



# Gendered Impact of Caregiving Responsibilities on Tenure Track Faculty Parents' Professional Lives

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## Abstract

Navigating a career while raising a family can be challenging, especially for women in academia. In this study, we examine the ways in which professional life interruptions due to child caregiving (e.g., opportunities not offered, professional travel curtailed) affect pre- and post-tenure faculty members' career satisfaction and retention. We also examine whether sharing caregiving responsibilities with a partner affected faculty members' (particularly women's) career outcomes. In a sample of 753 tenure track faculty parents employed at a large research-intensive university, results showed that as the number of professional life interruptions due to caregiving increased, faculty members experienced less career satisfaction and greater desire to leave their job. Pre-tenure women's, but not pre-tenure men's, career satisfaction and intention to stay were negatively affected when they experienced at least one professional life interference. Pre-tenure men's desire to stay in their job and career satisfaction remained high, regardless of the number of professional life interferences they experienced. Sharing parenting responsibilities with a partner did not buffer the demands of caregiving on pre-tenure women's career outcomes. Our work highlights the need to consider the varied ways in which caregiving affects faculty members' careers, beyond markers such as publications, and how institutions can support early career stage women with family-friendly practices.

**Keywords** family work relationships · academic settings · career satisfaction · caregiving · faculty · gender roles · division of labor

Nearly fifty years ago, Hochschild (1975) argued in "Inside the Clockwork of Male Careers" that it would be extremely difficult, if not impossible, for women to achieve tenure because women's childbearing years coincide with pre-tenure years (reprinted in Hochschild, 2011). In the intervening time, numerous scholars have similarly critiqued the tenure track system because it is predicated on the "ideal male worker." This ideal worker can obtain tenure with little

difficulty because they are unencumbered by caregiving responsibilities and can devote themselves to their job (e.g., Stone & Hernandez 2013; Williams, 2005).

Despite advances for gender equity in academia, the ideal worker norm prevails. Moreover, it is clear that this norm "fits" gender expectations better for men (which assume that men will privilege work success at all costs) than women (who are assumed to care in the same way about their families; Heilman 2012; Heilman & Caleo, 2018). According to Heilman's lack of fit framework (2012), as well as Eagly and Karau's (2002) role incongruity theory, women are subject to evaluation in the workplace that is predicated on the stereotypes that assume they "fit" traditional male workplace demands less well than men do. Women enter graduate degrees in roughly equal proportions as men, yet women are not proportionately represented on the faculty tenure-track, though numbers are more even during the pre-tenure stage (American Association of University Professors, 2020). Specifically, although less than one-third of full professors are women, one-half of assistant professors are

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women (American Association of University Professors, 2020). Thus, while men benefit from their perceived gender-based “fit” with roles conventionally held by men, women incur costs because of their lack of fit, and these costs accumulate over the course of a career, so that more men, and fewer women, advance.

In the present study, we examined one of the biggest challenges women faculty can encounter on the tenure track: caregiving for children. Caring for children is an ongoing task that can be unpredictable in terms of what responsibilities need to be met. School snow days, appointments, and illnesses can impact parents’ professional lives while at work or on the weekends. In addition to unexpected interruptions, there are daily caregiving responsibilities, like meal preparation, monitoring homework, organizing appointments, and transportation to different activities. Despite societal changes regarding men’s involvement in childrearing, women remain the primary caregivers in society (Bianchi et al., 2007; Radcliffe & Cassell, 2015). That is, women provide the majority of caregiving for both labor that is visible, such as cooking or laundry as well as labor that is less visible, such as planning for future actions and providing reminders (Harrington & Reese-Melancon, 2022). In addition, unlike men who are working parents, women operate under pressure from ambient stereotypes that paint a picture of motherhood and career success as incompatible (Cuddy et al., 2004; Luhr, 2020). This strain that faculty who are parents, especially women, endure raises the questions: How do the day-to-day demands of caregiving affect faculty members’ professional lives? Does sharing childcare responsibilities with a partner buffer the adverse effects on one’s professional life?

Previous research has consistently documented gender differences among parents on explicit tenure-related criteria, such as publishing and obtaining grant funding (e.g., Fox 2005; Grant et al., 2000; Hunter & Leahey, 2010). However, less is known about how caregiving responsibilities affect other aspects of faculty members’ professional lives. For instance, caregiving responsibilities can lead to interruptions at work, professional travel needing to be curtailed, or turning down a certain professional opportunity. Thus, in the present study, we sought to understand how professional life interruptions due to caregiving were associated with faculty members’ intention to leave and career satisfaction. We were able to compare how this competing family demand might impede women’s career development, while in fact not impeding men’s, as a result of the relative fit with the career demands and differential gender role expectations. Given that shared parenting responsibilities with a partner is integral to work-life balance and well-being for women (Bianchi et al., 2007; McClain & Brown, 2017), we also examined how this source of support may mitigate

the effects of caregiving on faculty members’, particularly women’s, careers pre- and post-tenure. In this paper, we focused on professional and parenting dynamics among cis-gender women and men in ostensibly heterosexual partnerships (sexual orientation data was not collected). As such, we draw on theory and research centered on gendered norms and expectations, primarily in the U.S. For ease of readability, we will refer to “professional life interruptions due to child caregiving responsibilities” as “professional life interruptions.”

## Gendered Expectations for Raising a Family While Working

Decades of research on working parents has concluded that starting a family while working toward and maintaining a successful career can be uniquely challenging for women (Miller, 2011). Research on academic parents has also found that women’s careers are often negatively affected after parenthood, while men’s are relatively unaffected—a phenomenon known as the “maternal wall” (Mason et al., 2013; Williams, 2005; Wolfinger et al., 2008). Women’s careers compared to men’s are often hindered due to parenthood because women experience unique gendered expectations. That is, women are socialized to adopt an ideal of motherhood that includes primary caregiving responsibilities, whereas men’s parenting ideals are less demanding (consistent with a social constructivist perspective; Leavitt et al., 2017; Leeds-Hurwitz, 2009). At the same time, women are affected by stereotypes that paint a conflicting picture of motherhood and career success (Cuddy et al., 2004; Luhr, 2020).

According to Eagly and Karau’s (2002) role incongruity model of prejudice, hostile prejudices are activated when a member of a social group enacts a stereotype-incongruent social role. Rooted in a gender role expectation framework, the role incongruity model of prejudice posits that women are stereotyped as and expected to engage in nurturing roles while men are associated with agentic roles (Eagly, 1987). Given these gender-based expectations, women who engage in roles associated with men, such as a professional career or “breadwinning,” are met with stigma. For example, women endure social and economic repercussions (e.g., being less liked, less likely to receive a job offer or raise) when they engage in stereotypically male behavior (Phelan et al., 2008; Williams & Tiedens, 2016). Of course the converse is also true; both role incongruity theory and Heilman and Caleo’s lack of fit model (2018) assume that because expectations about how gender norms fit or do not fit with the demands of career advancement differentially affect men and women,

men's advancement will not be affected by professional career interruptions, while women's will be.

In the context of caregiving, motherhood evokes traditional feminine stereotypes and emphasizes the notion that women should be nurturing, warm, and other-oriented (Eagly et al., 2000; Ridgeway & Correll, 2004). In contrast, careers in academia, especially those in the sciences and leadership positions, are associated with stereotypic masculinity and perceived as inconsistent with traditional feminine characteristics (e.g., helping others; Diekmann et al., 2010). Arguably, the dual roles of professional and mother elicit conflicting expectations. On one hand, succeeding in a professional capacity entails agency and competitiveness; on the other hand, motherhood entails nurturance and warmth (Diekmann et al., 2010; Hodges & Park, 2013). Moreover, these conflicting expectations can negatively affect women's job performance. For instance, when women are asked to think about either a parent or career domain, they exhibit a pattern of switching activation which, in turn, negatively affects their processing speed and work engagement (Hodges & Park, 2013). This understanding suggests that the incongruity or lack of fit between women's gendered expectations of career success and motherhood has clear psychological and work-specific consequences.

