

Formative Assessment for the Development of an Undergraduate Research Experience for College Students from Farmworker Families, North Carolina, 2020

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ABSTRACT

BACKGROUND: College students from families with migrant and seasonal farm work and agricultural processing experience face many barriers to educational attainment in the United States: sporadic schooling experiences, cultural and communication barriers, low pay, discrimination, and health issues from farm work. Retaining students from families with agricultural experience in higher education and research is critical for addressing educational and health inequities. In an effort to develop experiences that could serve as a pipeline for undergraduate students from farmworker and agricultural backgrounds into research careers, we conducted interviews to inform program development by exploring the research experiences of university students and recent graduates.

METHODS: Ten college-age students or recent graduates from four North Carolina universities from families with migrant or seasonal farmworker experience or agricultural processing experience were interviewed by phone between March 25, 2020, and June 17, 2020. We used a qualitative approach with inductive and deductive thematic coding of interview transcripts.

RESULTS: Three themes were identified that should be taken into consideration in the development of programs to promote research experience. The themes were: (1) *Consideration of students' lived experiences*, which described the importance of a program recognizing the context of students' experiences often as first-generation students in primarily White Institutions; (2) *The importance of providing mentorship and resources*, which participants highlighted the value of networks of resources and experience in navigating college; and, (3) *Include strong marketing and outreach efforts*, which highlighted potential barriers to hearing about opportunities.

DISCUSSION: Our findings show that research programs for undergraduate students from MSFW families are of interest to students. Such programs should consider the context of students' experiences as (often) first-generation students in (often) primarily White institutions, include advice to successfully navigate college, and have strong marketing and outreach efforts to reach potential participants.

BACKGROUND

College students from migrant and seasonal farmworker families face many barriers to educational attainment in the United States (Taylor et al., 2018). These students may face the same harsh labor conditions their families deal with, sporadic schooling experiences, cultural and communication barriers, low pay, discrimination, and health issues from farm work (Cortez, 2014; Arcury & Quandt, 2020). In addition, many students from migrant farmworker families move frequently, which is an important risk factor for academic failure (Cortez, 2014). Thus, children from Latino migrant farmworker families are a group of very academically vulnerable students (Taylor et al., 2018).

Latinx college students face “persistent educational inequalities” and remain underrepresented at every stage of the educational pipeline (Oseguera, Solorzano, & Villalpando, 2005). Despite the increase of Latinx representation within the U.S. population, it is still unlikely that Latinx representation will be equal within higher education anytime soon (Oseguera, Solorzano, & Villalpando, 2005). However, research has shown that factors that can aid Hispanic students’ success in higher education include- starting their studies at a 4-year institution, providing recruitment initiatives tailored to the family of the student, receiving culturally relevant programming and education, mentorship, professional development, college funding, and research opportunities (Estep et al., 2016).

Participation in undergraduate research benefits students by increasing academic achievement and retention, can help clarify the choice of a student’s academic major, and can help promote enrollment in graduate school (Haeger et al., 2015 & Estep et al., 2016). Participation in undergraduate research is especially beneficial for minoritized students and aids in the retention of minoritized students; this could be attributed to regular contact with mentors or faculty, promoting collaborative academic relationships, and accessing positive advising experiences (Haeger et al., 2015 & Estep et al., 2016). Mentorship can influence a student’s motivation, social integration, and contribute to overall success of a student (Estep et al., 2016).

Previous research shows that efforts to bridge achievement gaps through programs such as the College Assistance Migrant Program (CAMP) that focused on increasing retention of Latinx students and promoting their academic success can have an impact (Mendez & Bauman, 2018). Representation in the context of seeing one’s background, ethnicity, or culture reflected in the environment around them is important as well because it can create a sense of belonging. This idea of belonging, especially on a college campus with a vast number of students, academic and social difficulties, is important in feeling connected to the academic environment. Research has shown that Latinx students benefit academically from this feeling of connectedness and belonging to their academic institution (Mendez & Bauman, 2018).

