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While research demonstrates that family support is essential for doctoral students, research detailing institutional efforts to involve families is limited. We developed the GAIN Scholars program, consisting of two 3-week-long boot camps for incoming first-generation and historically marginalized doctoral students. Quantitative data were collected from 38 doctoral students in the GAIN Scholars program (n = 22) and the control (n = 16). One key component of this program was family support for doctoral students. Family members (n = 15) were invited to the opening ceremony, a day of programming, and online activities. Pre- and post-test measures indicate participants had a greater ability to identify resources, a greater ability to identify important life values as they impact resource identification decision-making, and a greater ability to identify complex environments and means for situational adaption, suggesting the program increased doctoral students' skills related to navigating environments, resources, and decision-making. Qualitative findings from doctoral students and their family members offered praise for the program and appreciation for the support opportunities. These results indicate that programs such as this—that foster connections among graduate students and their families—can be potentially beneficial in helping graduate students not only stay but thrive in their programs.

Keywords: family support, first-generation doctoral students, historically marginalized doctoral students, program

Introduction

Over the decades, doctoral education has made substantial contributions to the advancement of the educated workforce necessary to meet the economic and social needs of the twenty-first century. Achieving a doctorate is connected with higher lifetime incomes, employment rates, and occupational positions (Trennt & Euler, 2019). Despite the contributions and the increasing

popularity of doctoral education, many students do not complete their doctorate, which suggests that efforts are needed to promote doctoral student retention and success.

Doctoral students face unique challenges and experiences, including navigating competing roles, isolation, and academic stress (Pifer & Baker, 2016). These challenges are coupled with attrition rates ranging from 40% to 70% (Ames et al., 2018). A report by the National Science Foundation (2021) indicated that in 2019, the number of doctorate recipients from U.S. academic institutions was 55,614. This number declined to 55,283 in 2020. Also, the number of U.S. citizens and permanent resident doctorate recipients declined in 2020 to 34,492 (from 35,232 in 2019).

Since the late 1990s, the number of first-generation students (those whose parents have not completed college degrees) completing a doctorate has declined from 26% in 1998 to 18% in 2017 (National Science Foundation, 2019). Studies revealed that first-generation students are more likely to leave college without a credential than their continuing-generation counterparts (Cataldi et al., 2018). First-generation doctoral students identified academic and financial impediments, cultural issues, culture shock, otherness, and ambiguous family attitudes as obstacles (Bahack & Addi-Raccah, 2022).

Groups of Black, Hispanic, and Indigenous students and students from low-income or working-class families continue to be underrepresented in higher education (Thiem & Dasgupta, 2022). For example, the United States Department of Education (2019) reported that Black, Hispanic, and Indigenous postsecondary students enrolled and graduated at lower rates than White students. This disparity continues into graduate school as racially minoritized students enroll in graduate programs at lower rates as compared to White students, especially in the STEM fields (Zhou & Gao, 2021). The persistent socioeconomic, racial, ethnic, and gender differences in graduate populations hint at structural imbalances inside academic institutions despite attempts to ensure equal access to education (Griffin, 2019). Racially and ethnically minoritized students are more likely to experience racism, discrimination, microaggressions, isolation, less integration and belonging, lowered mental health quality, and less faculty support and mentoring (Brunsma et al., 2017). In other words, structural inequities exist and have significant, disparate impacts. Research shows that institutional racism, including conscious and unconscious prejudice, drains the motivation of even the most committed and well-prepared minoritized students (McGee et al., 2019; Thomas et al., 2018). These issues can decrease underrepresented students' sense of belonging in college and confidence in their own potential, particularly for those from marginalized racial or ethnic backgrounds.

Given these previously discussed barriers, nonfinancial family support is essential to the success of first-generation and other historically marginalized doctoral students (Burt et al., 2019; Walsh et al., 2023). Black men in Burt and colleagues' study reported that being in graduate school in a predominantly White institution (PWI) came with challenges, but having consistent encouragement from their families helped them cope with those difficulties. That sense of family

connection and encouragement was also identified as a strength for first-generation and historically marginalized students in Walsh et al.'s (2023) study on perspectives of family support. Many students from both studies also pointed out that having parents with advanced degrees and knowledge about graduate school was a plus; however, this advantage certainly does not exist for every student (Burt et al., 2019; Walsh et al., 2023).