Given this seeming incongruity of roles, it is not surprising that people view working mothers as less competent and committed to their careers than working fathers as well as working women without children (e.g., Correll et al., 2007; Cuddy et al., 2004). As such, women in professional positions who become mothers report that they experience a lack of support for family issues from their colleagues and supervisors, ostensibly both parents and non-parents (Mason et al., 2013; Moors et al., 2022). Colleagues who hold negative views (consciously or not) about mothers in the workplace (e.g., not committed to their job, should be caregiving instead of working) may be less likely to help advance women faculty members' careers, such as offering opportunities. In this study, some of the professional life interferences that we examined were related to how parents may perceive a lack of support from their colleagues or poor treatment (e.g., not being offered opportunity from a colleague to advance their career).

## Faculty Members' Work Context

Much attention has been paid to understanding the extent to which there are gender differences among parents on explicit tenure-related criteria, such as publishing and obtaining grant funding. Indeed, among parents, women tend to publish less often and obtain fewer grants than men (Fox, 2005; Grant et al., 2000; Hunter & Leahey, 2010). Less

is known, however, about how caregiving responsibilities affect other aspects of professional life, such as having professional travel curtailed, work disruptions, or opportunities not offered. For instance, one study of 127 faculty members (the majority of whom were women) found that 78% of faculty members did not submit a conference abstract and 50% turned down a talk due to childcare issues (Tower & Latimer, 2016). Conference travel is important, especially during the pre-tenure years, as these professional meetings can serve as a way to network, receive peer feedback, and build a scholarly reputation (e.g., Mata et al., 2010).

With respect to work disruptions due to caregiving, it may seem like an academic career is compatible with parenthood. Faculty members may have flexibility with their course schedules or can engage in writing outside the typical weekday work window. However, the core tasks of faculty members' jobs involve scholarly activity and teaching, and these are tasks that require blocks of uninterrupted time to complete. In fact, one of the top cited barriers to productivity mentioned by faculty is lack of time to dedicate to writing and conducting research (Hagan et al., 2019; Yarris et al., 2014). Unlike other tasks or occupations (e.g., answering emails, administrative tasks), productive scholarly activity relies on blocking off dedicated time, which is consistent with the ability of faculty members to achieve *flow*, or a state of total involvement in an activity that consumes one's full attention (Nakamura & Csikszentmihalyi, 2009). The mental energy needed to synthesize information, conduct complex analyses, or generate new knowledge can be challenging to complete when work interruptions occur, or unexpected time away is needed due to caregiving responsibilities.

Given the demands of achieving tenure, work-life balance may be particularly challenging for pre-tenure faculty members. Pre-tenure faculty members work more hours per week than their tenured peers (Link et al., 2008). Moreover, women who have children soon after they receive their doctorate are less likely to achieve tenure than men who have children during the same period (e.g., Mason & Goulden 2002). In a national study of academic physicians, mothers spent 8.5 more hours per week on domestic activities than fathers (an analysis that took into account total work hours and spousal employment; Jolly et al., 2014). Thus, in addition to working many hours to advance one's career during the pre-tenure years, becoming a parent during this time appears to adversely affect women's position in academia.

Tenure track positions are also unique because these jobs have steadily declined in the U.S. (Zhang et al., 2015). Thus, there are a limited number of positions, which creates additional pressure for faculty members' to be highly productive. Moreover, it is rare for academic institutions to offer reduced workload arrangements for tenure track

faculty, such as part-time positions or the ability to take substantial (more than one academic semester) time off (e.g., Drago & Williams 2000). As such, tenure track positions are highly competitive and the lack of options for a work schedule (such as a temporary part-time position) that allows for uninterrupted periods of time while caregiving for a new child, can further hinder academic parents', especially women's, advancement on the tenure track.

Taken together, faculty members' work contexts entail unique tasks, including stretches of uninterrupted time and professional travel to advance one's career. Working toward advancing one's career, however, can be negatively impacted by a range of caregiving responsibilities. While research has focused on gender differences in publishing and obtaining grant funding, it is unclear how professional life interferences due to caregiving (e.g., work interruptions, professional travel curtailed) affect faculty members' career outcomes. This study seeks to further expand this area of inquiry to better understand how caregiving responsibilities affect pre- and post-tenure faculty members' intention to stay and career satisfaction.

## Child Caregiving and Partner Support

How parents work with each other to care for children is a key to relationship quality and personal well-being (Ciciolla & Luthar, 2019; Leavitt et al., 2017). In most families, women engage in a disproportionate share of parenting, even if they are employed full-time (Ciciolla & Luthar, 2019; Radcliffe & Cassell, 2015). This is also the case among dual-career faculty couples (O'Laughlin & Bischoff, 2005). The caregiving responsibilities that women are disproportionately responsible for involve visible actions (e.g., cooking, dropping children off at school) as well as invisible labor (e.g., household management; Ciciolla & Luthar 2019). Feeling disproportionately responsible for household and child caregiving responsibilities is linked with strains on women's personal well-being and lower satisfaction with their partners (Ciciolla & Luthar, 2019; Leavitt et al., 2017). When responsibilities are shared, or at least perceived to be shared, work-life balance and other psychological benefits are better achieved by parents, especially women (Bianchi et al., 2007; Frye & Breugh, 2004).

In addition to personal and relationship benefits, sharing child caregiving responsibilities can also positively affect parents' careers. For instance, research has consistently documented that experiencing a high degree of work-family conflict is linked with low job satisfaction and organizational commitment as well as high job turnover (see Allen et al., 2000; Amstad et al., 2011, for meta-analyses). Most of this research focused on how responsibilities at home (e.g.,

the proportion of time spent on a given task) are linked with job outcomes and does not examine how parents may (or may not) share parenting responsibilities (Amstad et al., 2011; Buchanan et al., 2016). In the case of academia, little is known about how faculty members who are parents navigate caregiving and how different aspects of caregiving may affect their careers. In this study, we expand this research by specifically examining the ways in which faculty members perceive that caregiving responsibilities affect their professional life while taking into account the extent to which they share caregiving responsibilities with a partner. That is, we examined situations unique to an academic career to better understand how caregiving responsibilities—and sharing these responsibilities—may affect career outcomes among pre- and post-tenure faculty members.

## Study Aims and Hypotheses

We examined the relationship between professional life interferences due to caregiving and career outcomes among pre- and post-tenure faculty members, paying special attention to the role of gender and partner support for caregiving. We focused on intention to stay in one's current position, because this affective response is a robust predictor of quitting or staying at one's job (Cowden & Cummings, 2012; Ryan et al., 2012). Moreover, we focused on career satisfaction because it is a well-established predictor of productivity, retention, and well-being (Rosser, 2004; Settles et al., 2013). Both intention to stay and career satisfaction are essential in nearly all turnover models and frameworks (see Hom et al., 2017, for a review).

