

SJSU Project Succeed Retention Report 2019

Exploration of Peer Connections and
Retention

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Executive Summary

WestEd explored the relationship of the Peer Connections program with one-year retention rates, credits earned, and GPA. Participation in the Peer Connections program is associated with a higher one-year retention rate: students who attended at least one peer mentoring session were retained at a 90% rate, while students who did not attend any peer mentoring sessions were retained at an 85% rate. This difference was statistically significant when controlling for background characteristics (ethnicity, gender, Pell eligibility, college of enrollment, and high school GPA).

After controlling for background characteristics, participation in the peer mentor program was associated with a .05 higher GPA (3.05 vs. 3.00), but this small difference was not statistically significant. There was no significant difference in units earned for students who attended at least one peer mentoring session and students who did not.

The two groups of students (students who attended at least one mentoring session vs. students who did not attend any sessions) differed slightly in their background characteristics. These differences would have predicted a lower retention rate for students who participated in peer mentoring. Therefore, it is unlikely that the higher retention rate found for students who attended at least one peer mentoring sessions is due to differences in these background variables between the two groups. However, it is possible that the difference in retention is related to some unmeasured variable, such as student motivation.

Introduction

Project Succeed is a five-year improvement plan grant that was initiated at San Jose State University in October 2014. The goal of Project Succeed is to improve San Jose State University freshmen retention and graduation rates. WestEd STEM Evaluation Unit is serving as the external evaluator for the grant in Years 2-5 of the project. The improvement plan includes interventions in five areas: block scheduling of freshmen, increased support for freshmen through a Peer Connections program, living learning communities, a faculty mentorship, and a First Year Experience (FYE) for incoming freshmen.

This report explores the relationship of the Peer Connections program with one-year retention rates, credits earned, and GPA. Because the first cohort to participate in the Peer Connections program was the cohort entering in Fall 2015, WestEd has not yet received graduation data, and so this report does not include analysis of graduation rates.

The primary research questions addressed in this report are as follows:

- What relationship does student participation in the Peer Connections program as a mentee have with students' one-year retention rates, first year GPA, and first year units earned?
- Does the relationship between participation in Peer Connections and student retention rates differ based on students' gender, ethnicity, or Pell eligibility?

Methods

The Project Succeed team provided WestEd with student-level demographic, academic, and retention data for the Fall 2015 through 2017 cohorts. The team also provided WestEd with Peer Connections data for the Fall 2015 through 2018 cohorts; however, because the academic and retention data for the Fall 2018 cohort are not yet available, that cohort is not examined in this report.

The Peer Connections data for the 2016 and 2017 cohorts includes sessions from both the fall and spring semesters. For the 2015 cohort, a database error prevented the Project Succeed team from pulling data on sessions from the fall semester (but the team was able to pull data for spring

semester sessions). Because of this, inferences from the 2015 cohort are limited, as WestEd does not have the data to determine the full and correct list of students in the 2015 cohort who participated in the program. Students of the 2015 cohort who participated in the fall semester but not the spring semester would be miscategorized as not having participated in the peer connections program at all.

The focus of the analysis was the relationship between first year retention and the attendance of at least one peer connections mentoring session* (as a mentee) during the freshman year. We used logistic regression to examine this relationship while controlling for various background variables: ethnicity, gender, Pell eligibility, sub-college, cohort year, and high school GPA. High school GPA was chosen as the variable to control from prior academic success because complete SAT and ACT was not available. As part of this analysis, we examined the two groups of students (students who participated in at least one mentoring session verses students who did not) for any differences based on these background characteristics.

In addition, we analyzed the relationship between first year GPA and attendance of at least one mentoring session, and between first year units earned and attendance of at least one session. We used linear regression to examine these relationships while controlling for the same background variables as in the retention analysis.

Findings

Sample Characteristics

The table below (Table 1) shows the number of students who attended at least one peer mentoring session during their freshman year and the number of students who did not. Fall 2015 data on Peer Connections participation only includes students who participated in peer mentoring during the Spring 2016 semester, due to a database error explained above.

Table 1. Students who participated in peer mentoring sessions

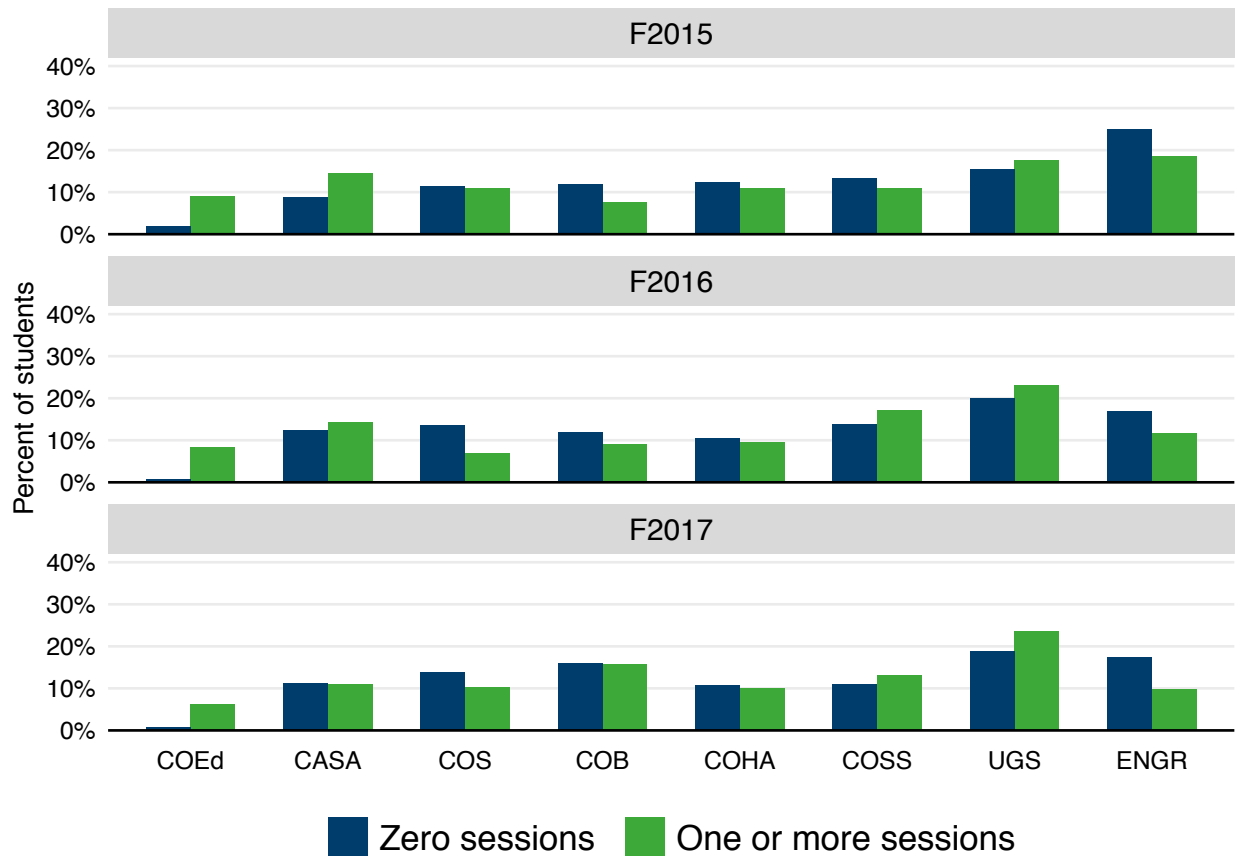
Cohort	Students who did not participate in peer mentoring	Students who attended at least one peer mentoring session*
Fall 2015	3258**	206**
Fall 2016	2655	561
Fall 2017	3672	831

* Sessions located at the Peer Connections center that were classified as tutoring or mentoring related and lasted at least 10 minutes.

