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To cite this article: Breanna M. Spencer, Sharnnia Artis, Marjorie Shavers, Stacie LeSure & Aishwarya Joshi (2022) To Code-Switch or Not to Code-Switch: The Psychosocial Ramifications of Being Resilient Black Women Engineering and Computing Doctoral Students, Sociological Focus, 55:2, 130-150, DOI: [10.1080/00380237.2022.2054482](https://doi.org/10.1080/00380237.2022.2054482)

To link to this article: <https://doi.org/10.1080/00380237.2022.2054482>



Published online: 15 Apr 2022.



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To Code-Switch or Not to Code-Switch: The Psychosocial Ramifications of Being Resilient Black Women Engineering and Computing Doctoral Students

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ABSTRACT

This qualitative study explored how 21 Black women enrolled in engineering and computing doctoral programs characterize and understand how they code-switch. We define code-switching as when Black women consciously or unconsciously modify the way they behave in engineering and computing environments to dissociate themselves from negative stereotypes held against their intersectional identities across gender and race. Utilizing Black feminist thought (BFT) as a theoretical framework, this study found that Black women experienced a host of detrimental challenges. Due to their environments, participants modified how they dressed and spoke in a conscious attempt to avoid reinforcing negative stereotypes held against Black women (i.e., the angry Black woman, the incompetent Black woman scientist, negative connotations of Black sounding names, and respectability politics of Black womanhood) and instead dispel these myths. To cope with the effects of code-switching, Black women relied heavily on their spirituality and identifying ways to reaffirm their Blackness. The implications of the findings indicate that Black women experience stress due to code-switching because of the stereotypes they encounter at the intersection of their gender and race.

The undermined psychological health and well-being of Black women enrolled in graduate school is alarming and demands considerable attention. The need for mental health services is critical for Black women doctoral students — who face a disparaging collection of systemic challenges, including race and gender biases, a lack of adequate mentorship and support, isolation and alienation, unwelcoming academic environments, and negative interactions with faculty and their peer groups (Dortch 2016; Patterson-Stephens et al. 2017; Robinson 2013; Shavers and Moore 2019). These stressors can nullify a sense of belonging and lead to identity concerns, stress and anxiety, imposter syndrome, tokenism, and various other psychosocial problems for Black women (Artis et al. 2018; Green et al. 2016; McGee, Griffith, and Houston 2019; Patterson-Stephens et al. 2017; Ridgeway et al. 2018; Robinson 2013; Shavers and Moore 2019; Thomas et al. 2018; Walkington 2017).

Within engineering and computing academic disciplines, specifically, very few studies have identified the unique race-gendered stressors Black women experience as engineering and computing doctoral students (Artis et al. 2018; McGee et al. 2019; Ridgeway et al. 2018). Even less is known about the coping strategies and mechanisms Black women in engineering and computing utilize to remain resilient in their degree programs (Artis et al. 2018; McGee et al. 2019). In general, research exploring the experiences of Black women enrolled in engineering and computing doctoral programs is important given their severe underrepresentation and the fact that these academic disciplines have historically marginalized Black women. In computing doctoral programs, Black women represent less

than 1 percent of the doctoral student population; in engineering doctoral programs, Black women represent 3 percent of the doctoral student population (Grimsley-Vaz 2018; Lewis 2018). Black women are also severely underrepresented in engineering and computing careers (BCCU 2021; Soto 2014).

Overall, the negative stereotypes Black women endure at the intersection of their gender and race are based on historical and present-day misconceptions, wherein they are typecast as angry, bitter, strong, hypersexual, poor, uneducated, and as single mothers and welfare queens (Dow 2015; Harris-Perry 2011; Kennelly 1999; Kilgore, Kraus, and Littleford 2020; McCurn 2017; McGee and Bentley 2017; Miles 2018; Trina and Norwood 2017; West, Donovan, and Daniel 2016). These enduring stereotypes have severely impacted Black women's psychological health and well-being. Shavers and Moore (2014a) purport that Black female graduate students utilize an "academic mask" as a coping mechanism or tool to overcome institutionalized racism and sexism. Behind this complicated mask, Black women are required to shift between different identities which "requires psychological resources and, depending on how often one has to negotiate, an individual can be depleted of those resources" (Danielle and Chavez 2018:773). It is through the process of shifting between identities that Black women's psychological health and well-being are adversely impacted (Hall, Joyce, and Hamilton-Mason 2012; Jones et al. 2021). As such, Black women graduate students are left with feelings of fatigue, weariness, and distress (Artis et al. 2018; Shavers and Moore 2014a).

Due to their disparate treatment, code-switching is a common action that Black women employ to combat institutional racism and sexism (Danielle and Chavez 2018; Dickens, Jones, and Hall 2020; Hall et al. 2012; Jones and Shorter-Gooden 2003; Ong 2005). Most code-switching definitions typically relate to alternating the use of two or more dialects whereby Blacks shift linguistically from using African American English (AAE) to Standard American English (SAE) (Koch, Gross, and Kolts 2001; Nelson 1990; Scott 1995; Wyatt and Seymour 1988; Young 2009). However, for the purpose of this study, we define code-switching as when Black women "consciously or unconsciously modify the way [they] behave in mostly White environments to dissociate oneself from negative stereotypes held against Black women" within engineering and computing environments (Spencer et al. *Forthcoming*). Along with their utilization of code-switching as a source of protecting themselves from the residue of racism and sexism complicit within the wider society, Black women also partake in self-care, challenge stereotypical assumptions held against their identities, walk away from difficult situations, identify safe spaces to share their experiences, and attend church to further cultivate their religiosity and spirituality (Eugene 1995; Everett, Camille Hall, and Hamilton-Mason 2010; Holder, Jackson, and Ponterotto 2015; Spates et al. 2020b).

Overall, existing sociological literature lacks a critical examination of how race and gender impact the experiences of Black women doctoral students enrolled in engineering and computing programs. The racism and sexism that Black women have endured within the wider society have seeped onto their higher education institutions and have resulted in multiple forms of inequalities. Thus, within these "chilly" collegial environments, the Black women in this study often believe, by virtue of their racial and social identities, that they must code-switch to combat discrimination and prejudice. To examine Black women doctoral students' experiences with code-switching more closely, this paper focuses specifically on the following research questions: (1) What are the race-gendered stereotypes that cause Black women to code-switch? and (2) What coping strategies do Black women employ to persist while simultaneously retaining their authentic selves?

