RESEARCH

Familial roles and support of doctoral students

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Abstract

Objective: Identify the role(s) and support(s), if any, that family members provide to first-generation and historically marginalized doctoral students, including strengths and challenges of this support.

Background: Nonfinancial family support is important for the success and retention of first-generation and historically marginalized graduate students. More empirical studies of the role(s) and support of family members of these doctoral students are needed.

Method: During an intervention designed for first-generation and historically marginalized doctoral students and their families, we conducted four focus groups with doctoral students ($n = 22$) and three focus groups with the family members they chose to accompany them ($n = 15$). Transcripts were analyzed using thematic analysis.

Results: Two themes emerged from the data: support and connection. In addition to providing distinct types of support, families play both supportive and connective roles. There are challenges to family roles and support in areas such as communication, doctoral student stress, and different ways that family members and doctoral students think about and approach life.

Conclusion: The study provided key insights to understanding the roles and support of family of doctoral students; more efforts are needed across graduate schools in the United States.

Implications: Family science faculty and graduate schools may collaborate to provide meaningful interventions for graduate students and their families for the goal of promoting graduate student retention and success.

Doctoral degree completion is an area of intense research interest. Although many students have the academic ability to complete their degree, nearly a quarter of students pursuing doctoral studies are not able to finish (Council of Graduate Schools, 2021). Completing doctoral requirements requires support from a variety of sources, and family support for doctoral students is a growing area of interest (Baldwin et al., 2021; Breitenbach et al., 2019; Walsh et al., 2021). Support from family has been shown to be a major contributor to doctoral degree completion (Sowell, 2009). Lack of family support also influences degree persistence (Cohen, 2011). Social support, or the amount of perceived support a person receives from within their social network, plays an important buffering role between adverse events and physical and mental health (Lee & Goldstein, 2016). Social support is a central element of relationships where individuals provide aid, assistance, and comfort to others (Cohen et al., 1985). Furthermore, Lee and Goldstein (2016) reported that the source of support also matters to the buffering effect. Family members including friends are important for providing social support to graduate students (Tompkins et al., 2016).

The concept of social support emerged from the family stress theoretical framework (Cooke et al., 1988). House (1981) conceptualized social support as an "interpersonal transaction" between individuals that reflects the following characteristics (i.e., subtypes of social support): emotional, appraisal, informational, and instrumental (see also House et al., 1988). House's (1981) conceptualization of social support is used here as a framework to understand which perceived supports are available to first-generation and historically marginalized doctoral students. *Emotional support* includes listening to concerns, sharing common life experiences, and having a sense of belonging and being cared for. Having access to networks of peers, friends, and family members who understand or support the graduate student's experience is key to student retention and potential success (Ong et al., 2011, 2020). Research has shown that the less support a college student has, the less likely they are to progress in their education (Dennis et al., 2005). This is especially true for graduate students, whose educational journeys are often misunderstood because few are aware of the complexities of graduate education, particularly for historically marginalized groups and first-generation college students (Miner, 2022).

First-generation college students are undergraduate students whose parents do not have a bachelor's degree or higher (Center for First-Generation Student Success, n.d.; Dennis et al., 2005; Tompkins et al., 2016). Those students may find it difficult to convey their studies and responsibilities to others, such as friends and family who in turn may not be able to provide support as needed. Definitions of first-generation students do not necessarily include other identity markers (i.e., race, class, sex, ethnicity) as defining features. In other words, first-generation students can be from low-, middle-, or high-income families of any race or ethnicity. Throughout this article, we also refer to historically marginalized graduate students—those who have been or continue to be institutionally and systematically denied full participation in mainstream social, political, and economic life based on their race, ethnicity, sex, gender, or other characteristic (Felder, 2019). Tan et al. (2019) posited that *appraisal support* from peers may be particularly necessary for historically marginalized doctoral students to reduce psychological distress. Appraisal support is providing feedback about performance or personal characteristics. *Informational support* is advice, guidance, and resources. Navigating postsecondary education may be more challenging for first-generation students than for students who can access informational support from relatives who have completed college degrees (Glass, 2023). Finally, *instrumental* support is the ability to secure material goods or services, such as financial assistance and costs associated with graduate education (e.g., tuition, textbooks) as well as costs of living while in graduate school (e.g., housing, meals). House's four subtypes of support are important but need to be considered according to differences in population type, such as first-generation students as well as those from historically marginalized groups.

Approximately half of college students identify as first-generation students (Center for First-Generation Student Success, n.d.). First-generation graduate students often struggle with the same

issues (e.g., hidden curriculum) they faced as undergraduate students (Smolarek, 2019). The current study is part of a funded intervention that offered two 3-week summer boot camps, professional development, mentoring, social network support, and family involvement for graduate students of color, first-generation graduate students, and populations that are underrepresented in certain disciplines (e.g., women in engineering). The graduate school sent invitations via a university graduate student listserv and encouraged graduate students who met these criteria to apply for the intervention. Applicants were randomly assigned to a control or experimental group. Our sample consisted predominantly of White and first-generation graduate students; however, the sample also included participants who identified as African American/Black, Asian/Pacific Islander, Hispanic/Latinx, or multiracial, whom we refer to collectively in this article as historically marginalized graduate students.

Families can be sources of support or of stress and conflict for White, first-generation students in science, technology, engineering, and math (STEM) programs (Miner, 2022) as well as for historically marginalized students (Ong et al., 2020). Few empirical studies of graduate students in STEM cite the importance of family influence and support (Ong et al., 2011, 2020). First-generation students and their families hold forms of social capital (e.g., information, resources, and support) that students can draw on to secure certain benefits and move through different fields or settings (Bourdieu, 1986; Glass, 2023). Due to long histories of being systematically excluded and discriminated against, historically marginalized students and their families often lack equitable access to institutional capital in higher education (Glass, 2023). A growing body of research documents how family members, including those without any STEM background, provide strong support networks and reinforce values that help to sustain historically marginalized students in STEM (Ong et al., 2011, 2020). However, the family's role could also be contradictory, and even become a barrier, due to a lack of understanding of their graduate student's path of study, or due to concerns about their graduate student deviating from their traditional cultural or gender roles (Ong et al., 2020). Thus, encouraging positive familial, partner, or other family support in the graduate students' educational pursuits can be beneficial to first-generation graduate students (Walsh et al., 2021) and historically marginalized students. We examine the roles family members play and the strengths and challenges of family support for first-generation students. We also attempt to answer Burt et al.'s (2019) call to examine the ways families support or hinder historically marginalized graduate students, particularly nonfinancial ways that may be tantamount to financial support.