Drawing on both the lack of fit and the role incongruity model of prejudice frameworks, we anticipated that more professional life interferences would negatively affect pre-tenure women's desire to stay in their position and career satisfaction, compared with men at the same career stage, and both women and men tenured faculty members. That is, we hypothesized a three-way interaction among the number of professional life interference due to children, gender, and tenure status for both job outcomes. We did not expect that gender would moderate this relationship for tenured faculty. Instead, we expected a main effect among post-tenure faculty men and women, such that job outcomes would be affected by the extent to which they experienced professional life interferences. Given that women, including those in academia, experience the brunt of childcare responsibilities (Dush et al., 2018; O'Laughlin & Bischoff, 2005), we expected that early career women would feel the tension between managing a successful career and raising a family to a greater extent than pre-tenure men and faculty members (regardless of gender) who have obtained tenure.

As discussed earlier, childcare demands are greater with younger children and this developmental time period often coincides with the work-demand-intensive pre-tenure years (Mason et al., 2013).

We further examined whether shared parenting responsibilities served as a buffer to the demands of caregiving and career outcomes among pre-tenure faculty. In line with previous work (e.g., Ciciolla & Luthar 2019; Frye & Breaugh, 2004), we predicted that sharing childcare responsibilities with one's partner would mitigate the hypothesized negative effect of caregiving on career satisfaction and desire to stay for pre-tenure women. Although we expected partner support for caregiving responsibilities would be beneficial for all academic parents to help manage the ways in which caregiving affects one's professional life, we expected this support to be particularly beneficial to pre-tenure women. Since the tenure review process is based on demonstrating high levels of competence and productivity in the early years of one's academic career, the lack of fit and role incongruity issues are maximized in this period (Greenhaus & Beutell, 1985). In particular, women are socially prescribed and assume greater responsibility for caregiving (Oleschuk, 2020; Sallee et al., 2016), thus making the pre-tenure years especially difficult for women to navigate their career and caregiving responsibilities.

## Method

### Participants and Procedure

Tenure-track faculty participants were part of a broader internal university-wide climate assessment survey initiative at a large Midwest Research I university in the United States, which was approved by the authors' Institutional Review Board. Approximately 30,000 undergraduate and 17,000 graduate students attend the university with approximately 5,000 faculty members (half of whom are tenure-track). The tenure requirements for this institution include a robust publication and grant funding portfolio as well as excellence in teaching. A total of 1,373 tenure track faculty members participated in the study with average response rate of 47%. In a study of 490 organization survey studies, Baruch & Holtom (2008) found that the average response rate was 35.7%; thus, this study's response rate is on par with (and exceeds) the average response rate for organizational research.

Our goal was to examine the relationship between caregiving responsibilities and job outcomes; thus, 185 faculty members who reported that they were not parents were excluded from this study. Of the 1,188 faculty members who reported that they had at least one child, 159 faculty

members were excluded from the analyses because they did not indicate their gender, tenure status, or relevant items analyzed in this study (e.g., aspects of professional life affected by caregiving, career satisfaction). The final sample consisted of 753 faculty members who were parents with a partner and completed measures central to this study's research questions.

Of the 753 parents, 171 (23%) were untenured and 582 (77%) were tenured; 505 (67%) respondents were men and 248 (33%) were women. Looking within tenure status, among pre-tenure faculty 74 (43%) identified as women and 97 (57%) identified as men. Among tenured faculty, 176 (30%) identified as women and 409 (70%) identified as men.

In terms of race/ethnicity, the majority of the sample ( $n=599$ , 80%) identified as White/European American; 79 (11%) identified as Asian/Asian American/Pacific Islander; 33 (4%) identified as Latina/o; 22 (3%) identified as Black/African American; 6 (1%) identified as multi-racial/ethnic; 4 (0.5%) identified as Native American/American Indian. The remaining participants did not indicate their race/ethnicity. The majority of faculty members ( $n=702$ ; 93%) were currently in a relationship. At 80% power (at  $\alpha=0.05$ ), our sample size enabled us to examine effects with seven predictors (primary variables of interest and interaction terms) as small as  $f^2=0.02$  and larger (analysis conducted using G\*Power; Faul et al., 2007).

### Measures

Tenure track faculty members responded to questions related to their experiences at their institution and provided personal and professional background information (e.g., gender, parent status, discipline, rank). Next, tenure track faculty members reported on their career satisfaction, intention to leave their current position, and whether different aspects of their professional life have been affected by having children. Faculty also responded to several questions related to workplace climate, mentoring, resources, and service, which are factors of faculty life that are beyond the scope this paper (see Lunsford and colleagues (2018), Moors and colleagues (2014), and Settles and colleagues (2013) for related research). For the full survey, see: <https://advance.umich.edu/research>.

### Professional Life Interferences due to Caregiving

To assess the number of professional life interferences due to caregiving responsibilities, faculty were instructed to indicate whether having children had negatively affected seven aspects of their professional life in the past five years. These professional life interferences included: "professional travel

curtailed,” “inability to work evenings and weekends,” “disruptions of work during the day,” “unexpected time away from work,” “opportunities not offered,” and “opportunities not taken.” An additional “other” option with an open-ended option was provided. These professional life interferences are consistent with qualitative research that highlights unique stressors that women faculty experience while caregiving (e.g., Armenti 2004; Mavriplis et al., 2010; Tower & Latimer, 2016). Faculty members indicated whether each aspect of their professional life had been affected via a checkbox response option (checked to indicate yes). Similar to research that assesses stressful life events (e.g., Romanov et al., 2003), we created a composite measure by taking the sum of all seven items for each participant, values ranging from 0 (*no aspects of professional life were affected*) to 7 (*all seven aspects of professional life were affected*).

### Career Satisfaction

To capture the different aspects of satisfaction with one’s academic career (e.g., resources, salary, success in scholarship), we used twelve items from the University of Michigan Faculty Work-Life Study  $\alpha=0.86$ ; Center for the Study of Higher and Postsecondary Education & Center for the Education of Women, 1999; also see DeCastro et al., (2014) and Settles et al., (2013) for further scale validation. Participants were asked: “How satisfied are you with the following dimensions of your professional development in your primary department/unit?” and to select the response option that best expresses their level of satisfaction for each dimension. The twelve items were: “opportunity to collaborate with other faculty;” “amount of social interaction with members of my department/unit;” “level of funding for my research or creative efforts;” “current salary in comparison to the salaries of my [institution] colleagues;” “ability to attract students to work with me;” “sense of being valued as a teacher by my students;” “sense of being valued as a mentor or advisor by my students;” “sense of being valued for my teaching by members of my department/unit;” “sense of being valued for my research, scholarship, or creativity by members of my department/unit;” “level of intellectual stimulation in my day-to-day contacts with faculty colleagues;” “sense of contributing to theoretical developments in my discipline;” and “balance between professional and personal life.” Additionally, faculty members were asked to rate their overall satisfaction with their current position on a 5-point Likert scale that ranged from 1 (*very dissatisfied*) to 5 (*very satisfied*). Items were averaged, with higher values indicating greater career satisfaction.

### Intention to Leave

We used one item to assess faculty members’ intention to leave their current position (Lindfelt et al., 2018; Ryan et al., 2012): “How often do you think about leaving [institution name]?” Participants rated the extent to which they thought about leaving using a 5-point Likert scale from 1 (*never*) to 5 (*often*).

### Shared Parenting Responsibilities

One item assessed the shared level of parenting responsibilities (similar to Schieman et al., 2018): “How would you describe, in general, the distribution of parenting responsibilities between you and your spouse/partner?” Participants rated on a scale from 1 (*I handle most of the parenting responsibilities*) to 5 (*My spouse/partner handles most of the parenting responsibilities*). The midpoint of the scale reflected that the parenting responsibilities were shared equally.