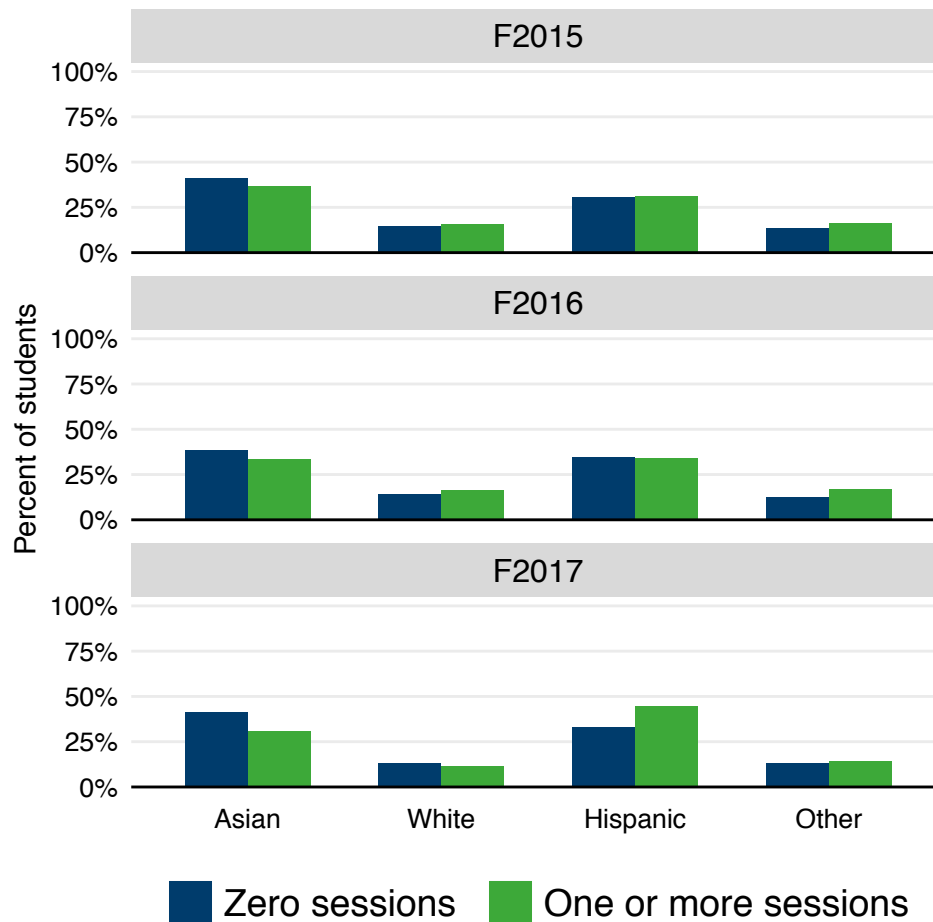
** For the 2015 cohort, a database error prevented the Project Succeed team from pulling data on sessions from the fall semester. So, the 2015 cohort data only counts students who attended a session in the spring semester. The 2016 and 2017 cohort data counts students who attended a session in either the fall or spring semester.

First, we compared the background characteristics of students who attended at least one peer mentoring session and those who did not. Because students self-selected whether they wanted to attend a peer mentoring session, there was the possibility that the two groups had large differences in their background characteristics (college, ethnicity, gender, Pell eligibility, and high school GPA).

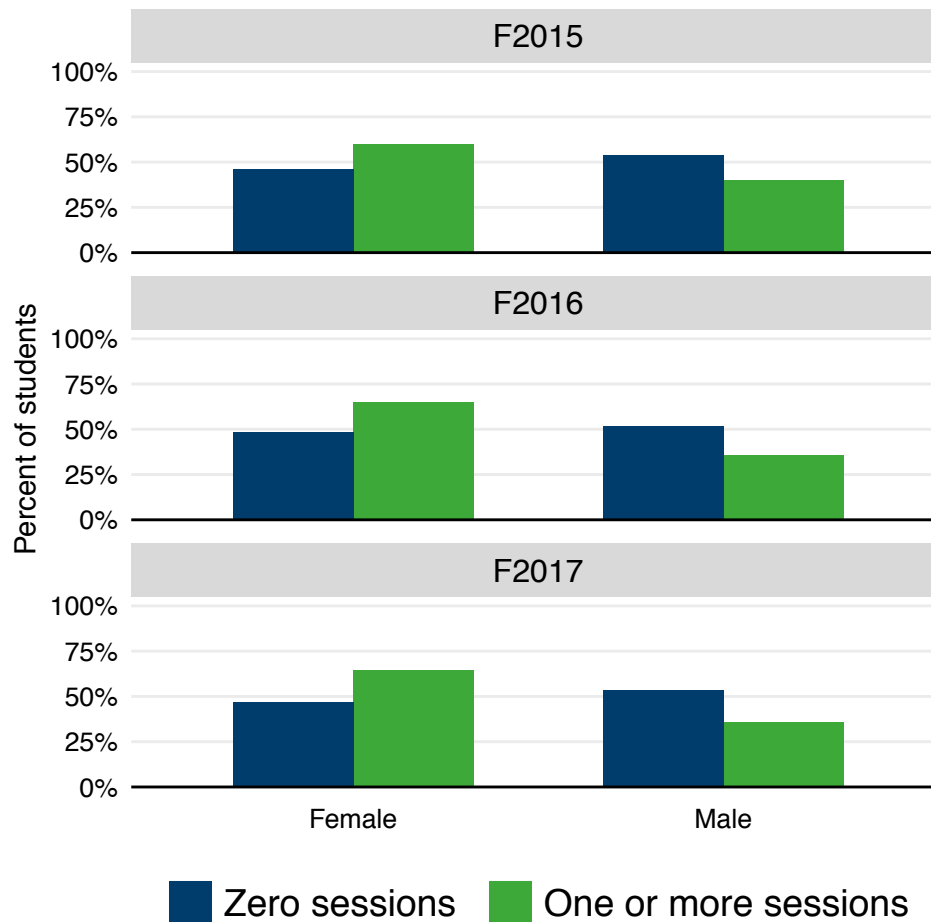
After examination, the two groups do differ by small amounts on all background characteristics. However, they differ in ways that would suggest a lower retention rate for students who participated in peer mentoring, based on background characteristics alone. Therefore, it is unlikely that the higher retention rate found for students who attended at least one peer mentoring sessions is due to differences on these background variables between the two groups.

