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Exploratory Investigation of Gender Differences in School Psychology Publishing Before and During the Initial Phase of COVID-19

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Abstract

Although many disciplines saw increases in manuscript submissions coinciding with lockdown measures, numerous studies have documented widening gender gaps in academic productivity. Chi-squared analyses of gendered trends in first author manuscript submission in three school psychology journals during the initial phase of COVID-19 compared to the same time frame in the preceding 3 years did not reveal any significant associations. There was a significant increase over time in the gender gap, with a trend of more female authors than male authors. Women school psychology researchers may not have experienced similar detriments to productivity as in other disciplines, or such detriments were not reflected in submission patterns during this time frame. Limitations of the study and implications for school psychology are provided.

Keywords

gender, school psychology, publishing, academia, COVID-19

The COVID-19 pandemic has presented broad challenges spanning far beyond its health effects. Unsurprisingly, numerous studies have emerged about a gender gap in research from the start of this pandemic. The purpose of this study was to explore whether similar dynamics were observable within school psychology.

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Background

COVID-19 appears to have compounded women's caregiving responsibilities, with U.S. working mothers being three times as likely to have become the sole caregiver for children than men (Zamarro & Prados, 2020). For academics, gender differences in the division of labor in both home and work were noted early on in the pandemic, with greater burdens on women for caregiving in home and community, and service within academic institutions (Malisch et al., 2020).

As such, there has been concern that COVID-19 has exacerbated gender disparities in research productivity. Although many disciplines saw notable increases in manuscript submissions coinciding with lockdown measures, numerous studies have documented lower rates of submissions by women and widening gender gaps in productivity and authorship positionality (e.g., Krukowski et al., 2020; Vincent-Lamarre et al., 2020; Wehner et al., 2020). This could have long-term implications for women scholars and their families, given the importance of journal authorship for career advancement (Vincent-Lamarre et al., 2020).

Purpose

Codding et al. (2020) noted the likelihood of gender disparities in academic productivity within school psychology during the COVID-19 pandemic. In this exploratory study, we sought to confirm whether this was borne out in the early months of the pandemic. We leveraged archival data from three North American school psychology journals to ascertain gendered trends in manuscript submission in the 3 years before COVID-19 and the months following emerging governmental responses in the US and Canada. Our research questions were:

1. What was the gender distribution of first authorship for submissions to selected school psychology journals in the first 3 months of the pandemic?
2. How does this compare to the same time period for the preceding 3 years?

Method

Data Source

This study entailed analysis of patterns in first author gender for three school psychology journals: *Canadian Journal of School Psychology* (CJSP), *Journal of School Psychology* (JSP), and *School Psychology* (SP; formerly *School Psychology Quarterly*). The study was deemed exempt from human subjects review by the institutional review board. Table 1 provides the analytic sample characteristics.

Procedures

In May 2020, we contacted the editors of school psychology journals (CJSP, *Contemporary School Psychology, International Journal of School and Educational*

Table 1. Analytic Sample Descriptive Statistics: Number of First Author Initial Manuscript Submissions for March Through May of Each Year by Gender.

	2017			2018			2019			2020			
Gender	SP	JSP	CJSP	SP	JSP	CJSP	SP	JSP	CJSP	SP	JSP	CJSP	Total
Women	40	42	5	63	61	6	11	57	20	24	62	22	413
Men	35	39	0	41	34	10	17	36	8	17	44	6	287
Androgynous	1	8	0	2	10	0	3	2	0	1	12	1	40
Unknown	8	1	0	7	8	0	2	9	3	12	13	1	64
Total	84	90	5	113	113	16	33	104	31	54	131	30	804

Note. SP = School Psychology; JSP = Journal of School Psychology; CJSP = Canadian Journal of School Psychology.

Psychology, Journal of Applied School Psychology, JSP, Psychology in the Schools, School Psychology International, School Psychology Review, and SP), requesting the following data: first author first name, state/country, and university; submission date and type (e.g., initial, resubmission); and invited/special issue status, during the time period of January 1, 2017 through May 31, 2020. CJSP, JSP, and SP provided some of the data, and publisher restrictions prevented the release of data from the remaining journals. The remaining journals were unable to provide this data due to publisher restrictions regarding release of authors' personally identifiable information. The publisher for SP provided the data already coded for gender using an open source software (Pérez, 2016) to determine author gender. For comparison of the data from the three journals, we reduced our study scope to gender and date, isolating March through May of each preceding year (2017, 2018, 2019) to allow for comparison to submissions during COVID-19 in 2020.