The following research questions guided this study:

1. What roles, if any, do family members play in the experience of first-generation and historically marginalized students who are in graduate school?
   i. What are the strengths of family members' role(s)?
   ii. What are the challenges of family members' role(s)?
2. In what ways, if at all, do family members support first-generation and historically marginalized graduate students?

METHOD

We chose a qualitative descriptive methodology for this study to allow for a comprehensive and flexible approach to answering the broad, exploratory research questions (Colorafi & Evans, 2016; Neergaard et al., 2009). Study participants, 22 doctoral students and 15 family members, arrived at a public university campus in the western United States as part of a federally funded preparatory program—at no cost to students—designed to increase retention and success of first-generation and historically marginalized graduate students in doctoral programs. (See Appendix A in the supplemental materials for hallmarks of the program.) Before

arriving on campus, doctoral students were asked to invite one family member to attend part of a preparatory program with them. "Family" was defined as partners, spouses, siblings, cousins, aunts, uncles, parents, grandparents, children, in-laws, or fictive kin. The doctoral students and family members were invited to participate in focus groups on campus. Focus groups are discussions that explore a specific area of issues (Kitzinger, 2005). We selected focus groups as the data collection method for this study because we were seeking to understand the range of ideas or feelings that participants have about family members' roles and support of first-generation and historically marginalized students who are in graduate school (Krueger & Casey, 2015).

We had two categories of focus group participants: (a) doctoral students ($n = 22$) and (b) their selected family members ($n = 15$). We developed two semistructured focus group guides, one guide for each category of participants. Focus group guides included 17 open-ended questions that aligned with the research questions, such as an open-ended question for doctoral students (i.e., "What roles, if any, do family members play regarding your graduate school experience?") and for family members (i.e., "How would you describe your role, if any, in the academic life of the doctoral student?") The focus group guides were reviewed by all authors with doctoral qualifications from a variety of fields (e.g., family science, public health, diversity and equity, graduate education). Minor adjustments were made to the semistructured guides based on feedback.

Recruitment

This focus group study is part of a larger study in which eligible participants, all of whom had to be domestic students, applied as part of their general application to a research-based PhD doctoral program or through a separate application. The application was for possible selection into a preparatory program (3 weeks in summer 2021 and 3 weeks in summer 2022) that included additional support, such as professional development, mentoring, and social networking, during their first year and a half of graduate school. Regarding the selection criteria, applicants had to identify as a first-generation student or as part of one or more historically marginalized groups, including but not limited to Hispanic/Latinx, Black/African American, Asian/Pacific Islander, multiracial, and women in STEM. Twenty-six selected applicants were randomly assigned to the preparatory program (experimental condition), and there was attrition of four applicants before the start of the preparatory program. One applicant in the experimental group did not fit the selection criteria but was admitted to and participated in the intervention. Again, each participating doctoral student ($n = 22$) was invited to select one family member to attend 2 days of the preparatory program with them. The family member was provided with funds to support their transportation or board and were invited to a welcome reception, a day of programming, and focus groups. Seven doctoral students did not have a family member attend with them. All family members selected by doctoral students, regardless of their attendance status, received an electronic tablet to promote healthy communication between the family member and the doctoral student (see Appendix A in the supplemental materials).

All participants gave informed consent before participating in the study, and it was communicated to them and their participating family members that their status in the program was not contingent on their participation in the study.

Participants

Of the 37 total participants, there were 22 doctoral students (11 first-year and 11 second-year doctoral students) and 15 family members. Approximately 67% of family members and 59% of students identified as White. Three participants identified as Asian/Pacific Islander three identified as and Hispanic/Latinx (13.6% each), two students as African American (9.1%), and one as

multiracial (4.5%). A large majority of the students identified as first-generation students. In the self-report for first-generation status, 15 students (68.2%) stated that they were first-generation undergraduate students, and 20 students (90.9%) indicated they were first-generation graduate students. On the basis of parental degree attainment, however, these numbers were slightly different. Fourteen of the student participants indicated that their parents had less than a bachelor's degree (63.6%), and two student participants reported that they had a parent with less than a bachelor's degree and a parent with a bachelor's degree (9%). Two of the participants would definitely not be considered first-generation students because the parent or parents had a graduate degree or beyond.

See Tables 1 and 2 for the doctoral students' demographic characteristics and education related traits. See Table 3 for the family members' demographic characteristics. Overall, most of the family members on campus for the program were not from the doctoral student's family of origin, as shown in Table 3. All names are pseudonyms.

Data collection procedure

Focus group data collection occurred for family members on July 26, 2021, and for doctoral students on July 28, 2021. This was a time when social distancing and mask requirements were lifted on campus, but the requirements returned on July 30, 2021.

Fifteen family members participated across three five-person focus groups. The 22 doctoral students participated in one of four focus groups: two groups of five participants and two groups of six participants. Each focus group had one facilitator. Four of the five facilitators are authors and PhD faculty members (one professor, one associate professor, and two assistant professors), and the other facilitator was a doctoral candidate and not an author of this article. All focus groups were recorded and conducted in classrooms or meeting rooms on campus. Upon arrival, participants were given information about the focus groups and study. All materials for family members were available in English and Spanish.

Each focus group lasted a maximum of 100 minutes, and all focus groups were conducted in English and transcribed verbatim by researchers. There was one $10 gift card raffled at the end of each focus group.

Data analysis

Three analysts wrote and discussed reflection statements about historically marginalized graduate students and first-generation students and their families before analysis and composed reflective memos throughout the analysis phase (see Lincoln & Guba, 1985).