Figure 1. Small differences in students enrolled in various colleges

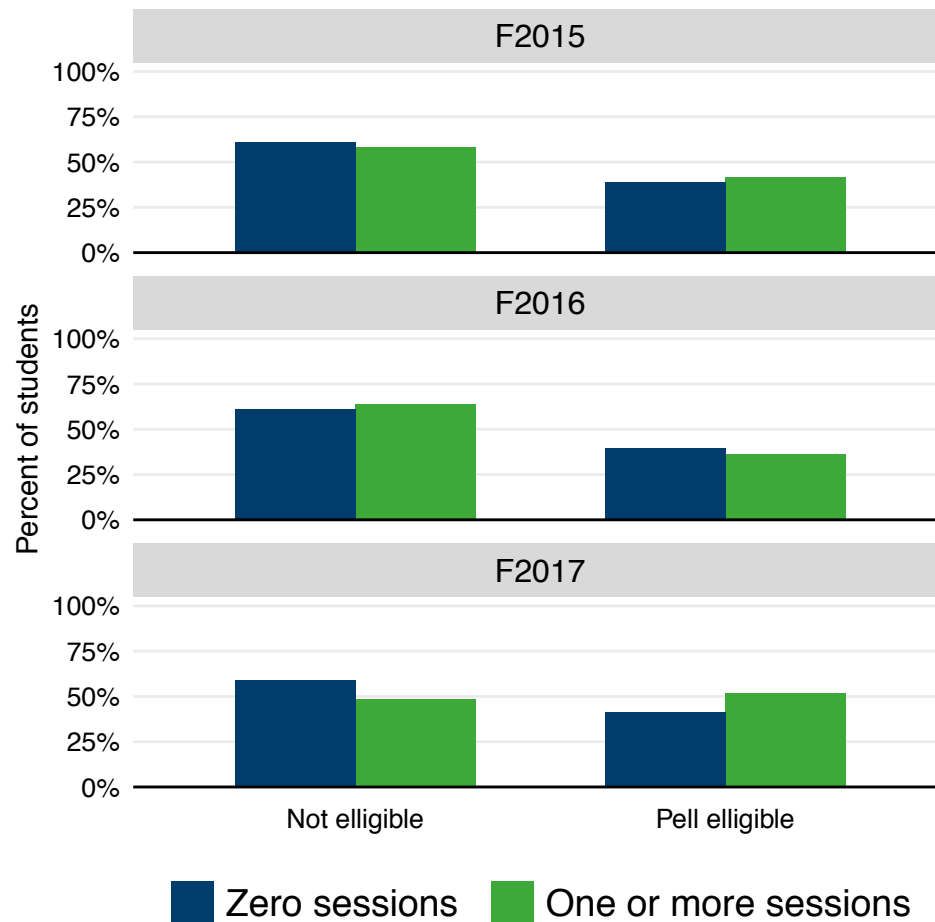
The consistent difference between the two groups across all cohorts is that a greater percentage of students in the College of Education and lower percentage of students in the College of Engineering attended at least one mentoring session (Figure 1). There is some minor variation from year-to-year for the other colleges, but nothing as consistent or large as the differences for the Colleges of Education and Engineering. The average retention rate for the College of Education students from the three cohorts is 82%, tied for the lowest among all colleges, while the average retention rate of Engineering students is 90%, the highest of all colleges. Because a higher percentage of Education students and a lower percentage of Engineering students make up the group of students who participated in peer mentoring, we would expect a lower retention rate than students who did not participate, all else being equal.

Figure 2. Slightly fewer Asian and more Hispanic students in F2017 cohort

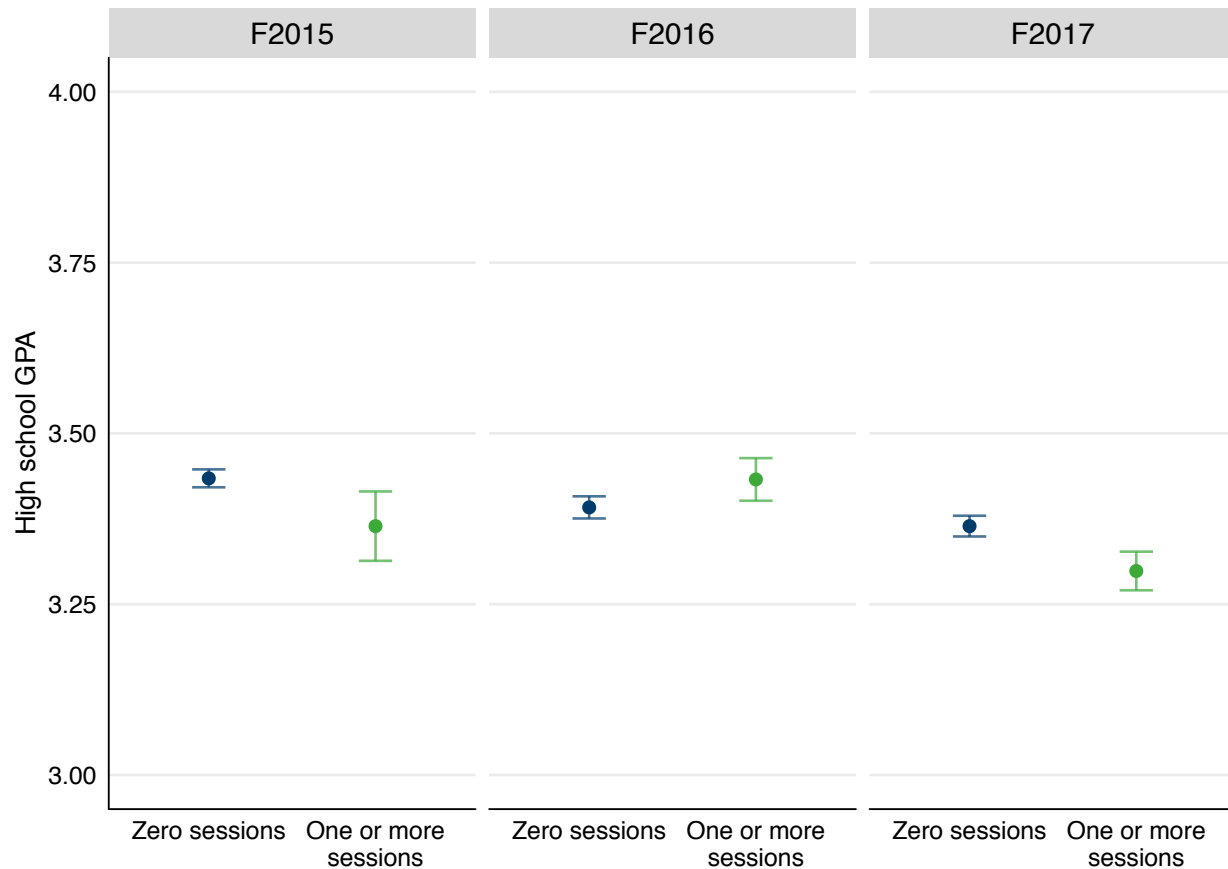
While the ethnicity distributions of the two groups were similar for the Fall 2015 and 2016 cohorts, the 2017 cohort had fewer Asian students and more Hispanic students attend peer mentoring sessions, when compared to the students who did not. Asian students as a whole were retained at a 91% rate, while Hispanic students were retained at an 81% rate (Figure 2). Based on ethnicity alone, we would expect a lower retention rate of students in peer mentoring for the Fall 2017 cohort than for students who did not attend.