The existing literature suggests that higher education institutions need to provide information about the time commitment, requirements, and process of pursuing a doctoral degree to both students and their families to help bridge the gap for those students without much familial, institutional knowledge (Breitenbach et al., 2019; Burt et al., 2019; Jairam & Kahl, 2012). Doctoral students discussing the types of professional support they desire mention valuing mentors that can offer "feedback, advice, and problem-focused assistance" (Jairam & Kahl, 2012, p. 320). Having mentors who understand the specific challenges that marginalized and first-generation students face can be especially helpful (Burt et al., 2019). Just as new doctoral students may be unaware of the ins and outs of graduate school, their family members can also be unfamiliar, disengaged, or simply too young to understand (Breitenback et al., 2019). Students may do their best to communicate these processes to their family members, but institutions should be actively and directly involved in providing opportunities for families to be engaged and involved in this learning process.

This article describes one initiative by which university faculty from various disciplines partnered with a graduate school to serve first-generation and historically marginalized doctoral students. In the sections that follow, we report feedback on the program in relation to family support and support of the graduate students themselves. Additionally, we discuss the applicability of this program for other universities considering an initiative to support students from these populations. Two theoretical frameworks guided our study and discussion of the results. First, Sense of Community Theory (McMillan & Chavis, 1986) highlights four elements necessary for building a strong sense of community: membership and belonging in a group; influence and making a difference in the group; integration and fulfillment of needs in the group; and shared emotional connection in history, time, and experiences. Secondly, House's Theory of Support (1981) describes four subtypes of social support, including emotional (being cared for and listened to), informational (receiving resources and advice), appraisal (receiving feedback), and instrumental (tangible items or services).

These theorists did not assume that types of support and community differ greatly by identity. McMillan and Chavis (1986) applied their theory to previous studies on community belonging, referencing diverse samples but never concluding that the components of their Sense of Community Theory would be experienced significantly differently in these various samples. House et al. (1988) studied the association among the components of House's (1981) Theory of Support and health outcomes. They found that the strength of associations among support and health variables may differ between Black and White populations in one specific county, but not

that either population would experience these types of supports in different ways. Though these researchers did not focus on differences in experiences of support among various groups, these differences may exist. First-generation and historically marginalized graduate students may each have unique supportive experiences in graduate school overall and when compared to students who are not first-generation or otherwise systematically marginalized. However, we anticipate that the first-generation and historically marginalized graduate students will highlight some of the same components of community and support identified by McMillan and Chavis (1986) and House (1981) after participation in this targeted program.

Fostering community and support in the ways identified by McMillan and Chavis (1986) and House (1981) may not only help students and families involved in the programs but also transform the way the institution interacts with its students. First-generation and historically marginalized students are likely to face different and compound challenges compared to students with more institutional knowledge and social/cultural capital in the spheres of academia. We explore outcomes in relation to these eight elements (four from each theory) of forming a sense of community and receiving support in graduate school for first-generation and historically marginalized students and their families in the analysis of their experiences within the academy.

GAIN Scholars Program Description

The Graduate Acceleration through Innovation and Networking (GAIN) Scholars program is an NSF-funded two-year doctoral retention program incorporating two three-week-long boot camps implemented by an interdisciplinary team of faculty members in biology, civil and environmental engineering, computer science and engineering, human development and family science, mathematics and statistics, diversity and equity, journalism, and public health. Prospective students were able to apply to the GAIN Scholars program either by checking “yes” on their graduate school application to their doctoral program or by applying using an interest form posted on the GAIN Scholars website. The students who applied or showed interest in the program were reviewed for eligibility as either identifying with a historically marginalized background and/or identifying as either a first-generation college or graduate student. Due to the program’s federal funding, international students were not eligible to participate. GAIN Scholars from a variety of disciplines were invited to ask one family member (broadly interpreted) to attend the first part of the preparatory program with them before arriving on campus. This article focuses on the experimental group’s first five days of the GAIN Scholars program’s first year (a 3-week boot camp), which focused on family support, connection to resources, social support, self-awareness, and self-care.

