

THAT'S YOUR CUE: COMPARING MALE AND FEMALE STUDENTS' PERCEPTIONS OF SOCIAL NORMS AROUND INVOLVEMENT ON CAMPUS

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Co-curricular activities have been shown to impact many measures of academic success, such as academic self-confidence, leadership abilities, identity development, personal development, and student thriving. Borrowing from established research paradigms on pluralistic ignorance, the current study sought to explore whether first-year and senior students' perceptions of themselves and others vary when it comes to attending and participating in campus activities and whether sex has an impact on those perceptions. Using data from the 2018 National Survey of Student Engagement, the study included 10,512 students attending 33 institutions. The results suggest significant differences across the sexes and within reference group (self vs. other) for attending campus activities and participating in co-curricular activities. These findings can help guide faculty, advisors, and administrators to better understand how students' perceptions of peer co-curricular activities might relate to their own, and how those perceptions might affect their behavior positively and negatively.

The positive influence of out-of-class experiences on student development is well-documented in the higher education literature (Astin, 1993; Chickering, 1969; Kuh, 1993, 1995; Mayhew et al., 2016; Pascarella & Terenzini, 2005). In particular, co-curricular activities have been shown to impact many measures of academic success, such as academic self-confidence (Chang et al., 2004; Chang et al., 2006; Denson & Chang, 2009; Kim & Sax, 2014); leadership abilities (Dugan et al., 2012, 2013; Hurtado, 2005; O'Neill, 2012; Park & Millora, 2012; Sax, 2008); identity development (Hurtado et al., 2011); personal development (Astin et al., 2011; Lee, 2002); and student thriving (Vetter et al., 2019). Much of the research examines particular types of co-curricular engagement. For instance, a meta-analysis of 40 studies found that service learning positively affected students' holistic development (Yorio & Ye, 2012). In another example, Smith and Chenoweth (2015) found that for college graduates, extracurricular leadership roles positively impacted their development of leadership skills and interpersonal abilities, which ultimately improved their ability to succeed in their careers.

More holistically, studies continue to show that students who engage with peers beyond the classroom accrue feelings of social inclusion and belonging (Nunn, 2021), which correspond with a variety of positive outcomes, including more extensive academic engagement and improved academic performance (Deil-Amen, 2011; Walton & Cohen, 2007), therefore benefitting a student's collegiate career and transcript. Many universities aim to create better citizens and prepare students for the job force. Stuber (2009) observed that extracurricular participation can provide students with valuable sociocultural resources, which can be utilized as soft skills in the workforce, granting them extra traction in interviews and interpersonal relationships. Rivera (2011) confirms these findings by acknowledging that extracurricular activities may serve as a new credential for job candidates' social and moral character in the hiring process to supplement missing years of professional work experience during an average student's college years.

But Can Students Be Too Involved on Campus?

If the benefits of co-curricular activities are always positive, one might assume that faculty, administrators, student affairs professionals, and staff should invest time in encouraging students to engage in these worthwhile activities. While most of the research suggests many benefits of co-curricular engagement, on the other hand, there are still critics that argue students are spending too much time in all these activities and that there is a trade-off with the time pursuing academics (Babcock & Marks, 2010; Taylor et al., 2020). Some studies have even found that participation in co-curricular activities detracts from subject matter learning and cognitive skill development (Armstrong & Hamilton, 2013; Clotfelter, 2011; Nathan, 2005). Perhaps it is a curvilinear relationship, as Zacherman and Foubert (2014) suggested, where a low amount of participation was beneficial to grades, but high participation actually had a negative impact. A recent study continued to question how campus involvement impacts academic progress for students and found through a latent class analysis that varying levels of involvement influence academics (Lingo & Chen, 2022). Students who were predicted to spend more time involved in co-curricular and leadership activities scored higher in their academic coursework during the first semester of their first year. They then earned lower GPAs later in their collegiate career after becoming more involved.

Additionally, students who exhibit the highest levels of involvement in co-curricular and leadership positions (orientation leaders/peer educators), also exhibit the same patterns (Lingo & Chen, 2022). If the relationship between campus involvement and student success is not linear, how can students know the “right” amount of time to spend in worthwhile co-curricular activities? Additionally, are there certain student groups we should encourage more or less than others?