We recoded this item to reflect shared parenting responsibilities (1) and primarily woman’s responsibility (0). Specifically, women who indicated a 1 or a 2 on the scale and men who indicated a 4 or a 5 were coded as 0 to reflect that the primary caregiving responsibilities were presumably the woman’s (sexual orientation data were not collected). The decision to dichotomize the item into two groups (caregiving responsibilities were primarily handled by women and caregiving responsibilities were shared) was made because only 4% of the sample (out of 166 pre-tenure parents) indicated that men were primarily responsible for caregiving. Specifically, four pre-tenure men indicated that they were primarily responsible for caregiving, and three pre-tenure women indicated that their partners were primarily responsible. Given the small sample size of men who were primarily responsible for childcare, these participants were excluded from analyses that included partner support due to inadequate statistical power. While dichotomization of continuous variables can yield misleading results (MacCallum et al., 2002), this decision, in some circumstances, can be justified, as in this study (see results below for further analyses).

### Demographic Variables

Participants self-reported their tenure status at time of survey assessment (0 = untenured; 1 = tenured) and their gender (0 = men; 1 = women). Missing responses for gender were replaced with available human resources data from the institution sampled in this study.

**Table 1** Descriptive Statistics by Gender and Tenure Status

	Pre-Tenure		Post-Tenure	
	Women Mean (SD)	Men Mean (SD)	Women Mean (SD)	Men Mean (SD)
Professional life interferences due to caregiving	3.85 (1.63)	3.08 (1.61)	3.32 (2.04)	2.62 (1.92)
Intention to leave	2.88 (1.19)	2.84 (1.18)	3.06 (1.16)	2.75 (1.15)
Career satisfaction	3.85 (0.82)	3.98 (0.71)	3.87 (0.71)	4.00 (0.67)

Note. Max score for professional life interferences was 7; max score for intention to leave and career satisfaction was 5.

## Results

### Preliminary Analyses

Tables 1 and 2 summarize the descriptive statistics and bivariate correlations among demographic variables, professional life interferences, and career-related measures. In terms of the number of professional life interferences experienced by faculty members within the past five years, on average, pre-tenure women reported 3.85, pre-tenure men reported 3.08, post-tenure women reported 3.32, and

post-tenure men reported 2.62 (out of 7 possible instances); see Table 1 and also Table 2 for means organized by tenure status. With respect to tenure status, 30% of women were untenured compared to 19% of men (this gender difference was significant,  $\chi^2(1) = 10.40, p < .001$ ).

### Effects of Caregiving on Career Satisfaction and Intention to Leave

To test our hypotheses, we performed two hierarchical multiple regression analyses with intention to leave and career satisfaction serving as the dependent variables. The number of professional life interferences, gender, and tenure status were entered in the first step; all possible two-way interactions were entered in the second step; and the gender x tenure status x aspects of professional life affected by children three-way interaction was entered in the third step; see Table 3 for final model. Interactions were probed using tests of simple slopes and the Johnson-Neyman technique (a region of significance test; model 3; Hayes 2013; Johnson & Neyman, 1936). Specifically, we used the Johnson-Neyman technique because it avoids the need to arbitrarily define “low,” “moderate,” or “high” levels of professional life interferences to probe the significant interaction term.

**Table 2** Correlations, Means, and Standard Deviations for Pre-Tenure and Tenured Faculty

	1	2	3	4	Mean	SD
1. Professional life interferences due to caregiving	--	-0.20**	0.14	-0.21**	3.47	1.65
2. Gender	-0.17***	--	-0.02	0.08	--	--
3. Intention to leave	0.26***	-0.13**	--	-0.51***	2.85	1.18
4. Career satisfaction	-0.20***	0.09*	-0.42***	--	3.92	0.76
Mean	2.83	--	2.84	3.96	--	--
SD	1.98	--	1.16	0.68	--	--

Note. Gender is coded as 0 = women and 1 = men. Correlations above the diagonal are for pre-tenure faculty members; correlations below refer to tenured faculty members.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**Table 3** Multiple Regression Analyses for Intention to Leave and Career Satisfaction Among Tenured Faculty

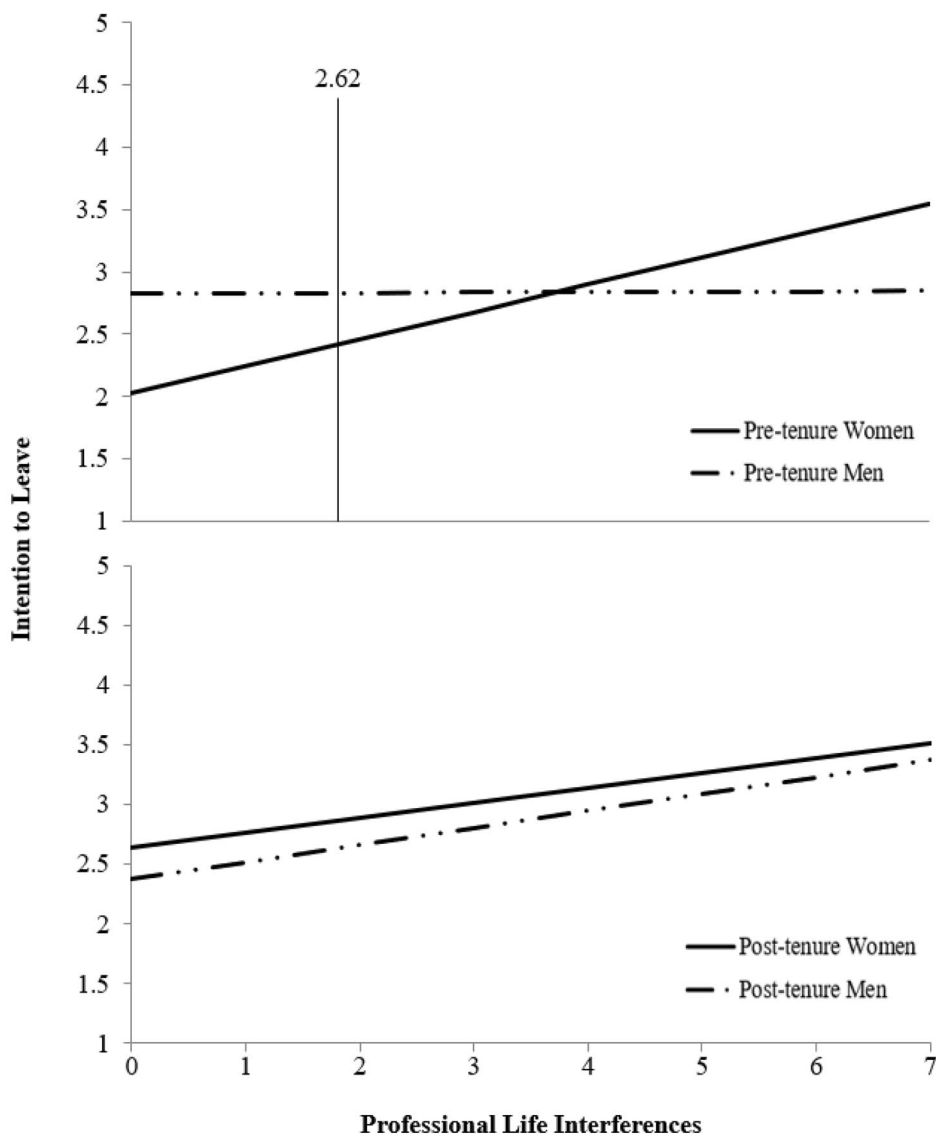
Predictors	Intention to Leave <sup>a</sup>				Career Satisfaction <sup>b</sup>			
	<i>b</i>	SE	$\beta$	<i>t</i>	<i>b</i>	SE	$\beta$	<i>t</i>
Professional life interferences due to caregiving	0.23	0.08	0.37	2.78**	-0.17	0.05	-0.46	-3.39***
Tenure	0.62	0.38	0.22	1.65	-0.46	0.23	-0.28	-2.02*
Gender	0.82	0.43	0.33	1.92	-0.42	0.26	-0.28	-1.64
Professional life interferences due to caregiving x Tenure	-0.10	0.09	-0.17	-1.04	0.12	0.06	0.36	2.13*
Professional life interferences due to caregiving x Gender	-0.22	0.11	-0.38	-2.05*	0.14	0.07	0.39	2.05*
Tenure x Gender	-1.08	0.47	-0.47	-2.33*	0.59	0.28	0.42	2.07*
Professional life interferences due to caregiving x Tenure x Gender	0.24	0.12	0.40	2.01*	-0.16	0.07	-0.45	-2.23*

