

Differences in Work-Life Experiences of Physicians by Parenting Status, Gender, and Training Level During the COVID-19 Pandemic

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ABSTRACT

BACKGROUND: The COVID-19 pandemic has presented new challenges for physicians, and physician-parents specifically. Few studies have focused on work-life changes in this population. The present study investigated work-life changes in a group of physicians during the first six months of the COVID-19 pandemic.

METHODS: A survey was distributed electronically to physicians affiliated with a U.S. medical school inquiring about experiences during the first six months of the COVID-19 pandemic (March 2020 to September 2020).

RESULTS: In logistic regression models adjusted for age, significantly more female physician-parents reported increased burnout, increased time with kids, and increased fear of going to work compared to male physician-parents. Around 1 in 2 attendings reported burnout, regardless of parenting status.

CONCLUSION: While high rates of burnout were found across all groups in this study, differences were found by gender and parenting status. Further research is needed to understand burnout during the COVID-19 pandemic and to support physician-parents.

KEYWORDS: physician-parents, burnout, COVID-19, pandemic

INTRODUCTION

The COVID-19 pandemic has placed an increased demand on health care professionals and hospitals, imposing limitations on community and social support systems. Notably, the pandemic has presented new challenges for physicians, parents and physician-parents, due to many having changing responsibilities for childcare and at work.¹ Despite studies showing increased rates of insomnia and loneliness,² poor work-life balance,³ and symptoms of mental illness²⁻⁴ among physicians during the COVID-19 pandemic, the experience of physician-parents, and particularly physician-parents who identify as female, has not been well studied.^{5,6} A number of studies performed prior to the COVID-19 pandemic have shown that women physicians spend more time on domestic activities than their male partners.⁷⁻¹⁰ Most studies also find increased burnout in women physicians compared to men.¹¹

A recent study in U.S. women found that women physician-parents were more likely to be responsible for childcare, schooling, household tasks, and more likely to work from home and reduce work hours during the pandemic than men physician-parents.⁶

One recent study of participants in a social media group for physician-mothers indicated increased levels of anxiety during the COVID-19 pandemic,¹² suggesting a need for greater community and government support for the mental health of physician-mothers. In separate studies of the same social media group, physician-mothers reported a range of concerns about health and safety for themselves, their families, their staff, and their patients.^{13,14} In another study, female scientists reported decreased time to devote to research during the pandemic, with additive effects among those with young children.¹⁵ Little is known about the different experiences of female physician-parents compared to male physician-parents during the COVID-19 pandemic.

The primary objective of the present study was to investigate gender differences in work-life changes in a group of physician-parents during the first six months of the COVID-19 pandemic. In this study, gender was self-identified. Secondary objectives included examining differences in work-life changes among attendings who were physician-parents compared to physicians who were not parents as well as comparing work-life changes in attendings to trainees.

METHODS

A survey was distributed electronically via REDCap¹⁶ in September 2020 to residents, fellows, and attendings affiliated with a United States medical school inquiring about work and parenting experiences during the first six months of the COVID-19 pandemic (March 2020 to September 2020). Survey items assessed demographics, training level, parenting status, COVID-19 exposure, and work-life changes between March 2020 and September 2020. A non-proprietary validated single-item questionnaire was used to assess burnout, which has previously been used to assess burnout in health care professionals.^{17,18} All completed surveys were included in the analysis.

Statistical analyses were performed with R studio Version 1.2.5042 (R foundation for Statistical Computing, Vienna Austria, (<https://www.R-project.org>)).

Demographics assessed included self-identified gender (female, male, nonbinary), age, training level, and medical specialty. Parenting status was assessed by asking if participants had children and their ages. For this study, physician-parents were defined as those with children under the age of 18. COVID-19 exposure was assessed by asking how often participants cared for patients with COVID-19 or patients under investigation (PUIs) for COVID-19. Work changes were assessed by asking about the need to take time off, hours per week at different stages of the pandemic, evening work, days of work, work from home, backup call, and feelings about work. Participants were also asked about feeling lonely in the past week, burnout, and work-life balance.

