Exploring the Lived Experiences of African American and Latinx STEM Faculty and Students in the U.S.

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ABSTRACT

Racialized faculty have been under-represented in U.S. institutions of higher education for decades and this is exacerbated in STEM disciplines with gender disproportionality. This study deployed a descriptive phenomenological design to capture the experiences of 11 faculty, postdoctoral, and graduate scholars who identified as African American and/or Latinx drawn from two universities in the southern U.S.; one a predominantly White, privately funded school and the other a designated Hispanic-Serving Institution that is publicly funded. We found four main themes (and three subthemes) that captured the shared lived experiences among the participants. We consider these findings through the lens of intersectionality.

In the United States (US), racialized faculty (RF) have been underrepresented in institutions of higher education for decades. This is apparent for several racialized and marginalized groups of people including Native American, Pacific Islander, African American, and Latinx academics. There have been many institutional and federally supported efforts to positively impact trends and experiences in academia, which have coalesced in recent years under the rubric of diversity, equity, and inclusion (DEI). DEI efforts sometimes involve the creation of leadership positions to spearhead efforts throughout campuses to include faculty recruitment and retention, student recruitment, and leveraging the metrics of DEI for marketing and rankings. These efforts are laudable but there is evidence that their impact on the lived experiences of racialized faculty and students may be limited. Reported in this paper are the findings of a study designed to capture the experiences of faculty, students, and postdocs affiliated with science, technology, engineering, and mathematics (STEM) disciplines regarding the persistent exclusion of racialized people in the professoriate.

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LITERATURE REVIEW

Data from 2018 indicate that African American and Latinx scholars each occupy 6% of full-time faculty positions though they comprise 13% and 16%, respectively, of the general U.S. population. By comparison, White academics hold 75% of faculty positions (United States Department of Education, 2020). The effects of this disparity are strongly felt in STEM disciplines and complicated with gender disproportionality within these male-dominated arenas. Racialized faculty have reported encountering barriers in the academy including racism, the inability to discuss diversity issues, service tax, and challenges with mentorship.

According to a survey of 10,438 STEM faculty, only 354 (3.3%) men and 260 (2.5%) women identified as underrepresented minorities (URM) (this definition excluded Asian faculty) (Matchett, 2013). Further, the percentage of URM women faculty in STEM shrank as rank increased, whereas the opposite trend was seen among URM men (Hurtado & Figueroa, 2012).

Racialized Faculty

Zambrana et al. (2017) found that racialized faculty largely view the academy as an unwelcoming environment, with racism being part of the "everyday experience." Stanley (2006) found that the idea of race was exploited by White colleagues to drive claims of reverse racism and minimize the seriousness of microaggressions against RF. Majority faculty often question RF qualifications, devalue their accomplishments, and marginalize their research, forcing the need for RF to work twice as hard to succeed (Joseph & Hirshfield, 2011; Zambrana et al., 2017).

Several studies have identified an increased service burden among RF. This "racial ethnic tax" (Zambrana et al., 2017), or service tax, included longer time expectations for a minoritized person for mentorship and collaboration on committees, university functions, and departmental and university diversity initiatives (Stanley, 2006; Griffin et al., 2011). Stanley (2006) reported challenges with balancing the desire to support minority student groups, communities, and junior faculty with department/university diversity expectations and the research agendas critical for tenure and promotion. Similarly, Joseph and Hirshfield (2011) reported unequal faculty expectations around supporting minority students, providing the voice for diversity, and being pioneers and advocates for diversity initiatives. Connecting with and supporting students and junior FC is a critical component of success in the academy. For example, Stanley (2006) found that the quality of mentorship experiences and the collegiality with White university colleagues were seen as make-or-break experiences for RF. However, many traditional processes within the academy can be experienced as exclusionary and even oppressive. For instance, a study of Latinx experiences with the tenure and promotion process at a PWI by Urrieta et al. (2015) found that participants reported being isolated and socially excluded, being expected to suppress their ways of knowing based on their ethnicity, gender, and political views.

