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# How did The COVID-19 Pandemic Affect Urology Publications?

## COVID-19 Pandemisi Üroloji Yayınlarını Nasıl Etkiledi?

**Tumay Ipekci[1], Ahmet Asfuroglu[2], Ali Yildiz[3], Muhammet Murat Dincer[4], Emrah Yuruk[5], Murat Bozlu[6], Ates Kadioglu[7]**

[1]Department of Urology, Bahcesehir University Faculty of Medicine, VM Medical Park Maltepe Hospital, Istanbul, Turkey
[2]Department of Urology, Etimesgut State Hospital, Ankara, Turkey
[3]Department of Urology, Okan University Faculty of Medicine, Istanbul, Turkey
[4]Department of Urology, University of Health Sciences, Bagcilar Training and Research Hospital, Istanbul, Turkey
[5]Department of Urology, BHT Clinic Istanbul Tema Hospital, Istanbul, Turkey
[6]Department of Urology, Mersin University Faculty of Medicine, Mersin, Turkey
[7]Department of Urology, Istanbul University Faculty of Medicine, Istanbul, Turkey

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**Corresponding Author:** Ahmet Asfuroglu / Etimesgut State Hospital, Department of Urology, Ankara, Turkey / ahmetasfur@hotmail.com / ORCID ID: 0000-0002-4310-7444

## Abstract

**Objective:** To evaluate the effect of the pandemic on the publications related to urology.
**Materials and Methods:** All publications about urology in the PubMed database between 2016 and 2020 were reviewed. The number and the rate of change in the number of these publications issued between the years 2016-2019, and in 2020 were recorded. The publications about urology and COVID-19 in the pandemic period were identified, their publication rates among them were examined.
**Results:** There was a reduction of 24.33% in the rates of publications on urology during the pandemic period compared to the time interval between the years 2016, and 2019, but without any statistically significant difference (p=0.122). A statistically significant difference was found only in the number of publications related to urological surgery between 2016-2019 and 2020 (p=0.045), but without any statistically significant difference in the number of publications on other subdiciplines of urology (p>0.05). The ratio of publications on COVID-19 and urology to all publications on COVID-19 was 1.33 percent. The ratio of publications on COVID-19 and urology to all publications on urology in 2020 was found to be 1.98 percent.
**Conclusion:** The COVID-19 pandemic did not make a significant difference in the number of publications on urology. Although disasters such as pandemics may not affect the number of publications, they can change the types of publications to which scientists are directed to.

**Keywords:** COVID-19, pandemic, publication, article, urology

## Öz

**Amaç:** COVID-19 pandemisinin üroloji ile ilgili yayınlara etkisinin değerlendirilmesi amaçlandı.
**Gereçler ve Yöntemler:** 2016-2020 yılları arasında PubMed veri tabanında üroloji ile ilgili tüm yayınlar incelendi. 2016-2019 ve 2020 yılları arasındaki yayın sayıları ve sayılarındaki değişim oranı kaydedildi. Pandemi döneminde üroloji ve COVID-19 ile ilgili yayınlar tespit edildi, tüm yayınlarla oranı incelendi.
**Bulgular:** Pandemi döneminde 2016-2019 yılına göre üroloji ile ilgili yayınlarda %24,33 azalma oldu ancak istatistiksel olarak anlamlı fark yoktu (p=0,122). Sadece ürolojik cerrahi ile ilgili yayın sayısında 2016-2019 ve 2020 yılları arasında istatistiksel olarak anlamlı fark bulundu (p=0.045), ancak üroloji ile ilgili diğer başlıklara sahip yayın sayısında istatistiksel olarak anlamlı bir fark yoktu (p>0,05). COVID-19 ve üroloji ile ilgili yayınların toplam COVID-19 yayınlarına oranı %1,33 oldu. 2020 yılında COVID-19 ve üroloji ile ilgili yayınların toplam üroloji yayınlarına oranı %1,98 olarak bulundu.
**Sonuç:** COVID-19 pandemisi üroloji ile ilgili yayın sayısında anlamlı bir fark yaratmadı. Pandemi gibi afetler yayın sayısını etkilemese de bilim insanlarının yöneldiği yayın türlerini değiştirebilir.