Note. Overall model: <sup>a</sup> $F(7, 742) = 7.44, p < .001$ . On Step 3, with the inclusion of all interaction terms,  $R^2 = 0.066, p = .04$ .

<sup>b</sup> $F(7, 745) = 5.67, p < .001$ . On Step 3, with the inclusion of all interaction terms,  $R^2 = 0.051, p = .03$ .

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**Fig. 1** Association Between Professional Life Interferences Due to Caregiving and Intention to Leave for Pre-Tenure Faculty (above) and Post-Tenure Faculty (below)



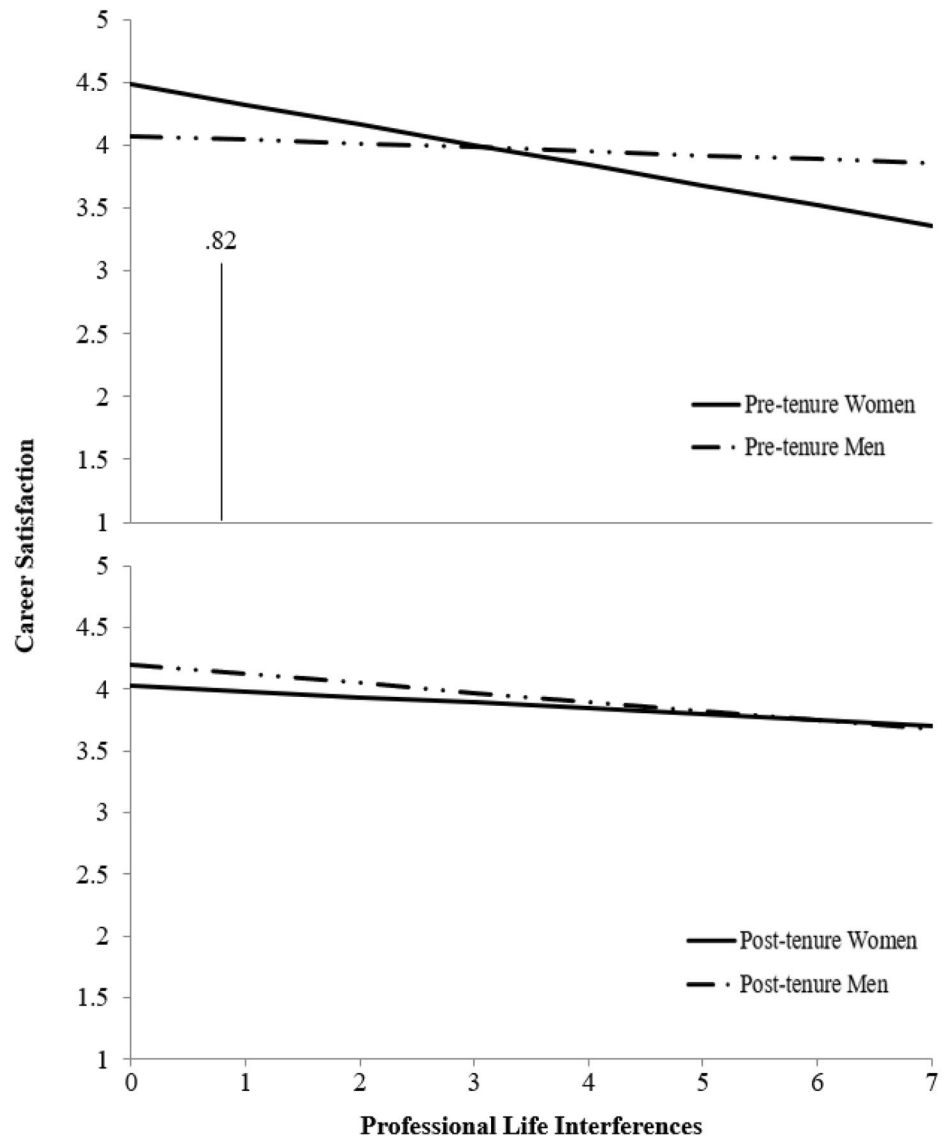
Instead, this technique probes a significant interaction by locating the point(s) on a continuous variable where a relationship becomes significant across the values of the moderator variables. In other words, this technique allows us to determine the exact number of professional life interferences (e.g., one, two, or more interferences) in which career outcomes are negatively impacted for pre-tenure women (compared to pre-tenure men). Additional hierarchical multiple regression analyses limited to pre-tenure faculty were conducted to examine whether sharing childcare responsibilities with their partner buffered the effects of professional life interferences on pre-tenure women's career outcomes.

As shown in the final models reported in Table 3, our hypothesized three-way interaction among professional life interferences, gender, and tenure status was significant for both job outcomes. As illustrated in Fig. 1, gender moderated

professional life interferences on intention to leave current position among pre-tenure faculty members. Among pre-tenure faculty, women expressed greater intention to leave their job when they experienced more professional life interferences,  $b = 0.23$ ,  $p = .006$ , while among pre-tenure faculty, men's intention to leave was not related to the number of professional life interferences they experienced,  $b = 0.003$ ,  $p = .96$ . According to the region of significance test (Johnson-Neyman technique), the relationship between gender and intention to leave was significant for pre-tenure women who experienced 2.62 (or more) instances of professional life interruptions (out of 7 possible instances). Among pre-tenure faculty, 79% of women experienced 2.62 or more professional life interruptions compared to 68% of men. Among post-tenure faculty, both women and men expressed greater intention to leave when they experienced



**Fig. 2** Association Between Professional Life Interferences Due to Caregiving and Career Satisfaction for Pre-Tenure Faculty (above) and Post-Tenure faculty (below)



a greater number of professional life interferences ( $b = 0.13$ ,  $p = .002$  and  $b = 0.15$ ,  $p < .001$ , respectively). On average, post-tenure women and men reported 3.32 and 2.61 professional life interferences and had average scores of 3.06 and 2.75 for intention to leave, respectively; see Table 1.

As shown in Fig. 2, further supporting our hypothesis, gender moderated the effects of professional life interferences on career satisfaction among pre-tenure faculty members. Among pre-tenure faculty, women had lower career satisfaction when they experienced a greater number of professional life interferences,  $b = -0.17$ ,  $p = .001$ , while men's career satisfaction at this stage was not affected by professional life interferences,  $b = -0.03$ ,  $p = .46$ . According to the region of significance test (Johnson-Neyman technique), pre-tenure women were significantly less satisfied with their career than pre-tenure men when they

experienced 0.82 (or more) professional life interferences (out of 7 possible instances). Among pre-tenure faculty, 100% of women experienced one or more aspects of their professional life affected by children. Among post-tenure faculty, both women and men had lower career satisfaction when they experienced more aspects of their professional life affected by child caregiving ( $b = -0.05$ ,  $p = .05$  and  $b = -0.08$ ,  $p = .001$ , respectively).