Retaining students from farmworker families in higher education and increasing the pipeline of students from farmworker families into research is critical for addressing health and educational inequities. As part of an effort to design a pipeline program providing research experiences for undergraduate students from migrant and seasonal farmworker, agricultural processing, and small-scale farming backgrounds, we sought to explore the college and research experiences of

students and recent graduates. Our findings can be used to inform programs designed to create more accessible research experiences for undergraduate students from migrant or seasonal farmworker families and ultimately promote diversity in the pipeline of future researchers.

METHODS

Participants and Approach

Qualitative methods were chosen for this study to allow participants to share their experiences as children from farmworker families in relation to their college experiences. Qualitative methodology was useful in creating a space to actively listen to participants' experiences and start to observe themes that were prevalent across interviews that spoke to the overarching experience of being a child from a farmworker family. Eligible participants were students who had recently graduated from high school and were planning to attend college, were currently working towards their undergraduate degree, were recent college graduates, or were attending graduate school. We defined college to include community colleges. These interviews occurred by phone between March 25, 2020, and June 17, 2020. The participants had varied life experiences but were all children of migrant or seasonal farmworker, agricultural, or small-scale farming families.

Recruitment

We contacted 20 college-age students from North Carolina and conducted interviews in English with 10 participants from four North Carolina universities. The sampling was conducted through intentional recruitment via email and social media to students from farmworker families. Students were identified from existing organizations that work with students from migrant farmworker families, such as Student Action Farmworkers, as well as Latinx organizations on ECU's campus such as AMEXCAN and the Latino Student Union. Each participant was mailed a \$20 gift card to a regional grocery store chain after completing the interview.

Table 1. Participant demographics (n=10), 2020

Demographic characteristics	n
Gender	
Male	4
Female	6
Ethnicity as defined by participant	
Hispanic, Hispanic/Guatemalan, Hispanic Latino (n=2), Latina, Mexican American (n=3), Mexican/Hispanic/Latin	
State vs Private University	
State university	9
Private college	1
Community college	0
Current Student/Alumni/High School Graduate	
Current Student	7
Alumni	2
High School Graduate	1

Instrument

We created an interview guide with open-ended questions. The questions regarded the participants' general college experience, research experience, barrier and facilitators to research participation, family history of agricultural experience, and interest in a research program specifically for undergraduate students from farmworker families. Probes were included in the interview guide if clarification or further information was deemed necessary. The guide is available in our institutional repository (ECU Dataverse, doi:10.15139/S3/STQXUU, available from: <https://doi.org/10.15139/S3/STQXUU>). We piloted tested the interview guide by conducting two mock interviews with undergraduate students and made further refinements based off the testing.

Data Collection

Participants were interviewed by the first author in English using the semi-structured interview guide. All the interviews were recorded and transcribed using a smooth verbatim protocol. Interviews were an average length of 23.4 minutes.

To account for personal biases and background, the interviews were conducted by an Indian American cisgender female-identifying 20-year-old undergraduate public health student, trained in qualitative interviewing techniques. Participants were informed about the nature of the research and that the interviewer was a student.

The interviewer and the second author held weekly debriefing sessions about recruitment and completed interviews in which we assessed if new information learned in that week's interviews added to our understanding or affirmed information provided in earlier interviews. By the end of recruitment, saturation had been achieved.

Analysis

We imported the completed transcripts into QSR's NVivo software (Version 12) for analysis. The first two authors utilized inductive and deductive thematic coding to identify themes present across the experiences of the participants that could inform an undergraduate research program. First, the first author and interviewer developed a preliminary codebook based on iterative review of the transcripts and conducted preliminary open coding. Second, the second author who was a White cisgender male-identified, associate professor who has worked with community partners in farmworker health, reviewed the transcripts and themes. Both analysts then conducted axial coding to identify connections between initial themes and reduce the number of themes into the most meaningful groupings. Both authors discussed the themes and their organization and came to agreement. This resulted in three overarching themes. As a check on the content, preliminary themes were presented to community partners and researchers on June 9, 2020. Due to time and logistics, participants were not able to provide feedback on the results. We followed the Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines (Tong et al., 2007). The research protocol was approved by the East Carolina University and Medical Center IRB (#20-000526), and participants provided verbal consent.