The experimental group consisted of 22 GAIN Scholars and 15 family members of choice. These scholars attended three days of in-person programming, and their family members attended one day of in-person programming. The fourth and fifth days of programming provided mentorship and assistance with individual development plans. Then, the remaining two weeks of

programming focused on academics, including statistical and computational software, app development, and programming.

Nine faculty spent eighteen months developing three and a half days of the GAIN Scholars program to focus on programmatic elements germane to family support and self-awareness for doctoral students. Input throughout the planning process was sought from a committee that includes a counselor, equity and diversity faculty, a first-generation doctoral student, and a doctoral student who identifies as historically marginalized. Three experts in diversity and equity, graduate school best practices, and higher education leadership reviewed the final plans for programming and provided minor feedback, which the first author addressed.

Two online activities (i.e., discussion board and website) involved doctoral students and their family members. The discussion board involved doctoral students posting about their strengths after reflecting on their individual results from the *CliftonStrengths for Students* and identifying strengths-aligned ways they would like to be supported by family. The website featured modules tailored to the students' and families' needs. To familiarize everyone with the website, the program coordinators asked families to review the doctoral students' posted bios and pictures and to let their doctoral students know they saw it to help introduce the platform.

Doctoral students and family members also had modules tailored specifically for their category. For example, the doctoral students participated in three days of programming that emphasized family support and self-awareness across four modules, featuring nine hours of in-person and online/asynchronous learning. The online components were built using online best practices at the authorship's university. The modules were comprehensive in that terms used in in-person learning were presented online and included additional videos and resources to support further learning. The broad module topics for graduate students included (a) introductions and overview of the preparatory program; (b) making graduate school work: surviving and thriving; (c) understanding yourself; and (d) team building, cultivating self-awareness, and self-care. Within these online modules and in-person learning opportunities, topics such as mentoring, intersectionality theory (refer to Crenshaw, 1989), imposter phenomenon (refer to Clance, 1985; Mullangi & Jagsi, 2019), and navigating the hidden curriculum (refer to Calarco, 2020) were highlighted. These contexts are particularly germane to first-generation and historically marginalized students (Bahack & Addi-Raccah, 2022; Brunsma et al., 2017; McGee et al., 2019; Thomas et al., 2018). The family members were provided 90 minutes of in-person programming to learn how to use tablets to communicate with graduate students, an overview of crucial graduate school terms, and questions to ask yourself when thinking about supporting the doctoral student. All program materials were available in English and Spanish.

Study Purpose

The purpose of this mixed methods pilot study was to evaluate the GAIN Scholars program elements themselves and within the context of family support. This program evaluation consisted

of an analysis of pre- and post-test data and focus group data to better understand the experiences of the experimental group of doctoral students.

Method

The evaluation was a mixed-methods design, and data collection occurred concurrently (Rossi et al., 2019). Mixed methods were used to ensure that the findings obtained were not lost in translation and were represented correctly, as would have been the case if only one method had been used (Jaga & Guetterman, 2021). Data were collected from both the experimental group of GAIN Scholars and the nonparticipating control group to provide a comparison between the two.

Measures

Family Support and Self-Awareness Attitudes

The researchers created three survey items based on objectives (Duncan & Goddard, 2017), which captured family support and self-awareness attitudes. The experimental group completed these items at pre-test (i.e., three weeks before the program) and post-test (i.e., three weeks after the program). The control group completed these items once during the post-test for the experimental group. Refer to Table 1 for items.