Accordingly, both systemic racism and sexism challenge the psychological health and well-being of Black women doctoral students in engineering and computing programs due to the persistent role of discrimination (Artis et al. 2018). To maximize and appease the comfortability of their non-Black counterparts, Black women oftentimes have to change their physical appearance in order to conform. For this reason amongst others, a sociological understanding of the experiences of Black women engineering and computing doctoral students is needed to investigate their race-gendered experiences. Given the complex ways in which Black women are constantly pushed to the margins, "[B]lack women

are ‘reclaiming their time’ by making efforts to change systemic racial and gendered processes that render workplaces and organizations particularly unwelcoming spaces” (Wingfield 2019:349). Thus, we argue that in order to create inclusive educational spaces where Black women can thrive and be their authentic selves, best practices must be identified to protect these women from the psycho-emotional burdens they experience within higher education institutions that do not center nor uplift their intersectional identities.

LITERATURE REVIEW

The Psychological Costs of Discrimination Amongst Black Women: To Code-Switch or Not to Code-Switch

Given the significant role of systemic racism and sexism, the psychological costs associated with being both Black and a woman are troublesome (Kamesha et al. 2020a; Perry, Harp, and Oser 2013; Terhune 2008; Wingfield and Chavez 2020). Black women are harshly evaluated and stereotyped based on the hairstyles and clothes that they wear in various social institutions, which either results in them challenging the injustices they encounter or feeling compelled to code-switch (Davis 2018; Jones and Shorter-Gooden 2003; Opie and Phillips 2015). Rosette and Dumas (2007:421) argued that “Black women do not have the luxury of mere preferences; their choices are colored by a historical lens that includes negative stereotypes and lowered expectations.” Furthermore, Black women are often left at the margins of academia due to the discrimination they encounter coupled with unsupportive faculty advisors (Dortch 2016; Patterson-Stephens et al. 2017). Overall, the emotional labor that Black women must perform is exhausting as they attempt to conceal their emotions to “enhance their compatibility with organizational norms” (Marlese and Wingfield 2011:568). Thus, the sequential argument can be made that organizations are not race- nor gender-neutral (Acker 1990; Ray 2019). In an attempt to counter negative stereotypes, some Black women code-switch.

Jones and Shorter-Gooden (2003) indicated that Black women engage in code-switching by altering the expectations they have of themselves between home and the workplace. Black women also cope with stress differently, as they must delicately navigate how they can respond to workplace inequalities without being perceived as angry or overly emotional (Hall et al. 2012). Boulton (2016:139) argued that, in order for Black people to advance in their chosen professions, “they must code-switch to [navigate and] negotiate Whites’ racial stereotypes.” At the intersection of their gender and race, Black women are scrutinized and placed under intense pressure (Marlese and Wingfield 2011). As such, Black professional women “must repackage themselves in ways that are more palatable to their white co-workers” (Marlese and Wingfield 2011:564). While the use of code-switching does help Black women doctoral students to persist, it takes an emotional toll on their mental health (Shavers and Moore 2014a, 2014b).

The utilization of cognitive resources to code-switch are complicated and mentally exhausting for Black women (Hall et al. 2012). The institutionalization of code-switching is grounded in discrimination, as Black people are marginalized and portrayed as racially inferior because of misperceptions about their identities. The consequences are dire for those impacted by stereotyped expectations (Boulton 2016). For example, Black women struggle with the incongruence between their professional and social identities (Hall et al. 2012, Joyce, and Hamilton-Mason 2012; Jones and Shorter-Gooden 2003). This incongruence is also the case for Black women in science, technology, engineering, and mathematics (STEM) degree programs who are up against numerous biases (Ireland et al. 2018; McGee and Bentley 2017). In such an environment, Black women encounter many challenges given their social identities in racialized and gendered spaces while pursuing STEM degree programs (Ireland et al. 2018; McGee and Bentley 2017).

The Experiences of Black Women within Academia

The overt and covert prejudice that Black women experience in academia is alarming. Black women enrolled in STEM programs at both the undergraduate and graduate level experience hostile environments that are fraught with racism and sexism (Alexander and Hermann 2016; Beoku-Betts 2004; Charleston et al. 2014; McGee and Bentley 2017). For example, Black women computing majors at the undergraduate level have to choose between their social identities “by either being “just Black” or “just a woman,” depending on how they assume others perceive them” (Solomon et al. 2018:4). And Black women enrolled in engineering undergraduate programs experience fatigue due to having to negotiate their identities across gender and race (Wilson 2018). Black women undergraduate computing and engineering majors experience a plethora of challenges and barriers, which includes being severely impacted by negotiating between their identities. These identity issues also follow them to graduate school.

Furthermore, at the graduate level, Black women engineering and computing doctoral students code-switch because they deem it necessary to “conform to the academic culture in order to feel accepted” (Artis et al. 2018:8). Black women are repeatedly disregarded and disrespected as scientists, and some faculty believe Black women students are incapable of doing rigorous, scientific research (Beoku-Betts 2004). The perpetuation of the White male scientist as the accepted norm has compelled Black women to excel past normal levels of competency (Beoku-Betts 2004). In this vein, Black women are oppressed in their fight against the myth of inferiority. As a strategy for resistance, Black women attempt to educate faculty and students about their experiences within the ivory tower of academia (Robinson 2013). Unfortunately, one of the consequences of Black women’s resistance strategies is that they are labeled as “confrontational and argumentative” (Robinson 2013:172). To be the lone, or even one of few, Black women in a graduate degree program is emotionally exhausting and detrimental to their success (Artis et al. 2018; Ridgeway et al. 2018). As a way to cope with unfair treatment within their collegial environments, Black women graduate students have relied on acquiring a prove-them-wrong ethos. This ethos is characterized by emerging unscathed from adversity, attempting to negate the stereotypical perceptions held against Black women, self-monitoring their actions, and concealing their true selves (Shavers and Moore 2014a, 2014b).

Although many Black women doctoral students have taken a stance against gendered and racialized oppression, tokenism, and being an outsider, they face a double-edged sword (Robinson 2013; Shavers and Moore III; Shavers and Moore 2014b). Black women graduate students are often depressed from hiding their true selves and unconsciously shifting between identities, damaging their psychological health and well-being (Shavers 2010; Shavers and Moore 2014a, 2014b; Shoge 2019). In this way, the “academic mask” that Black women are required to wear “when in the institution, regardless of their dilemma or perceived reality at a particular time, they had to assume a non-threatening, non-retaliatory, almost expressionless persona in order to promote self, survive, and succeed” (Ward 1997:8). Overall, Black women have fought, resisted, discovered, and carved out ways to persist in academia.

Given the limited amount of research critically examining Black women’s experiences as engineers and computer scientists at the doctoral level across gender and race, we believe that their stories should be told and understood to improve Black women’s psychological health and well-being and academic experiences (Artis et al. 2018). As part of a larger investigation, this study explores the race-gendered stereotypes that Black women doctoral students in engineering and computer science encounter, and whether or not they choose to code-switch to combat those stereotypes. Additionally, this study examines whether Black women doctoral students have employed coping strategies to persist in their engineering and computing doctoral programs.