Demographic Differences in Campus Involvement

Many students find involvement opportunities as safe spaces to develop an affinity with their campus and feel connected to their social identities. Still, existing studies have suggested differences in co-curricular engagement by some key demographics. In particular, research has suggested that both female and racial/ethnic minority student involvement requires navigating a more complex process in order to find groups of familiarity amongst their peers and cultures, thus allowing them to gain affinity to their universities and social groups (Silver, 2020). Also, in Silver’s (2020) research, students from lower socio-economic backgrounds struggle to find opportunities to get involved because they lack knowledge about how to find clubs and organizations based on their interests. Many of these students highlighted that they join organizations their peers referred them to due to the lack of knowledge of other organizations, regardless of whether or not they were fully interested in their peer’s organization.

As for time participating in co-curricular activities, research shows a gap between the involvement of female and male students, with females spending more time on these activities (Kwon et al., 2020; Zacherman & Foubert, 2014). One recent study found that women were more likely than their male counterparts to participate in multiple co-curricular learning opportunities, but the roles within these organizations also differed. Women were more likely to plan or promote an event, recruit new members, conduct a research presentation, write a research report, or mentor others, while men were more likely to engage in creating by-laws or to design products (Kwon et al., 2020). Findings on gender differences also show that women seeking leadership opportunities in co-curricular activities have common themes of collaboration and positivity, based on Haber’s (2012) study on leadership themes amongst students.

Some research has also shown that the benefit from co-curricular involvement differs by gender. In particular, one study found gender differences in the impacts on academic performance (Zacherman & Foubert, 2014). Women perform better academically when they are involved in co-curriculars. While men also show increases in their academic performance when they are involved in up to 10 hours of co-curricular involvement per week, participation hurts men’s GPA if they are involved in more than 10 hours. Zacherman and Foubert (2014) concluded that men may be more susceptible to becoming overwhelmed by their co-curricular commitments when compared to their female counterparts. These gender differences suggest the need to understand how students perceive the “right” number of hours to spend in co-curricular activities and their potential time management strategies.

Pluralistic Ignorance

A construct that can give insight into how students choose to spend their time on activities such as involvement on campus is pluralistic ignorance. Students often look to their peers on how they should behave in various situations (Cialdini & Goldstein, 2004; Glynn et al., 2009). Initially introduced in the 1930s as part of the emerging social psychology literature, pluralistic ignorance refers to “erroneous cognitive beliefs shared by two or more individuals about the ideas, feelings, and actions of others” (O’Gorman, 1986, p. 333). Relatively more recently, within the past 30 years there has been a revival in research dedicated to this topic, particularly exploring several negative or risky behaviors among college students. Research has found that there are misperceptions of social norms when it comes to alcohol use (Perkins, 2002; Suls & Green, 2003), sexual behaviors (Kuperberg & Padgett, 2017; Lambert et al., 2003; Paul et al., 2000), smoking and illegal drug use (Hines et al., 2002), and binge eating (Crandall, 1988) among undergraduates. These misperceptions of social norms can contribute to negative outcomes, and individuals may then regret or debate the decisions that led to those outcomes (Sargent & Newman, 2021).

Regarding classroom behaviors and pluralistic ignorance, Buzinski and colleagues (2018) found that misperceptions of how much other students spent studying negatively influenced exam scores. However, using an intervention to refute pluralistic ignorance moderately mitigated the negative impact on students’ scores (Buzinski et al., 2018). Furthermore, the research indicates that gender differences can play a notable role in the emergence of pluralistic ignorance, with women showing more concern about campus alcohol practices and norms than their perceptions of concern from both same- and opposite-sex peers (Suls & Green, 2003). On a related note, research findings also demonstrate an expected double standard of men conveying more comfort with casual sexual behaviors than women, but both groups overestimate the comfort of their peers concerning these behaviors (Lambert et al., 2003).

