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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 inconsistent 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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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



evaluating the results of our study and appreciating the context of participants' year of training and home region. We agree that regional variability in pandemic-related experiences can be significant relative to volume, leadership response, and community perspective. This varied both among countries and within countries on regional and institutional levels. Part of our goal within the United States was to ensure we appropriately assessed regional variability by sampling one third of randomly chosen programs. Contextual factors are influential in mediating COVID-19 related occupational stressors and their resulting psychological distress.¹ Interval reports of burnout, trauma, post-traumatic stress and the mental health sequelae resulting from the pandemic reinforce the need to focus on mitigating this risk for our future providers.¹⁻²

Blanchard et al's 2-year survey of over 500 residents at University of Chicago showed stable burnout rates in spite of the pandemic.² While limited to 1 institution, these results are consistent with ours. Despite Chicago experiencing a high COVID-19 case load, the authors hypothesized that the institution's response to the pandemic by reducing work hours and prioritizing mental health care and well-being. This is in line with the model proposed by Hendrickson et al in their conclusion that risk of COVID-19 itself was not the sole mitigator of occupational stress or mental health symptoms of healthcare providers during the pandemic.¹ They present an explanation of direct and contextual factors for occupational stressors, as well as strategies that programs can employ to reduce their effect on healthcare providers. Using this framework, one can think of our study as primarily an examination of how direct volume dependent factors changed for urology residents during the pandemic.

Of critical importance is the 12% of healthcare workers in Hendrickson's study who expressed thoughts of suicide or self-harm. This is in line with a growing body of data demonstrating high rates of distress and post-traumatic stress among healthcare providers around the world. Post-traumatic stress disorder symptoms (PTSD) were not fully evaluated in our study; however, as many as one half of healthcare providers reported acute stress or PTSD in surveys of Turkey³, New York⁴, and Italy⁵ during the respective peaks of their pandemics. However, this data is cross-sectional, and the pandemic continues to carry on. The long-term impact of the acute stress and its evolution into PTSD is

highly concerning.³⁻⁵ Rising post-traumatic stress, anxiety and depression appear to represent a "second wave" of the pandemic that we anticipate will have a significant impact on future healthcare providers. Institutions must not only focus on burnout and environmental stressors, but should proactively initiate interventions to support physicians and their mental health. The long-term impact of traumatic stress and mental distress on urology residents are critical for programs to understand and address as the pandemic continues.

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