Black Feminist Thought as a Theoretical Lens

Black feminist thought (BFT) is a theoretical framework that integrates, validates, centers, and gives voice to the unique experiences of Black women (Collins 2000; Few, Stephens, and Rouse-Arnett 2003). It was developed by Black women to disrupt and deconstruct negative stereotypes of Black

women. One of the central tenets of BFT is that Black women create self-definitions of themselves that reject and resist stereotypical images of Black womanhood (Collins 1986, 2000). Serving as Black women's critical social theory, BFT is essential for Black women's continued existence within wider society, including academia (Collins 2000; Jones, Wilder, and La'Tara Osborne-Lampkin 2013; Patterson et al. 2016). Black women have received very little exposure to such critical thought due, in part, to the fact that many Black women intellectuals have "labored in isolation and obscurity" (Collins 2000:2). BFT scholars are committed to empowering Black women in the context of social justice and, more importantly, for their own mental and physical well-being. These scholars understand that the "ultimate responsibility for self-definitions and self-valuations lies within the individual [Black] woman herself" (Collins 2000:119). This qualitative investigation employs BFT because it opposes the institutional and systemic oppression that has historically shaped the intersection of race, gender, class, sexual orientation, and other social identities of Black women.

For this research study, BFT was used to conceptualize the study and determine the methodology (i.e., using interviews and lived experience as data). BFT was also applied to develop the semi-structured interview protocol and was employed as an interpretive lens after coding the data. Using BFT, this paper examines why some Black women graduate students code-switch while others do not. Code-switching is a strategy used by Black women to battle historically oppressive forces (Hall et al. 2012 Jones and Shorter-Gooden 2003). This work analyzes how these women have resisted negative stereotypes of Black womanhood to empower and uplift themselves. BFT additionally challenges dominant group thinking and feminist theories and ideologies. Thus, we write and theorize about the psychosocial experiences of Black women doctoral students in engineering and computing so that they may define themselves.

METHODS

To explore the unique experience of Black women enrolled in engineering and computing doctoral programs, a phenomenological qualitative approach was employed. This qualitative research methodology was chosen because of its focus on everyday life experiences and its emphasis on the participants' perspectives. The qualitative methodology in this study used grounded theory as its analytical approach and applied BFT as its theoretical framework in the design, conceptualization, and interpretation of the study.

Recruitment

Institutional Review Board (IRB) approval was obtained from two universities prior to recruiting participants and collecting data. The researchers employed purposeful sampling strategies to collect and analyze data (Palinkas et al. 2015). Participants for this study were recruited through various e-mail listservs and conferences regarding underrepresented students in computing and engineering. E-Mails were sent to listservs owned by computing and engineering organizations and conferences that have a large percentage of Black women doctoral students. Snowball sampling was also used to identify additional participants (Patton 2002). Interested students completed a screening questionnaire to determine eligibility. To be eligible, participants had to identify as a Black woman in pursuit of a doctoral degree in an engineering or computing field. Eligible individuals were contacted via e-mail to schedule a phone interview.

Participants

There were 21 participants in this study and each participant was given a pseudonym to maintain confidentiality and anonymity. All of the participants in this study were Black women enrolled in engineering and computing doctoral programs at predominately White institutions (PWIs) and historically Black colleges and universities (HBCUs) across the United States. Ninety-five percent

Table 1. Educational Background, Socioeconomic Status, and Advisor Demographics of All Participants

Pseudonym	Discipline	First Generation College Student	Low-Income (Eligible for Pell Grant)	Status in Doctoral Program	Doctoral GPA	Faculty Advisor Demographics
Jenna	Engineering	No	No	Coursework	3.21	White Male, Associate Professor
Tanisha	Computing	Yes	Yes	All But Dissertation	3.95	Black Male, Full Professor
Gabrielle	Engineering	Yes	Yes	Coursework	3.52	Asian Male
Taylor	Engineering	Yes	Yes	Comprehensive Examinations	3.62	White Female, Associate Professor
Kiara	Computing	No	Yes	Coursework	–	Black Male, Full Professor
Molly	Engineering	No	No	Dissertation Prospectus	3.868	White Female, Associate Professor
Raven	Computing	No	No	All But Dissertation	3.85	White Male, Full Professor
Tiffany	Computing	No	No	Coursework	3.821	White Male, Associate Professor
Lauren	Computing	No	No	All But Dissertation	3.5	White Male, Associate Professor; Caucasian Female, Teaching Associate Professor
Lori	Engineering	No	No	Coursework	3.9	Black Male, Assistant Professor
Nia	Engineering	No	No	All But Dissertation	3.8	White Male, Associate Professor
Melanie	Computing	No	No	Coursework	3.95	Black Male, Full Professor
Bianca	Engineering	No	No	Coursework	3.3	White Male, Full Professor
Karen	Engineering	No	No	Comprehensive Examinations	3.7	White Male, Associate Professor
Ella	Engineering	No	No	Dissertation Prospectus	3.6	Asian Male, Full Professor
Elizabeth	Engineering	No	Yes	Dissertation Prospectus	3.52	Asian Male, Associate Professor
Kimberly	Computing	No	No	Coursework	4	Black Male, Full Professor
Chloe	Computing	Yes	No	Coursework	3.12	White Male, Associate Professor
Kelly	Computing	No	Yes	Comprehensive Examinations	4	Black Male, Full Professor
Michelle	Computing	No	No	Dissertation Prospectus	3.79	White Male, Associate Professor; Middle Eastern Male, Assistant Professor
Meagan	Engineering	Yes	No	All But Dissertation	3.5	White Male, Associate Professor; Iranian Male, Associate Professor
Kennedy	Engineering	No	Yes	All But Dissertation	3.9	White Male, Assistant Professor

($n = 20$) of the participants were U.S. citizens. Among the participants, 55 percent ($n = 11$) were enrolled in engineering doctoral programs and 48 percent ($n = 10$) were enrolled in computing doctoral programs. The participants were at different stages of their programs: 36 percent ($n = 8$) reported that they were completing their coursework; 14 percent ($n = 3$) were at the comprehensive examination stage; 18 percent ($n = 4$) were at the dissertation prospectus stage; and 27 percent ($n = 6$) reported that everything was completed except for their dissertation (i.e., All But Dissertation [ABD]). Eighty-seven percent ($n = 18$) of the participants reported code-switching. See [Table 1](#) for additional details about participants' educational background, socioeconomic status, and faculty advisor demographics.