All seven focus group transcripts were individually imported to Dedoose Version 9.0.17 (SocioCultural Research Consultants, 2021). Memo creation and coding occurred in Dedoose. Sensitizing concepts included (a) family support, (b) supportive roles, and (c) concepts from House's (1981; House et al., 1988) types of social support and guided data analyses. Focus group data were analyzed using Braun and Clarke's (2006) thematic analysis approach to generating codes and themes, which includes the following phases: (a) familiarizing yourself with your data, (b) generating initial codes, (c) searching for themes, (d) reviewing themes, (e) defining and naming themes, and (f) producing the report. There can be as many levels of coding as needed (King, 2004; Nowell et al., 2017). The first author and two additional analysts were selected to achieve a rigorous coding process to analyze the same data independently and discuss their coding (Patton, 2002). Three analysts independently read all the data to familiarize themselves with it and noted their initial codes for one transcript from each type of focus group. Through an ongoing consensus process, these coders reached agreement on a list of codes, including definitions, when to use or not use a given code, and examples. Two analysts then

TABLE 1 Doctoral students' pseudonyms and demographic characteristics: education-related traits

Pseudonym	Highest degree	Parent education	First-generation college student	First-generation graduate student	Primary funding	Field of study
Hoa	Master's	Parent with a bachelor's	No	Yes	Teaching assistantship	Anthropology
Tallah	Master's	Parent with less than a bachelor's	Yes	Yes	Both teaching and research assistantship	Anthropology
Amaya	Master's	Parent with less than a bachelor's	Yes	Yes	Teaching assistantship	Human development and family science
Nate	Bachelor's	Parent with less than a bachelor's	Yes	Yes	Research assistantship	Chemistry
Lindsey	Bachelor's	Parent with a bachelor's	Yes	Yes	Research assistantship	Neuroscience
Olivia	Master's	Parent with a graduate or beyond	No	No	Teaching assistantship	Psychology (interdisciplinary social psychology)
Ademar	Master's	Parent with less than a bachelor's	Yes	Yes	Self, family, or loan	Business administration
Naomi	Bachelor's	Parent with a bachelor's and parent less than a bachelor's	No	Yes	Research assistantship	Biological/biomedical science
Liam	Master's	Parent with a graduate or beyond	No	No	Teaching assistantship and GI Bill	Engineering
Ashley	Bachelor's	Parent with a bachelor's	No	Yes	Teaching assistantship	Biological/biomedical science
Noah	Bachelor's	Parent with less than a bachelor's	Yes	Yes	Teaching assistantship	Physics
Gabby	Master's	Parent with less than a bachelor's	Yes	Yes	Research assistantship	Psychology (interdisciplinary social psychology)
Cristobal	Bachelor's	Parent with less than a bachelor's	Yes	Yes	Teaching assistantship; scholarship/ fellowship/grant; self/family/loan	Engineering
Stephanie	Bachelor's	Parent with less than a bachelor's	Yes	Yes	Teaching assistantship	Neuroscience
Madeline	Master's	Parent with a bachelor's and parent less than a bachelor's	No	Yes	Research assistantship	Psychology (interdisciplinary social psychology)
Hiroshi	Bachelor's	Parent with less than a bachelor's	Yes	Yes	Teaching assistantship	Psychology (interdisciplinary social psychology)
Cara	Bachelor's	Parent with less than a bachelor's	Yes	Yes	Teaching assistantship	Psychology (interdisciplinary social psychology)

(Continues)

TABLE 1 (Continued)

Pseudonym	Highest degree	Parent education	First-generation college student	First-generation graduate student	Primary funding	Field of study
Diego	Master's	Parent with less than a bachelor's	Yes	Yes	Teaching assistantship	Psychology (interdisciplinary social psychology)
Jilly	Bachelor's	Parent with a bachelor's	No	Yes	Research assistantship	Ecology
James	Bachelor's	Parent with less than a bachelor's	Yes	Yes	Research assistantship	Physics
Guillermo	Master's	Parent with less than a bachelor's	Yes	Yes	Research assistantship	Public health
Benjamin	Bachelor's	Parent with less than a bachelor's	Yes	Yes	Teaching assistantship	Neuroscience

T A B L E 2 Doctoral students' pseudonyms and demographic characteristics: individual traits

Pseudonym	Gender	Age	Ethnicity	Relationship status	Children	Country of origin
Hoa	Female	—	Asian/Pacific Islander	Single	No children	Other
Tallah	Female	29	African American/Black	Single	No children	United States
Amaya	Female	51	Multiracial	Married	Children aged ≥6	United States
Nate	Male	—	White	Cohabitating	No children	United States
Lindsey	Female	24	White	Cohabitating	No children	United States
Olivia	Female	23	White	Single	No children	United States
Ademar	Male	37	African American/Black	Married	Children aged <6 and >6	Other
Naomi	Female	22	Asian/Pacific Islander	Single	No children	Other
Liam	Male	31	White	Single	No children	United States
Ashley	Female	26	White	Single	No children	United States
Noah	Male	—	White	Single	No children	United States
Gabby	Female	24	White	Cohabitating	No children	United States
Cristobal	Male	22	Hispanic/Latinx	Single	No children	United States
Stephanie	Female	25	White	Single	No children	United States
Madeline	Female	25	White	Single	No children	United States
Hiroshi	Male	50	Asian/Pacific Islander	Married	Children aged ≥6	Other
Cara	Female	23	White	Single	No children	United States
Diego	Male	27	Hispanic/Latinx	Single	No children	Other
Jilly	Female	25	White	Cohabitating	No children	United States
James	Male	28	White	Married	Children aged <6	United States
Guillermo	Male	25	Hispanic/Latinx	Single	No children	United States
Benjamin	Male	23	White	Single	No children	United States

independently coded the remaining transcripts and refined the codebook. Once all data were coded and reviewed, two analysts developed subcodes, subthemes, and themes to answer the research questions. The analysts reached agreement on themes through meeting and discussing themes, comparing them, and adjusting them based on a consensus. The fourth analyst independently reviewed all the data and coding analysis to report on the precision of codes, subthemes, and themes.