#### Exploratory Analyses: Types of Caregiving Responsibilities and Tenure Rank

To further examine these patterns, we conducted two additional exploratory analyses. First, we examined whether one or more specific type of professional life interference (e.g., professional travel curtailed) was driving the gender

difference in career outcomes among pre-tenure faculty. Specifically, we conducted a series of regression analyses with each of the six professional life interferences individually entered into the model (due to limited statistical power, the seventh open-ended item was not included). None of the three-way interaction terms (specific type of professional life interference  $\times$  gender  $\times$  tenure) predicting intention to leave and career satisfaction were significant,  $\beta_{range} = 0.06-0.13$ ,  $p_{values} = 0.18-0.71$ . These results suggest that a specific type of professional life interference (for example, professional travel curtailed due to caregiving) is not driving the results. Instead, the accumulation of professional life interferences is negatively associated with pre-tenure women's intention to stay and career satisfaction (whereas pre-tenure men's career outcomes are unaffected by the accumulation of professional life interferences).

To better understand the results among post-tenure faculty, we examined whether women and men who were associate and full rank professors were differentially affected by professional life interferences. We conducted two additional regression analyses with gender, rank, and professional life interferences (and all possible interaction terms) predicting intention to leave and career satisfaction. We found that the interaction between gender, rank (associate vs. full professor), and professional life interferences was not significant for intention to leave, but was significant for career satisfaction,  $\beta = 0.19$ ,  $p = .10$  and  $\beta = 0.59$ ,  $p = .002$ . Specifically, among associate rank faculty, women's career satisfaction was not related to the number of professional life interferences they experienced,  $b = 0.05$ ,  $p = .26$ . That is, the simple slope for women was non-significant and, of note, their career satisfaction was moderately low (mean of 3.58 out of 5.00). Among associate rank faculty, men had lower career satisfaction when they experienced a greater number of professional life interferences,  $b = -0.14$ ,  $p = .007$ . Among full professors (both women and men), more professional life interferences were linked with lower career satisfaction,  $b = -0.09$ ,  $p = .004$  and  $b = -0.05$ ,  $p = .011$ . In general, the same pattern of results was found as the main analyses (described above), with the exception that career satisfaction for women who are at the associate professor rank does not appear to be hindered by accumulating professional life interferences (though, at the mean-level, their career satisfaction is moderately-low).

### Pre-tenure Faculty: Partner Support for Caregiving Responsibilities

Of the 158 pre-tenure parents included in these analyses, 51% indicated that they shared parenting responsibilities equally with a partner and 49% indicated that these responsibilities were primarily handled by women. Women and

men were equally likely to indicate that they shared caregiving responsibility with a partner and that women were primarily responsible for caregiving,  $\chi^2(1) = 1.81$ ,  $p = .12$ . As described earlier, these comparisons focused on sharing caregiving with a partner and women as the primary caregiver because very few faculty members (7 total) indicated that men had the primary responsibility for caregiving. Moreover, compared to pre-tenure men, pre-tenure women reported more professional life interferences, regardless of whether they reported that they were primarily responsible for caregiving or shared responsibilities with a partner (3.77 compared with 3.14),  $F(1, 154) = 15.74$ ,  $p < .01$ .

To test our hypothesis that shared caregiving responsibilities would buffer the adverse effects of professional life interferences on pre-tenure women's (compared to pre-tenure men) career outcomes, we conducted two regression analyses with intention to leave and career satisfaction serving as the dependent variables. The number of professional life interferences, gender, and tenure status were entered in the first step; all possible two-way interactions were entered in the second step; and the gender  $\times$  tenure status  $\times$  aspects of professional life affected by children three-way interaction was entered in the third step; see Table 4 for final model.

Inconsistent with our hypotheses, for both career satisfaction and intention to leave, there were no significant moderating effects of shared parenting responsibilities with professional life interferences among pre-tenure faculty; see Table 4. Specifically, neither regression analysis yielded a significant gender  $\times$  professional life interference  $\times$  shared parenting responsibilities interaction,  $\beta = -0.20$ ,  $p = .56$  (intention to leave) and  $\beta = 0.19$ ,  $p = .57$  (career satisfaction). In other words, inconsistent with our predictions, whether pre-tenure women shared responsibilities with their partner or were primarily responsible for these responsibilities did not influence the number of professional life interferences they experienced and, in turn, did not influence their intention to stay or career satisfaction.

### Exploratory Analyses: Partner Employment Status and Sharing Caregiving Responsibilities

To better understand a potential reason as to why we did not find support for this buffering hypothesis, we explored the role of employment status of faculty members' partners. Perhaps, there were differences in the employment status (e.g., full-time, part-time, unemployed) of people's partners that could explain the extent to which people shared caregiving responsibilities with their partner. Given the sample size of pre-tenure faculty parents was relatively small ( $N = 158$ ), there was limited statistical power for additional analyses (such as a 4-way interaction to probe employment status). We found that men's partners were more likely than

**Table 4** Multiple Regression Analyses for Intention to Leave and Career Satisfaction Among Pre-Tenure Faculty

Predictors	Intention to Leave <sup>a</sup>				Career Satisfaction <sup>b</sup>			
	<i>b</i>	SE	$\beta$	<i>t</i>	<i>b</i>	SE	$\beta$	<i>t</i>
Professional life interferences due to caregiving	0.20	0.014	0.26	1.44	-0.18	0.09	-0.25	-1.37
Shared parenting	-0.61	0.76	-0.25	-0.80	0.56	0.48	0.37	1.18
Gender	0.24	0.69	0.10	0.35	-0.05	0.43	-0.04	-0.13
Professional life interferences due to caregiving x Shared parenting	0.08	0.19	0.14	0.44	-0.07	0.12	-0.21	-0.67
Professional life interferences due to caregiving x Gender	-0.16	0.17	-0.26	-0.91	0.09	0.11	0.22	0.78
Shared parenting x Gender	1.16	0.96	0.43	1.22	-0.69	0.60	-0.41	-1.16
Professional life interferences due to caregiving x Shared parenting x Gender	-0.14	0.25	-0.20	-0.59	0.09	0.15	0.19	0.57

Note. Overall model: <sup>a</sup> $F(7, 151)=1.53, p=.16$ . <sup>b</sup> $F(7, 151)=1.71, p=.11$ .

women's to be unemployed or hold part-time employment,  $\chi^2(2)=16.28, p<.001$ . Specifically, 30% of men's partners were unemployed compared with 9% of women's partners. In addition, 16% of men's partners held part-time positions compared with 9% of women's partners. Men with partners who were unemployed and employed part-time were more likely to indicate that their partner primarily handled caregiving than sharing caregiving equally, but this was not the case for women,  $\chi^2(2)=23.42, p<.001$ . Women pre-tenure faculty members with partners who were employed full-time were equally likely to be primarily responsible for caregiving as they were to equally share caregiving with their partner, whereas men were more likely to indicate that they shared caregiving responsibilities when their partner was employed full-time,  $\chi^2(2)=7.64, p=.02$ .

