How to "juggle all the competing demands":

Advice to PhD mums from the lived experiences of other PhD mums

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Doctoral research is not an easy undertaking for anyone, but the challenges of doing this while also navigating the complexities and gendered expectations of motherhood can be intensely and inequitably demanding. Mothers have been historically marginalised in higher education, yet still remain missing from many institutional initiatives that promote diversity, equity, and inclusion. Considering current demographic trends, 'PhD mums' are a potentially large cohort in doctoral programs, but they are often (made) invisible. This study reports on part of a large-scale international exploration of the experiences of 'PhD mums' across five continents. 998 'PhD Mums' provided advice to others who might now or in the future combine the roles of mother and doctoral researcher. Through a thematic analysis of the responses, advice relating to support, self-care, self-belief, role management, and preparation were revealed. The study elevates the voice of PhD mothers, offers advice and provides practical and moral support for those who, despite their unique and nuanced contexts, share the continuing challenge of navigating motherhood during their doctoral candidature.

Introduction

The average age of doctoral researchers across the world coincides largely with the time of life at which many people have children (Organisation for Economic Co-operation and Development [OECD], 2024a; 2024b). This means that potentially many doctoral researchers are also taking on parent and parent-like roles, although concrete data to confirm this is largely elusive. For example, a major international survey of graduate students only started asking (a single question) about parental status in the tenth year of its existence (Woolston, 2019). The most comprehensive data available appears to be in the United States, where it is suggested that

around one-third of graduate students (including both Master's and Doctoral programs) are parents (Anderson et al., 2024). Despite the potentially considerable presence of parents, higher education institutions are largely seen as 'care-less' spaces, and it is rare for institutions to recognize the challenges faced by those with 'care-full' home lives (Burford & Hook, 2019).

Doctoral education can have a profound impact on students' family plans, and conversely family plans can impact the doctoral student experience, and subsequent career trajectory and/or progression (Paksi et al., 2016). Social changes in the past few decades have resulted in an increased representation of women in doctoral education, to the point where there is equal representation in many countries, although national and disciplinary variation is evident. Again, albeit without concrete evidence, it could be concluded that doctoral researchers who are also mothers (though we do not assume a conflation between womanhood and motherhood) make up a significant part of many doctoral researcher cohorts, representing slightly less than half of enrolments across OECD countries (OECD, 2024a).

It is important to acknowledge that parenting is generally not experienced the same way by fathers and mothers, especially for those pursuing careers in academia. Mothers, who in many cases already carry an inequitable load in terms of household labour and the physical and emotional care of children, are subject to the 'motherhood penalty' (Halrynjo & Mangset, 2024). This refers to discriminatory practices and experiences that mothers often face in workplaces that negatively impact their career progression (Torres et al, 2024, p. 1). For mothers in academia, parenting may mean facing both overt and covert discrimination (Trepal & Stitchfield, 2012), as well as inequalities in wages and impacts on promotional opportunities (Powell, 2021). This is reflected in the lack of women in senior positions in higher education, which Grummel et al. (2009) describe as 'care-less positions'. These roles are disproportionately taken up by men without the same expectations of primary care; issues that also impact doctoral researchers. In

a US study of over 750 doctoral mothers, more than half reported an impact on their career goals, manifested as fewer opportunities for professional development, being less competitive in the job market, and delayed degree completion (Mirick & Wladowski, 2020). As a result, academic mothers at all career phases often stay silent about their identity as mothers (Mirick & Wladkowski, 2018). Others leave higher education altogether (Cech & Blair-Loy, 2019).

Higher education institutions around the world espouse a commitment to notions of diversity, equity, and inclusion (DEI) to address the systematic exclusion of certain groups. However, in the quantified university, promotion of DEI may be seen as a series of check boxes to help people succeed in the status quo. A number of academic books have lamented the (continued) lack of support for mothers in doctoral programs (e.g. Crawford & Windsor, 2021; Evans & Grant, 2009). Even when supports are nominally available, there are times when doctoral researchers may not be aware of what is available (Mason et al., 2024), or else unsupportive cultures may prevent doctoral researchers from taking advantage of known supports (Mirick & Wladowski, 2018). Adding to the challenges, mothers may be isolated socially and/or geographically from their peers (Khadjooi et al., 2012), and they may also be reluctant to share the realities of their daily lives due to the potential for negative backlash (Gonçalves, 2019).

