

“People Will Judge You...So Be Ready”: Advice to Pregnant Doctoral Students

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Abstract: *Doctoral program attrition is a significant issue, with 50% of doctoral students leaving their program before completion. Personal life events, such as marriage and children, are risk factors for attrition, but little research has focused on factors that positively affect persistence and success through these life events. In a nationwide survey project, individuals who had been pregnant during their doctoral program in the United States (n=626) suggested strategies and approaches that pregnant students could implement to support continued success in doctoral education, highlighting the voices of those with lived experience with doctoral education and pregnancy. Thematic analysis identified four primary themes in the responses: the creation of systems that support success, the need for clear expectations, the importance of productivity, and the feasibility of success. Implications for doctoral programs and social work educators include the need to identify ways that programs can actively support students through pregnancy, remain informed about supports and accommodations for pregnant students, and consider options to allow for a slow-down in productivity without penalty to the student.*

Keywords: *Doctoral education, pregnancy, persistence, doctoral students, qualitative research*

Doctoral attrition is a major problem in higher education. In the first seven years of a research doctoral program, approximately one-third of students graduate, one-third remain in their program, and one-third leave their programs before graduation (Sowell et al., 2015). While some go on to finish, about half of doctoral students will never complete their program. Completion rates vary by gender and field of study (Sowell, 2008). In social work, the number of research doctorate degrees conferred decreased by 12.7% between 2010-2020, but there are no gender differences (Council on Social Work Education [CSWE], 2021). In contrast, in science, technology, engineering, and math (STEM) fields, women are more likely than men to drop out of doctoral programs (Cabay et al., 2018; Sowell, 2008). Students who have a major life event, such as a pregnancy, birth, marriage, or death have an elevated risk of attrition (Gardner, 2009a; Maher et al., 2004; Spaulding & Rockinson-Szapkiw, 2012). In the United States, more than 25,392 women students graduate from PhD programs every year (National Science Foundation [NSF], 2021). In social work, 75% of research doctorate students are women between the ages of 25 and 44 years [CSWE, 2021]. With so many women of childbearing age in doctoral programs, including social work, many students experience a pregnancy or the birth of a child. Little is known about the reasons why some students persist through a major life event such as pregnancy, while others leave academia. This is an important, but little studied, aspect of understanding doctoral student persistence and attrition.

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Although Title IX provides legal protection to pregnant students (Office for Civil Rights [OCR], 2021), gender equity remains an issue in higher education. Gender differences exist in publications, salaries, workloads, grant funding, and promotion across fields, including social work (Casad et al., 2022; Johnson et al., 2022; Tower et al., 2019). In social work, base salaries are significantly higher for men in faculty roles than women and women are more likely to work in undergraduate only programs, which may be perceived as less prestigious and offer lower salaries (Tower et al., 2019). In social work, women faculty perceive the climate of their program as more negative than men, including on measures such as gender discrimination, sexual harassment, gender insensitivity, and work/life climate (Tower et al., 2019).

Pregnancy is a gendered, embodied experience that visibly highlights the decision to engage in caregiving alongside doctoral education. Pregnant doctoral students face challenges including a bias against caregiving, mentorship challenges, and the implicit pressure to demonstrate commitment and capability despite pregnancy (Mirick & Wladkowski, 2018; Wladkowski & Mirick, 2019). Additional challenges include expectations that pregnancies be timed to be minimally disruptive (Crawford & Windsor, 2021; Trepal et al., 2014), insufficient family friendly policies and supports (Mirick & Wladkowski, 2020; Mansfield et al., 2010), negative consequences of using family-friendly policies (e.g., loss of financial aid, funding, health insurance, or access to university services; Holm et al., 2015; Lynch, 2008; Windsor & Crawford, 2020), insufficient access to affordable childcare (Maher et al., 2004), negative responses from faculty and administrators (Cabay et al., 2018; Kaler et al., 2020), and limited access to essential professional development opportunities (Mirick & Wladkowski, 2018). Some of these challenges are immediate issues, due to pregnancy, and others are anticipatory stressors, as pregnant students plan for the postpartum period, and beyond. There is a dearth of information about the strategies and protective factors that support pregnant students' persistence in doctoral education. More research highlighting the voices of students with lived experience will expand our understanding of these experiences.