Figure 3. More female students attended at least one session

In the group of students who attended peer mentoring, a higher percentage were female than male (Figure 3). In the group of students who did not participate in peer mentoring, there was about the same percentage of female and male students. For the university as a whole, female students were retained at an 87% rate, while male students were retained at an 85% rate. Because the group of students who participated in peer mentoring contains a higher percentage of female students, we would expect the retention rate to be slightly higher than the rate for students who did not participate, based on gender alone.

Figure 4. Small difference in Pell eligibility for the F2017 cohort

There were no significant differences in Pell eligibility between the two groups for the 2015 and 2016 cohorts, but for the 2017 cohort there was a slightly higher percentage of Pell eligible students among those who participated in peer mentoring (Figure 4). Across the university, the retention rate of Pell eligible students was 84%, and the retention rate of non-eligible students was 87%. We would again expect a slightly lower retention rate for the 2017 cohort students who attended peer mentoring compared to those who did not attend, based on Pell eligibility alone.

Figure 5. Small differences in high school GPA between the two groups


* Plot shows means and 95% confidence intervals. Confidence intervals are wider for groups with fewer students.

There were small differences between the average high school GPA of each group for all three cohorts (Figure 5). For the 2015 and 2017 cohorts, the students who attended peer mentoring had slightly lower GPAs in high school, while in 2016, they had slightly higher GPAs. Because high school GPA is a statistically significant predictor of retention at SJSU, we would expect, on average, for students who attended peer mentoring to be retained at a slightly lower rate than students who did not attend, when holding all other variables equal.

One-Year Retention Rate

Despite the demographic differences between students who participated in peer mentoring and students who did not, the one-year retention rate of participating students was higher. Across all three cohorts, students who attended at least one peer mentoring session were retained at a 90% rate, while students who did not attend any peer mentoring sessions were retained at an 85% rate. Using logistic regression and controlling for the background characteristics discussed above, the difference in retention rate is statistically significant ($p < .01$). Based on a logistic regression model, the predicted average retention rate for students who attend peer mentoring

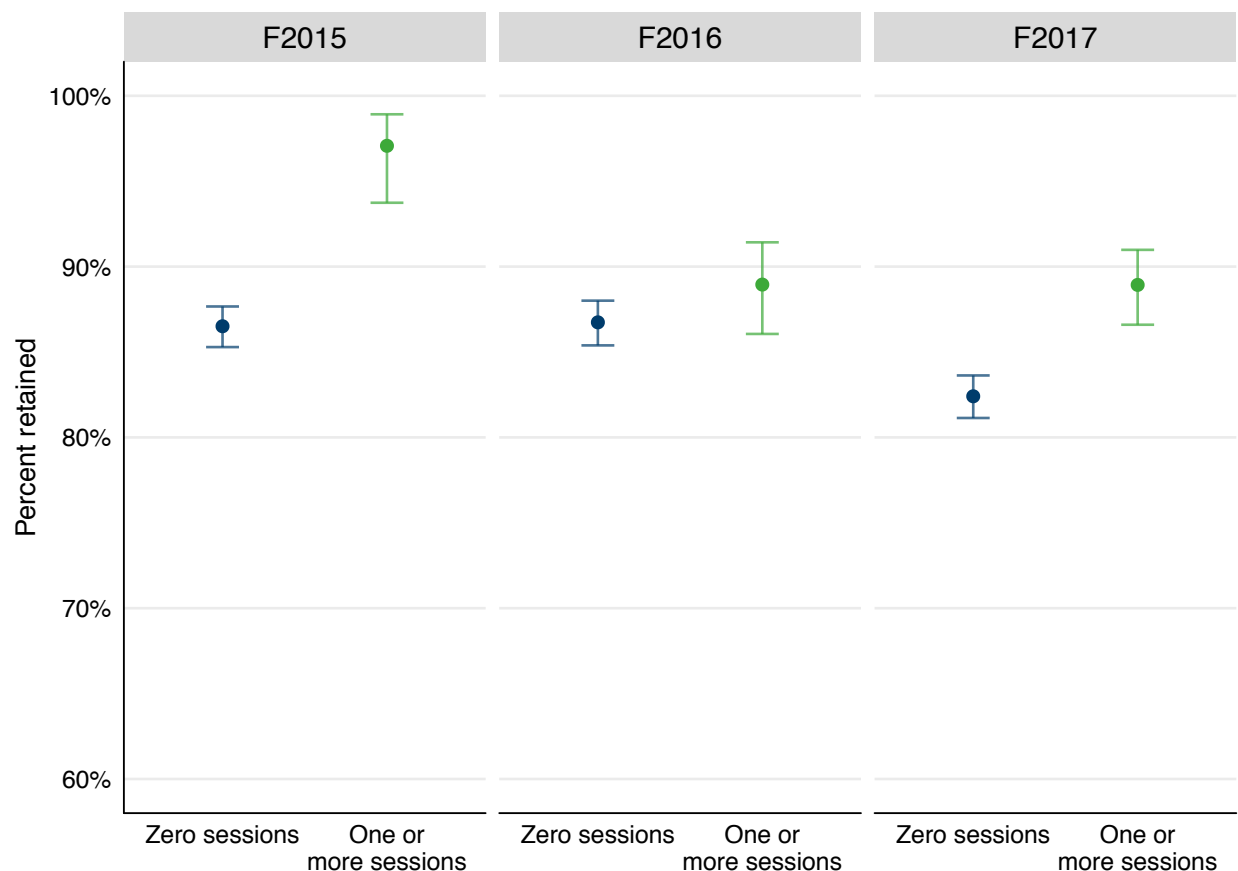
(and are average on all background variables) is 91%, while the predicted rate for students who do not participate (and are average on all background variables) is 85%.