Racialized Women Students and Faculty

Two decades of research (see, e.g., Gaston Gayles & Smith, 2018; Guy & Boards, 2019; Tate & Linn, 2005) have shown that racialized female graduate students (RFGS) have reported experiences of marginalization in their academic environments. Specifically, RFGS have reported a lack of mentoring, poor relationships with their advisors, microaggressions and stereotyping, tokenism, "hyper(in)visibility," diminished sense of belonging, and a chilly climate. These experiences can lead to isolation, self-doubt, and potential attrition (Ko et al., 2013). Consistent with this research, in a qualitative study on racialized female doctoral STEM students, Wilkens-Yel et al. (2019) investigated daily interpersonal encounters and found five main experiences: delegitimization of credibility, isolation and diminished STEM belonging, pressure to assimilate to cultural norms, tokenism, and differential treatment based on racial and gender identities. Research regarding racialized female faculty (RFF) showed similar findings.

Extant research regarding the experiences of RFF has found there are many structural and interpersonal challenges that impede their success. RFF have reported a chilly campus climate, exclusion, isolation (Kelly & McCann, 2014; Kelly & Winkle-Wagner, 2017; Turner, 2002), lack of mentoring (Kelly & McCann, 2014), tokenism and cultural taxation (Settles et al., 2019), and microaggressions (Holling, 2019). In a qualitative study on racialized female faculty, Turner (2002) interviewed 64 women regarding their experiences in the academic workplace. Turner's participants perceived their challenges in academia to be directly related to their intersectionality. Specifically, findings included feeling isolated and underappreciated; the salience of race over gender; being overtaxed by the department/university; feeling torn between family, community, and career; and being challenged and disrespected by students. Turner's study is almost twenty years old; however, her findings are still in agreement with more current research on RFF (see, e.g., Holling, 2019; Kelly & McCann, 2014; Settles et al., 2019).

Epistemic Violence in the Academy

Epistemic violence refers to "persistent and unwarranted epistemic exclusion that impedes an individual's ability to contribute to knowledge production" and can be observed as failing to recognize and refusing to compensate for epistemological contributions and emotionally taxing and coerced epistemic labor (Dotson, 2014, p. 115). Formal educational settings, such as research groups/labs, can be prime locations to (re)produce epistemic violence against racialized and marginalized scholars. The needs of the dominant group are privileged by exploiting the emotional and cognitive labor of marginalized groups through the requirement of unpaid and unacknowledged work.

Racialized women at all levels of higher education in STEM disciplines have reported experiencing unique challenges due to race- and gender-based marginalization (Ong et al., 2011). Racialized women in STEM have reported isolation and exclusion, hyper(in)visibility, microaggressions, stereotyping, tokenism, insufficient mentoring, and a lack of institutional support (Guy & Boards, 2019; Holling, 2019; Kelly & McCann, 2014; Wilkins-Yel et al., 2021). STEM culture, norms, and values have been characterized by behaviors that favor masculinity, competitiveness, and individualistic practices (Ong et al., 2017).

Intersectionality and Racialized Faculty

The "double bind" or "multiple marginality" of race and gender makes it difficult for racialized women to determine whether racism, sexism, or gendered racism is the operating oppression (Ong et al., 2011; Turner, 2002). Intersectionality is a framework that helps to explain the ways interlocking oppressions, such as racism, sexism, and classism, work to shape African American women's experiences (Crenshaw, 1989, 1991). Building upon the work of intersectionality's foremothers, Crenshaw (1989) coined the term intersectionality as a critique of gender studies that only focused on middle-class White women. Intersectionality posits that identities are not just added together or stacked like playing cards; instead, they create a unique identity with its own oppressions (Crenshaw, 1991). Further, essentialist views that consider social identities singular are challenged by intersectionality. For example, though African American women may share similar lived experiences, no African American woman's experience will be the same as another's. Differing past experiences, culture, and upbringing, among other factors, shape how each African American woman will view and experience the world. Intersectionality also asserts that social identities are historically and contextually situated. It posits that social identities operate within and are influenced by power structures. We used the conceptual lens to craft the semi-structured interview guide as we explored the link between personal experiences and the power structures of both the participant department and university.