**Anahtar kelimeler:** COVID-19, pandemi, yayın, makale, üroloji

| ORCID ID: | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **T. Ipekci** | 0000-0002-2755-0526 | **M.M. Dincer** | 0000-0001-7110-4155 | **M. Bozlu** | 0000-0002-8624-0149 |
| | **A. Yildiz** | 0000-0003-0293-9989 | **E. Yuruk** | 0000-0002-2343-8828 | **A. Kadioglu** | 0000-0002-5767-4837 |

## Introduction

The coronavirus disease 2019 (COVID-19) is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), and it has a worldwide impact on healthcare systems. During the pandemic period, there has been a significant alteration in the health care procedures in many medical establishments [1]. All routine non-oncological and certain oncological surgical procedures were canceled, and some patient interviews were conducted by the telephone or as video consultations [2,3]. Besides, full-scale restrictions were implemented by the governments of many countries to put an end to the pandemic [4]. In addition to the risk of healthcare workers getting the disease, there is also a risk of developing adverse psychological consequences such as anxiety, burnout, depression, fear of infection, a sense of incompatibility, and post-traumatic stress disorder [5].

The pandemic also negatively affected the publication process from the preparation and submission of the studies to their acceptance. Due to the pressure to publish highly acclaimed information on COVID-19, concerns about the quality of the data and peer reviews by editors were raised. The urgency of publicising available data on the pandemic seems to justify the basic limitations of the studies, such as their small sample size, lack of randomization or blinding, and invalidated results [6].

Although the negative effect of the pandemic on the process and quality of the publications is taken into consideration, to the best of our knowledge, its effect on the publications in any subspecialty of medicine has not been specifically investigated. Therefore, we aimed to evaluate the impact of the pandemic on urology publications.

## Materials and Methods

This retrospective study reviewed all publications on urology included in the PubMed database between 2016 and 2020. All publications related to COVID-19 released between December 31, 2019 where the first case was declared by the World Health Organization and January 1, 2021 were evaluated.

The publications were reviewed and grouped according to the mostly searched inclusive titles as urology, endourology, urooncology, pediatric urology, andrology, urogynecology, robotic urology, neuro-urology and urinary incontinence, kidney transplantation, urology, and infectious diseases, prostatic diseases, bladder diseases, urinary stone disease, urologic surgery, and urological emergency. The number of publications retrieved was recorded. The number of publications released between the years 2016-2019 and in the year 2020 was compared and the rate of change in their numbers was recorded. The publications were compared according to the titles sought between 2016- 2019 and in the year 2020.

All publications on urology were grouped and quantitatively evaluated in terms of clinical trials, meta-analyses, randomized controlled trials, review articles, and systematic reviews. Letters to the editor, book chapters, oral presentations, and moderated posters were excluded in this study. The number of all types of publications released between 2016- 2019 and in 2020 was compared and the rate of change in their numbers was recorded.

Besides, the publications on urology and COVID-19 in the pandemic period (2020) were identified, grouped using the same titles and types, and their numbers were recorded. The ratio of all publications and all individual types of publications on COVID-19 and urology, to all, and individual types of publications on COVID-19 was noted. The ratio of all and individual types of publications on COVID-19 and urology to all, and individual types of publications on urology in 2020 was also noted. The study was approved by the Ethics Committee of University of Health Sciences Dr. Sadi Konuk Training and Research Hospital (Approval number: 2021/577).

### Statistical Analysis

In the statistical analysis of this study, Statistical Package for the Social Sciences (SPSS Inc.; Chicago, IL, USA) 27.0 program was used. For descriptive statistics, categorical variables were expressed as absolute numbers and percentages, and continuous variables as means ± standard deviations. The percentage difference between two dependent variables was calculated. For comparisons between two dependent variables, the Wilcoxon test was used for non-normally distributed data. A value of $p< 0.05$ was considered statistically significant.