Table 1. Descriptive Statistics for Family Support and Self-Awareness Attitudes

	I can identify complex and challenging environments, and how to adapt to these situations.	I am aware of and can identify both on and off campus resources.	I can identify factors that contribute to my/or my family's decision-making process on how to manage resources.
Pre-Test			
Min	2	1	2
Max	4	4	4
Mean	3.14	2.59	2.95
SD	.56	.91	.72
Variance	.31	.83	.52
Median	3	2	3
Post-Test			
Min	3	3	3
Max	4	4	4
Mean	3.45	3.5	3.55
SD	.51	.51	.51
Variance	.26	.26	.26
Median	3	3.5	4
Control			
Min	1	1	1
Max	4	4	4
Mean	2.94	2.41	3.06
SD	.90	.94	.97
Variance	.81	.88	.934
Median	3	2	3

Evaluation of Family Support and Self-Awareness Programmatic Elements

At the end of the family support and self-awareness portion of the program, the experimental group was invited via Qualtrics to complete eight items to evaluate these programmatic elements. This survey was a standardized evaluation (Hardman & Peterson, 2020). There were four items (and two items with subitems) regarding process evaluation (e.g., "The facilitators valued perspectives of participants.") and four outcome evaluation items (e.g., "I increased my knowledge of the topics covered."). Refer to Table 2 for items.

Table 2. Evaluation of Program

Evaluation Question	Participant Response				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. The facilitators:					
a. were knowledgeable of the subject matter.	0	0	0	1	21
b. related program content to real-life situations.	0	0	0	0	22
c. valued perspectives of participants	0	0	0	0	22
2. The content was:					
a. relevant to my needs.	0	0	0	5	17
b. at an appropriate level.	0	0	0	4	18
c. well-organized.	0	0	1	5	16
d. based on credible, up-to-date information.	0	0	0	4	18
3. Attending this program module was worth my time.	0	0	0	5	17
4. I would recommend this program module to others.	0	0	0	3	19
5. I increased my knowledge of the topics covered.	0	0	0	7	15
6. I learned new skills related to the topics covered.	0	0	1	8	13
7. I will use the information I learned in this program module.	0	0	0	9	13
8. I will tell others about what I learned in this program.	0	0	1	6	15

Focus Groups

Focus groups were conducted with the experimental group and their family members. Focus groups were conducted about family members' roles and support, if any, for first-generation and historically marginalized graduate students. There were three five-person focus groups for family members (n = 15). For doctoral students (n = 22), there were four focus groups—two groups of five participants and one group of six participants. The focus groups lasted a maximum of 100 minutes. The doctoral student semi-structured interview guides had 17 open-ended questions. The family semi-structured interview guides had 17 open-ended questions. Most of the items

were about experiences, thoughts, and attitudes about family members' roles and support. The last item in each semi-structured focus group guide invited feedback about the GAIN Scholars program. The data generated by the last item are the focus of this study.

Sample

Thirty-eight graduate student participants, the control group (n = 16) and the experimental group of GAIN scholars (n = 22), completed the family support and self-awareness attitude items. Refer to Table 3 for demographic characteristics of students and Table 4 for demographic characteristics of families. To be eligible for this program, doctoral students had to be first-generation college or graduate students and/or from a historically marginalized background. We consider two related populations of first-generation doctoral students: first-generation college students—those whose parents did not complete a bachelor's degree or higher and first-generation graduate students—those whose parents completed a bachelor's degree but did not go on to pursue a graduate degree (refer to Center for First-Generation Student Success, 2017; U.S. Department of Education, n.d.). Both categories of students are described further in sample tables contained in the Methods section. Additionally, otherwise historically marginalized students were also recruited for involvement in program initiatives, those being students of color who identified as having a minoritized racial/ethnic identity, women and others with minoritized gender identities, and/or students from low-income families.

The control group consisted of students who were interested in and eligible to participate in the GAIN Scholars program but who, for a variety of reasons, could not commit to the program. The control condition included doctoral students who did not receive any programming, and no family members were involved. However, the control group participants were invited to access online program materials about two months after the program ended. The experimental group completed the evaluation of family support and self-awareness program elements and participated in focus groups. Fifteen family members of experimental group participants participated in focus groups.