Gender coding. For the remaining journals, we used the Pérez (2016) Gender Guesser software package to impute the author's gender based on their first name (note: SP was not included in this coding because data were already coded when provided from the journal). This program categorizes names into one of six gender categories: androgynous, female, mostly_female, male, mostly_male, and unknown. Utilizing the Gender Guesser, we imputed author gender for approximately 70% of authors.

We manually recoded the remaining CJSP ($n = 56$) and JSP ($n = 344$) records not decisively coded as male or female (those categorized as mostly_female and mostly_male). Each case was coded by two independent coders from among the fourth through eighth authors using procedures developed by the first and second authors. Any discrepancies were recoded by a third coder and the first author selected the final gender code.

Recoding followed these steps until gender could be estimated. First, coders visually inspected cases for coding errors (e.g., accented vowels replaced with symbols or spaces during journals' data extraction) and recoded with the appropriate gender code from the software package by matching the name and author's country. Second, poly names (e.g., John James or J. James) were recoded based on the first full name

provided (e.g., John or James). Third, the coders searched the website, http://www.namepedia.org/en/firstname and recoded gender by country. This recoding process resulted in the recoding of 30 names for male, 43 names for female, six names for mostly_male, and 15 names for mostly_female.

Analytic Sample

A total of 804 records were analyzed for March through May of 2017 to 2020 across the three journals. The codes were aggregated into four categories: men (41%; male and mostly_male), women (59%; female and mostly_female), androgynous (5%), and unknown (8%).

Analysis

To look for any association between the number of manuscripts submitted to three school psychology journals by gender and the onset of the COVID-19 pandemic, a Pearson's Chi-squared Test of Association was run for each year and for each of the journals individually.

We also conducted a test for trend using the Somers Delta (Somers D) to assess whether the absolute difference in the percentages of publications between male and female authors (i.e., gender gap) changed over time. For this analysis, we considered the difference for men and women authors only, excluding androgynous and unknown authors. Analyses were performed in RStudio v1.3.1093 using the base "stats" package.

Results

Given the study research aims, the Pearson Chi-squared Test of Association did not reveal any significant associations between the number of manuscripts submitted to school psychology journals by gender and the onset of the COVID-19 pandemic ($\chi^2 = 13.38$; $df = 9$; $p = .15$). Results are summarized in Table 2. We then conducted a test for trend using the Somers' Delta and found a significant result (Somers' $D = .67$, 95% CI [0.12, 1.0]). There was a significant increase over time in the gender gap, with a trend of more female authors than male authors. The percentages of female and male authors along with the gender gap are presented in Figure 1.

In addition, we considered the difference for men and women authors only, excluding androgynous and unknown authors. Within the three researched journals, first authors coded as female submitted a similar amount of publications (61.7%) as compared to the 3 years prior to the pandemic (54.0%) during the initial months of the COVID-19 pandemic (see Table 3).

Discussion

We sought to ascertain whether the initial phase of the pandemic has contributed to gender differences in academic productivity within school psychology similar to other

Table 2. Chi-Squared Test of Association Statistics for SP, JSP, and CJSP Combined.

	2017			2018			2019			2020		
Gender	f_o	f_e	χ^2	f_o	f_e	χ^2	f_o	f_e	χ^2	f_o	f_e	χ^2
Women	87	92	−0.52	130	124	0.51	88	86	0.18	108	110	−0.23
Men	74	64	1.26	85	86	−0.15	61	60	0.13	67	77	−1.11
Androgynous	9	9	0.03	12	12	0.01	5	8	−1.16	14	11	1.01
Unknown	9	14	−1.4	15	19	−0.97	14	13	0.17	26	17	2.15

Note. f_o = frequency observed; f_e = frequency expected; χ^2 = chi-squared statistic.

disciplines (e.g., Vincent-Lamarre et al., 2020; Wehner et al., 2020). Comparing gendered submission patterns in the first 3 months following widespread shutdowns in the United States and Canada relative to the same time frame in the three preceding years, no significant differences were found for men and women's submissions to three school psychology journals. Furthermore, the gender distribution of authors (61% women) is comparable to the gender composition of school psychology faculty members (63% women) based on the most recently available estimates (e.g., Reddy et al., 2017). This aligns with research conducted pre-COVID-19 indicating that differences between male and female faculty members in school psychology programs accounted for little variance (<4%) in research productivity (Grapin et al., 2013).