Although there is evidence that attendance of at least one peer mentoring session is related to higher retention rates, this is not enough to say the mentoring sessions were the cause of the increased retention. Even though a number of background variables were controlled for, including prior academic performance, there may be other explanatory factors in the difference in retention rate. For example, it may be that students who chose to go to peer mentoring were more motivated to stay in college than students who did not go to peer mentoring.

We further examined the relationship between the number of peer mentoring sessions attended and retention rate, but found no statistically significant increase in retention rate as the number of sessions attended increased. We also explored whether the relationship between participation in Peer Connections and retention rate differed based on students' gender, ethnicity, or Pell eligibility. While the difference in retention rate does vary some by sub-group, it was not large enough to be statistically significant.

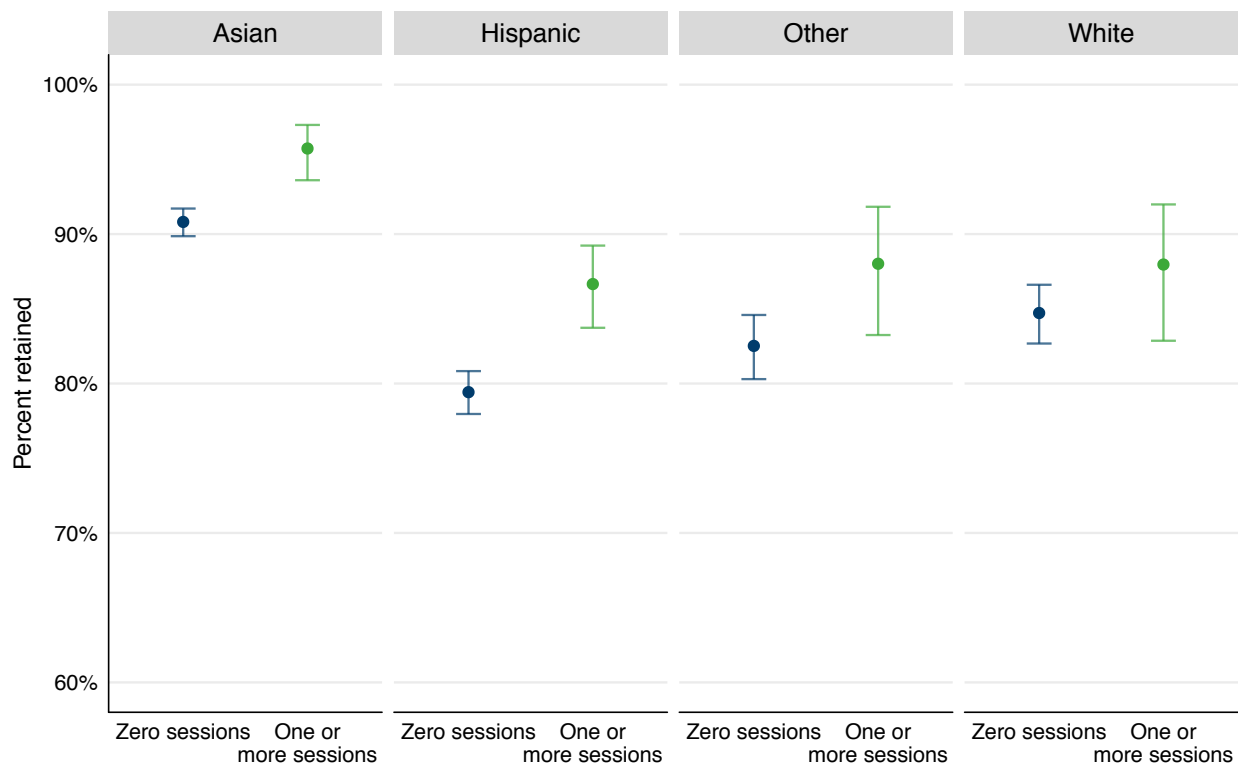
Plotted below (Figure 6) are the mean retention rate and 95% binomial confidence interval by cohort and by the sub-groups of interest (ethnicity, gender, Pell eligibility).

Figure 6. Retention rate by cohort

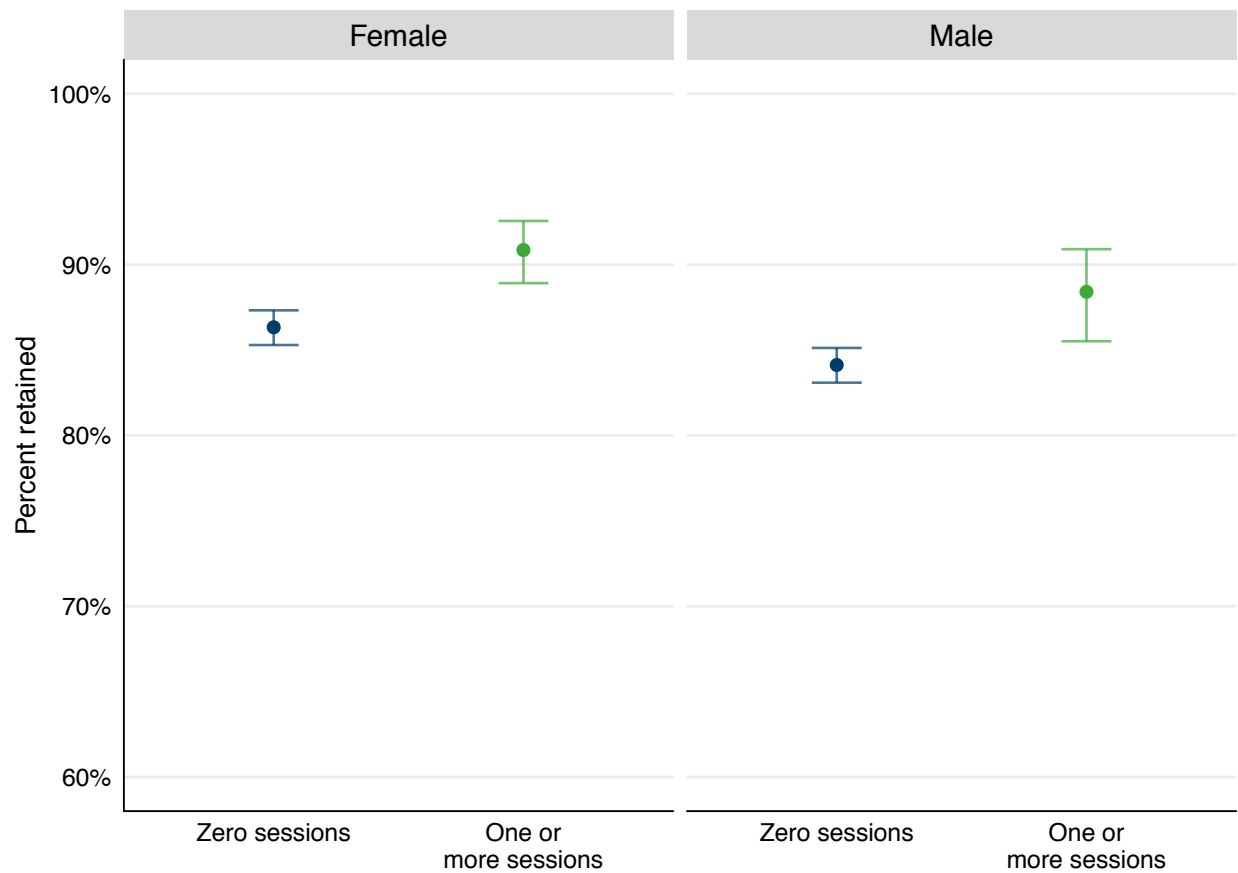


Students who attended at least one mentoring session were retained at a higher rate for all three cohorts, but the difference was only statistically significant for the 2015 and 2017 cohorts.