Table 3. Student Demographic Information: Control (n = 16) and Experimental (n = 22) Groups

Characteristic	Control	Experimental
Gender		
Female	9	12
Male	6	10
Prefer not to answer	1	0
Race/Ethnicity		
African American / Black	0	2
Asian / Pacific Islander	2	3
White	9	13
Other	2	0
Hispanic/Latinx	3	3
Multiracial	0	1

Characteristic	Control	Experimental
Highest Degree Attained		
Bachelor's degree	8	12
Master's degree	7	10
Relationship Status		
Single	12	12
Cohabiting	1	5
Married	3	5
Children		
No child	14	18
Child under 6 years	1	2
Child 6-18 years	1	2
First-Generation College Student[a]		
Yes	11	13
No	5	9
First-Generation Graduate Student[b]		
Yes	14	20
No	2	2

[a]First-generation college students are students whose parents do not have a bachelor's degree or higher.
[b]First-generation graduate students are the first generation to pursue a graduate degree.

Table 4. Demographic Characteristics of GAIN Scholars' Family/Support (n = 15)

Characteristic	*n*	%
Gender		
Female	9	60
Male	6	40
Age		
16 - 21	2	13.4
22 - 28	5	33.5
29 - 38	2	13.4
39 - 55	2	13.4
56 - 76	4	26.7
Race/Ethnicity		
White	10	66.7
Asian/Pacific Islander	1	6.7
African American/Black	1	6.7
Hispanic/Latino(a)	2	13.3
Other	1	6.7
Highest Level of Education		
High school diploma/GED	4	26.7
Some college	3	20.0
Bachelor's degree	5	33.3
Graduate degree	3	20.0
Relationship to Scholar		
Mother	1	6.7
Father	1	6.7
Sibling	1	6.7
Cousin	1	6.7
Friend who feels like family	3	20.0
Partner/significant other	3	20.0

Characteristic	*n*	%
Spouse	3	20.0
Fiancé	1	6.7
Child	1	6.7
Travel From		
Same city as university	7	46.7
Another city in the state	2	13.3
California	5	33.3
Other	1	6.7
Living with Student		
Yes	8	53.3
No	5	33.3
Unsure	2	13.3

Analysis

Due to limitations in sample size as well as observed deviations from normality, all quantitative analyses were conducted using nonparametric analysis. To assess for differences between the experimental and control groups, a series of Mann-Whitney U tests were computed against baseline scores, yielding no significant differences, all $p > .05$. These findings suggest that there were no differences in baseline Family Support and Self-Awareness Attitudes prior to the intervention. Additional Mann-Whitney U tests were conducted to test for differences pre/post-intervention and to explore the efficacy of the training program.

For qualitative data, transcripts were individually imported to Dedoose Version 9.0.17 (2021) and were analyzed using thematic analysis (Braun & Clarke, 2006). There were three analysts to ensure a rigorous coding and analysis process (Patton, 2002). Each analyst independently read all the data and noted initial codes for one transcript from each participant category. A consensus process was used to reach an agreement on codes and to create a codebook (Walsh et al., 2023). The analysts then assigned the agreed-upon codes to the transcripts in Dedoose and received and discussed the codes to organize them under themes and subthemes in order to answer questions relative to the study's purpose. Themes were then reviewed and compared with the quantitative results to produce findings. Quantitative and qualitative results were merged during the interpretation of the results for comparison and triangulation.

Results

Results from quantitative and qualitative data were first reviewed separately and then integrated to evaluate the GAIN Scholars program elements themselves and within the context of family support. With regard to quantitative results, at the end of the intervention, participants reported a greater ability to identify resources both on and off-campus ($Med = 3.5$) compared to pre-test reports ($Med = 2.0$), $U = 104.5$, $p < .001$. Participants reported a greater ability to identify important life values as they impact decision-making about resource identification and management, $U = 135.00$, $p = .006$. There was a marginally significant increase in participants'

ability to identify complex and challenging environments and means of adapting to these situations at post-test compared to pre-test, $U = 175.00$, $p = .066$. There did not appear to be a significant shift in abilities related to identifying factors that can contribute to decision-making processes and resource management following the intervention, $U = 182.00$, $p = .113$. A mean score was computed to look for global changes in attitudes following the intervention when looking at overall changes in attitudes of the agreement for items. Results indicated a significant increase in global attitudes at post-test (*Med* = 3.5) compared to baseline scores (*Med* = 3.00), $U = 115.5$, $p = .003$. An additional Mann-Whitney U test was conducted to investigate further changes between the experimental and control groups. Individuals in the experimental group had a higher change (*Med* = 3.45) compared to those in the control group (*Med* = 3.00), $U = 102$, $p = .015$.

