Women, racial minorities and first-generation students are underrepresented in the STEM fields. Minority groups, such as Hispanics, earn only 21% of STEM degrees and 18% of chemistry degrees. Women earned 45% of chemistry bachelor’s/master’s and 38% of doctoral degrees in 2016. First-generation college-going students make up one third of undergraduates and even less in STEM postgraduate education.

Post-graduation career plans indicate whether students perceive themselves capable of further education. This might help illuminate reasons for underrepresentation by identifying possible disparities within underrepresented groups.

Research Questions

RQ1 What are freshman chemistry students’ post-graduation plans?

RQ2 Do post-graduation plans differentiate... a. ... by gender?
   b. ... by ethnicity?
   c. ... by first-generation college going status?

Method

Data and Sample
N=2184 freshman students (61.4% Female, 42.8% FG) who were enrolled in an introductory chemistry course at a Southern California college.

Students filled out survey at beginning of term.

Measures

Educational Aspirations
a. “What are your plans following graduation?”
   Coded thematically into categories: Job, School, Personal, Gap Year, Travel, Family, No Plans

Demographic Information
a. Gender: 0=Female, 1=Male
b. Race/Ethnicity: White, Latino, East Asian (e.g., Chinese, Korean), Southeast Asian (e.g., Vietnamese, Filipino), Other
c. First-generation college going status: 0=Continuing-generation college-going (CG), 1=First-generation college-going (FG)

Statistical Analysis
a. Final sample: N=1808 (reported post-graduation plans)
   b. Descriptive, Chi-Square analysis

Results

What are freshman chemistry students’ post-graduation plans?

- Majority of students aspire to attend further education (71.3%)
- Second most popular plan was to get a job (35%)
- Highest frequencies for both males and females: School followed by job
- Significant gender differences: Job (p=2.1, p<0.01), School (p=1.9, p<0.01), Personal (p=3.0, p<0.01), Family (p=1.6, p<0.01)

Discussion

- Freshman students reported intentions to 1) continue their education and 2) get a job after graduation most frequently.
- This pattern held across all sociodemographic categories.
- By gender:
  - School: Females intended to continue school more and males intended it less than expected
  - Personal and family: Males intended to pursue personal and family reasons more and females intended it less than expected.
- By ethnicity:
  - Job: White and Latino students intended to get a job more than expected
  - School: South East Asian students intended to continue school more and East Asian students intended it less than expected
  - No plans: East Asian Students reported having no plans more and South East Asian students reported it less than expected
- By college-going status:
  - Job: FG students intended to get a job more and CG students intended it less often than expected
  - No plans: CG students reported having no plans more and FG students reported it less often than expected
  - May be due to burdens faced by FG students (e.g., lack of family support, facing debt)

Limitations:
- Freshman students’ postgraduation plans may change
- Sample consisted of mainly life science majors

Future research:
- Need for longitudinal study of students’ post-graduation choices
- Investigation of differences and changes in plans, actual decisions made and influential factors

References


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