## Results

In the current study, it was found that between 2016 and 2019 and in 2020 a total of 45,018, and 8,516 publications related to urology were published, respectively. During the pandemic period in the year 2020, the number of urology-related publications decreased, albeit not statistically significantly by 24.33% compared to the average of the previous four years ($p=0.122$).

In the detailed evaluation, the total number of publications on subspecialties of urology released between 2016- 2019 is shown in **Table 1**.

Considering the titles of the publications, there was a statistically significant difference only in the number of publications related to urological surgery between 2016- 2019 and in 2020 ($p=0.045$). Any statistically significant difference in the number of publications related to other subspecialties of urology was not noted ($p>0.05$). The average number of publications related to urology between 2016- 2019 and during the pandemic period is shown in **Table 2**.

Between 2016, and 2019, 7,729 clinical trials, 3,740 meta-analyses, 4988 randomized controlled trials, 23,703 review articles, and 4,858 systematic reviews were published. When the 2016-2019 and 2020 data were compared, it was observed that the highest reduction among the types of publications related to urology was in clinical trials, the lowest reduction was in reviews, as well as an increase in systematic reviews. The number, and rate of change in publication types related to urology are shown in **Table 3**.

The andrology publications increased by 30.22% in 2020 compared to the average number of publications particularly including review articles and systematic reviews released between 2016, and 2019. Especially in 2020, 70 articles were published on Peyronie's disease, with an important increase of 105.9% among andrology publications. Compared to the average number of publications released between 2016, and 2019, an increase of

**Table 1.** Total number of publications on urology subbranches between 2016-2019

| Urology subbranches | Total number (n) |
|---|---|
| Endourology | 114 |
| Urooncology | 294 |
| Pediatric urology | 1103 |
| Andrology | 1284 |
| Urogynecology | 445 |
| Robotic urology | 863 |
| Neuro-urology and urinary incontinence | 79 |
| Kidney transplantation | 4836 |
| Urology and infectious diseases | 185 |
| Prostate diseases | 7668 |
| Bladder diseases | 3694 |
| Urinary stone diseases | 433 |
| Urologic surgery | 7875 |
| Urologic emergency | 1217 |

26.32% in endourology, 2.63% in pediatric urology, 1.51% in robotic urology, 23.24% in urological infections, and 29.17% in urological emergencies were observed in 2020.

The ratio of publications on COVID-19 and urology to total publications on COVID-19 was found to be 1.33 percent. This ratio was 0.26% in clinical trials, 1.21% in meta-analysis, 1.36% in review articles, and 1.55% in systematic reviews. The ratio of publications on COVID-19 and urology to total number of publications on urology in 2020 was found to be 1.98 percent. This ratio was 0.14% in clinical trials, 1.45% in meta-analysis, 2.66% in review articles, and 1.45% in systematic reviews. During the pandemic period, randomized clinical trials on urology were not conducted.

## Discussion

The COVID-19 pandemic did not make a significant difference in the number of publications on urology. It was observed that the number of systematic reviews increased, but the number of clinical trials, meta-analyses, randomized controlled trials, and reviews decreased. It has been predicted that scientists are still continuing their scientific studies during the pandemic.

In the study published by Palayew et al. [7], 93% of the publications on COVID-19 released in the first 12 weeks were accepted by the relevant journals within the first 30 days. It was observed that the acceptance rates of publications on COVID-19 and the pandemic increased, and the time to acceptance of the publications shortened due to the urgent need for medical information concerning the pandemic. The number of peer-reviewed publications decreased with the onset of the pandemic and the number of preprint publications increased significantly due to the pressure created by the urgent need for medical information related to the pandemic [8]. One reason for this may be that large-scale randomized controlled trials may not be feasible or ethical in critical and emergency situations [5]. However, these preprint publications could not reach the quality of peer-reviewed publications [8]. In our study, the PubMed database research was conducted using peer-reviewed publications that were considered to be of high quality, not released as a result of the pressure caused by urgent need for relevant medical information. A non-significant decrease in the number of relevant publications was observed which revealed that the pandemic period had not significantly affected the number of publications.