Social norms are often developed with a specific reference group in mind. Some research has further explored how individuals can “recalibrate” in reference to perceptions of who is even considered part of one’s peer group in given situations. Wänke (2002) examined the effect of manipulating reference groups on a survey and found this could affect responses about the frequency of movie attendance. For instance, the results of the study suggested that students considered themselves as more frequent movie-goers in comparison with the general population but not in comparison to their college peers. Another study indicated that part-time students may be using other part-time students as their reference group, and thus their interpretation of vague quantifiers (such as “sometimes” or “very often”) on self-report surveys of academic behaviors differs from their full-time student counterparts (Rocconi et al., 2020). Thus, the research suggests that when people estimate their frequency of engaging in a particular activity, they do it within a comparison framework of others, including college peers (Wänke, 2002), part-time enrolled peers (Rocconi et al., 2020), and race, education, and age group (Schaeffer, 1991).

The Current Study

While much of the literature supports the positive outcomes of campus involvement (Astin et al., 2011; Chang et al., 2004; Chang et al., 2006; Denson & Chang, 2009; Dugan et al., 2012, 2013; Hurtado, 2005; Hurtado et al., 2011; Kim & Sax, 2014; O’Neill, 2012; Park & Millora, 2012; Sax, 2008; Vetter et al., 2019), there is literature that suggests that these positive relationships are not linear. While increasing campus involvement has positive outcomes at first, student participation at the highest levels may lead to negative outcomes for cognitive skill development and academic success (Armstrong & Hamilton, 2013; Babcock & Marks, 2010; Clotfelter, 2011; Lingo & Chen, 2022; Nathan, 2005; Taylor et al., 2020; Zacherman & Foubert, 2014). Applying the concept of pluralistic ignorance, the current study wanted to explore whether students have realistic perceptions of how much time their peers spend attending campus activities and events and participating in co-curricular activities. If students do not understand the “social norms” around time spent in these activities, they may spend more time involved in these campus activities to “keep up” with their peers.

Given the previous research, it seems that conceptually, student perceptions of their own and others’ behaviors concerning campus involvement may also differ. Additionally, the gender or sex of the student may play a role. The current study sought to explore whether first-year and senior students’ perceptions of themselves and oth-

ers vary when it comes to attending and participating in campus activities and whether sex has an impact on these perceptions. Borrowing from established research paradigms on pluralistic ignorance, this study explores whether there are within-group (self vs. other) and between-group (sex) differences for a sample of college students concerning their perceptions of 1) frequency of attending campus activities and events and 2) time spent participating in co-curricular activities. This study also addressed potential interactions, exploring whether patterns are more or less pronounced for particular groups. The research questions guiding this study are:

1. Do within-group (self vs. other) differences exist among college students concerning their perceptions of a) frequency of attending campus activities and events and b) time spent participating in co-curricular activities?
2. Do between-group (e.g., sex) differences exist among college students concerning their perceptions of a) frequency of attending campus activities and events and b) time spent participating in co-curricular activities?

METHOD

The dataset utilized in this study is derived from the National Survey of Student Engagement (NSSE) 2018 administration. NSSE is an annual survey administered to first-year and senior students every spring at four-year colleges and universities across the United States and Canada. The goal of NSSE is to assess college students' exposure to and participation in a variety of effective educational activities. Participating institutions opt to administer NSSE for several reasons, including but not limited to national, regional, and disciplinary accreditation; cross-disciplinary curricular improvement efforts; program and departmental evaluation; and institutional efforts such as measuring the effectiveness of First-Year Experience programming or high-impact practices. The items on NSSE address many different types of student experiences, student time use, and perceptions of institutional climate and encouragement.

Since its inaugural administration in 2000, NSSE has always concentrated on first-year and senior students, as these groups of students are at two essential points in their postsecondary education, with first-year students putting down a foundation and seniors holding the most undergraduate experience (NSSE, 2013). Data suggest that the experiences and makeup of these groups are diverse. Thus, it is best to keep them separate when examining their engagement, aiming to account for their different enrollment patterns, transfer status, retention, and persistence (NSSE, 2015). Due to these important differences between first-year and senior students, NSSE has a rigorous requirement to retain separate groups of students in reporting and data analysis, and this was applied to the groupings in the current study.