For the purposes of this study, we were specifically interested in parents of children younger than 18 years-old (hereafter referred to as "physician-parents"). Because there were no participants who identified as nonbinary, the primary analyses examined differences between self-identified male and female attending physician-parents. Secondary analyses included comparisons of attending physician-parents and attending physicians who are not parents, as well as trainee physicians compared to attending physicians.

Descriptive statistics were performed for each survey item comparing the above groups. T-tests (for continuous variables) and chi square test (for categorical variables) were performed to compare the two groups for each of the survey items. For those that appeared to be different between the groups, logistic regression analysis was performed with the survey response as the dependent variable, group as the independent variable, adjusting for age. We also adjusted for gender when comparing attending physician-parents with non-parents and when comparing attending and trainee physicians.

The study was evaluated by the Institutional Review Board at Lifespan and determined to be exempt.

RESULTS

We received 245 completed surveys (an estimated 10% overall response rate; 58.8% attendings, 10.6% fellows, 30.6% residents). The three most common specialty responses were internal medicine (28.4%), pediatrics (18.4%), and emergency medicine (10.6%), with each of the remaining specialties accounting for less than 10% of responses.

Attending physician-parent experiences by gender

Our primary analysis was limited to attending physicians, which included 145 individuals (8.1% survey response rate for attendings). Demographics and survey responses for attending physician-parents who identify as female were compared to physician-parents who identify as male (**Table 1**); in our small study there were no participants who identified as nonbinary. In logistic regression models adjusted for age, significantly more self-identified female physician-parents

Table 1. Demographics and survey responses for attending physician-parents who identify as female (n=33) compared to physician-parents who identify as male (n=34).

	Female	Male	p
Age, mean (sd)	43 (5.5)	45 (8.0)	NS
Taken time off, percent (n)			
For childcare	21.2% (7)	32.4% (11)	NS
For illness	30.3% (10)	17.6% (6)	NS
Hours per week, mean (sd)			
Before COVID	45 (13)	51 (11)	NS
Spring 2020	44 (17)	49 (19)	NS
Fall 2020	48 (16)	51 (11)	NS
Changes in work requirements, percent (n)			
More evening work	39.4% (13)	29.4% (10)	NS
More days of work	24.2% (8)	23.5% (8)	NS
Increased percentage of work from home	72.7% (24)	64.7% (22)	NS
COVID exposure at work			
Weekly or daily	39.4% (13)	50.0% (17)	NS
More than 10 COVID patients total	24.2% (8)	42.4% (14)	NS
Work-life changes			
Feeling lonely in past week (3 or more days)	24.2% (8)	11.8% (4)	NS
Burned out	66.7% (22)	35.3% (12)	0.03
Work-life balance	51.5% (17)	47.1% (16)	NS
Fear of going to work increased	69.7% (23)	29.4% (10)	<0.001
Increase sense of purpose	45.5% (15)	23.5% (8)	0.09
Changes in relationship with child			
Increased connection with child's learning	51.5% (17)	32.4% (11)	NS
More time with children	84.8% (28)	58.8% (20)	0.03
Increased conflict with children	36.3% (12)	17.6% (6)	NS

NS = not significant. p values reported are for t tests or chi square tests comparing the two groups. Only p values < 0.1 were reported.

reported increased burnout (OR 3.6, 95% CI: 1.3–10.8, $p = 0.016$), increased time with kids (OR 4.0, 95% CI: 1.3–14.2, $p = 0.021$) and increased fear of going to work (OR 5.5, 95% CI: 2.0–17.0, $p = 0.002$) compared to self-identified male physician-parents (**Table 2**).

Attending physician-parents vs. attendings who are not parents

Demographics and survey responses for attending physician-parents were compared to attending physicians who are not parents (**Table 3**). Notably, after adjusting for age and gender, attending physician-parents were more likely to report increased work from home (including telemedicine) (OR 2.4, 95% CI: 1.1–5.5, $p = 0.027$) as compared to attending

Table 2. Logistic regression demonstrating significant differences by gender and work-life balance concerns.