Literature Review

Individuals in all levels of academia, from doctoral students to full professors, engage in their work within the broader context of societal values, beliefs, and assumptions, and the culture and expectations of academia. For women with children, academic culture can present unique challenges. Ward and Wolf-Wendell (2016) explain:

Ideal workers are dedicated to the job, meaning they are not supposed to take into account things that are non-job related (i.e., family) ...yet contemporary norms associated with motherhood and parenting still assume a dedication to family that excludes devotion to work. Academic women can find themselves in a bind that stands at the intersection of ideal worker norms that assume a complete focus on work, intensive mothering norms that assume a total dedication to family, and societal norms that grant unprecedented access to women in the workplace while limiting what they can achieve if they want to be a professional and a parent. Ideal worker norms expect women to approach work as if they do not have children and

intensive mother norms expect women to parent as if they do not have careers. (p. 12)

Doctoral students find themselves in a particularly vulnerable position, as they have fewer policies to support them during pregnancy and the postpartum period than full-time faculty (Bodkin & Flemming, 2021; Crawford & Windsor, 2021; Springer et al., 2009). For example, they are often ineligible for the Family Leave and Medical Act (FMLA) or other ways to access a maternity leave (Springer et al., 2009). Social work students are not exempt from these issues, with many social work doctoral students describing a lack of institutionalized support for pregnant students (Wladkowski & Mirick, 2020). Program administrators often have little information about policies pertaining to pregnancy, resulting in confusion, lack of information, or misinformation which can lead to lack of access to supports or unintentional negative consequences of using supports (Kent, 2020; Romero-Hall et al., 2018; Springer et al., 2009; Windsor & Crawford, 2020).

Due to ideal worker norms, pregnancy is problematic as it interferes with the 24-7 availability of the ideal worker (Mason et al., 2013; Ollilainen, 2019). Pregnant students describe comments and feedback illustrating assumptions that they are less committed to their doctoral studies than non-pregnant students (Mansfield et al., 2010; Mason et al., 2013; Ollilainen, 2019). These beliefs create anxiety and fear about how pregnancy might affect a student's professional identity, academic work, reputation, and academic career (Hopwood & Paulson, 2012; Mansfield et al., 2010; Wilkins-Yel et al., 2022). Students carefully consider pregnancy disclosure and may remain silent about pregnancy to avoid negative assumptions about their motivation or commitment (Kaler et al., 2020; Mansfield et al., 2010; Romero-Hall et al., 2018). Often, students describe working harder to demonstrate they can still do the work during pregnancy and the postpartum period (Mansfield et al., 2010; Romero-Hall et al., 2018). Navigating these challenges can cause anxiety, concern, guilt, and stress (Mansfield et al., 2010; Wilkins-Yel et al., 2022). Support from faculty, peers, and mentors can mitigate these negative feelings and ameliorate negative experiences (Maher et al., 2004).

Attrition and Persistence in Doctoral Education

The culture of a doctoral program is critical to doctoral student persistence. Doctoral students need to learn the norms, expectations, and implicit rules of their specific field and doctoral education. This socialization into a doctoral program is associated with higher rates of persistence, while a lack of integration increases risk of attrition (Lovitts & Nelson, 2000). A positive climate supports students' success. In contrast, when the doctoral program fosters an environment in which negative interactions with students occur, attrition rates increase (Cabay et al., 2018). Lovitts and Nelson (2000) argue that "many students who depart are conducting a referendum on the department culture; they are voting with their feet" (p. 47).

The literature on doctoral student persistence has emphasized the importance of good executive functioning skills, such as organization, discipline, flexibility, internal motivation, for student success (Byers et al., 2014; Gardner, 2009a; Martinez et al., 2013; Spaulding & Rockinson-Szapkiw, 2012). Faculty tend to emphasize the importance of the

academic preparation of the student, but often there is no difference in academic performance between students who leave and students who stay (Gardner, 2009b; Lovitts & Nelson, 2000). One qualitative study of pregnant and parenting students' experiences in social work and other health care fields found that along with determination, organization, and persistence, students attributed their success to good luck in terms of fertility, pregnancy timing, supportive mentorship, and positive programmatic climate (Wladkowski & Mirick, 2019). The concept of pregnancy timing is well-established in academia (Armenti, 2004; Windsor & Crawford, 2020), but the role of luck and fertility in timing is rarely discussed.

Mentorship

A strong relationship with a mentor supports students' progression through a doctoral program (Maher et al., 2004) and is the strongest predictor of a student's decision to remain in a program or leave before graduation (Lovitts & Nelson, 2000; Wilkins-Yel et al., 2022). Good mentorship supports students during personal crises and is pivotal in determining student retention when a negative life event or health issue occurs (Wilkins-Yel et al., 2022). Pregnant students identify the importance of supportive advisors who provided them encouragement, support, and advocacy such as checking in with a student, providing or offering support, listening, and other demonstrations of caring (Hopwood & Paulson, 2012; Kent, 2020; Lynch, 2008; Trepal et al., 2014). Characteristics of effective mentors include empathy, availability, flexibility, warmth, and trustworthiness (Kent, 2020). Mentor acceptance of a student's pregnancy and advocacy for accommodations create a supportive foundation for students (Holm et al., 2015), while fear of mentors' responses can lead to students' lack of disclosure of challenges to mentors (Wilkins-Yel et al., 2022).