Measures

The research team used multiple data sources (i.e., demographic questionnaires, participant interviews, and researcher reflections) to triangulate findings and ensure the credibility of the study (Yvonna and Guba 1985). The protocol for the semi-structured interviews were guided by the tenets of BFT, specifically focusing on the intersectionality of gender and race, using the participants' lived experience in knowledge construction (Collins 2000). Semi-structured interviews were conducted to address important issues and provide consistency while allowing for flexibility in the participants' responses (Charmaz 2006).

The interview protocol contained 45 questions relating to the overall doctoral experience and the following guided questions related directly to code-switching: (1) How would you describe the “public you” that you present in academic settings versus the “private you” in personal settings? and (2) What strategies have you used to overcome any challenges or barriers that you have faced in your doctoral program? These questions provided the opportunity to explore and better understand the ways in which code-switching impacts the lives of Black women in academia. In addition, a demographic survey was sent via e-mail to students after they completed the interview portion of the study. The demographic survey included 55 questions to collect background data regarding the participants’ gender, ethnicity, race, socioeconomic status, educational background, doctoral program, and future plans.

Data Collection

This work explores the participants’ personal experiences with code-switching and examines coping strategies they may employ to deal with racism and sexism in academia. The research team conducted 21 semi-structured phone interviews to examine the educational experiences of Black women enrolled in engineering and computing doctoral programs across the United States. The phone interviews ranged from 50 to 111 minutes with a median time of 81 minutes. The audio of these interviews were recorded and professionally transcribed. After completing phone interviews, participants were emailed a link to a demographic survey. Once participants completed the interview and demographic survey, they received a \$25 Amazon gift card. Once each researcher completed the interview, they engaged in a debriefing, using reflective journaling (Ortlipp 2008). This reflective debriefing served as a way for members of the research team to (1) reflect on the interview; (2) highlight any emotions, feelings, or reactions that come up; (3) identify emerging themes; (4) highlight information that stands out; and (5) communicate amongst researchers on the team.

Data Analysis

To identify major themes and patterns from the interview transcripts, grounded theory was utilized during data collection and analysis. Grounded theory involves reading and rereading the transcript data multiple times to generate emergent themes and patterns (Bluff 2005). Each interview transcript was reviewed by at least two researchers independently. Dedoose software was used for the open coding process, which involved each researcher reviewing the data and identifying code labels to represent emergent ideas or themes. A codebook was then created for each code label. Additionally, one team member audited each transcript after the open coding stage to ensure consistency, check for saturation, and present discrepancies at research team meetings. The research team would meet weekly to develop the code book and engage in axial coding and start to connect themes and generate theory. All transcripts, process notes, codebooks, and data analysis were kept in password-protected software on password-protected computers.

Trustworthiness and Rigor

Qualitative methodology is evaluated by the trustworthiness and rigor of the methodological procedures (Patton 2002). The research team established methodological rigor through credibility, transferability, dependability, confirmability, and authenticity (Patton 2002). To develop a dependable study, the research team established a logical, traceable, and documented audit trail that included the following artifacts: (i) research proposal, (ii) finalized interview protocols, (iii) demographic information, (iv) recorded participant interviews, (v) reflective debriefing documentation, (vi) participant interview transcripts, (vii) codebooks, and (viii) research team analysis.

To triangulate the data and increase credibility, the team conducted a thorough literature review, analyzed the demographic questionnaires, examined the interviews, and employed research partner analysis (Yvonna and Guba 1985). The project team also provided “thick descriptions,” which

consider both the behavior and context of the events discussed in the interviews. The thick descriptions allow for readers to generalize the findings based on their own desired settings and how they align with the descriptions.

RESULTS

Overall, the Black women in this study experience racism and sexism in academia. These lived experiences have placed them at the margins, where they are greatly disadvantaged and cast as outsiders. This leads to the belief that they must code-switch to be successful (i.e., taken seriously, respected, etc.). The participants shared the belief that they are required to separate their work lives from their personal lives. Several themes emerged from this study regarding the experiences of Black women in computing and engineering doctoral programs. The themes discussed in this section include (1) Navigating Race and Gender Stereotypes: The Public “Me” versus. the Private “Me” and (2) Strategies for Combatting the Effects of Code-Switching.

Navigating Race and Gender Stereotypes: The Public “Me” versus. The Private “Me”

This theme answers the first research question — that is, what are the racial and gendered stereotypes that cause Black women to code-switch? Participants were asked to share how they present themselves in an academic setting. From the thematic analysis of the experiences of Black women engineers and computer scientists, the subthemes that emerged are being typecast as the angry Black woman scientist, conforming to European hair and beauty ideals, and changing how one dresses in order to develop a sense of belonging within their social contexts.

The angry Black woman scientist. Black women have been historically stereotyped as the angry Black woman (Doharty 2020; Harris-Perry 2011). They are often characterized as callous, vindictive, off-putting, argumentative, and aggressive. One participant, Lori, shared:

I actually always keep a level head. Even if something is emotional to me. I don’t just fly off the handle. I will make a statement if I feel that statement needs to be made. I’ll just address it because I don’t want to ignore it. I don’t want to pretend like it’s not a problem People will usually understand why I’m saying what I’m saying. They don’t feel like I’m attacking them. I guess I try really hard so that they don’t feel like I’m attacking them. I have this precursor with people where they think I’m attacking them. Personally, I’m friendly. I don’t present myself as a competitor because I don’t really like competing with anybody . . . I present myself as somebody who is always willing to help.

Although Lori excels academically, she is burdened with the constant belief that people may view her as the angry Black woman. Lori consciously chooses to “keep a level head” because she understands that, as a Black woman, she does not have the luxury of authentic self-expression without the fear of it being misinterpreted due to negative stereotypes. Ultimately, Lori knows that Black professionals are “held to different emotional standards than their [W]hite colleagues” (Wingfield 2010: 256). Therefore, she remains mindful of how she displays her emotions and manages her tone of voice. These racist and sexist assumptions about Black women have left them marginalized and othered.

Another student, Nia, also shared that she “can’t have [her] angry face on,” further adding, “I always try to smile because that’s always in the back of my head that people are going to think I’m naturally angry or closed off because I’m a Black woman. I try to be professional but also friendly and polite.” Both Lori and Nia consciously choose to appear nonthreatening, code-switching their emotions to appeal to non-Black people. The Black women in this study make these choices because, as Doharty (2020: 554) wrote:

Black women are aware that despite how they might perceive themselves to be managing their emotions, that is, no matter how softly spoken, articulate, educated, light-footed or introvert she is, she may still possess features that are a little too angry, a voice that is a little too loud and a demeanor that is a little too Black for others. Therefore, she may utilize alternative ways for emotionally dealing with being the academic translator and interpreter of Black experiences of racism and sexism—including outside of the academy.

