Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

22. StataCorp. *Stata Statistical Software: Release 15*. College Station, TX: StataCorp LLC; 2017.
23. Novara G, Bartoletti R, Crestani A, et al. Impact of the COVID-19 pandemic on urological practice in emergency departments in Italy. *BJU Int*. 2020;126:245–247. https://doi.org/10.1111/bju.15107.
24. Motterle G, Morlacco A, Iafrate M, et al. The impact of COVID-19 pandemic on urological emergencies: a single-center experience. *World J Urol*. 2020;1. https://doi.org/10.1007/s00345-020-03264-2.
25. Pinar U, Anract J, Duquesne I, et al. Impact of the COVID-19 pandemic on surgical activity within academic urological departments in Paris. *Prog Urol*. 2020;30:439–447. https://doi.org/10.1016/j.purol.2020.05.001.
26. Bernardino R, Gil M, Andrade V, et al. What has changed during the state of emergency due to COVID-19 on an academic urology department of a tertiary hospital in Portugal. *Actas Urol Esp*. 2020;44:604–610. https://doi.org/10.1016/j.acuro.2020.06.010.
27. Fedson DS. COVID-19, host response treatment, and the need for political leadership. *J Public Health Policy*. 2020. https://doi.org/10.1057/s41271-020-00266-7.
28. Roumiguié M, Gamé X, Bernhard J-C, et al. Does the urologist in formation have a burnout syndrome? Evaluation by Maslach Burnout Inventory (MBI). *Progres En Urol J Assoc Francaise Urol Soc Francaise Urol*. 2011;21:636–641. https://doi.org/10.1016/j.purol.2011.02.006.
29. Shanafelt TD, Balch CM, Bechamps GJ, et al. Burnout and career satisfaction among american surgeons. *Ann Surg*. 2009;250:463–470. https://doi.org/10.1097/SLA.0b013e3181ac4dfd.
30. Danilovic A, Torricelli FCM, Dos Anjos G, et al. Impact of COVID-19 on a urology residency program. *Int Braz J Urol*. 2021;47:448–453. https://doi.org/10.1590/S1677-5538.IBJU.2020.0707.
31. Paesano N, Santomil F, Tobia I. Impact of COVID-19 pandemic on Ibero-American urology residents: perspective of American Confederation of Urology (CAU). *Int Braz J Urol*. 2020;46(suppl 1):165–169. https://doi.org/10.1590/s1677-5538.ibju.2020.s120.

EDITORIAL COMMENT

The initial and subsequent waves of the COVID-19 pandemic have required medical and surgical training institutions to pivot to alternative teaching and learning techniques. As such, clinical and surgical experiences have been affected in many institutions globally. Despite these changes, surgical residents are tasked with competently reaching milestones required to progress through training. Effectively managing these changes while navigating the challenges of the pandemic itself can be a daunting task for residents, potentially impacting their overall quality of life.

This online survey-based study evaluated the clinical and non−clinical experiences of urology residents in the US and 3 European countries (Italy, France, and Portugal [EU]) to assess the impact of these pedagogical changes on everyday life, particularly with respect to well-being. A 72-item survey was developed to assess burnout, anxiety, depression, loneliness, quality of life, and professional fulfillment using validated instruments, and included 38 novel pandemic-specific questions. The survey, activated in September 2020, was retrospective, as it asked residents to compare experiences prior to and after the initial peak of the pandemic. The same author group conducted a study on urology resident burnout in US and EU urology residents (2019),[1] and the same residency program contacts were used for the current survey's distribution; however, the current study included only one-third of all US programs. The response rate was low (16.7%) with missing data for multiple questions, decreasing the sample size for some analyses. With lengthy surveys, this is not uncommon, as survey fatigue can play a role.[2,3] Importantly, as the authors note, respondents included PGY-1 residents (n = 37; 17%) who may not have been able to adequately answer some of the questions due to inexperience.

Several findings were consistent with previously reported studies. Respondents spent significantly fewer days per week in the hospital (1.6) and the operating room (0.96). Ammann and colleagues (2022) reported a significant pandemic-related decrease in general surgery major cases between residents in 2019 and 2020 of 1.5% fewer cases ($P = .011$), which was magnified during the chief year with 8.4% fewer cases ($P < .001$).[4] It would be interesting to see the current study's data stratified by year of training, which could provide a clearer picture of residents' experiences. As the authors hypothesized, there was no significant rise in burnout or depression, potentially due to many programs reporting increased physical health and wellness supports.[5] While these are encouraging data, it is important to consider that each country represented experienced different pandemic-related circumstances, including lockdowns and other restrictions. These may have varied significantly depending upon the location within the country, especially in the US where restrictions were largely mandated by state and local governments, which could potentially influence these findings. Future research on the impact of the COVID-19 pandemic on the well-being of urology residents' worldwide will be important, especially as the pandemic continues. There is much to learn about how training modifications affect many of the variables observed in this study, and the more data we have, the more equipped we will be to adapt our curricula to better train our residents.

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References

1. Marchalik D, Goldman CC, Carvalho FFL, et al. Resident burnout in USA and European urology residents: an international concern. *BJU Int*. 2019;124:349–356. https://doi.org/10.1111/bju.14774.
2. Stavseth MR, Clausen T, Røislien J. How handling missing data may impact conclusions: a comparison of six different imputation methods for categorical questionnaire data. *SAGE Open Med*. 2019;7. 2050312118822912.
3. de Koning R, Egiz A, Kotecha J, et al. Survey fatigue during the covid-19 pandemic: an analysis of neurosurgery survey response rates. *Front Surg*. 2021;8:690680. https://doi.org/10.3389/fsurg.2021.690680.
4. Ammann AM, Cortez AR, Vaysburg DM, et al. Examining the impact of COVID-19 restrictions on the operative volumes of US general surgery residents. *Surgery*. 2022;171:354–359. https://doi.org/10.1016/j.surg.2021.06.003.
5. Rosen GH, Murray KS, Greene KL, Pruthi RS, Richstone L, Mirza M. Effect of COVID-19 on urology residency training: a nationwide survey of program directors by the society of academic urologists. *J Urol*. 2020;204:1039–1045. https://doi.org/10.1097/JU.0000000000001155.

https://doi.org/10.1016/j.urology.2022.01.071
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AUTHOR REPLY

We are grateful for the comment on our article "A multinational study of the impact of COVID-19 on Urology surgery residency and wellbeing." Dr. Hoogenes raises excellent points in