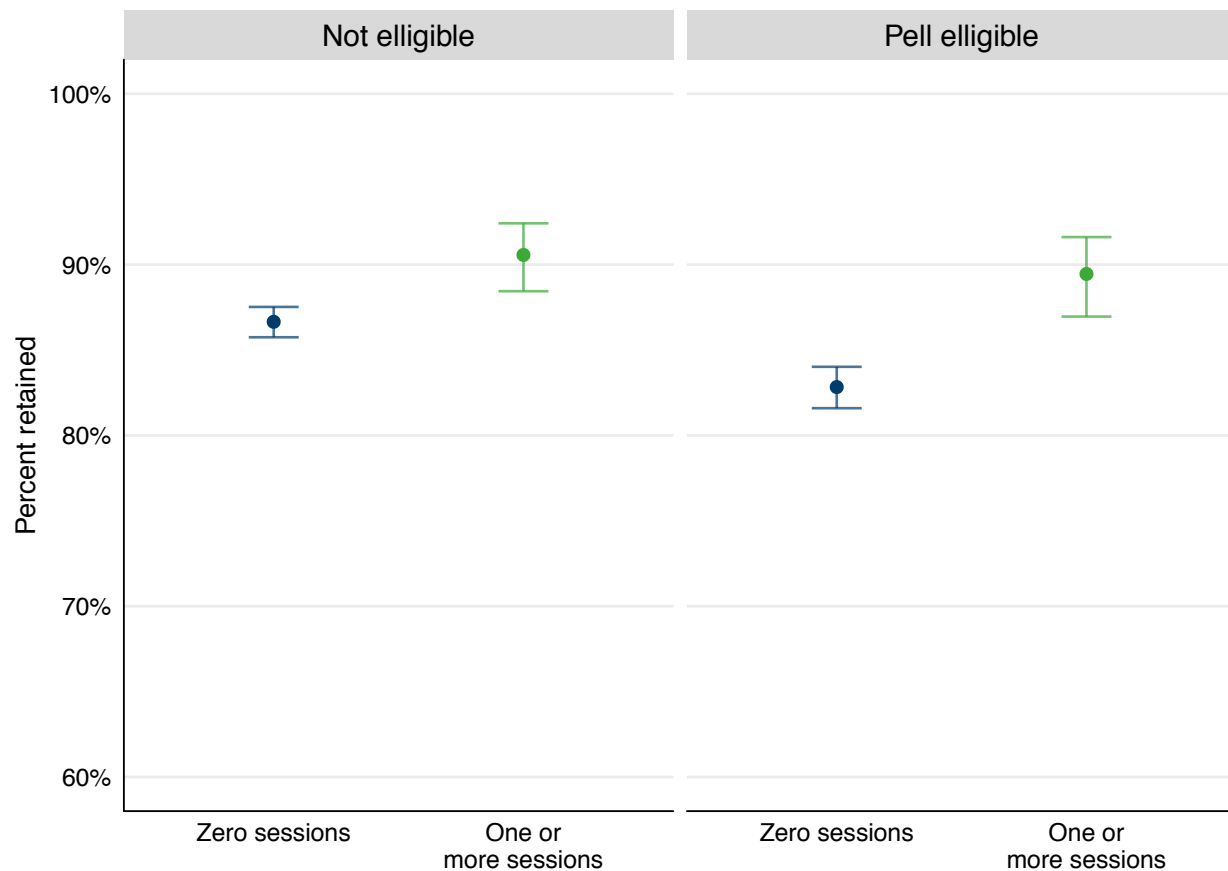
Figure 7. Retention rate by ethnicity



The retention rate of students who participated in peer mentoring was higher for all ethnicities, although the difference was not statistically significant for White students (Figure 7). Because of the lower number of students of White and Other ethnicities, the 95% confidence interval error bars are larger.

Figure 8. Retention rate by gender

The retention rate of students who participated in peer mentoring was higher for both male and female students (Figure 8).

Figure 9. Retention rate by Pell eligibility

The retention rate of students who attended at least one session of peer mentoring was higher regardless of Pell eligibility (Figure 9).

GPA and Units Earned

As secondary analyses, we examined the relationship between the Peer Connections program and first-year GPA and units earned. First-year GPA and units earned data were not included in the academic data for the Fall 2017 cohort, and so only the 2015 and 2016 cohorts were examined.