The Current Study

There are known factors that contribute to doctoral student persistence (Byers et al., 2014; Gardner, 2009a; Martinez, 2013; Spaulding & Rockinson-Szapkiw, 2012). While a few researchers have explored the intersection of motherhood and doctoral education, identifying challenges associated with these dual roles (Mason et al., 2013; Trepal et al., 2014), limited research has explored factors that affect doctoral program persistence and success for this population. This study builds on a previous small qualitative study on the topic of pregnancy with healthcare students (e.g., social work, nursing; Mirick & Wladkowski, 2019), further expanding and deepening our understanding of this topic by highlighting the voices of students with lived experience of pregnancy in doctoral education and eliciting their understanding of the factors that support success as a pregnant doctoral student.

Methods

Study Design and Sampling

This paper reports results of a larger mixed-methods research project that explored women's experiences with pregnancy and motherhood during their doctoral education in the United States. Quantitative and qualitative findings specific to parenting are reported elsewhere (Mirick & Wladkowski, 2020). The analyses reported in this paper are limited to a qualitative subset of the data, the open-ended responses to a survey question that asked for guidance and recommendations to current doctoral students about managing pregnancy as a doctoral student. This question was only answered by participants who themselves had been pregnant during their doctoral programs. Following IRB approval, participants were recruited through professional and personal networks, social media groups devoted to academic motherhood, and direct outreach to doctoral programs. To reach current students, directors of doctoral programs were contacted from six intentionally diverse fields: sociology, social work, English, biology, nursing, and computer science. The recruitment materials asked that "women who had experienced a pregnancy or had a child during their doctoral program" consider study participation. Gender was not included as a screening question or on the survey itself. Unintentionally, language choice may have discouraged gender-diverse students from participating, leading to a sample that was predominately cisgender.

Data were collected via an anonymous survey using Qualtrics online survey software. No incentives were offered for study participation. Demographic questions were asked. These included age, race, sexual orientation, field of study, region of country, current employment status, number of pregnancies during the doctoral program, experience of pregnancy loss, and experience of medical complications due to pregnancy. Data on participants' advice and guidance to current pregnant doctoral students was collected through the following open-ended question: What advice would you give a woman doctoral student who is planning to become pregnant or has just found out she is pregnant?

Data Analysis

Data was analyzed using Braun and Clarke's (2006, 2012) six steps of thematic analysis, an iterative process of identifying themes in a data set. In this study, a set of responses to the following open-ended survey question was analyzed, "What advice would you give a woman doctoral student who is planning to become pregnant or has just found out she is pregnant?" Two members of the research team conducted the first steps of the analyses independently. First, they read the responses multiple times to become familiar with the data. Then, they independently created a set of initial codes based on analysis of the first 20% of responses. After comparison and discussion, a final set of codes was created, and the remaining responses coded. For responses with coding discrepancies or ambiguities, the responses were discussed until full agreement was reached. Following the initial coding process, the coding team met to discuss areas of commonality and difference between the preliminary codes and to group similar codes into larger themes. Exemplars are used to illustrate these themes in the participants' own words.

Findings

Participants

Participants ($n=626$) ranged in age from 24 to 55 years ($M=34.55$, $SD=4.70$). Most participants identified as White (70.8%, $n=443$) and heterosexual (86.4%, $n=541$) and had been pregnant only once in their doctoral program (61.7%, $n=386$). The majority (84.0%, $n= 526$) had been pregnant in the past five years. Most participants were current doctoral students (57.2%, $n=358$), with 13.6% ($n=85$) in tenure-track or tenured academic positions. The most heavily represented fields were healthcare (27.3%, $n=171$), life sciences (23.0%, $n=144$), social sciences (17.7%, $n=111$), and arts/humanities (16.0%, $n=100$). Participants attended doctoral programs in the South (29.1%, $n=182$), Midwest (22.2%, $n=139$), Pacific Coast (13.9%, $n=84$), MidAtlantic (13.4%, $n=84$), Northeast (11.8%, $n=74$), and West (9.1%, $n=57$) United States. See Table 1.

Factors Affecting Persistence, Success, and Experience as a Pregnant Student

In an open-ended question, participants shared recommendations for pregnant doctoral students. Four themes presented from the data: 1) the value of pregnancy as a time to create systems that support success ($n=412$); 2) the need for clear expectations ($n=167$); 3) the importance of productivity ($n=135$); and 4) the feasibility of pregnancy and parenting within doctoral education ($n=123$). See Table 2.

