.

Ethical Approval

The study was approved by Gaziosmanpaşa Training and Research Hospital Clinic Investigations Ethic Committee (Approval No: 2020-116, Date: 2020/06/23) and written informed consent was received from all participants. The study protocol conformed to the ethical guidelines of the Helsinki Declaration.

Author Contributions

Conception and design; AK, CTG, AK, Data acquisition; NCC, CK, OF, Data analysis and interpretation; CTG, CK, OF, Drafting the manuscript; AK, CTG, CK, Critical revision of the manuscript for scientific and factual content; NCC, CTG, OF, Statistical analysis; AK, AK, Supervision; AK, AK.

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Appendix

Tıpta Uzmanlık Öğrencilerinin Covid-19 Pandemisinden Etkilenme Düzeyleri

Değerli meslektaşlarımız;

Türk Üroloji Akademisi koordinatörlüğünde, “Türkiye’deki Üroloji İhtisası Yapan Tıpta Uzmanlık Öğrencilerinin COVID-19 Pandemisinden Etkilenme Düzeyleri” başlıklı anket çalışması planlanmıştır (Etik Kurul No: 2020/116). Çalışmaya pandemi süresince tıpta uzmanlık eğitimi veren kliniklerin katılımı amaçlanmaktadır. Çalışmaya dâhil olmak için anket formunu doldurmanız yeterli olacaktır.

Formun Üstü

1. Kimlik Bilgileri

Ad-Soyad:

Doğum Tarihi:

Çalıştığı Kurum

İhtisasa Başlama Tarihi:

2. Pandemi öncesi rutinde kliniğinizde haftalık üroloji poliklinik saati neydi?

3. Pandemi süresince kliniğinizde haftalık üroloji poliklinik saati neydi?

4. Pandemi öncesi rutinde kliniğinizde haftalık üroloji ameliyatı sayısı neydi?

5. Pandemi süresince kliniğinizde haftalık üroloji ameliyatı sayısı neydi?

6. Pandemi süresince kliniğinizin çalışma düzeninde değişiklik oldu mu?

Evet

Hayır

7. Pandemi süresince elektif üroloji hizmetleri durdu mu?

Evet

Hayır

8. Pandemi süresince sadece üroloji hastalarının bulunduğu serviste haftalık çalışma saatiniz değişti mi?

Arttı

Aynı

Azaldı

9. Pandemi süresince her bir asistan hekimin haftalık toplam çalışma saati önceki rutine göre nasıl değişti?

Arttı

Aynı

Azaldı

10. Pandemi süresince kliniğinizdeki asistan hekimler üroloji pratiği dışında görevlendirildi mi? (örneğin: Covid servisi-polikliniği)

11. Pandemi öncesinde kliniğinizde haftalık teorik eğitim ve seminerler için ayrılan süre kaç saat idi?

12. Pandemi süresince kliniğinizde haftalık teorik eğitim ve seminerler için ayrılan süre kaç saat idi? (uzaktan eğitim, video konferans vb. dahil)

13. Pandemi öncesinde kliniğinizde araştırma için ayrılan süre kaç saat idi?

14. Pandemi süresince kliniğinizde haftalık araştırma için ayrılan süre kaç saat idi?

15. Pandemi süresince uzaktan eğitim, videokonferans vb. yeni teknolojileri eğitim ve araştırma çalışmalar için kullandınız mı?

Evet

Hayır

16. Yeterli cerrahi vakaya girememe endişesi yaşadınız mı?

Evet

Hayır

17. Acil üroloji vakalar yapıldı mı?

Evet

Hayır

18. Elektif ürolojik cerrahiler yapıldı mı?

Evet

Hayır

19. Ailenize hastalık bulaştırma endişesi duydunuz mu?

Evet

- Hayır
20. Çocuk bakımı konusunda çalıştığınız kurum tarafından destekte bulunuldu mu?
- Evet
- Hayır
21. Pandemi süresince evinizden ayrı yaşamak zorunda kaldınız mı?
- Evet
- Hayır
22. Pandemi süresince çalıştığınız kurum tarafından konaklama imkânı sunuldu mu?
- Evet
- Hayır
23. Pandemi süresince çalıştığınız kurum tarafından ulaşım imkânı sunuldu mu?
- Evet
- Hayır
24. Çalıştığınız kurumda çalışma alanlarında sosyal mesafe ile maruziyeti düşürmek için çalışma yapıldı mı?
- Evet
- Hayır
25. Virüse maruziyet konusunda endişe duydunuz mu?
- Evet
- Hayır
26. Kişisel koruyucu ekipmana ulaşmada eksiklik hissettiniz mi
- Evet
- Hayır

27. Çalıştığınız kurumda komorbiditesi olan çalışanlara izin verildi mi?

- Evet
- Hayır

28. Çalıştığınız kurumda karantinaya alınan asistan hekim oldu mu? (Branşı neydi?)

29. Çalıştığınız kurumda Covid-19 için sürüntü alınan veya test yapılan asistan hekim oldu mu? (Branşı neydi?)

30. Çalıştığınız kurumda Covid-19'a yakalanan asistan hekim oldu mu? (Branşı neydi?)

31. Çalıştığınız kurumda Covid-19'a yakalanan ve hayatını kaybeden asistan hekim oldu mu? (Branşı neydi?)

Formun Altı