This particular quotation speaks directly to the numerous ways in which Black women are repeatedly misunderstood whether they consciously or unconsciously attempt to combat negative stereotypes held against their social identities at the intersection of their gender and race. Thus, Black women are required to engage in emotional labor that depletes their psychological health and well-being.

I am not my hair. Another form of respectability politics challenging Black women is biased assumptions regarding their hairstyles. The natural texture and personal styling of Black women's hair is viewed favorably by Black women in the natural hair community. However, some outside this community view Black hair as "less beautiful, less sexy/attractive, and less professional than smooth hair" (Johnson et al. 2017:6). Another student, Melanie, expressed how her advisor recommended that she wear a weave (i.e., sew in) instead of her natural hair to become more palatable and acceptable for the job market. Melanie claimed:

... before I entered the doctoral program, I [wore] my natural hair ... in all its glory. However, one of my mentors strongly recommended that I get a sew in, which I was completely against. One, I never had a sew in of any sort, but I went ahead and got it. I just noticed that there [were] different reactions toward me because I [did] get treated a little bit differently as I would have if I were to wear my natural hair, which is completely unfair ... sometimes I feel I'm not able to be my authentic self in the program. I know that probably has [had] an impact on my experience as a whole ... not being able to express myself [for] who you truly are. So, you have to keep that on lockdown many times.

Melanie strongly disliked the recommended feedback she received from one of her mentors to wear a weave. She was told to get a weave because her mentor perceives that she comes off as intimidating. The exact advice that Melanie's mentor offered her included "to navigate through this White world, you have to do certain things in order to have least resistance as much as possible." This student was also left speechless because she realized that, after she had changed her hair, she started being treated better. And worst of all, Melanie had to code-switch by wearing a weave instead of her natural hair wherein she felt unable to express her true and authentic self. Being a Black woman in academia is a difficult experience for many. The derogatory comments about their hair being unattractive, unruly, and not aesthetically pleasing added to this difficulty.

Altogether, natural hair in the workplace such as afros and dreads are typecast as unprofessional, unfeminine, and unwanted. In a study conducted to examine the types of hairstyles Black female executives wear on the job, it was found that they typically opted for Eurocentric styles (Dawson and Karl 2018). This finding suggests that "Eurocentric preferences, stereotypes, and bias seem to have a significant influence on the hair choices of Black women working their way up the corporate ladder" (Dawson and Karl 2018:52). Given the historical preference for Eurocentric hairstyles due to White beauty standards, Black women such as Melanie are treated better when they wear weaves instead of their natural hairstyles, which is complicit in the ways in which Black hair is demonized within the wider society. Black women are forced to select Eurocentric hairstyles for fear of looking "run down" because they are self-conscious and fear that they will be judged due to their physical appearance.

Due to the grotesque stereotypes held about Black women's natural hairstyles, legal efforts have been undertaken to professionalize their natural hairstyles (Donahoo and Smith 2022). These legal efforts consist of policies being enacted to prohibit Black hair discrimination such as the Creating a Respectful and Open World for Natural Hair (CROWN) Act and the New York City Human Rights Law (NYCHRL) Act (Donahoo and Smith 2022). On the other hand, another student named Raven mentioned that she felt racially affirmed in her research lab because the Black women in her research lab, including herself, wear their natural hair. Raven asserted, "[W]e walk in and see women wearing cornrows, or locks, or braids, or something like that." Raven was elated every morning when she walked into her lab and saw other Black women scientists wearing natural hairstyles.

Changing the way you dress in academia. Multiple studies have found that Black women are discriminated against due to their physical appearance, which includes their body image, hairstyles, and clothing choices (Njoku and Patton 2017; Strings 2019). As such, Lukate (2021:14) wrote, "[T]he continued legacy of hegemonically defined beauty discourses that center Whiteness and marginalize Blackness, trap the women's identities, and influence their experiences in the

diaspora.” Accordingly, when Black women doctoral students in engineering and computing disciplines select their wardrobes, many opt for apparel that blends into the culture of their respective departments by dressing similarly to the other students and faculty. One student, Kiara, vividly described how she used to love dressing up and wearing colorful clothing that matched her vibrant spirit and chic personality. However, Kiara no longer wears her favorite clothes and accessories because she consciously made the decision to adapt to the culture of the department. Even though no one in her department made any comments regarding her clothing, Kiara decided to change her outer appearance. She shared, “I’m meeting them right where they are. It’s not like I’m reaching too far from where I was before, but it was kind of like, ‘Oh, this is what y’all do?’ I’ve read the situation and I decided, ‘All right, let me meet them where they are and adapt.’” Kiara decided to start wearing dark sweaters and flat shoes. She describes this look as “more simplified and refined.”

Kiara modified her clothing choices because, in contrast “to a standard, generic image of the ordinary [White male] scientist, students often experience a threat of prejudgment based on how they look and act” (Ong 2005:602). As such, Kiara felt compelled to change because she wants to closely mirror what a scientist is “supposed” to look like based upon her preconceived notions. The intersection of gender and race are visible here because she is aware that her identity is not aligned with the image of a typical White male scientist (Ong 2005). Kiara reported that scientists in her department do not dress up in fancy, vibrant clothing but instead wear boring, drab clothing. Unlike Kiara, Raven felt comfortable wearing clothes that have symbolic and important messages because her research lab is “majority-minority.” Raven elaborated:

For Black History Month, I decided to wear four of my Blackest shirts every week. I have a shirt that says Melanin in the middle of the African continent. I have a Black Girls Rock tee shirt. I have a Black by Popular Demand shirt . . . I’ll wear them to campus. I’ll wear them to class. I have a shirt with Sojourner Truth, Harriet Tubman, Angela Davis, all the way down to Assata Shakur. I was leery about wearing that one. But then, I was like I don’t care. People [can] say something about it . . . it’s whatever.

Raven enjoys expressing her Blackness via her timeless clothing choices and overall physical aesthetic. She believes that her research lab is an affirming space that allows her and other Black women to be their full selves at the intersection of their gender and race.

The operationalized constructions of Black womanhood concerning complex issues of race, gender, and class promotes respectability politics because Black women are expected to conform to Whiteness as a way to receive better treatment (Barnes 2016; Cumberbatch 2021). This pervasive narrative endorses the ideology that Black women must alter or modify themselves in order to undo historical influences of negative Black women stereotypes. These stereotypes were created and maintained to reproduce and perpetuate racist and sexist images of Black womanhood (Njoku, Butler, and Beatty 2017; Njoku and Patton 2017; Patton 2014). The intersection of respectability politics and code-switching challenges Black womanhood. Black women are at risk of experiencing self-sabotage, low self-esteem, and mental and emotional fatigue because of race and gender stereotypes.