RESULTS

Regarding the first research question, "What roles, if any, do family members play in the experience of first-generation and historically marginalized students who are in graduate school?" and subquestions, two themes emerged: (a) strengths of family roles and (b) challenges of family roles. The subthemes, codes, and subcodes that comprise these themes are presented here and in Appendix B in the supplemental materials.

Strengths of family roles (Theme 1)

Two subthemes, support and connection, emerged from the doctoral student and family data. These two subthemes address forms of support and connection as well as family members' supportive and connective roles.

TABLE 3 Doctoral students' family/support pseudonyms and demographic characteristics

Pseudonym	Gender	Age	Ethnicity	Highest level of education	Relation to scholar	Travel from	Living with scholar
Chivonn	Female	35	African American/ Black	Master's	Spouse	Another city in NV	Yes
Wyatt	Male	60+	White	Graduate degree	Friend who feels like family	Reno	No
Kelly	Female	74	White	Bachelor's	Friend who feels like family	Another city in NV	No
Connor	Male	26	White	Bachelor's	Fiancé	Reno	Yes
Jacob	Male	29	White	Bachelor's	Partner/significant other	Other	Yes
Lucas	Male	51	White	Some college	Spouse	Reno	Yes
Damon	Male	18	Other	High school diploma/GED	Child	Reno	Yes
Laurel	Female	22	White	Some college	Partner/significant other	California	Yes
Garrett	Male	62	White	High school diploma/GED	Father	California	No
Erin	Female	62	White	Some college	Mother	California	No
Stella	Female	25	Hispanic/Latinx	High school diploma/GED	Cousin	Reno	Yes
Luciana	Female	16	Hispanic/Latinx	High school diploma/GED	Sibling	Reno	Unsure
Sarah	Female	23	White	Bachelor's	Partner/significant other	Reno	Yes
Victoria	Female	24	White	Bachelor's	Friend who feels like family	California	No
Thu	Female	49	Asian/Pacific Islander	Graduate degree	Spouse	California	Unsure

Support

The subtheme of support includes various forms of support and differences in types of support. In some instances, there was much overlap in the perspectives of students and their families; some supports were discussed by both doctoral students and their families. Some support types; however, were brought up only by students or only by family members. We discuss the following supports according to which of the two groups brought them up.

Doctoral students and families reported myriad support for the doctoral students, including (a) emotional support, (b) instrumental support, (c) communicative support, (d) mental health support, (e) mutual support, and (f) general support.

Emotional support is a form of social support that involves providing concern for others (House, 1981; Sowell, 2009) and was deemed a desirable form of social support by participants, yet participants had difficulty defining acts or behaviors that represent emotional support. A family member participant clarified that "being there emotionally" demonstrates emotional support for the doctoral student. Doctoral students discussed emotional support more than family members, although family members also noted the importance of it. For instance, Jacob, a family member, said, "Helping to support them emotionally is going to be huge." Guillermo, a

first-generation college and doctoral student, said, "So, I guess for me it was like yeah, we still have the emotional support to an extent, they [family] will be readily available, you need only ask for it." Several doctoral student participants mentioned specific family members who provide emotional support. James, a White, first-generation doctoral student in physics, said, "My mom has always been an emotionally supportive person. … my mom and definitely my parents can give me emotional support for my family and issues involving my wife and kids and stuff like that." A few participants identified the benefits of providing emotional support for doctoral students. For example, Laurel, a family member, said, "It [support] helps them to stay focused and helps them know that they do have emotional support."

Families discussed instrumental support (House 1981; House et al., 1988) the most and described this tangible support through such examples as "running them lunch," "sending me food," "helping them around the house," and "feeding animals." Connor, a family member, said:

> A lot of times she [doctoral student] doesn't have time to get a workout in, you know it's [doctoral student's thought process:] like do I make it, do I get my workout in, or do I pack a lunch. So it's like okay, I can pack your lunch.

Noah, a doctoral student, stated that instrumental support is important. He said: "The support that I received was in the form of food, which, you know, doesn't pay for tuition. But at the same time, it does make a big difference, especially very good home-cooked food."

Doctoral students and families had consensus that communicative support is an important part of the supportive role. Families described daily communication behaviors that they provide to doctoral students. Families stated that they provided communicative support, which included the subcodes of (a) assuring the doctoral student, (b) discussing doctoral student's ideas/goals, (3) listening to the doctoral student, and (d) letting the doctoral student vent. Sarah, a family member who is also a doctoral student, demonstrated listening and assuring, she shared:

> I just do a lot of listening. So far, I have never studied something that she studies right now. So she'll go on tangents about things. And I do a lot of nodding. Like, maybe she needs to talk it through and process it.

Another doctoral student, Benjamin, demonstrated that family members let him vent about his experiences. He said he lets family know, "Hey, I'm just trying to vent about whatever BS happened in the lab today."

Doctoral students corroborated that families support them in these four ways. They also added that family members: (e) provide validation and (f) help with thinking and communication. Regarding family members providing validation, one doctoral student (who did not want to be identified for this quote), said:

> I feel like when I go through this series of events that took place, and I need to know perhaps, if, when I talk it out. Am I in the right space to be upset about this So I do follow a very logical sequence and sequential thought process, so I need to know like, am I wrong? Is this right? Like does this make any sense to you, I've had things where like, I'll reach out to my professor, and I'll ask a simple question and it will take forever for them to respond, and I'm like okay, would you be upset? And, then they're like, you're right, you know, the professor shouldn't keep you waiting that long.

Hiroshi, a doctoral student, noted that his children help his deep thinking and communication in English. He said:

I think my kids are very helpful for me as a doctoral student, because I will teach them chemistry. When I teach them chemistry, they will ask simple questions. Sometimes this simple question can inspire me in a deeper sense. It encourages me to think more deeply about the mechanism or the principle. So I think that is very good for me. And also, sometimes my daughters will correct my English, they will correct my grammar, and they will remind me about pronunciation—this is so helpful for me.