With this study, we sought to explore the experiences of African American and Latinx STEM faculty, postdocs, and graduate students at two universities: one a predominantly White institution (PWI) that is privately funded and the other designated as a Hispanic-serving institution (HSI) that

is publicly funded. The goal of this research was to inform a larger project that aimed to positively impact African American and Latinx students' decisions to enter the professoriate. Our research questions were:

1) What are the lived experiences of STEM academics (students and faculty) at a PWI?
2) What are the lived experiences of STEM academics (students and faculty) at a HSI?
3) How do the experiences differ by institution type, gender, and race?

METHOD

Participants were recruited from two southern universities in a large, diverse metropolitan area. One is a privately funded predominantly White institution (PWI) and the other is a public university designated as a Hispanic-serving institution (HSI). Institutional review board (IRB) approval was obtained and all protocols were followed in the method described hereafter. We deployed a descriptive phenomenological design to capture the experiences of faculty, postdoctoral, and graduate scholars who identified as African American and/or Latinx. Descriptive phenomenology, a hybrid deductive and inductive qualitative approach, enables a deeper understanding of a specific phenomenon (Lopez & Willis, 2004) and is appropriate to explore a relatively unexplored topic.

Purposive sampling was used to recruit participants who were at least 18 years of age; were fluent in English; provided informed consent; identified as either African American or Latinx; were affiliated with a STEM department; and identified themselves as a doctoral student, postdoctoral scholar, or faculty member (tenure and non-tenure line) to discuss their perceptions of and experiences at the participant institutions. Eleven participants were recruited and consented via email. They were drawn from both campuses and included five faculty, five students, and one postdoc. We interviewed two participants at one time and the remaining nine participants took part in individual interviews. All interviews were virtual, conducted via Zoom by the first author and some were attended by the third author during the spring and summer of 2020. Interviews were conducted using a semi-structured interview guide informed by the extant literature and consistent with descriptive phenomenology. Interviews lasted from 20 minutes to one hour depending on the participant. Within the structured interview guide, we asked open ended questions with probing follow-up questions to explore the lived experiences of participants. For example, we began most interviews with the open-ended inquiry, "Please tell us about your experience in [department] at [school]." We specifically asked about relationships with colleagues, employers, mentors, and professors they had currently and in the past, and how they felt the school (and department) they were affiliated with handled issues of belonging and DEI. We terminated each interview by asking for suggestions for improvement and asked, "Is there anything else you think is important for our team to know about your experience?"

Interviews were recorded, and participants could opt to remain on camera or participate via audio only. Recordings were downloaded and professionally transcribed. Transcriptions were read, anonymized, and cleaned while referring to the audio. Transcripts were uploaded to ATLAS.ti. Data analysis followed the first four steps of a descriptive phenomenology analysis outlined by Colaizzi (1978). First, each transcript was read multiple times to achieve a deep understanding of the data. Second, transcripts were reread, and 198 phrases were extracted that directly related to the phenomenon of study, specifically people's experiences in STEM departments and the colleges and institutions in which they were housed. Third, meanings of each statement were formulated and assigned a code. Fourth, the codes were consolidated into 49 code groups of meaning. Each code group was checked for endorsement by participants, and those code groups that were endorsed by the majority of participants were organized as themes and subthemes.

FINDINGS

Due to the small participant sample and our ethical responsibility to maximize anonymity and privacy, we could not ethically report the demographic details of our sample in a traditional breakdown. To connect gender and race and school (PWI or HSI) is important and interesting but would, in our opinion, risk our participants' anonymity. We can comfortably report that we included 11 people in STEM disciplines from two campuses in the southern US who included African American and Latinx scholars who worked as faculty, graduate students, and postdoctoral scholars. Of these 11 participants, seven identified as women. We found four main themes that captured the shared experiences among the participants.

Theme 1: Institutional Efforts of Diversity and Inclusion

Both faculty and student participants recognized the efforts to change institutional cultures and racial demographics on both campuses. This was discussed in various ways. Some participants applauded the inclusivity of their institutions. For example, one student participant said, "I really think they do a fantastic job as an institution with the people in leadership positions who actually do care . . . to make this an environment that is supportive and is inclusive." A similar sentiment was expressed by a faculty participant who said, "I don't feel that the environment for minorities is bad. I think on the contrary . . . I think overall is pretty good. They have a lot of support."