We also conducted further analyses to determine whether meaningful variance was lost when the item that assessed sharing caregiving responsibilities was dictomized. Specifically, we retained a 3-point measure, which compared women who were "primarily responsible" for caregiving to women who were "somewhat primarily responsible" for caregiving to women who "shared" caregiving responsibilities with their partner. The same pattern of results reported in the main analyses were found. That is, there was no moderation effect of sharing caregiving responsibilities (with contrast coded 3-point moderator and related interaction terms) on child caregiving responsibilities and both job outcomes (all  $p_{values} > 0.15$ ).

## Discussion

Meeting the responsibilities of caregiving while maintaining a career in academia poses unique challenges for women compared with men. The tenure track system is modeled on an ideal worker who is able to devote themselves fully to their job, which creates challenges for all parents in the

early years of their career and childrearing (Williams, 2005). However, these challenges are exacerbated for women, because of the lack of fit and incongruity of gender norms and workplace expectations (Eagly & Karau, 2002; Heilman & Calero, 2018). Despite changes in social norms for parenting over time, women remain the primary caregivers (Radcliffe & Cassell, 2015). Thus, women in tenure track positions who are parents endure work-family strains that men likely do not. Previous research has consistently demonstrated that there is a gender difference among parents on explicit tenure-related criteria (e.g., publication record); however, less is known about the varied ways in which caregiving responsibilities are associated with faculty members' work and, in turn, affect their career outcomes.

In this study, we sought to remedy this gap in knowledge by examining how professional life interferences, such as having travel curtailed due to caregiving, were associated with faculty members' intention to stay and career satisfaction. We also examined the role of sharing caregiving responsibilities with a partner on faculty members' career outcomes. We predicted that pre-tenure women, compared to pre-tenure men as well as tenured faculty, would experience more professional life interferences, and this would be linked with negative career outcomes, such as low career satisfaction. Given that women are primarily responsible for caregiving responsibilities (Dush et al., 2018; O'Laughlin & Bischoff, 2005), we expected that pre-tenure women would feel the tension between managing a successful career and raising a family to a greater extent than pre-tenure men and post-tenure faculty members of both genders. We also expected that sharing parenting responsibilities with a partner might ameliorate the demands of caregiving on pre-tenure women's professional life.

Results showed that pre- and post-tenure faculty members' professional lives are affected by caregiving responsibilities in a variety of ways—from disruptions during the workday to opportunities not offered. As expected and in

line with both the role incongruity and lack of fit frameworks, pre-tenure women, but not pre-tenure men, reported less intention to stay and lower career satisfaction when they experienced a relatively small number of professional life interferences due to caregiving (i.e., at least one instance). The power of gender norms for men that support the single-minded pursuit of career advancement, in contrast to the conflict between ideal worker norms and gender norms for women, led us to expect this pattern. During this early career and parenting period the conflict women experience interferes with their careers, while freedom from that conflict precludes that for men. Thus, pre-tenure men's desire to stay in their position and career satisfaction remained high, regardless of the number of caregiving responsibility interferences they experienced. The accumulation of professional life interferences (e.g., not offered opportunities or having professional travel curtailed due to caregiving) was *not* associated with pre-tenure men's career outcomes. For all other groups of faculty (pre-tenure women as well as post-tenure women and men), as the number of professional life interferences increased, their intention to leave increased and career satisfaction decreased, but this was not the case for pre-tenure men.

Consistent with the literature on gender norms, men at both the pre- and post-tenure career stages reported fewer professional life interferences compared to women at both career stages. At the post-tenure career stage, the relationship between professional life interferences and career outcomes did not differ between women and men. However, both women and men reported greater intention to leave and lower career satisfaction when they experienced more professional life interferences. This parallel in men and women faculty's responses at these later career stages may indicate that after tenure men are more willing to engage with family life at the expense of work, or that their partners are more determined that they do that (or both). Consistent with this possibility, in this study, 57% of tenured faculty reported sharing caregiving responsibilities with a partner and 43% said the woman was primarily responsible (whereas 51% of pre-tenure faculty reported sharing caregiving responsibilities). At the same time, it is important to recognize that post-tenure faculty reported fewer professional life interferences than pre-tenure faculty. Perhaps this is because children are older at this career stage. Thus, faculty who have obtained tenure may be able to accommodate the fewer interruptions from work than when children are younger.

Given that professional life interferences negatively affected pre-tenure women's intention to leave and job satisfaction, we examined whether sharing caregiving responsibilities with a partner mitigated the negative relationship with professional life interferences on career outcomes. Regardless of whether women were primarily responsible

for caregiving or shared responsibilities with a partner, they were more likely than men to report that professional life interferences due to caregiving negatively affects their careers. This finding is consistent with previous research that has found women, regardless of a position in or outside of academia, report more caregiving for children than men (e.g., Ciciolla & Luthar 2019; O'Laughlin & Bischoff, 2005). We predicted that partner support for caregiving would mitigate the negative effects of professional life interferences on career outcomes for pre-tenure women compared with pre-tenure men. However, unexpectedly, sharing caregiving responsibilities with a partner (compared to the woman being primarily responsible) did not buffer the adverse effects of caregiving for pre-tenure women's desire to stay in their position or career satisfaction.

One possibility that partially explains this finding is that pre-tenure women were more likely to have partners who were employed full-time compared to pre-tenure men. Specifically, men's partners were more likely than women's partners to hold part-time or no employment (rates of part-time and unemployment were 2–3 times more likely among men's partners than women's partners). Moreover, men with partners who were unemployed and employed part-time were more likely to indicate that their partner primarily handled caregiving than sharing caregiving equally. However, this was not the case for women. Women were equally likely to indicate that they were primarily responsible or equally responsible for caregiving when their partners were part-time employed or not employed (though, very few women had partners who were unemployed or part-time employed compared to men). Given that partners who unemployed or hold part-time employment may have more time available to provide care for children, this employment status difference between women's and men's partners may help explain why women's careers were relatively unaffected despite sharing caregiving responsibilities with a partner. Moreover, pre-tenure women reported more professional life interference due to caregiving than men, regardless of whether they equally shared caregiving responsibilities with a partner.

### Limitations and Future Directions

This study makes important contributions to our understanding of managing the demands of caregiving in academia, and future research can build from this study's limitations. One of the major limitations of this study is that results may not extend to faculty members' lives outside of research-intensive institutions. Faculty members in this study were sampled from one research-intensive university in the U.S. Despite the potential for limited generalizability, the institution sampled (a large R1 university) resembles many other

large public universities in terms of size, gender composition, and other related dimensions. It is possible, though, that faculty members who took part in the study differed in their perceptions of workplace climate or job outcomes compared to faculty members at small liberal arts colleges or research-intensive universities in other geographic locations in the U.S. Moreover, it is possible that faculty members who took part in this study differed from those who declined. Arguably, faculty members who are unhappy in their current positions or have been treated unfairly may have been less likely to participate in this study for fear of being identifiable. Thus, both of these limitations should be kept in mind when considering the results of this study.