Burnout		
Predictor	OR (95% CI)	p
Female gender	3.63 (1.30–10.83)	0.016
Age	1.03 (0.96–1.12)	0.39
Increased time with kids		
Predictor	OR (95% CI)	p
Female gender	4.01 (1.30–14.20)	0.021
Age	1.02 (0.94–1.10)	0.66
Increased fear of going to work		
Predictor	OR (95% CI)	p
Female gender	5.54 (1.96–17.00)	0.0018
Age	0.93 (0.86–1.01)	0.11

Table 3. Demographics and survey responses for attending physician-parents compared to attending physicians who are not parents

	Parent of child	Not parent of child	p
Gender (n)			
Female	33 (47%)	36 (49%)	NS
Male	34 (49%)	37 (50%)	
Prefer not to answer	3 (4%)	1 (1%)	
Age, mean (sd)	44 (7.0)	55 (12)	<0.001
Taken time off, percent (n)			
For childcare	28.6% (20)	0% (0)	<0.001
For illness	22.9% (16)	10.8% (8)	NS
Hours per week, mean (sd)			
Before COVID	48 (14)	50 (12)	NS
Spring 2020	46 (18)	48 (19)	NS
Fall 2020	49 (13)	49 (16)	NS
Changes in work requirements, percent (n)			
More evening work	32.9% (23)	20.3% (15)	NS
More days of work	22.9% (16)	20.3% (15)	NS
Increased percentage of work from home	67.1% (47)	51.4% (38)	0.08
COVID exposure at work			
Weekly or daily	45.7% (32)	28.4% (21)	0.05
More than 10 COVID patients total	31.4% (22)	21.6% (16)	NS
Work-life changes			
Feeling lonely in past week (3 or more days)	18.6% (13)	14.9% (11)	NS
Burned out	51.4% (36)	44.6% (33)	NS
Work-life balance	48.6% (34)	55.4% (41)	NS
Fear of going to work increased	51.4% (36)	35.1% (26)	0.07
Increased sense of purpose	35.7% (25)	31.1% (23)	NS

NS = not significant. p values reported are for t tests or chi square tests comparing the two groups. Only p values < 0.1 were reported.

physicians who were not parents. There was no significant difference in burnout between attending physician-parents (51.4%) and attendings who were not parents (44.6%).

Attending physicians vs. trainee physicians

Demographics and survey responses for trainee physicians were compared to attending physicians (**Table 4**). Notably, after adjusting for age and gender, attending physicians were

Table 4. Demographics and survey responses for trainee physicians compared to attending physicians

	Trainees	Attendings	p
Children < 18			
Yes	11	80	<0.001
No	70	74	
Gender (n)			
Female	73	69	<0.001
Male	28	71	
Prefer not to answer	0	4	
Age, mean (sd)	30 (4.3)	50 (6.9)	<0.001
Taken time off, percent (n)			
For childcare	5.0% (5)	13.9% (20)	0.04
For illness	18.8% (19)	16.7% (24)	NS
Hours per week, mean (sd)			
Before COVID	55 (21)	48 (13)	0.008
Spring 2020	55 (20)	47 (18)	0.006
Fall 2020	61 (15)	49 (15)	<0.001
Changes in work requirements, percent (n)			
More evening work	13.9% (14)	26.3% (38)	0.03
More days of work	7.9% (8)	21.5% (31)	0.007
Increased percentage of work from home	39.6% (40)	59.0% (85)	0.004
COVID exposure at work			
Weekly or daily	65.3% (66)	36.8% (53)	<0.001
More than 10 COVID patients total	45.5% (46)	27.0% (38)	0.003
Work-life changes			
Feeling lonely in past week (3 or more days)	16.8% (17)	16.7% (24)	NS
Burned out	40.6% (41)	47.9% (69)	NS
Work-life balance	65.3% (66)	52.1% (75)	0.1
Fear of going to work increased	53.4% (54)	43.1% (62)	NS
Increased sense of purpose	30.7% (31)	33.3% (48)	NS

NS = not significant. p values reported are for t tests or chi square tests comparing the two groups. Only p values < 0.1 were reported.

more likely to report increased evening work (OR 4.0, 95% CI: 1.6–10.3, $p = 0.004$), more days of work (OR 3.0, 95% CI: 1.0–9.2, $p = 0.049$), and increased work from home (including telemedicine) (OR 2.4, 95% CI: 1.1–5.3, $p = 0.032$). Although trainee physicians were noted to be more likely to be exposed to COVID-19 patients at least weekly (chi-square test – $p < 0.001$) and more likely to have seen more than 10 patients diagnosed with COVID-19 (chi-square test – $p = 0.003$) compared to attending physicians, these results were not significant after adjusting for age and gender.