It is interesting to note that most participants began by describing their experiences as "OK" or "good" and their institutions as positive like those above. However, everyone described experiences contradictory to their initial statements as the interview progressed. This pattern was strong among students with all but one following this sequence. Also of note is that a participant who self-identified as a racialized student concluded their assessment of institutional inclusivity by using the personal pronoun "they," narratively excluding themselves from racialized group membership.

Some participants named university leadership who were racialized people as points of contact, pioneers, and mentors to both faculty and students. These individuals were well positioned to lead change efforts and were intimately involved in recruiting, supporting, and mentoring racialized faculty and students.

However, a few participants thought large-scale efforts were unsuccessful, superficial, or not reflective of the wider campus. Intentional efforts to diversify faculty and student populations were noted by several participants including seasoned faculty who had the most insight into institutional efforts. It seems that large-scale external grants and the visibility they promote about change regarding diversity and inclusion may have had a positive impact on racialized scholars' experiences. For example, one long-time faculty member said, "The needle was never moving until [program] came along. And this is the first time I actually have seen some progress for increasing the number of underrepresented minorities within the faculty." The participant noted that moving the needle was challenging. Following the murder of George Floyd, campus leaders released a statement. This faculty participant noted about institutional leadership:

[They] just kind of put a Band-Aid on it or make a statement, maybe make an initiative, put some programming in place that, may have a few task forces, a few meetings, a few conversations around it. But then there is usually not anything substantial that follows.

Finally, a third faculty participant noted their campus administration's efforts to diversify the school but expressed hesitation regarding the motivation. The optics of concern and the genuine desire to effect change sometimes lead to increased visibility for racialized students and faculty. The next theme explores this further and contrasts with the isolation and invisibility reported by participants.

Theme 2: Hyper(in)visibility

Most participants shared examples of being unseen, unheard, and unrecognized, as well as excessively seen or spotlighted in their experiences of STEM departments. We considered this part of the same continuum, and while the details vary from person to person, and notably between student and faculty accounts, the three subthemes we discuss (i.e., tokenism, social exclusion, and epistemic violence) are all forms of hyper invisibility or hypervisibility.

Subtheme 2A: Tokenism

Tokenism is defined as "the practice of making only a perfunctory or symbolic effort to recruit a small number of people from underrepresented groups in order to give the appearance of sexual or racial equality within a workforce" (Stephenson, 2015). Here we considered participants accounts of tokenism as a form of hypervisibility. Six participants shared their experiences of tokenism. Among students, this was usually in the form of "being the only one," and in the case of one student, wondering if they were the first ever. They mused, "I asked myself the question, 'Am I one of the first or have other people come along and graduated and how has that been for them?'" If their respective departments included African American and Latinx students previously, they were unaware and some were actively trying to find those graduates to connect with. One faculty participant described the impact of being the only one during meetings and conferences. They said, "Rarely there were other people who look like me. So, you got the stares and the looks. It's just hard when you don't see anybody else in the room who looks like you."

Faculty participants acknowledged the service tax that came with their tokenism. It is noteworthy that every faculty participant was aware of their inclusion on committees and in mentoring racialized students as taxing, but they gladly paid for it for various reasons. For example, one faculty participant said:

I think I'm asked to do a lot of service. I'm just in all these various committees that I feel like I'm very widely spread and not necessarily even my expertise . . . And I always say yes, because I feel like it's a good learning opportunity, a good way to meet people.

Another faculty participant was similarly taxed. They said, "They want to put us in all committees for diversity. And because there are not many of us. So, it's always the same people."

This participant continued and described the advantages and disadvantages of what they called "checking boxes," and while they insisted "we're not equals yet . . . at least we'd have a seat at the table." They went on to describe the hypervisibility they felt in their role and the dehumanizing effect it had on them:

And it just felt like everybody was pulling pieces off me, like they were parading me around and I hated that. It was just a horrible feeling. I don't like feeling like I'm somebody's property. That's what it felt like. . . . And I would go to parties . . . people just walked up to me and started talking. And again, it felt like aren't you so lucky that you were invited to our club? Now we own you.