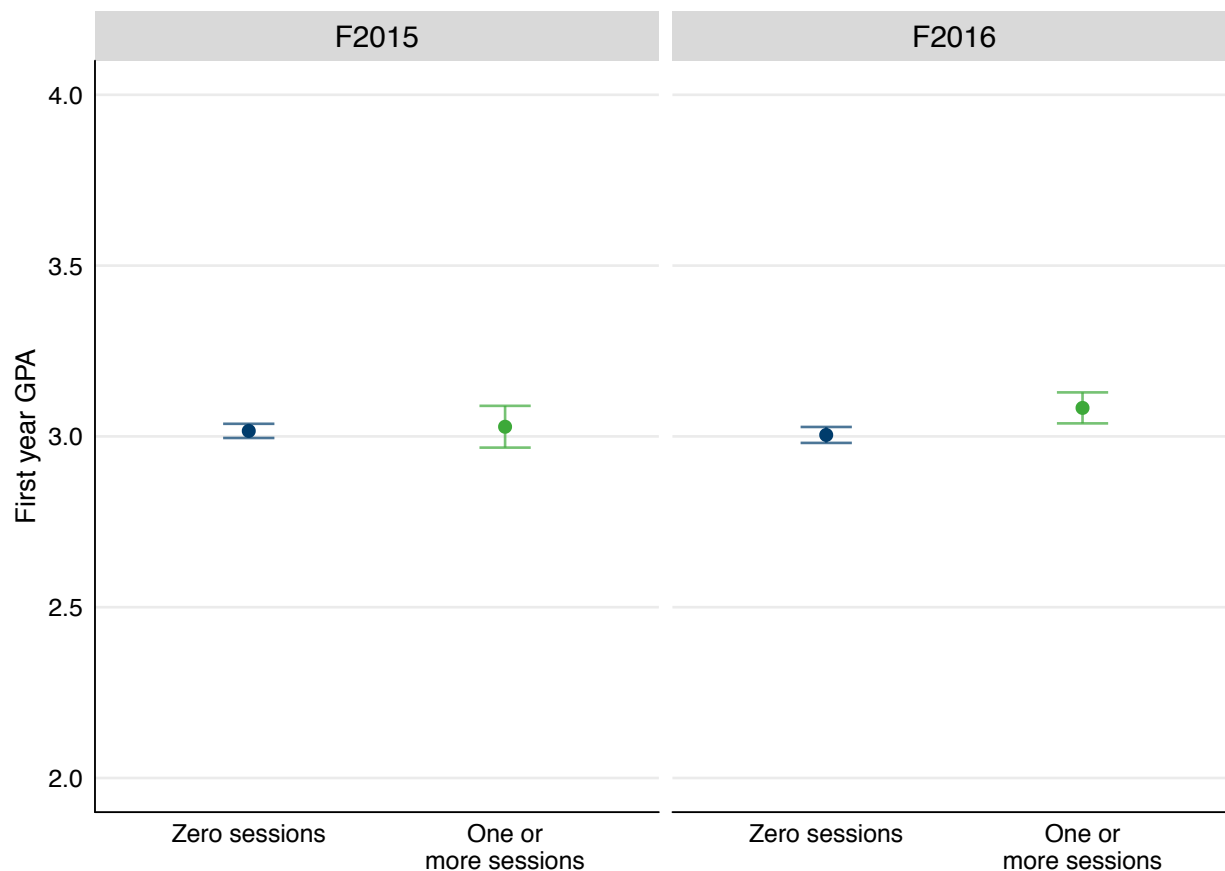
There was no significant difference in units earned for students who attended at least one peer mentoring session and students who did not. This may be because freshman year was not a long enough timeframe for differences in units taken to appear.

After controlling for background characteristics, participation in the peer mentor program was associated with a .05 higher GPA (3.05 vs. 3.00), but this small difference was not statistically significant. For students who attended at least one peer mentoring session, there was no significant relationship between the number of sessions attended and GPA. We also explored

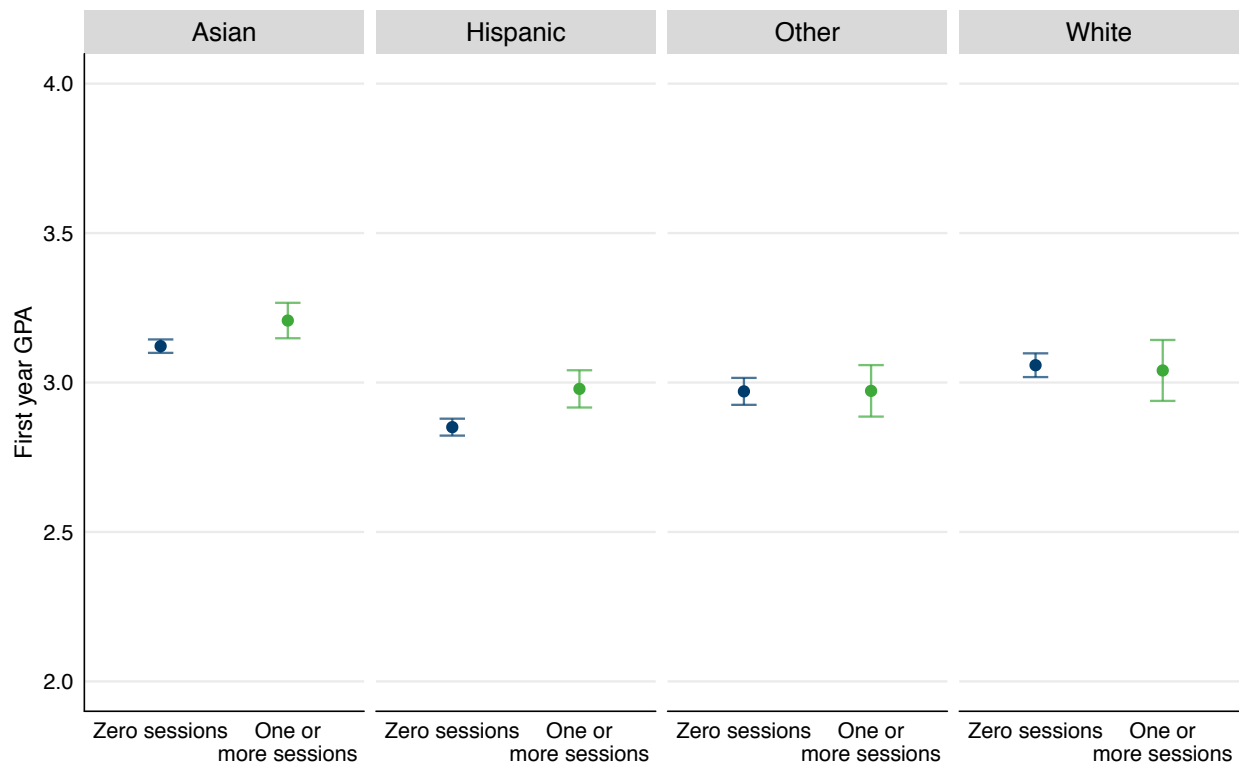
whether the relationship between participation in peer connections and GPA differed based on students' gender, ethnicity, or Pell eligibility. While the difference in GPA does vary some by sub-group, it was not by a large enough amount to be statistically significant.

Plotted below (Figure 10) are the mean first-year GPA and 95% confidence interval by cohort and by the sub-groups of interest (ethnicity, gender, Pell eligibility).