RESULTS

Throughout the interviews, every student mentioned their interest in a research program if it was available to them in college. We identified three themes that should be taken into consideration in the development of programs to promote research experience. The themes were: (1) *Consideration of students' lived experiences*, which described the importance of a program recognizing the context of students' experiences often as first-generation students in primarily White Institutions; (2) *The importance of providing mentorship and resources*, which participants highlighted the value of networks of resources and experience in navigating college; and, (3) *Include strong marketing and outreach efforts*, which highlighted potential barriers to hearing about opportunities.

Theme 1: Consideration of Students' Lived Experiences

Regarding the first theme, when designing a research program specifically for students from farmworker families, participants thought it was important to keep in mind the background of those students -- their family life, financial issues, immigration status, and (often) lack of experience with how to navigate college. Students discussed that they may not have had legal status, and this would have affected their lives growing up. "I'm not a US citizen. I am from Mexico, so I migrated here ..." (Interview #7). "I am a DACA recipient, even though I've been here for 14-plus years, and even though I've been paying taxes for three or four years by myself and my parents pay taxes, I'm still required to pay out-of-state tuition" (Interview #5). "I'm actually a first-generation student" (Interview #10).

Latinx students may also experience discrimination on campus, directly or inadvertently. One student described the atmosphere of their campus after the 2016 election results were announced, with Donald Trump set to be the 45th president of the United States. "It just felt, it felt bad. [...] I mean, it was kind of like they didn't care about us as minorities, and so it was some tough times" (Interview #3).

For students who attend primarily white institutions, they often felt like there were very few students and faculty from similar backgrounds. "I go to a predominantly white school and my experience there has been quite a bumpy ride because I am a first-generation college student [...] the diversity in the school is very, very minimal. So, it's been hard to maintain my cultural roots..." [...] "We are not diverse. We say we're not racist, but I feel like we are" (Interview #7). Students mentioned that a feeling of isolation was not just present in lack of mentors, but in making connections in general:

"I felt I couldn't connect with anybody on campus. I had such a hard time forming friendships or really connecting with the clubs that I did take a part in [...] People who come from my background, I think it's just feeling like, 'Oh, well nobody is really going to understand what it's like to grow up having this background'" (Interview #9).

Theme 2: The Importance of Providing Resources and Mentorship

Regarding the second theme, participants highlighted that advice from peers or mentors would be necessary when participating in a program like this because of the importance of mentorship

especially from students that have already navigated the college experience who may be from similar backgrounds. Students mentioned the isolation that was felt when they did not see representation of people of their ethnic identity in the faculty.

“Applying for college was a little bit stressful because I didn’t really have a lot of guidance. I’m a first-generation college student ... some things were uncertain like when it came to financial aid and we did reach out to our guidance counselors in high school, but they weren’t as helpful [...] Throughout college it’s kind of like you have to educate yourself about if there’s any clubs or organizations that might interest you. [...] Going in, you don’t really have an idea because it’s like you’re the first person of your family going to college and it’s like, well what I am supposed to do?” (Interview #1).

This lack of representation in faculty made it difficult for students to have mentors that would have had similar experiences and would be able to offer relevant advice. “If I had questions, I couldn’t call home. I had nobody I was really comfortable talking to” (Interview #10). One student mentioned a resource that was provided temporarily for students.

“We got what we call an immigrant coordinator.” “The purpose of the immigrant coordinator is to help immigrants feel comfortable in school, helping them out, finding resources [...] I think that was a valid response that we really needed at my school because we’re a predominantly white school...” “We also need more professors of color” (Interview #7).