Sample

Survey responses from the overall 2018 administration were gathered from over 275,000 first-year and senior students at 476 colleges and universities. In general, the NSSE participating institutions and survey respondents are representative of the characteristics of all U.S. undergraduate students at 4-year institutions. However, there are a few exceptions (for instance, full-time, female, and White students are slightly overrepresented; see NSSE, 2018 for details). The main survey instrument is termed the NSSE "core" survey. Still, each year, NSSE also appends extra "experimental" items to the end of the survey for research and development purposes. Five experimental item sets were written and administered to a randomly selected subset of institutions participating in the 2018 administration. The current study uses responses to one of these experimental item sets. Data were available from 5,025 first-year students and 5,487 seniors attending 33 institutions who responded to this experimental item set after completing the core NSSE survey. There were 23 private and ten public institutions. In terms of institutional enrollment size, there were seven schools with fewer than 1,000 students, 14 schools in the 1,000 - 2,500 range, five schools in the 2,500 - 4,999 range, five schools in the 5,000 - 9,999 range, and two schools with over 10,000 students. Regarding Carnegie classification, 5 were Doctoral universities, 15 were Master's colleges and universities, 10 were Baccalaureate colleges, and three had an "Other" Carnegie classification.

Around 68% of the students were female, 91% were enrolled full-time, and 81% were traditional age (i.e., less than 24 years old). For self-reported race/ethnicity, about 60% of respondents were White, 4% were Asian, 13% were Latino, 9% were African-American, 9% were multiracial, and 3% identified with another racial/eth-

nic group (e.g., Native American, Pacific Islander, or an unspecified “Other” category). Students were asked to self-report their academic major, which was then collapsed into ten fields: Arts & Humanities (12%); Biological Sciences (11%); Physical Sciences, Mathematics, & Computer Science (6%); Social Sciences (10%); Business (16%); Communications, Media, & Public Relations (4%); Education (8%); Engineering (5%); Health Professions (17%); and Social Service Professions (5%). This recoding of majors paralleled the standard major field groupings used by NSSE staff for reporting. These demographic characteristics for the subsample are mostly consistent with the overall patterns for NSSE respondents (NSSE, 2018).

Data Collection Procedures

Eligible students received an invitation to participate in NSSE via an email contact, which included a unique link to the survey instrument. All first-year and senior students at the participating institutions received this email invitation. Survey administration took place online, and the browser sessions were untimed so students could take as much time as necessary to complete the survey. The NSSE data collection period is during the spring semester of each year, ranging from February to May, depending on the institution’s academic calendar. Students receive a maximum of five email contacts per the institutional participation agreements and the IRB stipulations. For the 2018 administration, the average institutional response rate was 30% (NSSE, 2018).

Measures

The key independent variables for this study were sex and reference type (self vs. other). The dependent variables were two items from the core and two from the experimental item set, which asked about the frequency of engagement in several different behaviors. The first item from the core is framed from a “self” perspective and asks, “During the current school year, about how often have you done the following?” with the ordinal response options of Never, Sometimes, Often, and Very Often. Included in this item group was “Attended campus activities and events.” Another item group on the core survey focuses on the use of time regarding several types of activities, asking students to estimate how many hours per week they spend participating in co-curricular activities, with response options of 0, 1-5, 6-10, 11-15, 16-20, 21-25, 26-30, and more than 30. The experimental set then asked respondents about these same behaviors but from an “other” perspective, with “During the current school year, about how often do you think *most other students at your institution* have done the following?” and “About how many hours per week do you think *most other students at your institution* spend:” as the stems, with the same response options as in the previous stems (attended campus activities and events, participating in co-curricular activities). The wording for these “other” perspective items was based on previous pluralistic ignorance research (Suls & Green, 2003).

The core survey instrument also collected information on demographic characteristics from respondents, such as enrollment status, transfer status, first-generation status, race/ethnicity, age, and major. For this study, the variable measuring sex was reported by the institution, and responses included male and female. The student-level survey data was then merged with publicly available institution-level data, such as institutional enrollment size, institution control status (public vs. private), and Carnegie classification.

