The Role of Microaggressions in Career Development within the Sciences

Amy Anderson, M.S.Ed., Bernadette Sánchez, Ph.D. Department of Psychology, DePaul University, Chicago, IL
Hector Rasgado-Flores, Ph.D., Rosalind Franklin University of Medicine and Science, North Chicago, IL

Background

- Women, African Americans, Latina/os, and Native Americans are underrepresented in the sciences (National Science Foundation, 2013).
- According to Social Cognitive Career Theory, career development is impacted by contextual factors, such as barriers related to race/ethnicity and gender (Lent et al., 1994).
- Prior research has show that microaggressions influence educational experiences of women and people of color (Nadal, 2011; Alexander & Herman, 2013; Guzman, Trevino, Lubuguin, & Aryan, 2010).
- The aim of this research is to explore how racial and gender microaggressions influence career development within sciences.

Method

Context
Participants were STEMulate participants, graduate students and faculty in the biomedical sciences at a large Midwestern university serving as mentors in a science support program for Latina/o high school and college students.

Participants

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<th>Age</th>
<th>Gender</th>
<th>Ethnicity</th>
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<tr>
<td>35</td>
<td>Mean = 33.4 (SD =15.55)</td>
<td>21 Males, 14 Females</td>
<td>Latino = 14, African-American = 1, Asian/Pacific Islander = 3, White = 19, Other = 1</td>
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Procedure
Semi-structure interviews (30-121 minutes) were conducted with participants during summer 2015. Interviews were digitally recorded and transcribed to aid in data analysis.

Interview Protocol
Participants were asked open-ended questions about the role of race and gender in science, experiences in the program, what the students got out of the program, and relationships within the program.

Qualitative Analysis
Interview transcripts were coded inductively, using a modified grounded theory approach (Auerbach & Silverstein, 2003). Pairs of coders coded each transcript thematically. Member checking was conducted with the participants after the first round of coding to ensure the preliminary results were reflective of participants’ experiences in science.

Results

What is the role of racial and gender microaggressions in career development within the sciences?

Theme 1: Detrimental to Psychological Well-being

“I think [sexual objectification is] an impediment at a couple levels. Do you not respect me? If I were a faculty member, would you be doing that? If there were other people in the elevator, would you be doing that?” It was just sort of a reminder that I was subordinate and was it because I was a woman or was it because I was a graduate student? It was that sort of—am I going to be fighting this my whole life? Again it just weighs in the back of your mind, you just kind of keep trudging forward but if it just continues to accumulate, it becomes this increasing very amorphous psychological weights you just carry around.”

– Dr. Schmidt, female faculty

Theme 2: Mobility across Science Contexts

“[One of my family member’s] wanted to go into [science]. She was in graduate program and doing really well, but she was working in somebody's lab. She was getting hit on by another scientist and it was—It’s a full professor. It just really, I don’t want to say devastated, but it really hurt her, and then she ended up leaving grad school because of that and other types of situations like that. I mean there was no question that she was smart enough and hard-working enough, but she was treated differently, and in a way that made her uncomfortable, and then decided that it’s not worth it for her.”

– Dr. Weber, male faculty

Theme 3: The Pressure to Prove Oneself

“Playing off of that being-the-minority thing, I’m afraid, just because I’m a woman, some—being in a job where there’s mainly males, I’m afraid that my opinion won’t be taken as seriously, or I maybe looked down upon. I think that may be a challenge later on, and I may have to stress how smart I can be in the field, and I’m actually there to help. I think that could be a big disadvantage.”

– Evangelina, STEMulate student

Theme 4: Lack of Relatable Network

“Well, since there’s not enough of us, I feel like they feel like, “Oh, you guys don’t know this topic as well as we do since there’s more of us,” more Caucasians. I think that since there’s more—there’s not enough Latina/os and not a lot of support system, like, “Oh yeah, we’ve probably been through the same thing and we got through it. It’s just very challenging.” There’s not enough support system. I would say, since Latina/os—In school there’s not enough Latinos you could compare yourself or are almost alike.”

– Javier, STEMulate Student

Conclusions

- The present study found four ways in which microaggressions influence science career development: 1) detrimental to psychological well-being, 2) mobility across science contexts, 3) the pressure to prove oneself, and 4) lack of relatable network.
- All participant groups (i.e. STEMulate students, graduate students, and faculty) reported ways that microaggressions influenced science education and careers.

Strengths and Limitations

- The study adds understanding that microaggressions can have a detrimental influence on career development among individual’s from underrepresented groups in the sciences.
- The current study only addresses the perspectives of individuals within the science pipeline. Future investigation should be made with individuals who have left sciences.

Acknowledgments

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