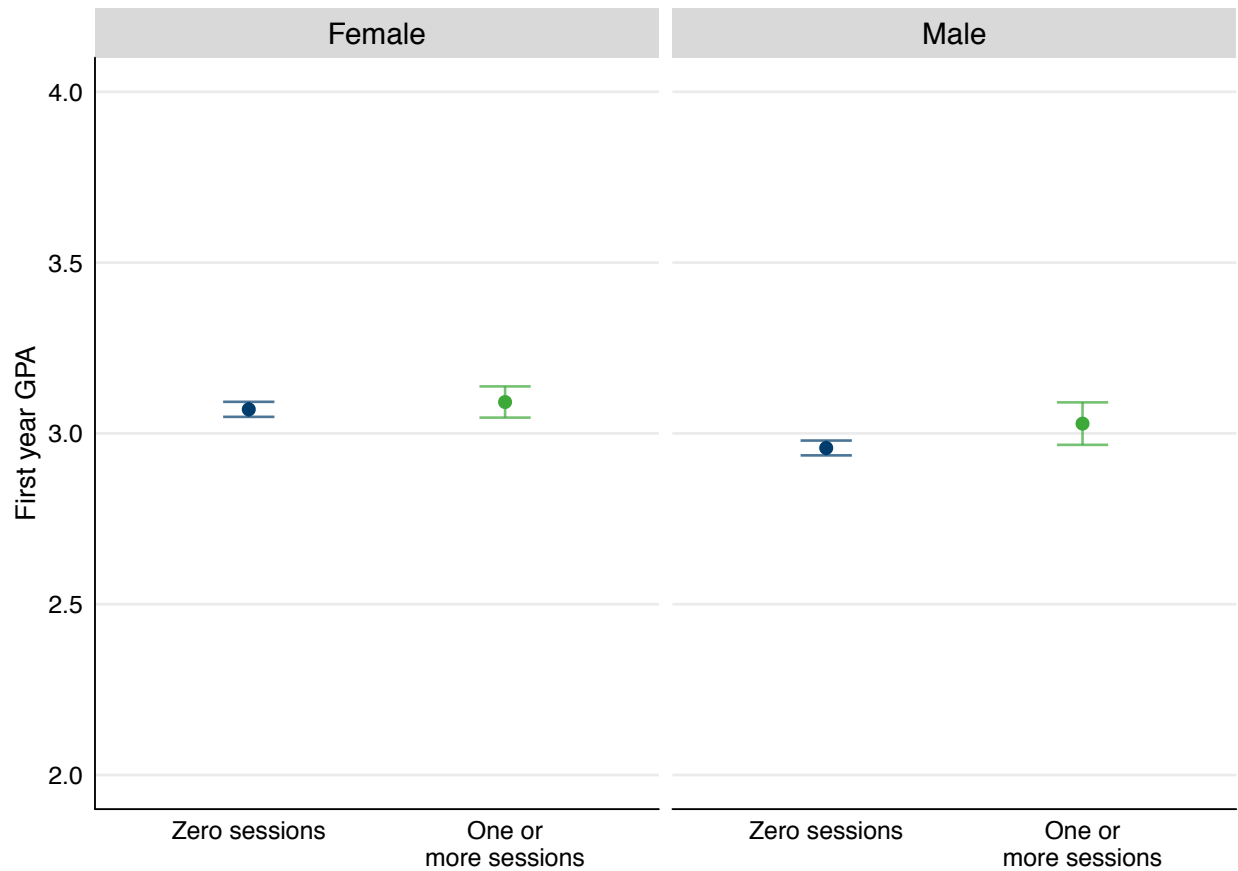
Figure 10. GPA by cohort



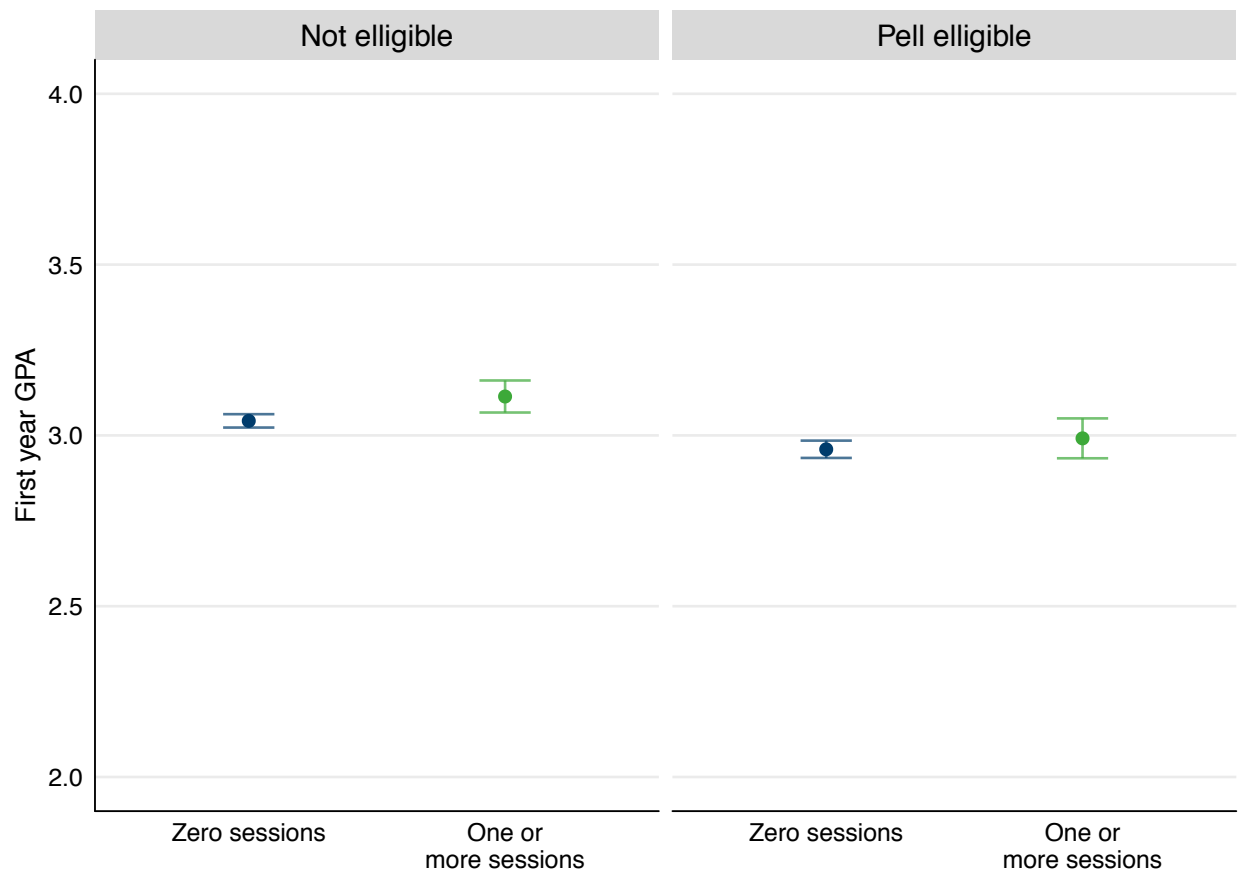
For the 2016 cohort, students who attended at least one peer mentoring session had a slightly higher GPA. In the 2015 cohort, both groups had about the same GPA.

Figure 11. GPA by ethnicity

The GPA of students who participated in peer mentoring was slightly higher for Asian and Hispanic students, but about the same for White students and students of Other ethnicities (Figure 11).

Figure 12. GPA by gender

The GPA of students who participated in peer mentoring was slightly higher for male students, but not for female students (Figure 12).

Figure 13. GPA by Pell eligibility

The GPA of students who participated in peer mentoring was slightly higher for students who were not Pell eligible, but about the same for Pell eligible students (Figure 13).