Broadening Participation in STEM for Underrepresented Minorities: Investigating peer mentoring as a program-level strength

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ABSTRACT

- In higher education, some racial minorities are underrepresented in academia
- The National Science Foundation implemented the Louis Stokes Alliances for Minority Participation (LSAMP) as a means aiding student success to create a new generation of STEM leaders
- MI-LSAMP research program bestows insights into the multilevel strengths (i.e., personal, program, campus)
- Research suggests that peer mentoring facilities positive outcomes for mentees (Stockdale, 2017)
- Used a subset of question from a larger baseline survey administered to the 2022-2023 cohort of the MI-LSAMP participant
- Conducted t-tests and chi-square tests to examine the possibility of gender differences in students' experiences and perceptions of peer mentoring
- Analyses showed that females differ from males in the frequency and type of topics discussed with peer mentors

INTRODUCTION

- There is a lack of underrepresented minorities such as Blacks and African-Americans, Hispanic and Latino Americans, American Indians, Alaska Natives, Native Hawaiians, and Pacific Islanders as well as females in the STEM workforce (NCSES, 2023)
- NSF implemented Louis Stokes Alliances for Minority Participation (LSAMP) to address underrepresentation by providing support to these students
- The Michigan LSAMP provides tutoring, career exploration activities, faculty sponsored research opportunities, and peer mentoring
- Research on MI-LSAMP is guided by Bowman Strengths-based Model (2011) as an alternative to deficit-based models
- Peer mentoring as a program-level strength suggests positive outcomes
- I explored how peer mentor relationships differ between females and males within underrepresented racial groups when discussing an assortment of personal, academic, and professional topics

METHOD

- Our sample of respondents included a variety of races, genders, and academic institutions in Michigan
- Used a subset of questions in baseline surveys administered to the 2022-2023 cohort of students participating in the Michigan LSAMP, all of whom had connected with a peer mentor
- Students were asked to identify their gender and how frequently they discussed the topic in Table 1 with their peer mentor
- T-tests examined whether the number of topics discussed with peer mentors differed by gender
- Chi-square analyses determined if frequencies of discussion of various topics differed by gender

RESULTS

- Findings demonstrate that females engage in discussion more frequently than males
- Females had a mean of 7.0263 and a standard deviation of 6.56974
- Males had a mean of 10.2632 and a standard deviation of 7.75917

TABLE 1
Frequency of Topics Discussed with Peer Mentors by Gender

Discussion Topics	Females n = 38	Males n = 19
Degrees in STEM	44.8%	26.7%
Careers in STEM	48.3%	20.0%
* Professional development opportunities	51.7%	20.0%
Careers in academia/education	37.9%	20.0%
Careers in industry	35.7%	20.0%
Mentor's/coach's career path & job responsibilities	41.4%	26.7%
Applying for jobs/internship	37.9%	26.7%
Applying to graduate school	31.0%	26.7%
Dealing with issues of identity related to being in STEM	34.5%	20.0%
*Finding/creating a STEM community	51.7%	20.0%
*Networking	55.2%	33.3%
Dealing with discrimination, racism, sexism, & other isms	21.4%	26.7%
*Gaining support from family, friends, and peers	62.1%	21.4%
*Developing relationships with mentor/coaches	58.6%	26.7%
How to obtain the most benefit from NxtGEN & MI-LSAMP	46.4%	20.0%
*Developing discipline specific skills & knowledge to succeed in STEM	55.2%	20.0%
*Using personal, familial, or program strengths to prompt your success in STEM	58.6%	26.7%

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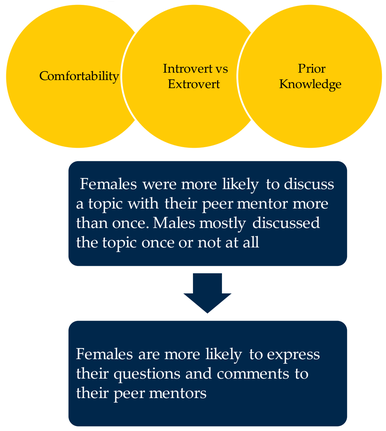
DISCUSSION

- Calculated the frequency of topics discussed within a peer-mentor relationship.



Limitations:
- Sample size was small
- # of females > # of males
- Did not consider
- genders outside of female and male

Possibilities:
- Investigate how to get males to engage more
- Explore reasons for these findings
- Repeat the study with a larger number of students

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