Support for mental health was also discussed by both categories of participants. Doctoral students and family members used statements that were captured in the subcode of stress reduction and providing balance/breaks. Family members noted that stress reduction for doctoral students includes a "break from work" to "laugh with your friends" and "do some fun things." Diego, a first-generation psychology student who identifies as Hispanic/Latinx, shared, "I look to my support system when I'm really stressed, and that support helps." Regarding balance/breaks, one doctoral student (pseudonym not reported) said, "I just hang out with them [family] and not talk too much about graduate school, and like schoolwork. Yeah, so they're supportive in the way that I can get away from school." A graduate-educated family member, Thu, said, "I think one of my roles in the life of my husband is to try to balance his life."

Mutual support was expressed by doctoral students through language such as "having a give and take is really important," "having the necessary skills to support one another," and "we support each other a lot." Family members also expressed mutual support by stating things like "vice versa" and "they support me too" regarding the doctoral student. Laurel, a partner/significant other, said "I want to be there completely open to everything [regarding graduate school] that they want to do because I know they would be the same for me."

Both data sets also captured general support (or type of support unspecified) through language such as "having support" or "support is important." Diego said, "My parents are in Mexico. … I have support from my parents and my two brothers." One family member, Erin, said, "We're supporting her when she's going through every little step in order to be her support."

Doctoral students also highlighted (a) financial support, (b) guilt-free support, and (c) long-term support. Students frequently mentioned financial support as a type of support that is important to them. Regarding financial support, one doctoral student (Cristobal) noted, "My family, my whole family, plays a financial role … like 20 bucks or something. Forty bucks still, more than gladly will help me out." Hoa stated, "They've [parent] been the biggest support for me financially." Some students described specific types of financial support, such as assistance with paying their rent, paying for food and clothing, and help with tuition costs. Ashley, a doctoral student, stated, "A single bedroom can go for like $1,400 dollars a month and that's like with a shared bathroom. I was definitely able to save a lot of money through [living with dad]. So yeah, the financial help from family for 3 years [during college], so I have 3 years of rent."

Guilt-free support meant that the doctoral students received and desired support from a family member, but the students appreciated or wanted to be free from the guilt associated with accepting support or having to do something in return for support from family. Noah (doctoral student) said: "I have people who have been in my life who have helped me but not expected [anything in return] nor is it [their helping Noah] expected of them." Madeline described guilt-free support and stated:

> But they [parents] also know that supporting me means being hands off and not making me feel bad. Because I always feel guilt about not being in their lives as much as they support me. So like giving me that support and not like expecting anything out of it is helpful to me.

Long-term support or support across time and many life stages and transitions was also noted by doctoral students. Jilly asserted that her boyfriend has "been with me since halfway through undergrad and he's you know supported me through a lot." Madeline stated, "My mom is a single mom; I've grown up with her my whole life. And she's the most supportive person of me." Diego said, "My cousin was probably the closest person in my life, and she's the one that supported me the most during the challenges of going through undergrad and having to work and pay for it."

Family members of doctoral students discussed (a) being there for the doctoral student, and (b) that the doctoral student's family of origin (i.e., biological or legal family) is unsupportive. *Being there* was defined as having a presence and was discussed in all three family focus groups. Erin, a mother of a doctoral student, said "Just being like, you know, everybody's saying, just be present, and be there for the student." Sarah, a partner/significant other stated, "All I can do is be there and hope that they [doctoral student] reach out." Damon, a child of a doctoral student, said, "I'm going to try to be there every time she walks through the door home."

Many doctoral students found support from people they referred to as family members but who were from outside of their family of origin. This included friends who feel like family, partners/significant others, and spouses. Stephanie said, "My boyfriend is a very supportive member of my family." Olivia said, "My good friend … so throughout this whole education thing, she's really been a big support system." Regarding an unsupportive family of origin, Jilly, a doctoral student, said:

> There are certain members of my family who are pretty antiscience and into conspiracy theories and things like that, like members of my immediate family, and so it's like everything I'm studying goes directly against the things that they believe in and rant about in front of the whole family. And, so I'm like, okay cool, I'm going to keep my work to myself then.

Similarly, Sarah, a family member, said:

> Like with my scholar's family, not everyone values education or knowledge. That's not always the top priority and I think that some of the scholar's biological family would prefer like a different route, even if it is like a lower paying job or a different job.

Connection

In contrast to the subtheme of support, which focused on various forms of assistance that family members provide to graduate students as part of their roles, the subtheme connection encompasses aspects of having and maintaining relationships between graduate students and their family members. As with the subtheme of support, there were some aspects of connection that were discussed by both doctoral students and their families, and some reported by only one group or the other.

According to the doctoral student and family member data, the connective role is one in which there is (a) a desire to feel or stay connected and (b) visits with family.

In three focus groups, doctoral student participants noted wanting to feel or to stay connected to family during their doctoral program. For instance, Madeline, a doctoral student, said, "It's important for me to stay connected to them [family] because out here, I'm from a different state." In two focus groups, family members noted the importance of wanting to feel or to stay connected to the doctoral student. For example, they used language such as "it's important to consistently stay connected," "staying connected all the time is important," and "it's very important to stay connected because the scholar is a good friend of mine." Sarah, a family member, said, "I think it's really important to stay connected. I think in some ways the connection is automatic."

Doctoral students and families shared the importance of in-person family visits with family members who do not live with them. For instance, Stephanie, a White, first-generation doctoral student in neuroscience, said, "I would say it's really important for me to stay connected especially since my family [of origin] is not living with me. And I keep in touch with them mainly through visits in person." A family member (Erin) said, "It's important for them to be home. Our daughter says don't change anything because when she comes back to visit, she wants to be able to be in the same room and have the comforts of home and consistency." Jacob said, "Every summer or every Christmas break, I tried to at least go back home [to visit parents and siblings]." Although many doctoral students described positive aspects of visiting with or being in close geographic proximity to their family of origin, some also expressed ambivalence. For example, a doctoral student in STEM (Lindsey) stated, "My mom is driving me nuts. I love her to death. I'm happy she's being there and helping me out."

