High Statistics Anxiety and Low Perceived Quantitative Competence Among Undergraduates in Clinical Psychology Courses

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Introduction

- Quantitative skills are foundational to clinical psychology, but students often express ↑ anxiety and ↓ self-efficacy
- Women, underrepresented minority students (URM), first-generation students, and those with disabilities may be particularly at risk
- Study Aim: Investigate attitudes related to quantitative skills among undergraduate students in clinical psychology courses

Method

- 240 students in non-methods clinical psychology courses at 3 institutions in Fall 2017 and Spring 2018
- Pre- and post-course assessments: 1) statistics anxiety, 2) implicit theories of quantitative skills, and 3) perceived competence in research methods and statistics

Results

- 80% women; 30% URM; 14% first-generation; 25% students with disabilities
- 50% of students $\geq$ 75th percentile for statistics anxiety relative to undergraduate norms
- 33% of students endorsed a fixed mindset for quantitative skills
- 60% of students reported being "somewhat competent" in research methods and statistics.
- Using paired samples *t*-tests, none of the variables changed significantly from pre- to post-course (*p*'s = .10 - .37)
- Figure 1: Women had > statistics anxiety than men at pre-course, $t(226) = 2.35$, $p = .020$, $d = .40$. Individuals with disabilities had > statistics anxiety than individuals without disabilities at pre-course, $t(192) = 3.74$, $p < .001$, $d = .28$, and post-course, $t(175) = 2.99$, $p = .003$, $d = .52$.
- Figure 2: Women had < perceived competence about statistics than men at pre-course, $t(228) = 2.33$, $p = .021$, $d = .37$, and post-course, $t(207) = 2.12$, $p = .035$, $d = .35$. URM students had < perceived competence about statistics than Caucasian students at pre-course, $t(223) = 2.26$, $p = .025$, $d = .34$.
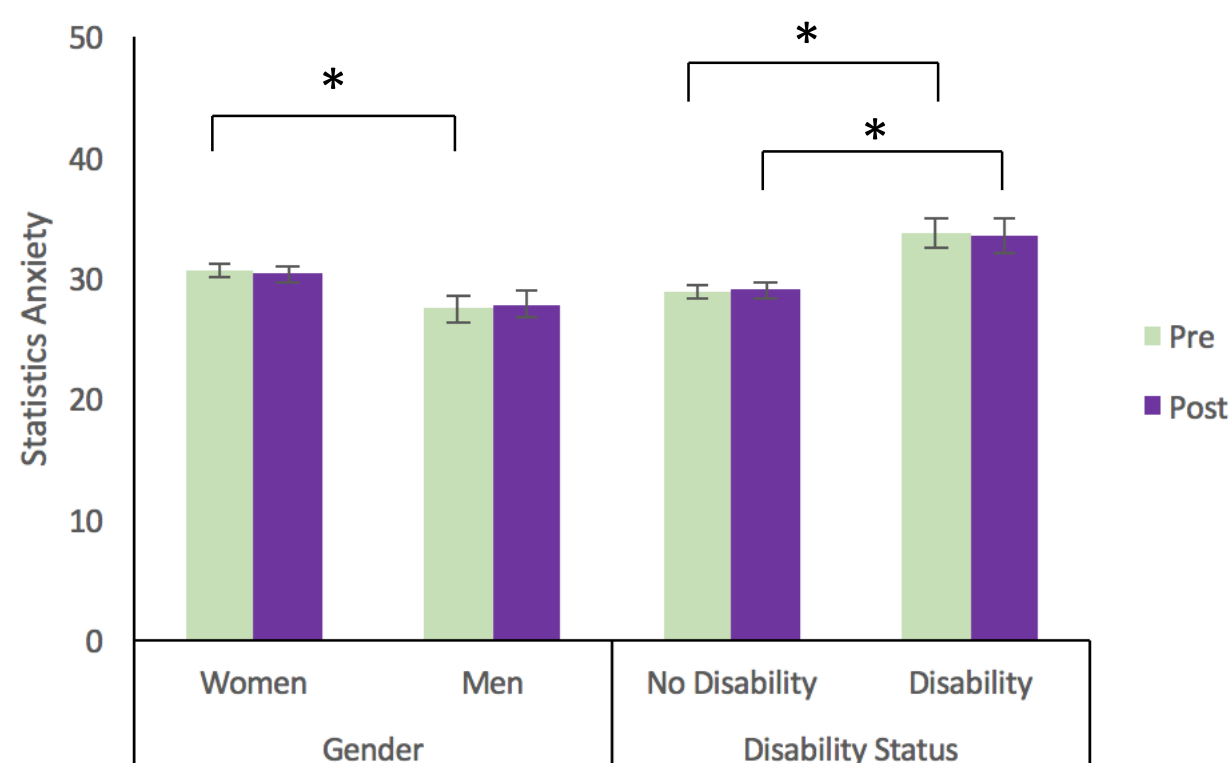