One faculty participant stressed the superficial tokenism as a currency of optics at the university level. Of diversity they said, "It's as celebrated like an award. You know, we're listed as one of the most diverse institutions. But then we don't pay attention to the fact that we are diverse." Linked to tokenism are feelings of isolation and experiences that highlight the symbolic nature of racialized faculty and scholars. We have divided reported experiences of isolation into "social exclusion" and "epistemic violence and intersectionality" in the following two subthemes.

Subtheme 2B: Social Exclusion

Many participants spoke of either feeling alone or finding people with whom they felt they could be their authentic selves or both. The importance of having even one or two people with whom to socialize was described by one student participant: "With those people that had the same sort of background, you could socialize in your entirety, you know, with your whole Hispanic-ness." While this student discussed a purely social network of two other people with whom they could be their whole selves, other participants found that kind of support within organizations. For example, one student participant spoke of her social exclusion both at school and in the community and the meaning of her organizational affiliation:

People like me are no longer getting made fun of for speaking so properly. And I'm not getting made fun of for knowing words that have multiple syllables. It was no longer "you're not Black enough" or "you're not White enough." It was just like you could just be. Because I had [professional society], I didn't care very much about the fact that I was the only woman or the only Black woman.

Another student participant described what it was like when they found a Black student organization on campus:

I was the only Black person in my department. And it wasn't until November where I walked through a student center, and I found a room full of Black people. It was the university's Black Student Association. And I was like, hey, I haven't been in a room of Black people since, like, April.

Organizations that linked students by race had a great impact. Another student participant described meetings with a different student organization and called their participation "almost life changing." They described utilitarian advice from a student in a different field, the only supportive peer interaction they had had.

One student took on a pragmatic and solution-oriented approach to solving the problem of being taken in their department. They said, "I did a lot of work for recruitment because I was the only Black person in the department, and I very much didn't like that." They also were looking forward to becoming academic mentors themselves one day. They said, "I want to be a mentor so that other people don't have to go through what I went through and feel like they're not capable." Social exclusion was also reported among faculty participants. One person demonstrated resiliency and determination in their response:

I'm going to make myself part of the boys' club, whether they like it or not. Some of them started to be more receptive. And I think it changed a little bit . . . there's still a lot of boys' club things going on.

Subtheme 2C: Epistemic Violence and Intersectionality

Some participants reported epistemic violence in the form of being underestimated, excluded, and involving academic theft. It is important to note that all instances of epistemic violence were reported by women. Specifically, racialized women recalled incidents or relayed a feeling of skepticism and a lack of trust of their colleagues. Racialized women in academia experience epistemic violence when they are given menial tasks, excluded from research projects, and have their work stolen and/or unacknowledged (Dotson, 2014). Many minorities in positions of privilege within a department assume that their presence is solely for the need of diversity, diminishing and underestimating their intellectual work and abilities. The faculty who reported epistemic violence described instances when they or another minoritized faculty woman were labeled "diversity hires." Then they described

being told they would easily find faculty positions due to their minoritized status. They said, "I've had colleagues that before I got hired told me, 'Oh, you're gonna get a lot of interviews because you're female and minority.'" One woman faculty participant spoke specifically about the faculty hiring process and shared her experience of how epistemic exclusion has made it difficult to create a diverse pool of faculty applicants.

Regarding the students, epistemic oppression in the forms of exclusion and theft were discussed. Epistemic exclusion was expressed through experiences of being underestimated, given simple tasks to complete in group work, and not being able to ask for help for fear of being assumed "stupid." Specifically, one student shared, "[I] was just given an introduction and conclusion . . . they didn't want to give me any calculations or anything that's actually substantial." She continued:

I'm going to feel stupid if I ask a friend for help. It's going to be them thinking I'm just trying to get their answers because that has been my experience . . . because I don't know what I'm talking about because I'm a Black woman who doesn't know anything.