Table 1. *Sample (n=626)*

Characteristic	<i>n (%)</i>
Race	
White	443 (70.8%)
Asian/Pacific Islander	34 (6.3%)
Latina	31 (5%)
Black/African American	19 (3%)
Multiracial	8 (1.3%)
American Indian/Alaska Native	1 (0.2%)
Undisclosed	90 (14.4%)
Sexual Orientation	
Heterosexual	541 (86.4%)
LGBTQ+	62 (9.9%)
Prefer not to disclose	23 (3.7%)
Field of Study	
Healthcare	171 (27.3%)
Life Sciences	144 (23%)
Social Sciences	111 (17.7%)
Humanities & Arts	100 (16%)
Education	49 (7.8%)
Math/Computer Science	21 (3.3%)
Physical/Earth Science	18 (2.8%)
Engineering	11 (1.7%)
Undisclosed	1 (0.1%)
Role	
Current doctoral student	358 (57.2%)
Full-time tenure track faculty	70 (11.2%)
Full-time non-tenure track faculty	46 (7.4%)
Full-time non-academic position	46 (7.4%)
Post-doctoral fellow	36 (5.8%)
Tenured faculty	15 (2.4%)
Full time parents	13 (2.1%)
On leave from doctoral program	9 (1.4%)
Dropped out of program	7 (1.1%)
Unemployed	1 (0.2%)
Prefer not to answer	35 (5.5%)
Number of pregnancies	
One	386 (61.7%)
Two	192 (30.7%)
Three	39 (6.2%)
Four +	9 (1.4%)

Table 2. *Themes From Advice to Pregnant Doctoral Students (n=626)*

Theme	n (%) [*]	Subtheme	n (%) [*]
Create systems that support success	412 (64.8%)	Social support system	167 (40.5%)
		Active role	153 (37.1%)
		Planning for baby	150 (36.4%)
		Communication	95 (23.1%)
		Mentorship	61 (14.8%)
Set expectations	167 (23.9%)	Realistic	79 (47.3%)
		Anticipate negativity	77 (46.1%)
Productivity	135 (21.2%)	Work ahead	97 (71.9%)
		Maintain	61 (45.2%)
Feasibility	123 (19.3%)	Encouragement	89 (72.4%)
		Choose between	34 (27.6%)
		motherhood & academia	

^{*}% add to more than 100% because participants could provide multiple answers

Create Effective Support Systems

Participants ($n=412$) believed pregnancy represented a critical time to create systems to support their success during the postpartum period and beyond. This process included creating a social support system ($n=167$), taking an active role in the creation of this system (e.g., research, advocacy, confidence; $n=153$), planning (e.g., childcare, organization, finances, maternity leave; $n=150$), using clear communication ($n=95$), and accessing good mentorship ($n=61$).

Create a Support System. Participants ($n=167$) emphasized the importance of intentionally creating a support system during pregnancy, so students did not have to manage the dual roles of student and parent alone after their baby was born. One participant said, “Do NOT think you can/should do it alone, so make sure your spouse is there to help, that family is there to help.” This personal support was valued and seen as critical. Support systems included friends, family, partners, peers, colleagues, or faculty. Many saw these support systems filling multiple roles, including emotional support, guidance, and childcare. Including academics who were parents in this support system, such as “a friend in your department who is a mom too,” was identified as important to success. Creating a professional support system outside of the department was seen as a necessary option if the department was not supportive of the pregnancy. A support network was perceived as an essential component of success as a doctoral student mother and creating a network was an important task during pregnancy.

Active role. Participants ($n=153$) advised students to spend their pregnancy taking an active role in shaping the system to meet their needs by researching their rights, advocating for themselves, and “owning” their decision to have a child. Students need to “determine policies around pregnancy” and ensure they are “well informed of the resources available to...a pregnant student and new mother.” Research is necessary because staff do not always have correct information. One participant said, “Don’t trust that financial aid is telling you fully researched information ...I spoke with a financial aid representative...affirmed there would be no problem, yet...now, there is.” Students need to advocate for themselves, to

“push for the space and support you should receive.” This can mean accessing support outside the department such as the graduate student union, legal representation, or the Title IX office. Some resistance was assumed, as is illustrated by this advice to “fight for every right- don’t give up” and “advocate for yourself even if you receive a bad reaction.” One aspect of the ability to advocate was confidence in their decision to be pregnant. Participants recommended that students “own it!” and “not apologize to anyone for being pregnant.” Participants recommended trying to avoid negative feelings about pregnancy, as one participant shared:

Resist any internalized shame around becoming pregnant. I am queer and intentionally got pregnant. I had some internalized homophobia/sexism/misogyny about making this “choice.” I feared others would judge me and say, “Why did she decide to do this now?” as opposed to a straight-identified person “accidentally” getting pregnant.

Participants encouraged students to be confident in their decision, spending their pregnancy researching their rights and pregnancy policies, and advocating for their right to use these policies without negative consequences to their reputation or career trajectory.

Planning. Participants ($n=150$) identified the importance of spending pregnancy planning for future academic success. Planning spanned topics such as finances, childcare, routines, goals, and coursework as well as tasks such as reassessing priorities and building organizational skills. Planning for childcare was essential and included advice such as “get on a daycare list now.” Another common aspect of planning was arranging parental leave. Many participants believed a leave was important, although some qualified this advice with comments such as “if possible.” Planning also included setting and achieving goals and prioritizing tasks. One participant advised “organize your priorities around productivity targets and be very diligent about meeting targets.” Pregnancy is a valuable time for planning for success during the postpartum period.