DISCUSSION

While high rates of burnout were found across all groups in this study of physicians at an academic medical center in the early stages of the COVID-19 pandemic, differences in the experience and impact of the pandemic were found by self-identified gender and parenting status. Importantly, in all groups, around 1 in 2 physicians reported burnout: both attendings who were parents (51.4%) and attendings who were not parents (44.6%) reported high rates of burnout. Burnout was high regardless of training level (40.6% of trainees, 47.9% of attendings). Notably, despite reporting similar work hours to male physician-parents during the COVID-19 pandemic, female physician-parents were more likely to report increased burnout, increased time with their children, and increased fear of going to work. This adds to the literature from other studies of women physicians that show increased burnout, anxiety, distress, and depression,^{19,20} and a higher likelihood of screening positive for PTSD among women physicians.²¹ It also adds to existing literature highlighting women-physician burnout, as a recent study of 215 U.S. parents found that women experienced greater work-to-family conflict, anxiety, and depression during the pandemic compared to men.⁶

Our study adds to other work examining employment changes by gender in many professions during the beginning of the COVID-19 pandemic. These findings are consistent with studies showing work-life changes during the pandemic among mothers in other professions, including in academia, single mothers, and other health care professionals.^{22–25} One study found that mothers of young children reduced hours more than men, the overall work-hour gender gap increased by 20–50%, and that mothers were more likely to reduce work hours than men in dual-earner couples.²⁶ Another study showed that state-mandated closures of childcare facilities were associated with a greater reduction in employment in women compared to men in the United States.²⁷ A large study in Italy showed that almost 20% of the sample experienced significant parenting-related exhaustion, affecting mothers more severely.²⁸ In contrast, another study demonstrated that there was an increase in father involvement in many household and childcare tasks at the beginning of the pandemic.²⁹

In addition to differences among attending physician-parents by gender, our study also showed differences in the experience of attending physicians who are parents of children, compared to those who are not, as well as attendings compared to trainees at the beginning of the COVID-19 pandemic. In particular, attending physician-parents of children were more likely to report increased work from home than attending physicians who were not parents of children. Attending physicians overall were more likely than trainee physicians to report an increase in evening work, days of work, and work from home. We did not study the baseline work schedules of different groups, but it is probable that changes in schedule were greater for physicians with more flexibility, which likely depends on both level of training and specialty.

Our study raises many questions for future research and should be interpreted within its limitations. First, the study represents findings from a single institution with a response rate of only 10%, so the results may be specific to our institution and/or reflect responder bias. Second, the number of responding trainees with children was too low to be analyzed, but studying this subset of physician-parents is also important. Furthermore, while we analyzed data based on self-identified gender and included both same- and opposite-gender couples in our recruitment, we did not further break down our analyses into same-sex and opposite-gender couples due to small sample size. While we included nonbinary options for gender, no one in our sample identified as such, further limiting our study. Additionally, physicians in different specialties may have different experiences during the pandemic, but we did not have enough respondents to study these differences in detail. Although we identified work-life changes during the pandemic, we do not know about the experiences of these physicians prior to the pandemic. In particular, we do not know the pre-pandemic burnout rates, which vary by specialty and gender. Finally, our survey was performed during the first 6 months of the COVID-19 pandemic, and work-life changes continue to evolve over the course of the pandemic. Larger studies are needed to further characterize the relationship between work-life changes, gender, and training level during the COVID-19 pandemic.

In conclusion, our study found higher burnout, increased time with children, and increased fear of going to work among female physician-parents compared to male physician-parents during the first six months of the COVID-19 pandemic. Our work can help inform larger studies that can further shape institutional policies which support physician-parents in order to help prevent burnout, including initiatives such as those targeted towards child-care support, burnout prevention and mitigation, and leave-of-absence policies and protections.

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