Within this context, the authors conducted an international study to better understand the experiences of 'PhD mums' across various geographic and disciplinary contexts, by seeking those who were engaged in doctoral research while also having a mother or mother-like role (Ethical approval, Murdoch University #2020/028). Earlier publications arising from this study focused on how motherhood both positively and negatively influences doctoral research and researchers (Mason et al., 2023), and the range of supports that are available or that might be possible (Mason et al., 2024). In this paper, we aim to elevate the voice of PhD Mums by collating and sharing practical advice from participants' first-hand experiences. As Janzen

(2016) reminds us, "no two experiences are exactly alike, but within the sharing of experiences, others may benefit" (p. 1508).

Methodology

Guided by a lived experiences framework (Ellis, 1992), to capture the experience of mums and how they lived through their PhD experience, a mixed-methods survey was developed for the study. More than one thousand current and recent PhD mums from over 100 countries responded to the online survey during a two-month period in late 2020. It has been argued that the collection of rich qualitative data through open-ended questions in surveys may not be an ideal approach, with interviews often preferred (Jain, 2021). However, surveys have been found to be effective in eliciting data from participants on sensitive topics, particularly from those who may not otherwise be able to participate (Braun et al., 2021). A testament to this is the fact that, despite our survey being quite comprehensive, our target participants being extremely busy undertaking (at least) two intense roles, and despite an emerging pandemic that placed additional pressure on parents and especially mothers (Cox et al., 2023), we were able to garner participation over a short period from many hundreds of participants, many of whom wrote in-depth responses to our qualitative prompts.

After closing the survey, data were prepared for manual analysis, involving first inputting all responses into a spreadsheet. This paper reports on responses to an invitation within our survey for participants to provide advice to other current and future PhD mums. The responses were reviewed to remove cases which were incomplete or did not provide any clear advice. The final dataset included more than 55,000 words written by 998 participants from various demographic, geographic and disciplinary contexts (Table 1).

Table 1. Overview of participants, n=998

Nationality[1]			Location of doctoral program[1]		
Africa	82	8%	Africa	44	4%
Americas	134	13%	Americas	276	28%
Asia	164	16%	Asia	96	10%
Europe	336	34%	Europe	352	35%
Oceania	207	21%	Oceania	252	25%
Broad field[1]			Enrolment status		
HASS	663	66%	Domestic	811	81%
STEM	336	34%	International	165	17%
No response	3	<1%	No response	22	2%
Age bracket[2]			Graduation status[2]		
20-29	57	6%	Currently enrolled	724	73%
30-39	549	55%	Recent graduate	274	27%
40-49	333	33%	(within 5 years)		
50+	59	6%			

[1]Multiple responses possible. [2]At time of data collection

To analyse this textual data, a thematic content analysis approach was adopted (Braun & Clarke, 2006). This involved first becoming familiar with the data through multiple readings, before manually applying descriptive codes to sections of text giving similar pieces of advice. In some studies, coding continues until a 'saturation point' where no new codes are applied (Hennink et al., 2017). However, despite the large number of participants that usually makes manual coding of all responses overly intensive for researchers, coding was continued until all data were exhausted. This was necessary as our exploratory study centred the participants' experiences, and we did not wish to exclude any responses. This goal also justifies our inductive development of codes, without a codebook being prepared in advance. As shown in Figure 1, initial codes applied included 'support', 'supervisor', 'self-care', and 'family first', each representing a different form of advice.