Theme 3: Include Strong Marketing and Outreach Efforts

Regarding the third theme, participants noted the importance of outreach for students to become aware of a program specifically catered to undergraduate students from farmworker families. When creating a program for a targeted demographic, it would be beneficial to have all eligible students aware of such a program to decide whether they would want to participate in it. The students expressed interest in research but there was recurring mention that research opportunities specifically for students from farmworker families should be well advertised and made accessible so students would be able to get involved. “I would definitely say to reach out to [...] people from my background” (Interview #6). “Whenever students are applying at there’s a checkmark that says ‘migrant’ or ‘seasonal farm workers student’ and that information could go directly to them” (Interview #1). “Use different ways of recruiting people. Social media as well...” (Interview #4). “Making [the program] something that the university sees and really advocates for” (Interview #10).

DISCUSSION

Principal Findings

Our findings show that research programs for undergraduate students from farmworker families are of interest to students. First, they should consider the context of students’ experiences as (often) first-generation students in (often) primarily White institutions. Second, programs should include advice from peers who have successfully navigated the college or mentors and ideally

include mentors of color. Third, programs should have strong marketing and outreach efforts to reach potential participants.

Results in Context

Research has shown that factors that can aid Hispanic students' success in higher education include- starting their studies at a 4-year institution, providing recruitment initiatives tailored to the family of the student, receiving culturally relevant programming and education, mentorship, research opportunities, professional development, and college funding (Estepp et al., 2016).

The importance of taking students' backgrounds into consideration as part of their experiences in college, is due to the toll that stress can take on academics, and students from farmworker families face a disproportionate amount of stress compared to the average student (Gómez, Lopez, & Overton, 2017). For example, if a student is a part of the DACA program, they may feel more comfortable standing out on campus compared to other undocumented students who may be concerned about how their citizenship status would affect their college career and general safety (Gómez, Lopez, & Overton, 2017).

In a study conducted by Russel et al. It was found that participants in undergraduate research experiences, showed increased confidence, an increased comprehension of the research process, and awareness of higher education opportunities (Russel et al., 2009). In addition, of the students that were surveyed, across all ethnicities, the most positive outcomes from Undergraduate Research Experiences were shows in Hispanic Students (Estepp et al., 2016). Studies about mentoring in the context of "underrepresented and minority groups" particularly in the sciences, show that "developmental relationships" produce higher levels of career success in the long-term (Kobulnicky & Dale, 2016). These factors will be considered when creating this program.

This research fits into literature because we are providing insight into undergraduate students from farmworker families' lives and their interest in research. Their interest in research is important because learning more about farmworker health is vital to improving living conditions for farmworkers.

Strengths and Limitations

The strengths of this research include the use of a qualitative approach that allowed for rich detail regarding participants' lived experiences. The students interviewed were from North Carolina universities and from Latinx families with farm work or agricultural experience. In addition, we were able to hear directly from these students about their college experiences and their backgrounds as children from families with experience in farm work or agricultural processing, and we were able to explore those experiences through rich qualitative data. The participants were reached through multiple means of recruitment, especially through community partners that have a background of working with Latinx farmworkers and students from that background. The limitations of this research include the number of participants (n=10), although we did achieve saturation. Our research may not generalize to other states or populations. Our results could have been influenced by our recruitment approach. An additional important limitation is that due to the specificity of the targeted group of participants and our recruitment

approach, students from farmworker families that may not identify as Latinx were not included in this study.

CONCLUSION

There are profound barriers in educational attainment and substantial health inequities facing farmworkers. These barriers are ultimately reflected in the diversity of the researchers who study farmworker health, and it is critically important to identify strategies to reduce barriers to educational attainment and participation in the research workforce. To that end, this study identified three key areas of consideration for pipeline programs. It is our hope that these can be leveraged into pipeline programs that have an impact of farmworker and educational justice.

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