In a study by Myers et al. [9] on the effect of the pandemic on the working time of the scientists, it was found that before the pandemic the weekly average working time of the scientists was 61 hours, and it decreased to 54 hours after the pandemic with an average decrease of 11% in all scientific fields. Working hours of a scientist working in the field of health sciences also decreased by 12 percent [9]. In the guideline prepared by the European Association of Urology Guidelines Office Rapid Reaction Group, surgical priorities were classified as a low priority, intermediate priority, high priority, and emergency in the pandemic, and a roadmap was drawn for situations related to the decrease in the number of patients receiving the treatment in clinics. However, elective surgery plans were noticeably interrupted due to the changes in the duties of healthcare professionals, work stoppages, and loss of workforce due to COVID-19 infection [10]. The decrease in publications on neuro-urology and urinary incontinence should be evaluated within this scope. Postponing elective surgical procedures to reduce exposure to COVID-19 may have led to a reduction in the number of patients admitted to clinics [2,10]. The decrease in the number of patients may also have led to a decrease in publications [2]. Considering the effect of working time spent on the preparation and publishing of the manuscripts, the decrease in the number of publications by scientists can be associated with the decrease both in the weekly working hours and in the number of patients evaluated in outpatient clinics. It can be predicted that prospective studies may have been prematurely terminated or canceled due to the decrease in the number of patients. However, as can be seen based on the results of this study, during the pandemic period there may be an increase in the number of the review articles and systematic reviews published, because they do not require patient follow-up with potentially reduced patient burden and the prevalent tendency to release such publications.

The limitations of this study can be indicated as errors that may arise from search engine filtering and the fact that the data in the PubMed database has not been compared with the data of other reputable scientific databases such as Web of Science and Scopus.

**Table 2.** The publications related to urology in both 2016-2019 and 2020

| Topics | 2016-2019 | | 2020 | | Rate of change (%) | p |
|---|---|---|---|---|---|---|
| | Average number (n) | Mean of subtypes (mean±SD) | Number (n) | Mean of subtypes (mean±SD) | | |
| Urology | 3,732 | 746.40±682.64 | 3,623 | 724.60±845.71 | -2.92 | 0.883 |
| Endourology | 28.5 | 5.70±7.18 | 36 | 7.20±10.01 | 26.32 | 0.333 |
| Urooncology | 73.5 | 14.70±14.99 | 69 | 13.80±18.38 | -6.12 | 0.778 |
| Pediatric urology | 275.8 | 55.15±61.82 | 283 | 56.60±74.73 | 2.63 | 0.888 |
| Andrology | 321 | 64.20±50.00 | 418 | 83.60±103.52 | 30.22 | 0.497 |
| Urogynecology | 111.3 | 22.25±13.81 | 81 | 16.20±18.21 | -27.19 | 0.366 |
| Robotic urology | 215.8 | 43.15±42.23 | 219 | 43.80±55.45 | 1.51 | 0.940 |
| Neuro-urology and urinary incontinence | 19.8 | 3.95±4.53 | 3 | 0.60±1.34 | -85 | 0.080 |
| Kidney transplantation | 1,209 | 241.80±276.85 | 869 | 173.80±249.95 | -28.12 | 0.100 |
| Urology and infectious diseases | 46.3 | 9.25±8.60 | 57 | 11.40±13.65 | 23.24 | 0.438 |
| Prostate diseases | 1917 | 383.40±328.69 | 860 | 172.00±152.65 | -55.14 | 0.060 |
| Bladder diseases | 923.5 | 184.70±178.86 | 472 | 94.40±97.63 | -48.89 | 0.071 |
| Urinary stone diseases | 108.3 | 21.65±30.34 | 80 | 16.00±20.26 | -26.10 | 0.281 |
| Urologic surgery | 1,968.8 | 393.75±313.88 | 884 | 176.80±154.86 | -55.10 | **0.045** |
| Urologic emergency | 304.3 | 60.85±83.69 | 393 | 78.60±127.30 | 29.17 | 0.423 |
| COVID-19 and urology | 0 | 0.00±0.00 | 169 | 33.80±58.49 | 100 | 0.266 |
| TOTAL | 11,254.5 | 2250.90±2086.83 | 8,516 | 1,703.20±1,984.94 | -24.33 | 0.122 |