Figure 1. Data coding in progress

Code	RESPONSE	SUPPORT Have a support, get support, let ppl support, find network, find a community	SUPERVISOR supportive supervisor, department, institution, be clear to supervisor, boundaries	SELF-CARE prioritise self care, exercise, healthy eating, mental health	FAMILY FIRST family first, make family time, enjoy family time
30	Definitely, go for it. But, make sure you have a lot of support, and have an understanding supervisors definitely helps. Remember to take care of own yourself too, physically and mentally in the midst of your busy life as a student and caring for your family.	1	1	1	
67	Do it, but only if you have the support networks. If you aren't paid enough as a family, everything will suffer. You need childcare, and rest, and to treat it like a job. In a job, most people expect you to behave like you don't have kids, which is true here too, but you need to find a mix of a supervisor who understands, a topic that you actively want to work on, and boundaries you can keep to.	1	1	1	
158	For those who still can choose a supervisor/lab/campus, please consider whether they will support or give you pressure. Most will say time management is crucial but I think mental health comes first and you may prioritize your family. Only then you can feel at ease studying, working, and producing results. Take your own time, no need to rush.		1	1	1

Each of the codes was examined and organised into categories to generate themes. One of the main goals of our paper is to disseminate practical advice from experienced PhD mums. Many of the participants also noted a desire to help others as a key motivator for participating in our study. Thus, while the codes that contribute to the development of themes are not always reported in thematic analysis study papers, we report all codes applied to the dataset, including those that were not incorporated into a theme (Appendix A). While we acknowledge that not all of the specific advice represented in the codes will apply to all PhD mums, a large collection of diverse advice provides a comprehensive resource that can be used by PhD mums to consider and determine what resonates with their own experience.

While the codes represent concrete advice, the themes capture patterns in the data that transcend individual differences, and allow insights into the experience of combining doctoral

education and motherhood. In the following section the findings are reported, and in the

qualitative tradition, are combined with the discussion.

Findings and discussion

The reporting of the findings is organised by themes. Table 2 to Table 6 each report a theme,

headed with a descriptive title, a list of corresponding codes, a description of each code, and an

illustrative quote. Quotes are presented throughout the paper as a narrative device to convey

the participants' experiences in their own words, although slight typographical changes may be

made for readability (Corden & Sainsbury, 2006). The large number of participants offered great

insight into the lived experience of PhD mums; for objectivity we ensured that no participant was

quoted more than once. The five themes developed and presented below relate to: support,

self-care, self-belief, role management, and preparation. Discussion takes place within each of

these themes with links to aligned literature and proposed guidance for PhD mums.

Support

The first theme is related to the different support necessary to "*juggle all the competing

demands*" of motherhood and doctoral research and consists of nine codes (Table 2). We have

used this quote in the title of our paper as it captures the overall essence of the experience of

PhD mums, as seen threaded through the varied advice offered.

Table 2. Codes, descriptions, and quotes supporting the 'support' theme

Theme: You need a village to raise a child and complete doctoral research		
"It takes a village. We can't do it on our own and you need to find sources of support. It is possible, but we need help"		
Support network	Have/ get/ seek/ find (a) support/ network/ community/ village, ask for/ demand/ accept help, don't do it alone	*"Connect - Find your support network and lean on them"*

Family	Have/ get/ seek/ ask for/ accept support from family members, particularly partners. Involve/ have open communication/ discussions with family	*"If you have a partner or other family supports, have very explicit, detailed discussions in advance about your respective responsibilities"*
Friends	Have/ find supportive friends, ask for/ accept help from/ be open with friends	*"Try as much as you can to ensure you have a supportive system around you of people like a partner, friends and family to allow you to do your research"*
Supervisor	Have/ find/ ensure a supportive supervisor; have open communication, set clear expectations/ boundaries	*"Choose your supervisor carefully - their support can make or break the experience"*
Colleagues	Have/ find supportive colleagues/ peers/ mentors, be open with them	*"You need good colleagues who work collaboratively and understand your responsibilities"*
Institution	(Make sure you) Have a supportive institution/ department/ program	*"Make sure you find an institution that is family friendly and really understands what demands on your time and energy being a mother and a researcher will have"*
Other PhD mums	Connect with/ seek out other PhD mums, find/ join/ create online networks and communities	*"I found an online PhD parents group and it was amazing!! Finally I felt I had found my tribe, who really got me, my priorities and my distractions"*
Childcare and household duties	Have/ find appropriate childcare, get help with daily tasks such as childcare, cleaning, cooking, etc., bulk meal prep	*"Please outsource as much as possible -if you can afford it- be it hourly child minding or someone coming to clean the house. It is not possible to do it all"*
Financial	Make sure you have financial support/ stability, have/ find funding/ scholarships/ grants	*"Ensure you can manage it financially"*