These controlling images place constraints on Black women’s hair styles, clothing choices, and how they behave. As a result, Black women like Tiffany are left with an incongruence between who they are and how they feel they must present themselves. Tiffany shared, “[T]he way I dress when I go to school is . . . not the style I want.” Lauren made a similar statement when she shared that she can only be “most” of herself. She stated that she behaves differently around her academic peers and “hometown friends.” Lauren elaborated, “I’m usually more reserved about how I dress or how I talk or the jokes that I make. It depends on the setting and the people.” Having to code-switch leads to dissonance and can erode Black women’s sense of self as it relates to how they style their hair and having to change the way in which they dress in academia. They also face challenges due to the way in which they articulate how they use language, which will be discussed in the next section.

Changing the way you talk in academia. The findings from this study reveal that Black women in pursuit of doctoral degrees in engineering and computing code-switch because they want to be perceived as competent scholars in their respective fields. As scientists, Black women have to ensure that they sound educated at all times because if they make any mistakes, they may be perceived as incompetent or inept by their colleagues. One way they code-switch is by altering or modifying the way they talk in academic settings. The overt racial and gender discrimination they regularly encounter in academia leads them to believe that code-switching is their best strategy to overcome the harmful effects of prejudice.

For example, Tanesha mentioned that she always speaks very articulately because she does not want to encounter any form of bias toward her accented speech pattern. Tanesha went on to describe how the individuals she communicates with over the phone are shocked when they meet her in person and discover she is Black. Multiple individuals have told Tanesha, “[O]h my gosh, I was talking to you on the phone and I didn’t realize that you were Black.” While on the receiving end of the conversation, Tanesha typically utters to herself, “[Y]es, I am [Black]. I can pronounce my E’s and my R’s.” Consequently, Tanesha is unable to share her true feelings with these individuals that are shocked by her accent and her Blackness because she does not want to be perceived as the angry Black woman. Being labeled as angry hinders the interpersonal interactions that Black women have with their non-Black colleagues, so they must censor their emotions (Wingfield 2010).

Another participant, Alyssa, shared a similar experience. To not sound as Black, Alyssa partakes in a conscious effort to “enunciate every syllable of the words that [she is] saying and [she tries] to use the proper verbiage.” Another student, Gabrielle, discussed that she employs an approach when she is speaking to faculty or students in her department:

My speech definitely changes depending on my level of comfort with whomever I’m talking with. I have to be careful about who I’m around and who that person might know. Even if you don’t necessarily agree with their views, you’re not really allowed to be outspoken and express yourself. So yeah, I tend to be very neutral, I guess you can say [that’s the case] when it comes to certain topics and conversations.

The neutral approach that Gabrielle uses when she speaks is defined by a status quo, which is itself influenced by the White majority that have preceded her. She worries that they all may know the same people and she does not want her manner of speaking to lessen her chances of obtaining certain opportunities as a scholar and researcher. However, she stresses that her speaking style is dependent on her level of comfort with whomever she is interacting.

Talking “Black” can have serious ramifications for Black women as it can profoundly impact how others perceive them. Others’ perceptions influence how Black women view themselves and whether they feel compelled to modify how they speak. For this reason, Black women code-switch to protect themselves as much as possible because their intersectional identities are “constantly shaped, located, situated, and negotiated within different cultural contexts” (Myers 2019:114). Additionally, Black women also code-switch by declining to speak much during class. This is because they do not want to misspeak and be perceived as uneducated or incompetent engineers and computer scientists. Historically, social imagery of Black people in the United States has portrayed them to be uneducated, uncultured, and unrefined (Bany, Robnett, and Feliciano 2014; Flores 2020; Lundy 2018; Tyree 2011).

As such, a common issue the participants expressed in their interviews is a fear or apprehension to “speak up or comment on things” in academic settings. Taylor said, “[I]t’s not a fear of being wrong but I want to make sure [that] what I say is going to be . . . I don’t know . . . maybe it’s a correctness thing.” Taylor strives to ensure that she is viewed as competent within academic settings. For this reason, she struggles to find her voice as a Black woman. Taylor further elaborated, “I feel like everybody is watching everything I do. So, as soon as I speak up, that’s somethings that’s looked at. So, I’m a lot slower to speak . . . and I’d rather be quiet and just listen.” This is the case even though Taylor knows “what other people are saying is not [always] accurate but sometimes it’s not enough to get [her] to speak up.” Taylor does not speak up during class because she is concerned about contributing to the myth that Black people are unintelligent.

For similar reasons, Madison also feels hesitant to ask questions during class. She shared, “I am hesitant to say something unless I know it’s 100% correct and I have sources — meaning that I’m not just going to say something and be like I read that somewhere.” Madison takes it upon herself to always have sources to support her arguments and avoid some class discussions in an effort to dispel the myth that Blacks cannot become great scientists. These actions that both Taylor and Madison take signify a departmental climate wherein they struggle to reach their full potential because they are operating in a space that stereotypes their intellect and overall abilities as scientists.

In nonacademic settings, Black women engineering and computing doctoral students reportedly feel a sense of relief. They find they can return to their full selves without fear of sounding “Black.” They feel empowered to state their opinions and viewpoints without judgment or repercussion. Nonacademic settings are described as calm and comfortable. These settings are familiar to the intersecting social identities as Black women. In these environments, they are surrounded by family and friends who support and uplift them. Taylor expressed that, when she visits her family in Mississippi, she confidently speaks in her acceptable, southern accent because she can be her full self. However, when Taylor returns to an academic environment, she reported being teased and ridiculed for her accent. Such rude behavior reminds Taylor to “shut it off” and return back to code-switching. River Collective (1977:237) wrote, “[I]f Black women were free, it would mean that everyone else would have to be free since our freedom would necessitate the destruction of all the systems of oppression.” Overall, the majority of the Black women in this study are not free nor liberated because of the controlling images that continuously criticize Black women within the wider society.

Strategies for Combatting the Effects of Code-Switching

This particular theme answers the second research question — that is, what coping strategies do Black women employ to persist while simultaneously retaining their authentic selves? This section reveals some of the strategies Black women in pursuit of doctorates in engineering and computing employ to uplift themselves and combat the psychological repercussions of code-switching. These strategies include (a) embracing their authenticity, (b) developing strong resiliency, and (c) keeping God first.