**Table 3.** Number and rate of change of publication types related to urology

| | 2016-2019 Average number (n) | 2020 Number (n) | Rate of change (%) |
|---|---|---|---|
| Clinical trials | 1,932.3 | 720 | -62.74 |
| Meta-analysis | 935 | 484 | -48.24 |
| Randomized controlled trials | 1,247 | 492 | -60.55 |
| Reviews | 5,925.8 | 5,144 | -13.19 |
| Systematic reviews | 1,214.5 | 1,676 | 38.00 |

## Conclusion

In conclusion, disasters such as pandemics affect the functioning of every field, especially healthcare field, COVID 19 pandemic did not significantly affect the number of publications on urology but can change the types of publications to which scientists are especially interested in.

**Ethics Committee Approval:** The study was approved by the Ethics Committee of University of Health Sciences, Dr. Sadi Konuk Training and Research Hospital (Approval date, and registration number: 20.12.2021/577).
**Informed Consent:** This study does not require informed consent.
**Publication:** The results of the study were not published in full or in part in form of abstracts.
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## References

[1] Carenzo L, Costantini E, Greco M, Barra FL, Rendiniello V, Mainetti M, et al. Hospital surge capacity in a tertiary emergency referral centre during the COVID-19 outbreak in Italy. Anaesthesia 2020;75:928-34. https://doi.org/10.1111/anae.15072.

[2] Spinelli A, Pellino G. COVID-19 pandemic: perspectives on an unfolding crisis. Br J Surg 2020;107:785-7. https://doi.org/10.1002/bjs.11627.

[3] Ho HC, Hughes T, Bozlu M, Kadioglu A, Somani BK. What do urologists need to know: Diagnosis, treatment, and follow-up during COVID-19 pandemic. Turk J Urol 2020;46:169-77. https://doi.org/10.5152/tud.2020.20119.

[4] Wilder-Smith A, Freedman DO. Isolation, quarantine, social distancing and community containment: pivotal role for old-style public health measures in the novel coronavirus (2019-nCoV) outbreak. J Travel Med 2020;27:taaa020. https://doi.org/10.1093/jtm/taaa020.

[5] Dubey S, Biswas P, Ghosh R, Chatterjee S, Dubey MJ, Chatterjee S, et al. Psychosocial impact of COVID-19. Diabetes Metab Syndr 2020;14:779-88. https://doi.org/10.1016/j.dsx.2020.05.035.

[6] London AJ, Kimmelman J. Against pandemic research exceptionalism. Science 2020;368:476-7. https://doi.org/10.1126/science.abc1731.

[7] Palayew A, Norgaard O, Safreed-Harmon K, Andersen TH, Rasmussen LN, Lazarus JV. Pandemic publishing poses a new COVID-19 challenge. Nat Hum Behav 2020;4:666-9. https://doi.org/10.1038/s41562-020-0911-0.

[8] Smart P. Publishing during pandemic: innovation, collaboration, and change. Learn Publ 2020;33:194-7. https://doi.org/10.1002/leap.1314.

[9] Myers KR, Tham WY, Yin Y, Cohodes N, Thursby JG, Thursby MC, et al. Unequal effects of the COVID-19 pandemic on scientists. Nat Hum Behav 2020;4:880-3. https://doi.org/10.1038/s41562-020-0921-y.

[10] Ribal MJ, Cornford P, Briganti A, Knoll T, Gravas S, Babjuk M, et al. European Association of Urology Guidelines Office Rapid Reaction Group: An Organisation-wide Collaborative Effort to Adapt the European Association of Urology Guidelines Recommendations to the Coronavirus Disease 2019 Era. Eur Urol 2020;78:21-8. https://doi.org/10.1016/j.eururo.2020.04.056.