The results suggest women school psychology researchers may not have experienced similar detriments to productivity as in other fields, or such detriments were not reflected in submission patterns during the study period which may primarily reflect pre-pandemic scholarly productivity given the time frame of this study.

This is not to say there have not been gender differences in scholars' professional productivity after spring 2020 or gender bias present in other aspects of the publishing process (e.g., editorial decisions and publication). This warrants investigation given past findings of gendered differences in scholarly activity in school psychology (Harris et al., 2021) such that disparities in certain mentorship, training, or professional experiences impact research productivity.

Limitations and Future Directions

Although the first of its kind in school psychology, this exploratory study is not without limitations. Data obtained from only three school psychology journals, given variability in international privacy laws, may not represent trends in all school psychology journals. Further, submissions during the study period may have primarily reflected pre-pandemic scholarly productivity such that greater differences may be found later in the pandemic.

Although frequently used in research (Santamaría & Mihaljević, 2018), our gender coding strategy did not allow for gendering of every author or verification of authors'

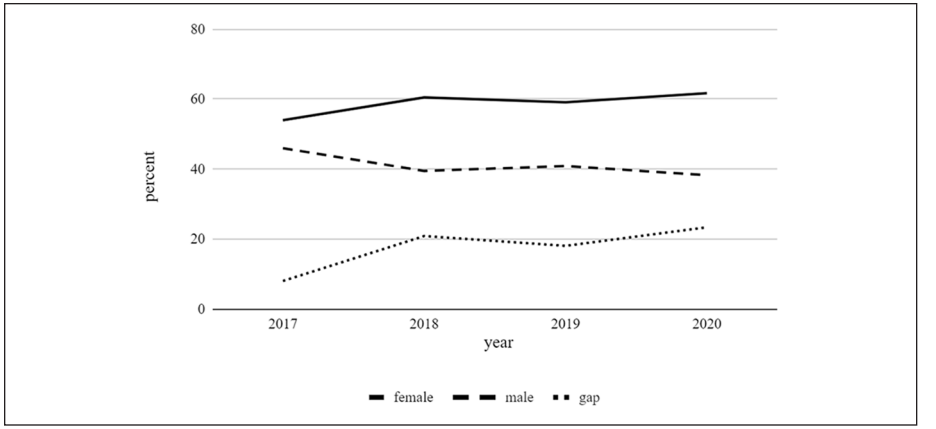

Figure 1. Gender and gap percentage by year.
Note. The gender gap is the absolute difference between the percentage of female and male authors.

Table 3. Gender and Gender Gap Descriptive Statistics.

	n		%		
Year	Female	Male	Female	Male	gender gap
2017	87	74	54	46	8.07
2018	130	85	60.5	39.5	20.9
2019	88	61	59.1	40.9	18.1
2020	108	67	61.7	38.3	23.4

Note. The gender gap is the absolute difference between the percentage of female and male authors.

genders. Further, the data provided did not allow for exploration of other factors potentially related to systemic differences in productivity (e.g., race, caregiving responsibilities, position type, rank, institution type, geographic differences in shutdowns). Studies of scholarly activities across the aforementioned factors will provide greater insight into potential disparities in scholars' outcomes related to COVID-19.

Implications and Conclusions

The present findings are promising for the field considering gender disparities in publication submissions reported in other disciplines. Given the persistence of the pandemic and limitations of our study period, it is necessary to continue monitoring the impact of the pandemic on scholarly activities and investigate bias in all aspects of the publication pipeline. Moving forward, we encourage transparency by publishers to allow for further research on this topic to promote equity within the field of school psychology and beyond.

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