Two doctoral student focus groups discussed *strong ties*, which was defined as the importance of attachments or relationships with the family of origin. James, a White, first-generation student in physics, noted "Family [of origin] is very important to both of us, we prioritize that." Diego said, "I feel that I'm still extremely blessed because I have a really good family and we are all really—we've maintained a good relationship." Jacob, a doctoral student, said:

> I think maintaining a connection with my family is very important to me. I grew up in a big family. There are six of us kids, so I have five siblings.… We probably, from our religious backgrounds, probably have very strong family ties and very strong relationships with our family, and luckily, we don't have any like family trauma or very negative family life experiences that I know a lot of people have.

Across all four doctoral student focus groups there was consensus that understanding the identity of a doctoral student is a hallmark of the connective role. Amaya, a multiracial first-generation student, said, "I think that my family just really realizes that it's [graduate school] such an important part of me and my life and it makes me happy and it makes me feel fulfilled." Ademar, a Black/African American first-generation student, offered, "At least we've [me and my family] got a bit of understanding in terms of the journey that I've embarked on."
Doctoral students reported that the strength of the connective role has been tested due to challenges related to the COVID-19 pandemic. Guillermo, a first-generation student in public health, who identifies as Hispanic/Latinx, said, "Because of COVID we couldn't go visit them [family] in Mexico." James said:

> Whenever I would have a break during the pandemic, it'd be like that we never—my wife and I never really got to have just our time; it was always with the kids and it was always with the whole family because we were stuck in our house together.

The pattern of connection in the family data was also revealed by the logistics code. Logistics included the subcodes of living together, time to travel, physical distance, and travel conditions. A family member (Laurel) said, "We just bought a place together, but also she [doctoral student] has a rental place down here [near campus] for times she can't make it home."

Challenges of family roles (Theme 2)

The second theme "Challenges of Family Roles" emerged and included four subthemes: (a) communication, (b) stress, (c) different approaches, and (d) family relationships. In the first subtheme of communication, both students and family members discussed two codes, whereas

one code was brought up by family members only (detailed subsequently). The rest of the subthemes of stress, different approaches, and family relationships were discussed by graduate students only.

Communication

In response to questions about staying connected, both doctoral students and their family members mentioned (a) preferences around differing modes of communication, and (b) communication issues. Only family members discussed the timing of communication. Participants in all focus groups (student and family members) expressed a variety of communication modes (e.g., text, phone calls, video conferencing, social media) and preferences. For example, a doctoral student (Hoa) said, "I guess with my parents I prefer FaceTime or calling because I'm very slow to type in my own language, or Burmese. I type very fast in English, so I use texting with my boyfriend every day." A family member (Laurel) noted that if she is not with the doctoral student, "then we FaceTime and we do that every night so we have some form of communication every day."

Both students and family members also brought up communication issues in their focus groups. Doctoral students expressed concerns about their communication skills, saying, "my communication skills are suboptimal," "my communication skills are not the best," and "it can be hard for me to vocalize concerns." A doctoral student (Diego) said, "I'm not the best at communicating my issues, I do tend to implode and sometimes don't explain why … and sometimes if I don't communicate … it leads to problems." Family members also expressed communication concerns. For example, a close friend (Victoria) said one communication challenge is "the scholar not reaching out and not sharing when she might be struggling."

Family members were the only group to express that the timing of communication can be a concern. Perhaps communication on demand is necessary, for example: "Just responding when they respond to you, or vice versa." Family members also noted that "sometimes giving them [doctoral student] space" may be necessary if there is too much communication, or that families must figure out a balance and participate in "communication as needed."

Stress

Doctoral student respondents expressed that families downplay the stress of doctoral students. For example, Jilly said, "You know, like my mom would always jump to oh it's gonna work out, it's all gonna be fine. You shouldn't worry. I appreciate the sentiment but I'm like, but is it?" Additionally, doctoral students asserted that they must downplay their stress to their families. For instance, Hoa said, "It really hurts me when my own mom is like downplaying the struggles that I have … how hard it is to plan a dissertation … the people that surround you are supposed to be a support but sometimes it kind of hurts me." Doctoral students conveyed that families are often a source of stress. Guillermo stated that "just some things they [family] think is support but it just stresses me out regarding like 'what are you doing? Are you caught up with your homework? Are you doing this?' It can be stressful." James said:

> My mother-in-law causes a lot of undue stress. But she does it, she causes a lot of stress for my schooling … it seems on purpose. … She will say things like you shouldn't let him study … he's just taking as much time as he wants. It's because you're letting him, or he needs to spend more time with the family.

Participants in two doctoral student focus groups discussed financial stress and its impact on their family. Tallah, a Black/African American first-generation student in anthropology, said, "My father received a significant reduction in his work hours, which is putting increased financial stress on my family." Madeline, a first-generation graduate student, said, "I've had a lot of arguments with my dad about money. The fact that I'm in debt really upsets him. That's unhelpful to me because I don't want to worry about my debt until I get in my career."

Different approaches

Many doctoral students described how their families differed in ways of thinking about and approaching life. Doctoral students, including White students, in all four focus groups expressed that cultural expectations/issues are challenges. Guillermo said, "My father … he's very old school Mexican, very machismo. So when there's something very mental or stressful, I can't exactly reach out to him." Amaya said, "I have an Asian father, and an Asian father is a very scary person." Doctoral students further expressed cultural expectations and issues with their families that clashed with the doctoral students' approach to life. Doctoral students described differences with their families such as "they're immigrants," "my parents are extremely religious," "they're farmers," "[they] grew up in a community that hunted to live … I'm not a big fan of firearms anymore," and "I was born in a different country than my parents."

Families' traditional thinking is another challenge expressed by doctoral students. Diego said, "I'm from a highly conservative family in Mexico. And I think part of the issue of me keeping everything to myself is maybe associated with the same traditional values." Amaya said, "It's very hard to change traditional thinking."

Participants expressed challenges in balancing and fulfilling competing family roles and graduate student roles. Role strain based on gender was expressed as another challenge by female doctoral students and one male student. Hiroshi, a male, first-generation student identifying as Asian/Pacific Islander, noted role expectations being challenged by living in a different state than his family. He shared, "For example, the heater may have some problems, and in ordinary times, I have to take care of them [wife and children], help to fix it but now they have to do it on their own." One female student, Lindsey, said, "I see my partner go with his friends and like nothing has changed but with the wives, it's all baby stuff … last year the women were wedding planning, I was just like whoa I'm planning on how to do school."