Good Communication. During pregnancy, participants ($n=95$) recommended being “honest,” “open,” and “upfront” in communicating needs, goals, timelines, and plans with faculty and mentors. For example, one participant said, “Go to the chair with your plan and see if they might be on board with it. It is better to go with a plan in hand.... don’t wait too long...it is better to plan ahead than surprise them.” The communication should be professional, careful, and assertive. One participant said, “Be very open...but don’t complain. Just be transparent about what is going on.” Good communication during pregnancy was seen as supporting student success.

Mentorship. Participants ($n=61$) reported that good mentorship during and after pregnancy is important because mentors “can guide you through the process in your department.” Planning for the long-term, the most important criterion for a mentor is being supportive of not just the current pregnancy, but also parenting doctoral students. One participant recommended finding a mentor who was “supportive of parenting in graduate school, even if their research interest does not exactly line up with your own.” Most emphasized the added value of the mentor being a woman with children, offering advice such as “find at least one mentor who is also a mother.” Faculty mothers were perceived as more likely to be supportive and could also “understand the extra challenges pregnant

doctoral students face.” Besides offering support, mentors could be role models, sharing the strategies they found supported their successes. One participant suggested, “Find a female mentor who has a child. Talk about how she made work/research/career possible.” Setting up mentorship during pregnancy that would continue to be supportive after the birth of a child was highlighted as critical to student success.

Expectations

Having clear expectations was considered important to success ($n=167$). Participants identified the need to have realistic expectations ($n=79$) and to anticipate negative responses to pregnancy ($n=77$).

Realistic Expectations. Participants ($n=79$) reported that it was important for pregnant students to have a realistic understanding about the challenges of pregnancy, and eventually parenting, as a doctoral student. They emphasized the unpredictability of pregnancy, which can require students to shift plans unexpectedly. They recommended a pregnant student expect unanticipated barriers and challenges, offering advice such as “realize that everything won’t work out as planned—stay as flexible as possible.” The reality of the physical challenges of pregnancy was acknowledged. One suggested strategy was “schedule more time to complete tasks (start tasks earlier) because you may have an emergency or feel tired one day.”

Having a realistic vision of parenting an infant as a doctoral student was identified as a key part of effective planning for the postpartum period. One participant said, “verbal support [from faculty] is certainly positive, but you will still be expected to produce, present, teach...it’s really, really difficult.” Being realistic about the need to plan for substantial childcare was at the center of this advice, with participants offering reminders such as “you can’t work and care for a child” and “do not expect to get things done when you are at home with your child.” One participant suggested, “Anticipate the first three to four months of infancy to be very hard...it will be next to impossible to do anything other than infant care.” This advice was not limited to the future parenting challenges faced by new parents, but included the need to expect that the structure of academia will not support work life balance. One participant said, “Work life balance is a lie. There is no such thing, so accept that. Systemic change is needed to produce anything close to that.” She went on to advise, “For now, we all have to set our own priorities based on our values and live with the fall out.” Participants recommended realistic expectations in terms of the challenges of pregnancy and the need to prepare for the difficulties of balancing infant care with doctoral education.

Negativity. Participants ($n=77$) advised students to be prepared for a negative response to pregnancy from faculty, administrators, and/or peers counseling: “Even in female-dominated disciplines, don’t be surprised by tremendous misogyny.” Participants recommended avoiding some negativity by refraining from talking about pregnancy. For example, one participant recommended not “put[ing] pregnancy front and center or else you will be viewed as a mom first and scientist second.” Another participant expanded, saying, “Make sure you still act like a professional in your field. Don’t turn into a baby-crazy, always-focused-on-the-pregnancy, type of person. That turns everyone off.”

Another participant said, “in my experience, it is better to keep most discussion of family private and to continue to talk only about work-related topics as much as possible.” It was acknowledged that no strategy completely protects a pregnant student from pregnancy bias. One participant shared her feeling of inevitability about negativity and bias, saying:

There is an enormous amount of bias against pregnant women in academia today. You need to grow thick skin to be able to brush off unwanted comments about your pregnant body, and pregnancy hormones that influence behavior during pregnancy. People will judge you, and so be ready.

Advice centered on the need to expect negativity when pregnancy, especially if a student talks a lot about their pregnancy.

Productivity

Productivity ($n=135$) was a common theme in advice to pregnant students. Participants provided advice to pregnant students to maintain productivity levels during pregnancy, spend their pregnancy strategizing for a productive postpartum period, and if possible, increase productivity during pregnancy to compensate for a slow down during the postpartum period.