Embracing “our” authenticity as Black women. Being marginalized for belonging to two oppressed groups (i.e., being a woman and Black) causes internal stressors. There is no easy way to process the psychosocial ramifications of code-switching, but research suggests that it leads women to feel incomplete, disconnected, and exhausted (Shavers and Moore 2014a). Learning to embrace their authentic selves is a strategy that some of the participants in this study utilized to combat and resist code-switching. They realized that code-switching would not change their identity as Black women, so they found acceptance and comfort in their Blackness. Tanesha asserted:

I’ve realized that regardless of what I choose; if I wear sweatpants one day and leggings another day; if I wear Uggs or own a Dooney and Bourke bag, I’m still going to be seen as a Black woman . . . I must keep moving forward . . . Now I’m just a lot more comfortable with who I am. This is who I am. I wear Uggs. No, I don’t have a town house in the Hamptons. But I choose to portray myself as who I am and I’m comfortable with it.

This realization was groundbreaking for Tanesha. She empowered herself to resist code-switching via self-acceptance. Collins (2000) asserted that it is profoundly important for Black women to define themselves for themselves, just as Tanesha made the decision to define her Blackness and womanhood on her own terms. Some of the Black women in this study developed self-confidence as a strategy to resist code-switching. Some participants mentioned that they present themselves the same in academic and nonacademic settings. They asserted that their dress and behavior were always professional. “I’m [the] same person all the time,” stated Bianca, the epitome of a Black woman with self-confidence. She affirmed, “[W]ithout knowing that I’m a woman or that I’m Black, my resume is impressive.” She was able to reject negative self-definitions and redefine herself in a way that was empowering. Therefore, when derogatory comments have been made about Bianca, she has responded, “[W]hat does that have to do with anything that I’m capable of?”

The Black women in this study are successful based on any standard of academic and professional success, even while struggling with encounters of racism and sexism. They have remained resilient and have continued to fight to be successful in their chosen fields by having their own sense of identity. They attend some of the most prestigious colleges and universities in the country. They are excelling in their chosen research fields. They earn good grades in extremely rigorous coursework. Some are recipients of national fellowships. Many are published authors. Overall, these Black women are the standard, not the exception, in their doctoral programs. They are accomplished leaders and trailblazers as engineers and computer scientists because they name themselves as a way to heal themselves and thrive (Collins 2000). Although Black women regularly encounter racism and sexism, they are successful because of their resiliency and determination that they will prevail.

The profound resiliency of Black women scientists. With determination and willpower to succeed, race and gender bias in academia does not stop Black women from persisting. Karen, like many other Black women doctoral students, shared that she was “really determined to finish.” The Black women in this study blazed their own trails. They take the necessary precautions to not “get depressed” in the face of adversity but instead “reflect to know what happened.” These Black women are committed to their work and hold a high regard of themselves as Black women in engineering and computing. Ella shared:

Being a Black woman in computer science makes me smile. I’m cheeasing from ear to ear right now. I don’t know if you could hear my whole tone changed from what I was talking about before . . . I know representation and my physical appearance means so much. You never know who’s watching . . . another Black girl needs to see me to know that there are Black women in this field.

Although Ella has experienced some setbacks as a doctoral student, she is always contemplating her next move. Ella and the other Black women in this study are using their race, gender, and academic status to inspire young Black girls to become engineers and computing professionals themselves. These Black women are resilient as they “don’t let things get them down or stop them” from achieving greatness. Previous literature suggests that the “Strong Black Woman” trope hinders the well-being of Black women because they tend not to disclose their true emotions and feelings (Abrams, Hill, and Maxwell 2019; Allen et al. 2019; Corbin, Smith, and Roberto Garcia 2018; Trina and Norwood 2017). However, in this study, some of the Black women utilize their strength to their advantage. Their strength pushes them to take care of themselves by taking time to talk with family, friends, and their Black women mentors when they experience a host of challenges within their doctoral programs. Some of them also journal about their experiences as a source of ritual and healing.

Black women in this study utilized their social supports, but also utilized mental health and counseling services as they varied in their ability to cope with the psychological distress they encountered during their doctoral programs. Black women scholars are entrapped between their warranted anger toward negative stereotyping and having to conceal this anger (Corbin et al. 2018). As such, “the Angry Black Woman is censored” (Corbin et al. 2018:628). Thus, counseling was a place for Black women to voice their warranted anger and improve their mental health and well-being. Spates et al. (2020b) found that it is important for Black women to voice how they are feeling in safe spaces intentionally designed for their overall well-being and upliftment.

God is my foundation: a spiritual healer in my time of need. Multiple studies have revealed that spirituality provides guidance and social support for Black people to remain resilient and maintain their well-being (Riggins, McNeal, and Herndon 2008). Spirituality helped the participants of this study to understand “that there is purpose (a plan) to their existence and to the negative as well as positive events that they experience” (Mattis 2002:314). Elizabeth was a poignant example of this faith. She understood her destiny and believed she had been called to pursue a doctoral degree. Elizabeth affirmed, “[T]his is the path God wants me to follow.” Kimberly also believed that her commitment to thrive and succeed came from her reliance on Jesus Christ. She shared:

I rely heavily on my spiritual discernment to guide me through. A lot of people that I am close with will support me and either pray for me or encourage me. They remind me that my worth is not dependent on the number of publications or whether this experiment is going well or this presentation is bad. They remind me at the end of the day that I'm more than my academic identity or my research.

Chloe mentioned that she seeks out “a place of silence” when she needs to destress and recenter herself. She uses this as a “time with God to get clarity” or when she “just needs a moment.” Likewise, Kelly believes God is her strength. She regularly recites part of the Philippians 4:13 scripture: “I can do all things through Christ.” She goes on to say that she is consciously aware that God gave her “analytical and critical thinking skills.” Through their belief in the power of God, these Black women remained resilient and were empowered because they believed their life's calling is to attain a doctorate in their field. Johnson's (2018) study reiterated that spirituality is a key contributor for Black women pursuing doctorates in STEM. Spirituality helps improve their academic and professional success because they have the reassurance that they belong in their respective professions (Johnson 2018).

The Relative Impact of Code-Switching

Unfortunately, not all the participants had developed these coping strategies. These Black women continued to internalize the stress that comes from believing they must change who they are to succeed in their degree programs. For example, Michelle acknowledged that she code-switches because she “doesn't want to give people any misconceptions about women of color in academia.” She further explains, “I don't want to give them any ammunition so to speak. I always try to speak and act proper.” Unaware of the psychological toll it has on their overall well-being, these Black women believe code-switching is helping them navigate and negotiate the terrains of racism and sexism in academia. The following car analogy from Lashley, Marshall, and McLaurin-Jones (2017:215–16) situates, contextualizes, and problematizes the myriad of challenges that Black women endure throughout their livelihoods:

To cope with the negative assaults on their self-images, many Black women have resorted to maladaptive coping strategies. It is important to understand which stressors Black women deal with from their perspective. Imagine for a minute, we are sitting in a car being driven by a Black woman. The person on the left may look at things differently than those on the other side of the car. She is the driver, we are the passengers. This ride allows us to get a glimpse of what she is seeing and experiencing on her journey, but she cannot fully take it in as we are not in the seat. Depending on where we sit in the car, we can only perceive parts of the road.