This theme emphasises the importance of support, reflecting earlier studies on both general cohorts of doctoral researchers (e.g. Mantai, 2019; Rönkkönen et al., 2023) as well as those also navigating motherhood (Crawford & Windsor, 2021; Yalango, 2019). It shows the need to have support in both the motherhood domain, and the doctoral researcher domain. Of interest is

the variety of verbs used in relation to support. Not only should PhD mums *have* support, they should *find* support, *get* support, *seek* it, *look for*, *ask for* and *demand* it. The use of both passive and active verbs reveals an intimate knowledge from the participants that support is not always forthcoming, but is nevertheless a necessity. Cronshaw et al. (2022) stress the importance of online communities for doctoral mothers (and particularly part-time students, an issue we address later in this paper), due to their peripheral position in doctoral programs. Participant advice was to not only find but to create online networks of other PhD mums, especially pertinent as the survey was completed by participants in the early stages of the COVID-19 pandemic. In addition, PhD mums are urged to *accept* support, and not to turn it down. As one participant advised, *"Take help if it is offered - don't be a martyr!"*. Such advice alludes to an expectation placed on mothers, and often internalised by mothers themselves, to do and be everything for everyone.

Within the support theme was advice not just about who can provide support, but the types of support needed, although in many cases this was limited to support with childcare and household duties, suggesting that these two aspects impacted participants the greatest. Despite growing participation of mothers in the workforce, and increased expectations for fathers to take a more proactive role in household duties, research continues to show that mothers take on an inequitable distribution of childcare and household responsibilities (Organisation for Economic Co-operation and Development, 2016). Participants in this study thus urge PhD mums to ensure they have support in this area.

Self-care

The second theme also includes nine codes, encompassing advice that urges PhD mums to take care of themselves, including their physical and mental health (Table 3), highlighting the

importance of maintaining, restoring and developing their wellbeing in all its forms (Hascher et al. 2021).

Table 3. Codes, descriptions, and quotes supporting the 'self-care' theme

Take care of yourself		
"I constantly remind myself … that I need to look after myself, and shouldn't feel guilty about doing so. If I don't then everything else starts to suffer"		
Self-care	Take care of your physical and mental health, get enough sleep/ rest/ exercise/ healthy food	*"Look after your mental and physical health (e.g. go for a walk, play with kids, do a puzzle, movie, meal out, eat healthy and exercise)"*
Self-kindness	Don't judge/ be hard on yourself, be proud of/ kind to yourself	*"Be kind to yourself and acknowledge that taking care of a family is difficult work"*
Be realistic - study	Don't try to be a perfect student, be realistic, be flexible, don't compare yourself to others, embrace your unique journey	*"Allow yourself to let other things go. You don't have to be everything to everyone and do everything perfectly in order to still accomplish your goals"*
Be realistic - motherhood	Don't try to be a perfect mother, be realistic, be flexible, don't compare yourself to others, embrace your unique journey	*"Don't be locked in by expectations of how child care should look … It is OK for children to have extra screen time and quickly assembled dinners - it is not forever"*
Take time out	Take time out/ away from study and/or children, retain a social life, have fun, know your limits/ when to take a break	*"Allow yourself time off to do something you enjoy, or to just have a day where you binge some Netflix"*
Guilt	Don't feel guilty/ for studying/ prioritising family/ taking time out	*"You will probably feel guilty all the time about everything. Try to stop this if you can - it doesn't help"*
Enjoy the journey	Enjoy family time, enjoy study time, involve children in your study journey, offset the challenges of one with the other	*"Most importantly- enjoy the process. Enjoy your research. Enjoy your children"*
Advocate	Speak/ stand up/ advocate for yourself, know/ demand your rights	*"Stand up for what you think is right. Mothers have as much right to pursue doctoral education as anyone else"*