Another student described her experiences of epistemic violence in the form theft within her research group, which can be a breeding ground for (re)producing epistemic violence against racialized women. She has had her work stolen by research group members on more than one occasion, and the advisor failed to address the theft, which has contributed to a competitive academic environment and a lack of trust. She explained:

This is something that has been recurring. It's that I present something. And then the next time we're in a group session or several weeks later and another colleague presents something, and they use what I've just presented, they use the figures. They use some ideas and there's no credit given.

When asked about other insights as an African American graduate student, she discussed strategies that would help her to graduation. Specifically, she mentioned more structure, transparency, and support mechanisms regarding the graduate program; more peer support; and a trusting relationship with her advisor. She explained further:

I guess having the security to know that my ideas will not be taken away from me. If I share something, the next time I see it, it's being worked on by another student and/or a group of students. And it makes me not want to share and it makes me not trust.

Epistemic violence in all its forms causes self-doubt, imposter syndrome, distrust, and isolation. And all negatively shape the experiences of racialized women. Thoughtful mentoring can help faculty and students to navigate some of these challenges. The next theme explores participants' mentoring experiences.

Theme 3: Mentoring is Impactful

Our interview schedule asked directly about mentoring, and we had 78 distinct quotes regarding participant experiences. Most participants (10 of 11) reported inadequate mentoring as part of their graduate student experiences, as junior faculty members, or compared to non-racialized and minoritized colleagues. These ranged from mild "awkwardness" in the mentor-mentee relationship, students who felt they needed to "play the game of getting help," to incidents of sexism and feelings of dehumanization. One student described their feelings of dehumanization as they tried to engage with their mentor. They said, "The cute little picture of a little dog, like with the leash in his own mouth. That's what it feels like." Most participants, however, reported feeling ignored by mentors, sometimes describing this as "hands-off." For example, one student participant said:

It wasn't until the last year after sitting in the grad seminar, he [mentor] said, "I think you'd be a good fit for academia." And that was the sort of only advice he ever gave me. I don't think he ever really followed up. I don't think I was top priority.

There were also three reports of excellent mentoring among the 11 participants, though it should be noted that of these three participants, two described both adequate and inadequate mentoring with differing reactions. One faculty participant also reported that hands-off mentoring did not have great negative impact, may have fostered independence, and provided a model of what not to emulate as they began to manage students themselves. Also, they noted strong senior faculty mentors when they joined the professoriate. Another noted both adequate and inadequate mentors as a junior faculty member with some of the early career mentors (themselves identified as racialized scholars) leaving due to frustration with the institutional focus on metrics over sustained relationship-building with racialized students.

One student reported excellent mentoring throughout their academic journey and was effusive about their mentors at the participant school and in their education leading to their current school and department. They reported both instrumental and emotional support. For example, concerned about attending school away from their family support system they said, "My relationship with [mentor] just made me feel more like I would still be OK, and I wouldn't have to go home in order to be OK."

Mentoring can serve as protection in the professoriate as articulated by one faculty participant who described her relationship with racialized students and junior faculty:

There is one faculty member in my department. She's an angel. But because of that, everybody gives her a lot of stuff to do. Then I volunteer to be her mentor, right? And then I start pushing everybody back. I said, "Off her back. You guys are not going to do that crap to her. No way!" I know how they are going to do what they're going to do to her because they did it to me.

We have reported the nature of mentoring from participants' perspectives and some of the feelings this evoked for them. Next, we discussed participants' reported barriers to success as both students and faculty members.

Theme 4: Barriers to Success in the Academy

Barriers were discussed by all participants and ranged in severity and nature and included feeling unprepared (expressed by both student and faculty participants), language and culture barriers among Latinx participants, discouragement from professors, lack of instrumental support, and discrimination. For example, one faculty participant described their feelings of unpreparedness specifically related to teaching. While racial/ethnic affinity was not a contributing factor in this participant's narrative, it was linked by others with respect to unpreparedness. For example, a student participant said, "This is a review, the first few weeks of school. And I felt like I didn't know any of it. So, I felt like I couldn't go and talk to my professors because I should know the information." They further explained that unpreparedness is not necessarily limited to academic preparation:

My first semester [was] so hard, those different transitions [leaving family and friends, a new city, a new school]. The stipend is very small. I didn't have health insurance. And then I got it and I had to pay for it. There's a lot of learning that took place, that I was very alone doing.