Given that Black women scientists' stories are oftentimes left untold, it is imperative that their narratives are shared to understand the mental health challenges they encounter. Stress due to racism and sexism is a common reason why these Black women code-switch. Black women have to tell their own stories as a form of self-healing to undue stress and be free of stigma.

DISCUSSION

This qualitative research study revealed that Black women code-switch in an effort to combat stereotypical viewpoints and to survive in engineering and computing environments. Black women were required to challenge microaggressions at the intersection of their gender and racial background, which resulted in code-switching. Several noteworthy and interrelated findings emerge from the results discussed above. The first is that 87 percent of all participants felt compelled to code-switch, despite the negative impact that code-switching had on their overall psychological health and well-being. The women in this study aimed to counter negative stereotypes as they did not want to be perceived as angry Black women scientists. They were hypervigilant in attempting to dispel myths that Black women are angry and combative by remaining level headed at all times and going out of their way to be polite and respectful to their advisors and colleagues.

Secondly, some of the Black engineering and computing doctoral students were required to uphold Eurocentric beauty standards because their departments informed them that, by not wearing their natural hair and instead opting for a weave, they would be more likely to obtain an academic or industry position while on the job market. Thirdly, another form of code-switching that Black women undertook was to alter the way they spoke and dressed in order to adapt to the culture of their departments. These Black women scholars experienced a constant mental drain brought on by having to assess if expressing their true selves would jeopardize their place in their respective degree programs.

To cope with these numerous and pervasive challenges, participants who currently and previously code-switched have identified a number of strategies. These strategies included embracing their authenticity, reframing their experiences by acknowledging that their mere existence in engineering and computing doctoral programs may help inspire other Black women and young Black girls to pursue similar fields, and tapping into their spirituality. By undertaking a BFT approach, some Black women were able to use redefinition and confidence instead of code-switching as a strategy to combat stereotypes — strategies that are rooted within Black feminism. This finding is promising because redefinition and confidence do not carry the mental health concerns that seem to come with code-switching. It is unclear from the current data what the differences were between those who resisted code-switching. This is an important avenue for future research to explore. While the emergent implications of this study focus on the reactions of the Black women faced with stereotypes, it is disheartening that these environments continue to cause these concerns. This reportedly takes a toll on them even after they partake in a number of coping strategies.

Due to the explicative ways in which the Black women in this study are required to code-switch, some of them may be less likely to pursue actual careers in engineering and computing. Black women have historically pushed for inclusive and equitable practices in both academia and industry within the STEM domain. Black women scientists are especially burdened by institutional racism and sexism, identity politics, discouragement from colleagues and mentors, and job dissatisfaction (Artis et al. 2018; Borum and Walker 2012; Prescod-Weinstein 2020; Thomas et al. 2018). The double bind continues to exist and persist, leaving Black women severely underrepresented in the engineering and computing pipeline at the undergraduate, graduate, and career levels. Thus, as McGee (2020:640) wrote, “working to unravel structural racism [and sexism] in the STEM arena will lead to a more fulfilling life for [Black women] who participate in STEM and enable [then] to be full members of the professional community that is shaping and determining our technological and scientific future.”

Historically, PWIs were not created with the intention of educating Black women undergraduate and graduate students. Many of these colleges and universities have yet to cultivate equitable practices that serve the needs of Black women by undertaking a Black feminism approach. To a large extent, some discussion has focused on Black women’s responses in engineering and computing doctoral programs, but the true responsibility for change falls on the graduate programs. Two critical components to shifting the culture of inclusion is for faculty and administrators to be aware of Black women’s intersecting identities and create spaces where Black women can cultivate social groups to support their needs as students. Advising and mentoring Black women graduate students should begin with the premise that higher education administrators and faculty develop an “awareness of the intersecting oppressions of race and gender these women face” as this “will assist the advisor in understanding the student’s experiences with racism, sexism, and classism in academe, without discounting them” (Jones et al. 2013:333). To help reduce and eliminate the need for code-switching, faculty and administrators should foster an environment that is more inclusive.

LIMITATIONS

This study provides detailed information regarding the experiences of Black women doctoral students enrolled in computer science at PWIs. One limitation is that only the reported perceptions of the participants were collected. Additionally, it became clear that further work must be done to elucidate the negative implications of code-switching on Black women's mental and physical health. Although the Black women doctoral students who participated in this study are resilient and strong, they pay a cost for their persistence. Are their so-called rewards for persisting worth the risks? Are they ever fully accepted? Are their gifts and talent even acknowledged? Is it okay for them to sacrifice their authentic selves to gain the approval of others in their field? Is the risk worth the emotional, mental, and physical drains they experience? These questions are posed because the myth of the Strong Black Woman comes with consequences. Too many of these women are suffering in silence. A silence that is possibly contributing to the serious health disparities amongst Black women (West et al. 2016). Finally, some women chose not to code-switch, which is a healthier way for women to persist. More research is needed to explore the benefits and limitations of choosing not to code-switch in this environment.

RECOMMENDATIONS: ROOTED WITHIN BLACK FEMINISM

Recommendations from this study include the need for faculty and university administrators to cultivate authentic relationships with their students to better understand Black women's experiences in their graduate programs. This can be done through one-on-one or small-group conversations to learn more about their experiences and needs at the intersection of their gender and race. Faculty advisors should become aware of their unconscious biases as it relates to race and gender. Attitudes and stereotypes about Black women's natural hairstyles, clothing styles, accents, family structures, and introversions versus extroversions perpetuate an unwelcoming environment that influences Black women to code-switch. Advisors should encourage all of their students to embrace their backgrounds in order to assist Black women in cultivating a stronger sense of belonging. Advisors should not be afraid to hold a conversation with Black women students concerning topics on which they are not an "expert." Faculty and administrators should also support Black women's participation in race-gendered organizations, conferences, and programs. This type of support can serve as a network for students to affirm their unique perspectives and identities in order to eliminate the need for code-switching. Thus, it is important to combine "many of the tenets of Black feminism thought with [the] responsibilities, functions, and characteristics of advisors that results in a culturally responsive approach to advising [for Black women]" (Jones et al. 2013:334)

Acknowledgments

We would like to thank the National Science Foundation for funding this research study (i.e., Award Number: 1548332).

Disclosure Statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by the NSF [1648332].

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