Participants advised maintaining productivity levels through pregnancy, emphasizing the importance of remaining productive and engaged in doctoral work throughout pregnancy. One participant advised, “As hard as it is, try your best to be productive during your pregnancy because you will almost certainly experience a slump in productivity in the postpartum period when you are sleep-deprived and caring for a newborn.” Some participants saw pregnancy as a time to prepare for a productive postpartum period. For example, participants recommended planning research so that there was work to do during the postpartum period. One participant shared this advice, “Get as much writing and experiments done as possible while pregnant, so you have data to analyze and stuff to help keep you busy while away [on maternity leave]. This way you can hit the ground running when you come back.” Another participant suggested a pregnant student organize their research so that they are ready to collect data during the postpartum period, saying, “Don't allow yourself to completely disengage...I used my maternity leave to collect data. That way, I didn't have to put a lot of brain power into it, but I was still engaged enough to keep a foot in the door.” Others recommended that students use their pregnancy to develop new strategies to maintain productivity that are unique to parenting students, such as “focus on working fewer hours more productively” or “think about work differently.... doing just one-half page a day.”

Pregnancy was seen as a time when students could increase their productivity to plan for unexpected pregnancy complications or an inevitable slowdown in the postpartum period. For example, one participant advised to work ahead and “finish expected work as early as possible” since pregnancy could be unpredictable. Working ahead during pregnancy was seen as a strategy to be able to briefly pause for the baby's arrival. For example, one participant said, “Hurry and get everything possible done before the baby comes. Do everything possible to allow yourself sufficient time to recover and enjoy your

baby.” Many participants recommended students “get as much work done while pregnant as possible,” including assignments, journal articles, dissertation chapters, and conference presentations. Other advice included “complete and draft manuscripts before the baby comes” or finish a major doctoral program benchmark, such as, “try to take your exams, finish your prospectus, or have at least one chapter draft done and approved by your committee” or “Finish your dissertation before the baby comes. Do not delay.” Some participants hedged this advice, offering caveats such as “do as many assignments and classes when pregnant as possible, within reason and sanity.” These recommendations implicitly acknowledge the inability to halt program expectations, even for a major life event.

Feasibility

The final theme centered on the feasibility of combining pregnancy, and ultimately parenting, with doctoral work ($n=123$). Some ($n=89$) focused on encouragement, and the belief that it was ultimately possible to be both a doctoral student and parent, while a smaller group ($n=34$), highlighted the necessity to choose between the two roles. There was an implicit assumption that pregnant students were considering these issues during their pregnancy with some considering whether to remain in doctoral programs or academia.

Encouragement. Participants ($n=89$) offered words of encouragement, such as “you can do it” and “it’s possible” in conjunction with the belief that holding these dual roles was not easy but often worth it. Participants used descriptors such as “hard,” “challenging,” “rewarding,” and “beautiful.” One participant offered, “Being a new parent is tough enough before adding the high stress of a PhD program. It is very possible, and rewarding, to do both, just try to be as strategic as possible.” Although all agreed it was possible, there was not a consensus that students should persevere in their doctoral studies. For example, one said, “Know that you are not alone - you CAN do this! But also know that if you change your mind and want to quit grad school, that’s ok too.” Encouragement often seemed an attempt to balance more negative feedback received elsewhere, such as this comment, “It’s not the end of the world or your academic career.”

Make a choice. Some participants ($n=34$) advised students to choose between academia and having a child, because it was not possible to manage the dual identities successfully or not worth the sacrifice and work required. For example, one participant said, “If you want to be a successful doctoral student, don’t be pregnant. If you want to be a good mom, don’t be a doctoral student because it is just impossible to be successful in both careers.” For some, the advice was starker, such as, “drop out-it’s not worth it.” The advice to make a choice applied to all of academia, as is illustrated by this participant, “academia is a shitty place for women and especially for pregnant women-get out of academia ASAP” perhaps by graduating “as quickly as possible and begin thinking about alt-ac work.” While only a small group gave this type of advice, one participant described the result of these beliefs, saying, “I know of one other female who became pregnant besides myself ...both of us decided to terminate our first pregnancies because we didn’t think that we could handle it and school at the same time.” Although some participants

provided encouragement, highlighting the excitement of pregnancy and ultimately, parenting, others recommended pregnant students leave academia.

Discussion

These findings provide a rare exploration of the lived experience of pregnant doctoral students, a group whose perspectives have historically been missing from the literature on higher education. The large sample size of this project – that spans humanities, STEM, and healthcare fields – offers a unique look at the factors students identify as affecting doctoral student success for pregnant doctoral student mothers, based on their own lived experience. These findings clearly demonstrate the diversity of pregnant students' experiences. While some participants focused on the ways to be successful as a pregnant student, including the importance of consistently producing academic work and progressing in the program, others emphasized the need to set expectations and consider feasibility. This advice may reflect the unique nature of their own experiences, based on field of study, programmatic culture, advisor/mentor, or availability of external resources (Mirick & Wladkowski, 2018).