Another student participant succinctly phrased their experiences like this: "I know where I've been, and I know where I want to go. And it sometimes seems as if that distance between the two is really quite large, but I don't have the support to bridge that gap." They continued and described the support they were receiving from mentors as letter-writers, but then they realized that their publication

count was not strong enough and that mentorship through years as a doctoral student failed to properly support them in this way.

There were less subtle experiences described related to preparation. One faculty participant recounted their friend's experience during their graduate program, saying, "A friend of mine was told that he basically was not going to make it because he came from a [system school] . . . not [the flagship], one of the other schools." One student participant described what they called "microaggression" related to peers physically blocking their section of shared space and making it very difficult to actually sit at their desk:

I've been in situations where I've been told something insulting and the postdoc who said it was there, my advisor and another colleague were there, and nothing was said in response. It doesn't help that I'm the only one of everything. It's not as if I can say it's one thing. It's a combination of several things that make things impossible.

Experiences of discrimination were also endorsed by faculty participants. One faculty participant expressed concern about how incentivizing diversity hires could lead to discrimination. They explained:

If the person that gets hired on this initiative and hears something like, "So, you guys just hired me because I am a minority not because I'm good?" Because there was an incentive. This will generate discrimination because if there wasn't this incentive, you wouldn't have been hired.

Diversity does not necessarily guarantee inclusion and one faculty participant described their experiences with sexism as a faculty member:

It [academic unit] is almost all female by design. But I don't think it's for the right reasons. I think it's to say, "look at me, I support women," even though you don't. Once you work for this person, you know him. He behaves like he owns you . . . you don't tell him no. I'm not my own person anymore . . . you're supposed to do what you're told, and you should feel grateful . . . I've described it as a haram.

Many of these barriers and discriminatory behaviors hint at ways to improve the culture of STEM departments for the benefit of all, and especially the students and faculty who identify as Latinx and/ or African American.

DISCUSSION

In this paper, we explored the lived experiences of STEM faculty, doctoral students, and postdoctoral scholars who identified as African American or Latinx and who attended one of two schools located in the southern US: one a public HSI and the other a private PWI. We employed the tenets of descriptive phenomenology to analyze the data and have organized our findings into four themes: institutional efforts of diversity and inclusion; hyper(in)visibility; mentoring, and barriers to success in the academy. Finally, we assembled and organized suggestions for improvements from participants without enforcing a threshold of consensus among participants because we think all voices should be heard on this point. Instead, we arranged them into four suggestion clusters. Participants called for departments and institutions to 1) strive toward a faculty that reflects student diversity, 2) recruit more students who identify as African American and Latinx, 3) enhance faculty interactions with racialized and minoritized students, and 4) structure and take responsibility for graduate students' sense of belonging.

Many of our findings are consistent with and add to previous literature. For example, our findings are consistent with work by Stanley (2006) with regard to the importance of mentoring as a make-

or-break experience. Faculty participants in this study spoke of the enduring impressions of the mentoring they experienced and how they factored into their own student mentoring responsibilities and approaches. Our findings are also consistent with those of many studies (e.g., Gaston Gayles & Smith, 2018; Guy & Boards, 2019; Kelly & McCann, 2014; Tate & Linn, 2005; Wilkens-Yel et al., 2019) about the frequent lack of mentoring that occurs among racialized female graduate students and experiences of social exclusion (Kelly & McCann, 2014; Kelly & Winkle-Wagner, 2017; Turner, 2002), microaggressions, and stereotyping. And certainly, our participants endorsed that the many experiences and barriers to success diminished their sense of belonging in the academy, at their institutions, and sometimes in their departments, a finding that echoes work by Ko et al. (2014). Finally, our findings also add to the literature about tokenism experienced by racialized people including work by Diggs et al. (2009), Griffin et al. (2011), Settles et al. (2019), Stanley (2006), and Zambrana et al. (2017). Aside from the ways that our findings are consistent with previous work, there are several findings that are of note.