Normalise	Bring your child to campus/ events/ conferences, talk about the challenges/ realities, don't hide your parental status	*"You can help normalise motherhood on campus/in doctoral programs by bringing your baby with you as much as possible. It's important"*

Participants addressed the issue of self-care by encouraging PhD mums to be kind to themselves and to avoid succumbing to the unattainable ideals of mothers, namely, good mother ideology which refers to beliefs that women are only 'good' mothers if they adhere to the tenets of dominant parenting discourse, which prioritizes children's needs and child-raising above all else (Williamson et al., 2023). Undertaking a PhD challenges the 'good mother' ideology and encourages mums to be silent about their quest. However, there was a strong call by PhD mums to make motherhood visible by bringing babies to campus and acknowledging their multiple demands, which aligns well to the global movement of making life and learning visible (Hattie, 2023).

The advice under the 'be realistic - mother' code reflects the sentiments of Lenette (2012) - "the dishes can wait." Participants were aware that if they didn't look after themselves everyone suffers and gave advice on how they achieved this through simple refocussing on self, family and friends or escaping into nature. Prioritising self-care is not a luxury but a necessity for mothers and impacts well-being (Bettison & Davenport, 2025).

Self-belief

Another theme, incorporating five codes, includes advice which encourages PhD mums to take on the challenge, and underscores their ability to combine motherhood and doctoral research.

Table 4. Codes, descriptions, and quotes supporting the 'self-belief' theme

(You can) do it! It is possible! It is worthwhile! *"Go for it.Do what you want. Yes you're a mother but you're a person with goals and dreams and you only live once"*		
Encouragement	Do it! You can do it! Don't give up! It is possible/ doable!	*"Do it! Go for it! :) You can do it"*
Fulfilment	Follow your dream, do what you love/ fulfils you, remember your purpose/ the benefits/ rewards	*"Do it, because you can make a difference in you and in the world. Do it because it is challenging, but the outcome will be rewarding"*
Don't sacrifice	Don't put off motherhood for doctoral research; Don't put off doctoral research for children	*"Don't sacrifice either. You just learn to make things happen. You are not a bad parent because you work or are researching!"*
Good timing	Doctoral study offers flexibility (more than postdoctoral study, academia, other employment)	*It is possible and in some ways is a great time to do it due to flexibility.*
Role model	You are/ be a role model for your children/ others/ future PhD mums	*"You are a role model for future generations"*

Between 50-75% of PhD students suffer from imposter syndrome (Wang & Li, 2023), but this

number could be even higher for PhD mums, owing to the additional burdens placed on them.

Doctoral researchers (often considered 'students') often have a precarious position within higher

education institutions, and therefore overt advocacy can place them at risk. This is particularly

true within the imbalanced power dynamic of the supervisor/supervisee relationship, where

exploitative and abusive supervision practices are not uncommon. Indeed, abusive supervision

can be the result of a supervisor "punishing the supervisee for some real or imagined

shortcoming" (Cohen & Baruch, 2022, p. 508). As found by Mirick and Wladowski (2018), many

academic mothers felt that they could only "be successful if they maintained a silence about

their identity as a mother and ensured that their family life did not negatively impact their work

productivity" (p. 253). Other participants were driven by or were aware that they were sacrificing time away from family to be a researcher. Many believed that this positioned them positively as a role model, however one participant framed it negatively by considering it a selfish pursuit.

Many PhD mums in this study offered encouragement and assurance that, while challenging, combining doctoral research and motherhood is not only possible, but a worthwhile experience. Hinojosa and Caul Kittilson (2020) talk about the importance of women seeing other "people like me" in order to empower them to inhibit spaces they may otherwise be excluded or marginalised from. Encouragement from others who share a similar experience is vitally important for PhD mums, especially as they may be the only (visible) parent in their doctoral program. We hope that the words of encouragement and advice from participants will provide support and a sense of solidarity with other PhD mums. As a number of participants offered, "You've got this!"