In a similar vein, another doctoral student expressed concerns about differences in family planning/social clocks. Three female graduate students referred to their expected "dissertation as my baby." Additionally, Stephanie, a White first-generation student, said, "I am worried as a woman about not having children early enough for my parents so they can enjoy grandchildren." Tallah said:

> My mom is the only person in her circle who is not a grandparent. They [mom and doctoral student's significant other] want children. I'm looking at both of them. First, my master's degree kicked my butt. They both watched me struggle. Then they watched me get accepted to a PhD program and they see how hard I work … and they still have the audacity to ask me about children.

Doctoral students in all four focus groups also discussed educational differences with family as a challenge. Participants used language such as "they didn't go to college" "barely finished their senior year of high school," and "we have very different educational backgrounds." One White, first-generation doctoral student (Benjamin) said, "The fact that my family doesn't actually have really an educational background, that does cause issues sometimes."

Family relationships

The theme of challenges regarding family dynamics and relationships came up in all doctoral student focus groups. Family conflict was specifically discussed in two doctoral student focus groups. A doctoral student (pseudonym not reported) said, "We have very different political views and views about the world and sometimes that can be conflicting. And, so I don't want to discuss those things because they cause conflict."

Doctoral students in all focus groups talked about the ongoing challenge of feeling pressure from their family to excel. A White, first-generation doctoral student in physics (Noah), said, "You know it is strange in my family where there's sort of this expectation that I should do something successful but no guidelines or direct help." James said, "I felt that same pressure from my family. I've always excelled in math in elementary, middle, and high school, and so there's always like this pressure of like you've done so well, like you just keep doing well."

Additionally, doctoral students reported an ongoing challenge of enmeshment/codependency. One doctoral student noted the intersection of stress and codependency. Specifically, Tallah said, "Because when she's [mom] stressed, I'm stressed" and "My mom has the absolute ability to control my emotions." In a different focus group, Stephanie said, "I'm almost needing a little bit of freedom to be able to do what I need to do." Doctoral students also expressed that they need to set boundaries with family and described "trying to set boundaries," it taking "a lot of work to set those boundaries," and "needing to have conversations about boundaries." Hoa said:

> My sister has a toddler so she's not always free, so we always make sure to check in before we burst out with things we want to complain about. I did not respect that boundary before, but we had a lot of conversations and she's like, "hey, don't take it personally." So I slowly learned how to respect boundaries and to set my own boundaries when it comes to my mom.

Parentification was an experience noted by a couple of participants. Amaya said, "Basically, in my mother's culture you become a parent as soon as you're able to become a parent. I think they [parents] look forward to retiring when their oldest becomes old enough." Tallah said, "I've been raising my siblings since I was like 5 years old." Although several of the doctoral students are also parents of their own children, parenting did not emerge as a code.

Lastly, doctoral students in three focus groups talked about the challenge of needing to educate their family members about graduate school so they would understand more about them and their roles as students. These students described the hope that their families would "be more knowledgeable and connected." Lindsey furthered, "I would come home and he [partner/ significant other] would be like so why can't you just write a whole manuscript in one day." Amaya said she wants family to know "this is what she does, these are the people she works with and the environment that she spends her time in."

DISCUSSION

First-generation and historically marginalized doctoral students and their families provided valuable information about their experiences and perspectives of family roles and support systems for doctoral students. Their words and the resulting themes highlight several considerations, including reducing ambiguity and ambivalence for students and their family members regarding the graduate school experience, while supporting students and families apart from the graduate student role. We also note how these results indicate that frequently used models of support could benefit from considering the experiences of more diverse student populations.

Finally, we highlight the importance of understanding the role of chosen family (i.e., nonbiological or nonlegal persons defined as family) for graduate students. Given these considerations, we discuss practice implications and acknowledge some noted limitations.

Participants provided balanced perspectives of both strengths and challenges associated with family roles that highlight the ambivalence with which many doctoral students regard the impact of family. Issues around communication, stress, familial relationships, and differences among family members in ways of thinking about and approaching life comprised the challenges faced by graduate students and their families. Support and connection among graduate students and their family members were strengths. When considering the structure of networks and social interactions (Cooke et al., 1988), it is important to note that these challenges and strengths exist in conjunction with family dynamics that occur outside of the graduate school context. Uncertainty around what being a graduate student entails or disconnects related to perspectives of graduate student status further complicated preexisting family dynamics. When there is more clarity around each members' role and status, however, there may be less ambiguity contributing to experienced challenges. This underscores the need to evaluate general family processes and those directly connected to the ways first-generation and historically marginalized students experience graduate education. In the theme of challenges, for example, each subtheme contained codes related to simply being a family member but also to family members' lack of understanding of or connection to the graduate student role (e.g., timing of communication, financial stress, educational differences, and the students need to educate their family members). Again, programs aimed at integrating families into the graduate student experience could improve student outcomes and well-being.

In the theme of strengths, some themes were directly related to the "graduate student" status of the doctoral students, but not all. For example, the codes of emotional support, mutual support, long-term support, strong ties/relationships, and visits with family (under the support and connection subthemes and as brought up by both students and their family members) were largely disconnected from the student's role as a graduate student. This signified families can meaningfully impact the lives of graduate students without having complete understanding of what it is like to be a graduate student. We argue that giving families the opportunity to learn more about what it means to be a graduate student could potentially improve doctoral student outcomes. At the same time, we understand from the graduate student perspective that simply supporting student–family relationships outside of the student role is also warranted. Graduate students' networks are not disconnected boxes but interconnected webs. When graduate students are considered whole people with multiple identities, goals, and networks, finding ways to support students in those intersecting contexts could improve outcomes.