Doctoral Students' Evaluation of Program

Overall, doctoral student participants who completed the program had favorable reviews (see Table 2). All participants strongly agreed that the facilitators related program content to real life and valued the perspectives of the participants. Other evaluation data is integrated into the findings below.

Focus Group Feedback on the GAIN Scholars Program

Three themes emerged from both categories of focus group participants regarding their feedback on the GAIN Scholars program: (a) praise for the program, (b) opportunities for support, and (c) constructive feedback.

Praise for the Program

Family members discussed praise in the form of praise for the institution for creating the program and praise for the institution for helping families understand the doctoral process (code). One family member participant said, "I am happy that the university organized this program for us [families] to get a bit of information about what it is like to go through a doctoral program." Another family member participant said, "I think it is wonderful the school created this program to help us learn and hope it has a lot of success."

Doctoral students appreciated the GAIN Scholars program (code) for helping them "learn expectations of what a successful individual looks like." One doctoral student stated, "It's really cool to be in a program and get free cool stuff." Another doctoral student appreciated "the opportunities in the program to learn from everyone." These results with regard to learning coincide with doctoral student participants' survey evaluation results, where all respondents either agreed or strongly agreed that they increased their knowledge of the topics covered and that they will use the information they learned in the program during their studies.

Opportunities for Support

Doctoral students felt there was social support built into the program in the form of friendship (code) and not being alone in their experiences (code). One doctoral student said, “My only friends are the ones that are in the program with me, or the people I’ve met here.” Another doctoral student said, “It’s a nice group to be part of.” One doctoral student said, “I think with this program, something that’s like really big for me is that it’s like, I’m not the only one who can experience some of these challenges, others are experiencing them too.”

Family members discussed that the GAIN Scholars program provided opportunities to support doctoral students in the form of families being present at the program (code). Family members thought they were supporting doctoral students “by being here, just what we’re doing here, we’re attending [the program].” Another family member said, “We’re right here, as we are today right here [at the program].”

Family members also noted that the GAIN Scholars program allowed them to receive support as a family member from other families (code). They liked the “support group” within the program or “discussions with other family members with a doctoral student.” Another family member of a first-generation college and doctoral student said:

> It was nice to hear [other families] talk about graduate school and it was a little relieving to know everyone does not know every part of it. I was Googling and stuff but every program is so different, every school is so different. It was nice to hear others’ concerns today.

This thought relates to similar sentiments from doctoral student participants about not being alone in their experiences (code).

Constructive Feedback

Constructive feedback was provided to the graduate school about targeted audiences for programs and providing more information to students and families after acceptance. Doctoral students thought the program should be made available to other graduate students (code). One student said, “This [GAIN Scholars program] is something that hopefully could be expanded, the university has a lot of graduate students from other countries, and like they should all be here.” Another student echoed this assertion and said, “It would be wonderful if this can be offered to international students, like a training they could receive or third-year graduate students that are still lost that are still struggling.” Doctoral students’ desires to offer the program to other students is supported by doctoral student survey evaluation results where all respondents either agreed or strongly agreed that they would recommend the program to others, and all respondents except for one agreed or strongly agreed that they would tell others what they learned in the program.

Family members said more information is needed for doctoral students and families upon acceptance (code) of the doctoral student in the form of "what the doctoral student needs to do." One family member said, "Nobody told her [doctoral student] where to go or what to do." One family member said, "It felt like there wasn't a lot of information given in the process after acceptance, it was like blank."

Discussion

This study explored the effectiveness of a program designed to support first-generation and historically marginalized doctoral students early in their programs. Quantitative and qualitative results indicated positive outcomes and evaluations of the program. In terms of pre-and post-test outcomes, family support and self-awareness attitudes were generally strengthened, suggesting that the experimental group learned skills related to navigating environments, resource identification, and decision-making.

