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# Gender differences in authorship of obstetrics and gynecology publications during the coronavirus disease 2019 pandemic



## EDITOR'S CHOICE

**OBJECTIVE:** There has been an exponential increase in publications on coronavirus disease 2019 (COVID-19) since the beginning of the COVID-19 pandemic, with more than 30,000 publications on PubMed as of July 12, 2020.<sup>1,2</sup> It is uncertain whether the impact of COVID-19, from an academic productivity perspective, differentially affects males and females. In the specialty of obstetrics and gynecology, 57% of physicians are female, who, in academics, skew toward junior faculty.<sup>3–5</sup> With the current gender composition of physicians in obstetrics and gynecology, there may be impacts of the COVID-19 pandemic on family and work balance unique to the specialty.<sup>6</sup> There may also be an implicit bias among journal editors toward senior researchers.<sup>7,8</sup> This may be more pronounced at a time when rapid dissemination of COVID-19 publications has increased value. The primary objective of this study was to compare the gender of the first authors who published COVID-19 and non-COVID-19 topics from January 2020 to June 2020 in the 6 journals in obstetrics and gynecology with the highest impact factors.

**STUDY DESIGN:** Original research articles published from January 2020 to June of 2020 in *Human Reproduction Update*, *American Journal of Obstetrics and Gynecology*, *Fertility and*

*Sterility, Human Reproduction, Obstetrics and Gynecology*, and *Gynecologic Oncology* were identified. The pre-COVID-19 era was defined as the period from January 2020 to February 2020, whereas the COVID-19 era was defined as the period from March 2020 to June. Initially, gender and academic rank for the first authors were determined by inspecting the name and contact information. If either information was not clearly delineated, Google searches and inspection of institutional websites were performed. Investigators with a rank of assistant professor or below were considered junior faculty; associate professors, full professors, and directors were considered senior faculty. A binomial probability calculator or chi-square test was used to compare gender distributions and academic rank where appropriate.

**RESULTS:** A total of 655 obstetrical and gynecologic articles were published between January 2020 and June 2020 where first author gender could be identified (Table). Representing 57% of the academic faculty, females had a disproportionately higher number of first author publications at 63.1% ( $P<.0001$ ). Overall, publications were more likely to have junior faculty as the first author ( $P<.0001$ ). There was no difference in academic rank among authors of COVID-19-focused publications ( $P=.389$ ). Compared with the pre-COVID-19 era, there was no difference in the gender of the first authors during the COVID-19 era ( $P=.471$ ). In the COVID-19 era, there was a significant decrease in publications by junior faculty ( $P<.0001$ ).

**CONCLUSION:** This study found that most publications in high impact factor journals in obstetrics and gynecology have females as first authors. There was no change in the rates of females as first authors following the start of the COVID-19 pandemic. The pandemic did result in a higher proportion of subsequent publications being authored by senior researchers. This suggests that junior faculty are more vulnerable to the social and professional disruptions that the COVID-19 pandemic has incurred. A limitation to this study is that the senior authors and genders were not analyzed for comparison. These findings suggest the need to further explore the intersection between gender differences in academic rank and publications among specialties beyond obstetrics and gynecology. ■

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**TABLE**  
**Change in authorship gender before and during the COVID-19 pandemic**

Characteristic	Pre-COVID-19 (Jan. to Feb.; n = 228)	During COVID-19 (March to June; n = 427)	P value
Authorship			.471
Male	80	162	
Female	148	265	
Academic rank			.0001 <sup>a</sup>
Student	67	75	
Junior faculty	74	134	
Senior faculty	62	169	
Unknown	25	49	

COVID-19, coronavirus disease 2019.  
<sup>a</sup> Statistically significant.  
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The authors report no conflict of interest.

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