Although historically motherhood has been perceived as incongruent with academia (Armenti, 2004; Drago et al., 2006; Mason et al., 2013), only a small group of participants highlighted explicit negativity towards pregnant students. Instead of blatant, intentional discrimination and bias, most participants described doctoral education as a context that is a poor fit for doctoral student mothers, making pregnant students vulnerable to caregiving bias and requiring them to spend their pregnancy planning, increasing productivity, setting up a support system, and for some, considering leaving academia. While pregnant students could find success, it required intentional, organized work during pregnancy, the constant production of academic work, even on maternity leave, and active engagement with the university to research and advocate for accommodations to which they were legally entitled. Doctoral work is difficult, exhausting work, and unsurprisingly, a small group shared the belief that remaining in academia was not worth the required effort. These findings highlight a critical equity issue in terms of access to doctoral education.

The advice highlights the immense amount of energy, motivation, and drive a pregnant student must expend to shape their environment to support their success. While figuring out how to create a supportive system (Maher et al., 2004), students must simultaneously research policies and support, advocate to obtain these (Windsor & Crawford, 2020), cope with staff and faculty who may be unfamiliar with them and/or provide inaccurate information (Springer et al., 2009), find supportive mentors, work ahead to manage a decline in productivity following childbirth, communicate their plans and needs to faculty, and plan for the baby (e.g., childcare, finances). They must engage in their doctoral work with confidence, ready to combat or avoid possible negative responses from faculty and staff. These are high expectations for students during a period where they may experience pregnancy symptoms like fatigue or nausea, need to cope with an unanticipated pregnancy, or may be kept busy with doctoral work, such as data collection, preparation for a conference presentation, or difficult coursework. This guidance highlights previous research emphasizing the importance of motivation, determination, perseverance, and

organizational skills for doctoral student success (Gardner, 2009a; Martinez et al., 2013; Spaulding & Rockinson-Szapkiw, 2012).

The focus on productivity emphasized the ideal worker norms which persist in academia, which often values productivity and the prioritization of academic work while dismissing those who value both the personal and professional aspects of their lives as less committed, less successful, and less desirable academics (Fox, 2020; Sallee et al., 2016). Further, it highlights a lack of space in doctoral education to pause for life events. Participants' emphasis on the importance of planning for sufficient childcare likely also reflects this necessity and is supported by previous research findings on the role of childcare responsibilities and other family-related issues on their slow progression through a doctoral program (Maher et al., 2004). For some students, creating and maintaining this high level of productivity during pregnancy may be unappealing or infeasible. These students are forced to decide whether to push back against accepted cultural ideals or leave academia (Fox, 2020; Sallee et al., 2016).

The importance of a good support system was emphasized by many participants, and they advised students to spend their pregnancy building a support network that serves a variety of purposes, including providing childcare, emotional support, and advice for navigating a doctoral program as a mother. Access to a supportive mentor who was a mother was highly recommended, supporting previous findings of the importance of the mentoring relationship to doctoral student success (Holm et al., 2015; Hopwood & Paulson, 2012); Kent et al., 2020; Mansfield et al., 2010). Previous research has emphasized that a mentor can ameliorate or accentuate the challenges a student faces while pregnant (Wladkowski & Mirick, 2019; Wilkins-Yel et al., 2022). Additionally, some offered support and encouragement to pregnant students, telling them they can navigate both roles successfully, and to be proud of their pregnancy. These messages suggest a sense of solidarity and support amongst students who have experienced pregnancy as doctoral students. This advice was uniformly cisnormative, with the implicit assumption that pregnant students identify as women and mothers. While this might be a result of a primarily cisgender sample, it highlights the need for research on the experiences of gender-diverse pregnant students and increased awareness that students experiencing pregnancy are not all women.

Of concern were descriptions of an unwelcoming climate for pregnant women in academia, reinforcing earlier research findings that academia can be a difficult place for academic mothers, who can face caregiver bias, microaggressions, and a lack of access to the professional development opportunities necessary to be competitive on the academic job market (Armenti, 2004; Drago et al., 2006; Windsor & Crawford, 2020) and suggesting that these challenges may begin during pregnancy. Participants anticipated bias and negativity about pregnancy. They offered strategies to avoid being affected by caregiving biases, such as avoiding talking about their pregnancy or carefully choosing mentors, PIs, and advisors (Drago et al., 2006; Holm et al., 2015). This negative climate may partially explain the need for a strong support network (Byers et al., 2014) and the belief for some that combining the dual roles is not feasible (Abetz, 2019).

Limitations

Limitations to the study design include an inability to determine a response rate, making it difficult to assess the possible impact of a response bias. It is possible that individuals who had a negative experience were more likely to complete the survey. The research question relies on participants' personal perspectives on success, which are likely not uniform across responses. As these responses reflect only individual students' perspectives, there is no evidence these strategies would effectively improve persistence of doctoral student mothers or increase their chances of academic success. Additionally, the questions ask participants about their prior experiences with pregnancy. Due to the timing of these surveys, these pregnancies occurred prior to the COVID-19 pandemic. It is unknown how the pandemic may have shifted and changed these experiences.