Role management

The next theme includes advice around the practicalities of role management, including the organisation and management of time and space. This theme incorporates four codes.

Table 5. Codes, descriptions, and quotes supporting the 'role management' theme

Theme: Organise your time and space so that it works for you		
"On a practical level - work out what writing system works for you: small chips everyday or big chunks every once in a while"		
Time management	Get organised/ have a plan, find a balance, manage time, set boundaries, don't procrastinate, work smart	*"Planning for your day, month, year is very important. Time management is key.*
Leave	Make sure you have/ know your leave entitlements, take parental leave	*"Take longer maternity leave. 6 months not enough. I thought I should return to it ASAP but in retrospect I should have waited"*

Part-time	Consider (changing to) part-time enrolment	*"consider part time even if you intend full time … family issues will tend to fall on your shoulders and it is not fair on you to try and be superwoman"*
Workspace	Find/ make a dedicated/ separate study space, join/ organise writing events/ retreats	*"I think it's important to have a physical space to sit and work that is away from normal life - even if it's a corner of a room at home"*

Role management highlighted the importance of organising one's time and space and offered the most diverse and contradictory specific advice. For example, there was advice to work as fast as possible, and advice to take your time. There was advice to find a balance, and others urging to stop trying to find a balance. There was advice to draw a clear line between study and family, while others suggested a need to merge the two spaces. There was advice to make a strict routine and stick to it no matter what, and others recommending flexibility from the outset. Some participants advised to wait until children were older and more dependent, while others noted that there was no best time, or even that doctoral study was the ideal time (as opposed to during postdoctoral study or employment) to have a baby. While the specific advice appears to contradict each other, the theme was developed to capture the essence of the advice, which is that PhD mums should find an approach that best works for them, and that there is no one correct way to be a PhD mum. As one participant shared:

Ironically, I would say, "Don't listen to other people's opinions and just do what is right for you!" Some people will tell you to work harder, others will tell you to take time off, but you know what is right for you and your family. There are often many other variables that are at play, so what works for one person will not work for another.

Considering part-time enrolment was also advice offered by a number of participants, allowing more flexibility and time to deal with unexpected interruptions. However, research shows that part-time students are placed in a 'peripheral' position in universities, with limits to their ability to engage with the university community (Cronshaw et al., 2024; Teeuwsen, 2012). In addition, leave entitlements and funding opportunities may not be eligible to part-time students in some contexts.

The competing expectation to be both the ideal mother and the ideal doctoral researcher was also raised in our earlier paper, an expectation that upholds patriarchal structures (Mason et al., 2023). Schmidt et al. (2022) show this in their review of two decades of research on social expectations of mothers. Although mothers are increasingly expected to work (and doctoral research is constituted as work in many contexts), social norms mean that those external commitments "should not interfere with her family responsibilities, or reduce the time and energy she has available for her children" (p. 64). Meeting these contradictory and untenable goals places mothers at risk of burnout, with implications on career outcomes (Meeussen & Van Laar, 2018).

Preparation

Composed of five codes, the final theme includes advice from participants who urge PhD mums to be prepared for the realities of combining motherhood and doctoral research.

Table 6. Codes, descriptions, and quotes supporting the 'preparation' theme

Understand and be prepared for the realities		
"It's really tough"		
Don't do it	Don't do it	*Finish your PhD first then start mothering*

Consider carefully	Don't do it unless/ until (e.g. support, financial stability, after exams, children are older/ more independent)	*"Don't do it unless you have a support system, decent time management, financially covered and a good daycare"*
Know that it is hard	Be prepared, know that it will be hard/ requires sacrifice, be sure it's what you want, weigh pros and cons	*"Be sure you know your 'why?' - why are you doing the PhD? If you don't have this it is really hard to keep going"*
Discriminati on	Expect/ look out for/ be careful of discrimination/ impact on research/ career opportunities	*"There is a very good chance that you will be subject to discrimination. Document everything and be ready to defend yourself"*
Lack of understandi ng	Lack of understanding from the institution/ supervisors/ peers/ family	*"Be prepared very few people really understand or can imagine what it's like"*