First, while participants were constituents at either a publicly funded or a privately funded school with different racial student demographics, the experiences of students, postdoctoral scholars, and RF did not vary by institution. This suggests that variations in funding sources and student demographics at institutions of higher education in the US may matter little in terms of experiences of marginalization in the academy. Indeed, this is consonant with claims that our current institutions of higher education—including minority-serving institutions—are legacies of a sexist, racist, and classist era of colonization, modernization, and marginalization marked by the ongoing and persistent structural inequities (Bhambra et al., 2018; Cupples & Grosfoguel, 2019). Second, we found reports of epistemic violence only among women faculty and student participants. The violence reported was striking, and we consider these findings through the lens of intersectionality. Ong et al. (2011) and Turner (2002) noted how difficult it is for racialized women to determine whether racism, sexism, or gendered racism (or other intersectional identities) is the operating oppression. Third, institutional efforts were not only consistent with the superficiality noted in previous studies (Diggs et al., 2009) but were part of the optics of inclusion that institutions of higher education put much currency in. Universities often post diversity statistics as a "badge of honor" that overlays the superficial actions that persist on campuses. This implies an emphasis on marketing, recruitment, and admissions, while inadequately addressing persistent inequities, problems of retention, and quality of life. The optics of inclusion must expand the intention to attract and retain African American and Latinx faculty and to also make sure there is equity and accountability in hiring processes (Boyle et al., 2020).

LIMITATIONS AND FUTURE DIRECTIONS

We gathered qualitative data, and while the sample size is appropriate to the study design, it is small and therefore these findings are not generalizable to all racialized and minoritized STEM faculty and students. There were remarkably few racialized members of the departments from which our sample was drawn. For example, one participant wondered if they had been the only African American ever in the department and the only current racialized affiliate. For this reason, we are ethically unable to fully report the demographics of our sample. We recognize the drawbacks of this approach, but there were simply too few potential participants from which to augment our sample and mitigate ethical concerns. To increase the rigor of the study and consistent with the tenets of descriptive phenomenology (Colaizzi, 1978), we bracketed our experiences by including both emic and etic perspectives on the analysis team and weekly debriefing during analysis and write-up. Three of the four authors (second, third, and fourth authors) are STEM scholars while the first author is a social work research faculty member. The second, third, and fourth authors have had past affiliations with one of the participating institutions. Thus, both emic and etic perspectives are present among analysts. Finally, drafts of our findings were distributed to a racialized woman in STEM who has worked at

both an HSI and a PWI, and who is an expert in educational research and evaluation. She considered the findings consistent with her own personal experiences and as an expert reviewer.

Future research could include expanding the sample size in order to consider possible differences and similarities by rank, gender, and institution type. Pragmatically, this would mean expanding recruitment to more institutions because of the very small number of African American and Latinx scholars at the two included institutions. This would require a different project, as this work was part of a multi-year federally funded study with a defined number of institutions. However, by replicating the work at other institutions, and thus expanding the sample, detailed demographics could be reported while maintaining privacy and confidentiality. Also, research should be expanded to include constituents at other types of institutions (e.g., predominantly undergraduate institutions, historically Black colleges and universities). With larger sample sizes, cultural differences between the experiences among African American and Latinx scholars might be discerned. The expansion of the sample ought to target Indigenous, Pacific Islander, and Asian Americans for a more complete and fine-grained landscape of oppression. Qualitative data of this nature could greatly augment the quantitative metrics that universities use to track recruitment, retention, and efforts aimed at mitigating inequities. Finally, in keeping with efforts to decolonize westernized universities, many of the practices of change such as auditing authors, editing normative gendered and racialized language in disciplines, and considering students and content in politicized and historicized context may also improve the quality of academic experiences among racialized scholars and ultimately lead to greater representation in STEM.

This study was part of a larger project to increase the representation of African American and Latinx scholars in the U.S. professoriate. The study, in the short term, is being used to craft a communication and support plan among the underrepresented scholars at the included institutions. It could serve as a blueprint of support and recruitment for universities in the US. It is possible that some of the lessons learned might also be appropriate for underrepresented university students and faculty in other settings.

CONFLICTS OF INTEREST

We wish to confirm that there are no known conflicts of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome.

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