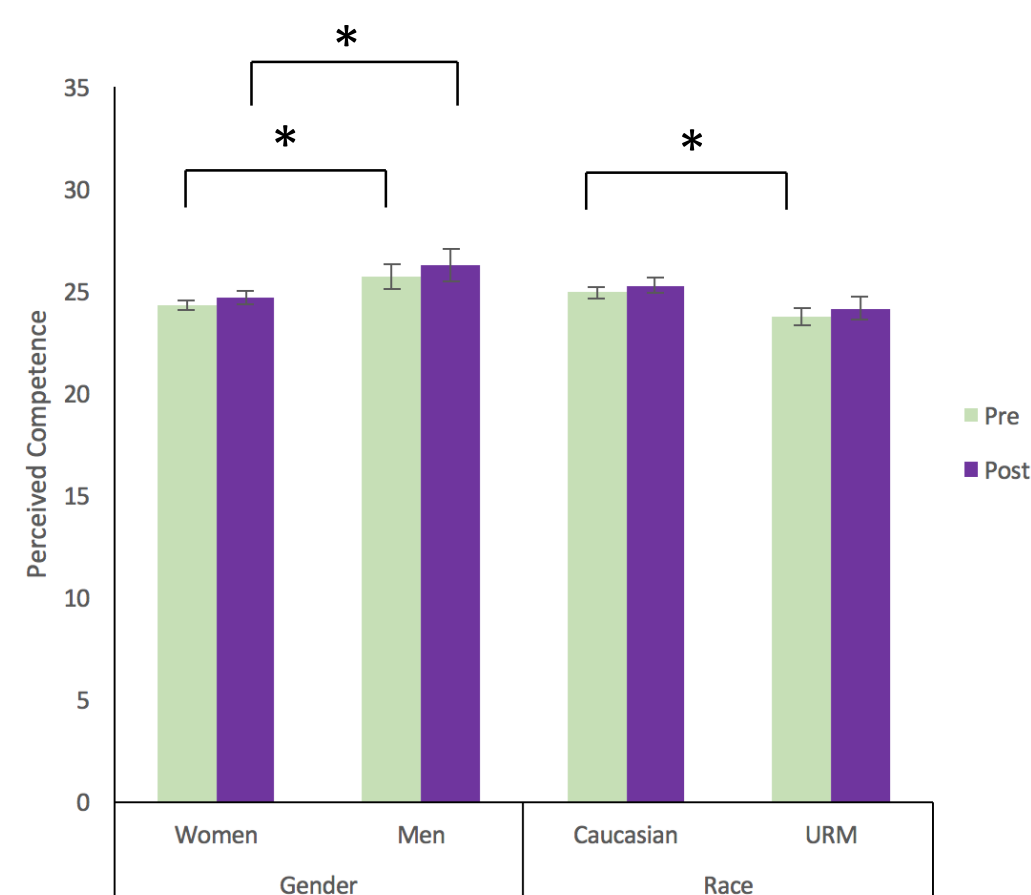*Figure 1*. Statistics Anxiety by Gender & Disability Status

Figure 2. Perceived Competence by Gender & Race

Discussion

- Students' high and unchanging levels of statistics anxiety and fixed mindsets, along with higher anxiety and lower perceived competence of underrepresented students, may represent barriers to further study in clinical psychology
- Limitations: unequal sample sizes in groups, self-report bias, data from selective liberal arts institutions
- Future Research: examine impact of explicit instruction in quantitative skills on anxiety, mindset, and perceived competence