The doctoral students and their families mentioned support types that mirror prior studies (e.g., emotional, informational, appraisal, and instrumental; see House, 1981; House et al., 1988; Tan et al., 2019). More nuanced contexts of support; however, were also discussed, such as unconditional support, support of a long-term nature, or what unsupportive behaviors look like and how they impact experience. Knowing not only what type of support is deemed important but also the characteristics of that support is essential for better understanding the graduate student experience and how families need to be supported to support each other. Models such as House's (1981) typologies of social support may benefit from incorporating the experiences of historically marginalized student populations. For example, the logistics and contexts of maintaining connection were described in various forms. Families understood ways of connection that worked for them but were realistic about barriers. Diverse families, including those with economic instability, or those with specific cultural expectations may experience family connections and challenges to maintaining family connections in different ways from White families or those with more resources and institutional knowledge about graduate school. These connection challenges directly relate to the structure of student networks and the quality

of types of supports they are able to receive. A multifaceted, holistic approach to understanding who graduate students are and what they need to thrive is warranted.

Additionally, of note regarding structure of networks and social interactions (see Cooke et al., 1988), students noted chosen family as important, including the variety of support they provided and the logistics of maintaining connections with them. Graduate students provided their own definitions of chosen family, which included biological and legal relationships but also "friends who feel like family." These definitions support Manning's (2015) observation that family scientists should expand their understanding of the increasing inclusivity of familial definitions. The students here highlight that types and levels of support are just as meaningful as who provides support. One of the challenges the students experienced was due to family members not understanding the student's struggles and responsibilities. This challenge resulted from a variety of reasons from cultural upbringing, differentiating mindsets, financial responsibility, societal norms and roles, and lack of family education. Graduate student participants in the study brought attention to the fact that for some students the thought of having family invited or required to university events can be uncomfortable given the vast differences in how the graduate students and families think about and approach life. Again, with the variety and diversity of definitions of family, support and connection may look different from student to student. Ultimately, approaching student support from a multidimensional and inclusive lens may have meaningful impacts on completion rates for doctoral students.

Practice implications

The findings from this focus group study inform the current and future family-friendly interventions and efforts in the context of higher education, particularly those designed to retain first-generation and historically marginalized doctoral students—especially nonfinancial family support (Burt et al., 2019; Glass, 2023; Ong et al., 2020; Sowell, 2009). In the present study, the strengths of family roles in supporting doctoral students included support and connection. Specifically, the strengths of emotional support, instrumental support, communicative support, and mental health support, to name a few, were valued by graduate students and their families. Family science faculty can collaborate with graduate schools to normalize this support and suggest sample practices for each type of support for families of graduate students. This may alleviate families wanting to be involved and supportive but not always knowing how or if what they are doing is helpful. Future research should examine the interactions between the types of support and practices families provide and the results these have on graduate students. Graduate schools should invest funds and create goals in their strategic plans around family support and connection, which should be context-dependent and tailored to the specific needs of first-generation and historically marginalized graduate students. In our work, we invited families (loosely defined) of participating graduate students to a welcome reception, including programming that helped them learn graduate school terms and opportunities to connect with other families. On the basis of our study findings, normalizing nonfinancial support and connection, and providing concrete strategies and examples of support and connection, are meaningful pursuits.

The barriers mentioned by the participants can be directly addressed by graduate schools and universities. First, the financial burden of graduate education can be reduced by expanding funding opportunities specifically for first-generation and historically marginalized graduate students with funding opportunities such as graduate assistantships, scholarships, grants, and fellowships. Many of the nonfinancial stressors may be difficult for higher education institutions to address directly, but virtual opportunities for family members to be participants in the student's education can assist with the lack of understanding of the student's responsibilities and struggles. Family members could also be invited to university functions for their graduate

students and actively participate in events currently in place for graduate students, but also novel virtual and in-person initiatives welcoming families to university campuses can be created. These initiatives could allow for the families of graduate students to obtain a better understanding of the responsibilities associated with graduate education and the opportunities it can afford their students. Funding support for family travel and devices, such as those provided in this study, could be adopted by other universities and programs to support family participation in essential events.

Universities and their graduate schools can hold orientations for family members of graduate students to educate the family members further on what is and can be expected of their students as they progress in their graduate programs. Also, resources that may be available to graduate students, such as counseling and health care, can be expanded to cover family members to alleviate stressful situations. Graduate students are often privy to professional development opportunities such as workshops, and these can also include topics on communication because many of the participants discussed how they are not well equipped to communicate with their family members about graduate school (Covarrubias et al., 2018). Given the recent expansion of webinars and videoconferencing, these workshops or lectures could also be made available for family members of graduate students to attend virtually.

This study focused on first-generation and historically marginalized students and their families who attended a program designed to promote a sense of belonging and facilitate retention. The potential generalizability of the results is limited by several factors. First, the participant sample included an unequal number of participants from historically marginalized racial and ethnic groups, with White students and family members comprising 62% of the total participants. This resulted in increased attention to the perspectives and experiences of White doctoral students and White family members. Second, the study also focused on the experiences and perspectives of doctoral students enrolled at one land-grant institution with the Carnegie Classification designation of R1 (for doctoral university with the highest levels of research activity) in the western United States. Doctoral students at different institutional types and from historically marginalized backgrounds may have vastly different experiences than we report here. Doctoral students—including those who are White, first-generation students, historically marginalized, underrepresented in particular fields, or first-generation students of color—are not a homogeneous group, have varied cultural roles, and receive varied support from their families (Walsh et al., 2021).

Conclusion

Our study empirically examined family roles in supporting doctoral students. Our findings highlight how predominantly White, first-generation, and historically marginalized doctoral students and their families make sense of and navigate their respective roles in connection with the challenges and expectations embedded in the graduate school experience. Further, consistent with prior research (Baldwin et al., 2021), our findings demonstrate that regardless of these families' levels of understanding of the roles and responsibilities of their "graduate student," they managed to find ways to offer meaningful support in substantially varying forms. Moreover, this study documented the barriers experienced by students attempting to reconcile familial and societal expectations with their family's lack of understanding about the role of a graduate student, while also navigating the rigors of graduate school. Last, this study offers practical guidance on how higher education institutions may better support doctoral students—especially those who are first-generation students and from historically marginalized backgrounds—through the creation of specialized programming, financial support, and other strategies for engaging families.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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