Future studies could also examine the various ways caregiving responsibilities can influence faculty members' career outcomes, especially during the COVID-19 pandemic. Data collection occurred prior the COVID-19 pandemic; thus, future researchers should consider the unique strain that academic parents endured while managing their careers during the pandemic. For instance, recent research has shown that women's productivity was acutely affected during the pandemic, including fewer first-authorship pre-prints and published papers than men (Andersen et al., 2020; Oleschuk, 2020). Future research should also consider the other ways in which caregiving can interfere with professional life during the pandemic. For instance, prior to vaccine availability, parents were simultaneously managing their careers while caregiving and helping their children remotely learn from home (and likely without outside help). It is very likely that interferences, like work interruptions or the inability to accept advancement offers, were more frequent during this time and could have long-term effects on faculty members' career outcomes. Moreover, research has shown that the pandemic exacerbated gender inequality, as women were more likely to take on greater amounts of caregiving and household labor (CohenMiller & Izenkova, 2022). Thus, in a similar vein, future research should consider an assessment of caregiving responsibilities that takes into account various aspects of caregiving, such as feeding, bathing, or virtual schooling (Kobrynowicz & Biernat, 1997). Assessing these different aspects of caregiving could illuminate responsibilities that are of greater importance to or uniquely affect career outcomes. This type of nuanced caregiving assessment would address the present study's measurement limitation, as we used a global assessment, instead of a nuanced assessment of caregiving.

Moreover, understanding how academic parents navigate child caregiving responsibilities during the COVID-19 pandemic would be beneficial to better understand career outcomes that may have a lagged effect and contribute to advancement discrepancies among women and men. One key factor that should be considered in future work is

the rate at which faculty reach promotion beyond tenure. Research suggests that men are more likely to obtain tenure than women and reach promotion to full professor status quicker than women (Box-Steffensmeier et al., 2015; Stewart et al., 2009). Among parents, women and men who use a tenure clock extension for caregiving obtain tenure on similar timelines; however, women are later disadvantaged and take longer to reach full professor status (Fox & Gaughan, 2021). To date, research has not yet identified why it takes women longer to reach full professor status. Some scholars suggest that men could be using parental leaves to focus on scholarly pursuits (rather than caregiving; Rhoads & Rhoads 2012), however, qualitative research does not support this notion (Lundquist et al., 2012). Moreover, it is unclear how child caregiving responsibilities and partner support for sharing caregiving responsibilities affect rates of promotion among faculty members—especially within the context of the COVID-19 pandemic and lack of childcare resources. Future researchers and academic administrators should consider ways in which institutions can support academic parents (see Oleschuk 2020, for recommendations), including tenure clock extensions that many academics, especially parents, may have used during the pandemic (Butler, 2021). Likewise, researchers and administrators should be mindful of possible later downstream consequences of tenure-clock extension policies on women's career advancement.

Future research should also consider the potential bias embedded within asking people to rate their parenting responsibilities in comparison to each other. For instance, people tend to evaluate men and women differently based on gender stereotypes, setting the standards for women's caregiving higher than men's caregiving (known as shifting standards; Kobrynowicz & Biernat 1997; Park et al., 2008). Specifically, the reference point for men's caregiving involvement is arguably low, which could create a larger perceived difference in caregiving expectations for mothers and fathers. Perhaps this tendency for shifting standards in parenting responsibilities influenced faculty members' reporting of their own and their partners' parenting behaviors. Moreover, there could be individual differences in what people (regardless of gender) believe constitutes shared responsibilities. Thus, future research should examine the type and quality of caregiving tasks in more depth. Related, very few faculty members indicated that men were primarily responsible for caregiving. Thus it is likely that men benefit from an unrestricted range of support (more than 50% of responsibilities shared), whereas the maximum support that women receive may be "equal support" from their partners (i.e., 50%). Thus, the fact that our measure is based on perceptions of shared responsibilities that may be influenced by gender norms could partially explain why sharing parenting responsibilities did not attenuate the relationship between

pre-tenure women's professional life interferences and their job outcomes. Future research would benefit from an assessment of parenting responsibilities that directly assesses partner sharing practices.

Finally, researchers should consider how caregiving strains may play out differently in dual-career academic couples as well as positive aspects about caregiving. For example, previous work has shown that among dual-career academics, women reported spending a higher percentage of time on caregiving as well as household tasks (e.g., cleaning, cooking) relative to their partners (Sallee et al., 2016). Thus, researchers should also consider ways in which policies and institutional support related to childcare may be particularly beneficial to dual-career academics. In addition, this study focused solely on how caregiving can adversely impact academics' professional lives. Previous research has demonstrated that parenting can positively influence one's academic career, including becoming more efficient in work and changing one's perspective on career and family life (Huopalainen & Satama, 2019; O'Laughlin & Bischoff, 2005). Our research demonstrates that it also has adverse effects, at least under some conditions. It is important for future research to balance attention to the positive and negative effects in the same study.

### Practice Implications

Our study sheds light on policy implications for college and university administration. Our results highlight how women, but not men, who are parents are often disadvantaged during the pre-tenure years—a time that is critical to one's academic career. Ample research has documented the benefits of policies and programs aimed at helping parents navigate career and family life, including direct employer benefits (e.g., improved productivity) and the ability to recruit and retain diverse applicants (Butts et al., 2013; Wingard et al., 2019). Academic institutions play a valuable role in fostering women's career success with family-friendly policies (Kossek & Ozeki, 1999; Mason et al., 2013). Taken together, family friendly policies and programs at academic institutions could further help support faculty members, especially pre-tenure women.

In addition to common policies that support tenure track parents, such as tenure clock extensions or paid leaves, institutions could also consider developing other types of programs or policies to better support academic parents. For instance, family-work scholars (Drago & Williams, 2000) have proposed the idea of a half-time tenure track option, which would allow faculty members with caregiving responsibilities (e.g., for children, ill family members) to have their workload reduced by half for a period of time. This type of reduced workload could provide academic

parents the ability to achieve goals toward tenure while caregiving. To the best of our knowledge, this does not appear to be an available option at any U.S. institution for tenure track faculty members.

Based on the present study's findings, many pre- and post-tenure parents indicated that their professional travel had been curtailed due to caregiving responsibilities. As such, institutions could develop travel programs or policies to support faculty members who are parents. Some institutions provide academic parents a stipend to travel with children or to cover expenses related to home care (e.g., overnight nanny) for research and professional engagements (see programs offered by the University of Michigan and Princeton University as examples). This type of institutional support could minimize the negative effects that caregiving demands have on faculty members' careers. Taken together, efforts to re-examine existing family-friendly policies and programs would benefit all parents in academia, especially women during the early years of their career—and help challenge the notion that motherhood is incompatible with an academic career.

### Conclusion

In sum, our study demonstrated that caregiving for children affects faculty members' professional lives in a variety of ways, particularly pre-tenure women's. We expanded on research that examined gender differences in the publication records of academic parents (e.g., Grant et al., 2000; Hunter & Leahey, 2010) by examining other ways in which caregiving can affect faculty members' lives, such as having professional travel curtailed due to caregiving responsibilities. Our results show that, compared to pre-tenure men, pre-tenure women are more likely to express a desire to leave their job and report lower career satisfaction when they experience a relatively low number of professional life interferences (one or more). In fact, pre-tenure men's career outcomes are relatively unaffected by professional life interferences due to caregiving. This gender difference disappears among tenured faculty members. Instead, increased professional life interferences are associated with decreased career satisfaction and increased intention to leave for both post-tenure women and men. Although some research suggests that the negative effects of child caregiving responsibilities on women's careers may be mitigated by sharing caregiving responsibilities (e.g., Amstad et al., 2011; Buchanan et al., 2016), we did not find evidence for this in the current study. Taken together, these findings underscore the important role that institutions can play to support the needs of parents, particularly women, in academia.

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**Data Availability** Survey data from the present study is available upon request. The survey instrument used in the present study can be located here: <https://advance.umich.edu/research>

## Declarations

**Conflict of interest** The authors declare they have no conflicting financial interests.

**Consent to Participate and Publish** Informed consent was obtained from all participants included in the present study to participate in the survey and publish their aggregate responses.

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