The qualitative feedback received supported McMillan and Chavis's (1986) Sense of Community Theory. Both doctoral students and family members discussed the feelings of membership and belonging that were fostered by the program. The students were able to feel less alone and appreciate the friendships forged during the sessions. They also experienced a shared emotional connection with other doctoral students in the program. Family members felt a sense of community as well. They commented on being able to be there for the students, which connects to the element of influence and making a difference. Family members also spoke about the support they received from the other family members in attendance. This sense of emotional connection and belonging with other family members was seen as a strength to those who could be there to support their graduate students. These results indicate that graduate school programs such as this—that foster connections among graduate students and their families—can be beneficial in helping graduate students not only stay, but thrive, in their programs.

Additionally, House (1981, 1988) discussed four types of social support (that can be used to help graduate students be successful). Students and their family members mentioned three of the four subtypes: emotional (e.g., that the program allowed them to be listened to and cared for), informational (e.g., that the program provided resources and advice related to being a successful graduate student), and instrumental (e.g., that the program gave tangible resources like books and food). Although we provided appraisal support (e.g., feedback on their work done during the program), this might not have been salient enough for students to mention in their focus groups.

Given the overall feedback (both quantitative and qualitative), it appears that this type of supportive program for graduate students and their families has the capacity to greatly improve the experiences of first-generation and/or historically marginalized students. Students may be unaware of the challenges and opportunities associated with graduate school, and even when they are aware, it may not be easy to communicate those issues to their family members

effectively. Furthermore, family members may feel alone or isolated when supporting the graduate student.

The combination of targeted programming for first-generation and historically marginalized students around navigating graduate school, combined with the incorporation of their families and an understanding of family support, made these efforts impactful. These historically marginalized groups face discrimination, a lack of institutional knowledge, and a lack of quality mentors (Bahack & Addi-Raccah, 2022; Brunsma et al., 2017; McGee et al., 2019; Thomas et al., 2018). This program provided institutional support while encouraging and incorporating family support. The graduate students reported value in learning about navigating graduate school in the ways that may be most impactful for them. This institutional support was bolstered through the inclusion of their established support systems: their families. It can be difficult enough to discuss the expectations of graduate school with family members, seemingly even more so for first-generation and historically marginalized students (Walsh et al., 2021). Again, when providing communicative support to both students and their families, the two systems of institution and family can work together to strengthen student experiences. Institutions of higher learning should be willing to invest in supporting their students and their families to ensure better retention and success of those who may need this support the most. These efforts are likely to show that institutions are invested in their students' successes and consider inequity and background experiences into consideration when providing support. In turn, the academy benefits when all its students are better positioned to succeed.

Limitations

There are several limitations to this study. First, this program took place at one land-grant institution in the western United States, so results may not be generalizable to every institution of higher learning. Additionally, the funder delimited this program to noninternational students. Participants suggested that iterations of this program should be made and offered to international students; the authors also suggest that international students be considered in such targeted programming.

The present study was also not well-powered statistically due to the relatively small sample size. A power analysis was conducted using a combination of *a priori* and estimated post hoc power analysis using G*Power v. 3.1.9.2. This method was chosen to balance a feasible yearly cohort size and to determine if sufficient power would be achieved. Assuming a moderate effect size (d = .30), in order to achieve a minimum power of .80 with an alpha of .05, a total of 102 participants will be needed, with 51 participants in each group. Thus, the replication of this study with a larger sample size is certainly warranted. This would further confirm both the quantitative and qualitative findings reported here.

Finally, not every GAIN Scholar had a family member participate in the program due to reported logistical challenges, such as geographical distance or inability to take time off from work. It is

also plausible that not every student felt comfortable having a family member, albeit loosely defined, accompany them to campus.

Conclusion

Based on this pilot evaluation, we consider the GAIN Scholars program to be a promising initiative to help families be involved and supportive of their doctoral students. The GAIN Scholars program is also a model for university Graduate Schools and interdisciplinary faculty to engage first-generation and historically marginalized doctoral students and their families in a meaningful program intended to promote student success and retention.

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