It is not surprising that PhD mums highlighted the importance of preparation, as it is inherent in all aspects of their daily operations as mothers. Acknowledging that many mothers spend time planning their pregnancies, preparation is central to operationalising any task once they become mothers. The concept of preparation for motherhood is defined as an intermediate process of active and conscious participation defined by cultural, social, and historical contexts, whose attributes are classified into physical and psychological preparation. These attributes contribute to understanding the preparation for motherhood during gestation as a multidimensional concept that goes beyond medical preparedness (Osorio-Costaño et al., 2017). Within this process, women could visualize themselves as mothers and anticipate the necessary life changes, solve conflicts and generate lifestyle changes that support their preparedness. Preparation is a process of active, conscious, and positive participation that favors the transition toward a doctorate in the same way (Osorio-Castaño et al. 2017). Antecedents, attributes and consequences impact the preparedness of mothers undertaking PhDs, in the same way they prepare for parenthood - by embracing the realities of discrimination, isolation and doubt.

While we are reluctant to quantify our findings, we feel it important to note at this point that those who encouraged the combining of motherhood and doctoral education, reflected in the self-belief theme, outnumbered those who cautioned against it. Nevertheless, a sizable number of participants did caution against combining motherhood and doctoral education. At the core of this cautionary advice is an appeal for doctoral researchers and mothers to be aware of and be prepared for the realities of taking on two highly intensive roles. Thus, the advice does not appear to stem from a lack of confidence in any mother's ability to complete doctoral education (or any doctoral researchers' ability to meet the demands of motherhood), but from an intimate knowledge of the real and systemic challenges and barriers as experienced firsthand.

Limitations and future research

The findings of this study should be considered in light of several limitations. The participant recruitment efforts and the survey itself was conducted in English, reflected in the concentration of participants in English-speaking countries. At the time of data collection, participants were recent graduates or current doctoral researchers, meaning that those who have dropped out, been forced out, or otherwise left their doctoral programs were not part of our study, introducing a survivorship bias. The advice offered by participants is influenced by their own diverse experiences and contexts, analysis of which has not formed part of this paper. Future research could interrogate the role that different national, institutional, disciplinary, and personal contexts play in the experiences of PhD mums.

With advice coming from a range of voices and perspectives, it is inevitable that some advice will contradict others. The most obvious is the advice to "do it", juxtaposed with advice to "don't do it" in relation to combining motherhood and doctoral education. Similarly, the contradictory call to make visible their motherhood, whilst others' encouraged mothers to remain silent. Thus,

the myriad advice presented in this paper must be taken critically and in consideration of each individual's unique situation and context.

Conclusion

Embarking on a PhD while navigating motherhood introduces unique challenges beyond the already complex nature of doctoral study. Drawing on insights from almost 1000 participants who have experienced combining these two roles, this study identified five key themes - support, self-care, self-belief, role management and preparation – to capture strategies and advice for those who are or who might combine doctoral studies and motherhood. The findings revealed various manifestations of the 'motherhood penalty' within postgraduate education, providing further evidence of systematic barriers that marginalise mothers in academia. By illuminating the voices of those with lived experience, our hope is that while contributing to broader conversations about equity in higher education, will provide practical guidance for current and future PhD mums, that will help them to better navigate the complexities embedded in PhD studies particularly when combining this with motherhood.

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Appendix A:

Additional codes not incorporated into the themes

Avoid vices like alcohol or unhealthy food
Be careful about who/when you tell about pregnancy
Be confident, *"think, and act, like a mediocre white male"*
Choose a topic that you are passionate about/ fits in with your work
Don't blame children
Don't do it during a pandemic!
Don't enrol part-time
Don't expect an academic position upon graduation
Have faith, trust in God
Invest in a good breast pump
Know when to quit, be willing to quit if necessary
Listen to motivational podcasts
Live near your university to save commuting time
Make a list of things to do with your children after graduation
Take advantage of the public library
Take advantage of student discounts
Take lots of photos of/with the children
Use reference management software
"Write everything down before taking leave- so you know exactly where to pick up from"