There are some limitations to the sample. First, the initial recruitment email asked for participants who were women who had experienced a pregnancy during their doctoral education. This choice of language may have inadvertently restricted the responses to cisgender women. Because gender was not asked as a demographic question, the presence of gender-diverse participants in the sample is unknown. Further, the sample has limited racial and ethnic diversity, with 71% identifying as White. While it is important to develop a better understanding of intersectionality in doctoral education, including the ways in which race, ethnicity, and gender intersect, the limited racial/ethnic diversity in the sample means these findings may more accurately represent White cisgender women's experiences. The emphasis in participants' advice about finding support from other academic mothers emphasizes the cisnormative bias in these findings. Future research should address this gap, so women of color and gender-diverse individuals are better represented in the doctoral student literature and we develop an understanding of the ways that social identity intersects with pregnant students' experiences (Wilkins-Yel et al., 2022). Even with these limitations, these findings provide information on the little studied area of pregnancy in doctoral education.

Implications

Findings of this study emphasize that in many doctoral programs, the responsibility for achieving success while simultaneously managing the physical challenges and stigma associated with pregnancy belongs to the pregnant student, not faculty, administrators, or the university. Instead of the program being responsible to provide reasonable accommodations for a pregnant student, as Title IX requires, these findings emphasize the student's responsibility to manage through careful planning and hard work. A requirement for a high level of work, confidence, motivation, and energy creates inequities in terms of who can be successful. Students who cannot do the expected level of work, due to perinatal depression, lack of social support, financial instability, pregnancy symptoms, or medical complications of pregnancy, are at a disadvantage. These factors are independent of the ability to be an academic. The persistence of these inequities within doctoral education, across fields of study, is a social justice issue and a concern for all educators. Social justice issues at all levels of education are social work issues, and concerningly, there is no evidence social work doctoral programs are immune to these issues.

To address these systemic issues, doctoral program leaders and administrators could consider ways to take a more active, intentional role in supporting pregnant students. By taking on some of the tasks participants identified as essential tasks for pregnancy (e.g., research policies, advocate, create support system, communicate needs), program administrators could lessen the emotional load carried by pregnant students, allowing them to focus their time on their doctoral work, their pregnancy, and their family. For example, the doctoral program coordinator could meet with external departments in the university (e.g., Human Resources, Financial Aid, Title IX) to research policies and accommodations, so they have accurate information to provide to any pregnant student, include in the student handbook, and share at student orientation. Previous research reflects this study's findings, that many administrators and faculty are unaware of accommodations for pregnant students (Springer et al., 2009). Creating a culture where students do not have to advocate or "fight" to get access to these accommodations could save many students anxiety, energy, and time, as well as allow these accommodations to be equitably available to all students. Program coordinators could take up these responsibilities in other domains as well, such as mentorship, communication, and a support system.

It is more difficult to imagine how to challenge the ideal worker norm that does not allow for a break in productivity, even for a major life event such as pregnancy (Sallee et al., 2016). These norms and expectations are persistent, implicit, and often invisible to those in the academic system, and therefore are not questioned, or interrogated. Shifting expectations away from unrelenting productivity would likely benefit all students but this is a challenging undertaking. Students can experience many types of life events that require a pause in productivity, such as physical illness or death of a family member. Supporting students' ability to balance personal and academic needs supports all students. In the current system, some students, like the 5% reported in this study, decide remaining in academic is not worth the effort and sacrifice or believe it is impossible, leading to fewer graduates entering academia (Abetz, 2019; Wilkins-Yel et al., 2022). There is evidence that women of color are particularly vulnerable to feeling not welcomed by academic culture and more likely to leave academia, especially in the face of a major life event (Ong et al., 2017; Sowell et al., 2015; Wilkins-Yel et al., 2022). When these students leave academia, then important diversity of thoughts, experiences, and beliefs are lost. Social work educators must consider their role within this system and think through how to take action to address existing social justice issues about success.

Conclusion

Although academic institutions have increased the number of women enrolled in doctoral programs (NSF, 2021), being pregnant as a doctoral student requires a substantial amount of energy, planning, and determination to create the supportive system necessary for success. Based on these findings, it is unsurprising that having a child can shift a student's career trajectory, often moving them away from academia and prestigious tenure track positions at research-intensive universities, and towards jobs outside of academia and teaching intensive jobs at non-research-intensive universities, four-year colleges, and community colleges (Kulp, 2016; Mason et al., 2013). It is time for higher education to recognize, name, and address these equity issues. Social work educators can take the lead

on this issue, advocating against practices, policies, and norms that create barriers for pregnant doctoral students.

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