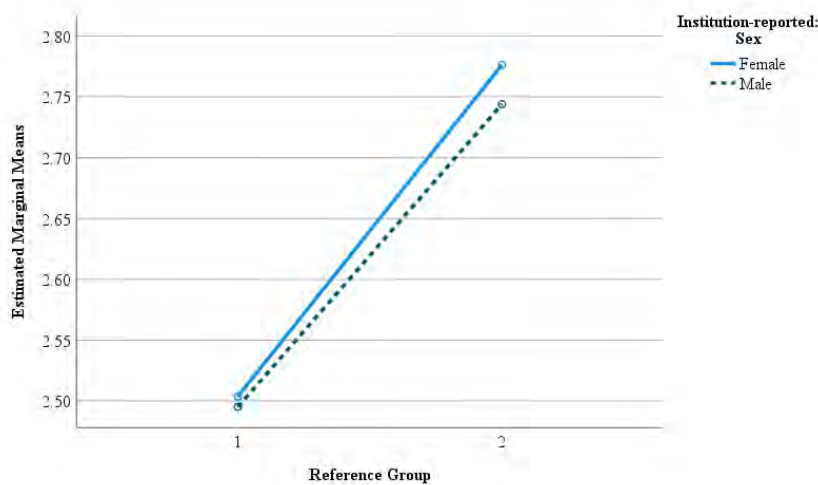
Analyses

To address the research questions, the four items regarding campus activities served as the dependent variables in a series of two-way mixed ANOVAs to examine differences between sex, reference type (self vs. other), and interaction effects. This analysis was selected because there are two independent variables, and one of them (self vs. other reference) was measured using the same participants, while the other (sex) was measured using different participants (Field, 2009). Following NSSE’s recommended analytic practices, separate analyses were conducted for first-year and senior students. Sex was treated as a between-subjects (i.e., independent samples) factor, and reference type was treated as a within-subjects (i.e., dependent samples) factor. Partial η^2 was used as an estimate of effect size. Interaction effects were investigated first, and Bonferroni adjustments were made for any interpreted main effects (Field, 2009).

RESULTS

Perceived frequency of campus activity participation was examined with a series of four separate 2 (sex) x 2 (reference group: self, most other students) analyses of variance (ANOVAs), with repeated measures on the second factor. For first-year students, results concerning the frequency of attending campus activities and events suggest significant main effects for reference group, $F(1, 4970)=215.46, p<.001$, partial $\eta^2=.042$, which indicated that students perceived other students as attending campus activities more frequently than themselves. However, this difference was small in magnitude. In contrast, there were no significant differences for the main effect of sex or the interaction effect (Figure 1).

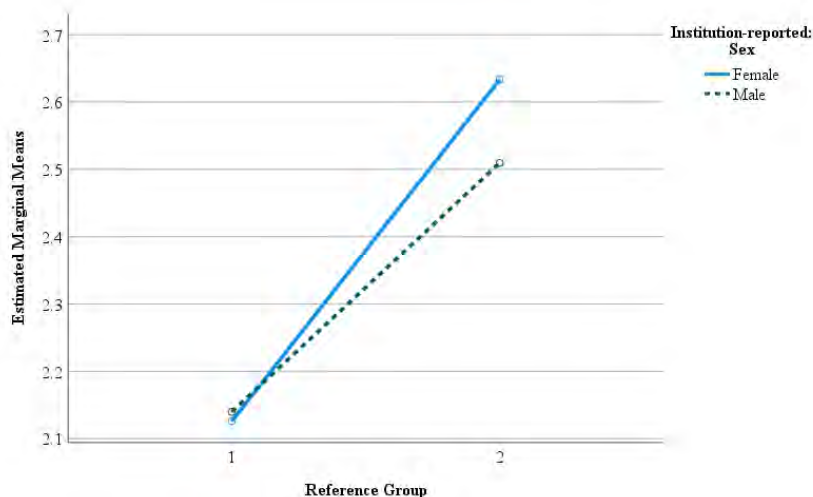
Figure 1. *Interaction Effects for First-year Perceptions of Attended Campus Activities and Events*



Note. Reference Group = reference type; 1 = self; 2 = other.

For seniors, there were significant main effects for sex, $F(1, 5405)=8.295, p=.004$, partial $\eta^2=.002$, which were very small in magnitude, and reference group, $F(1, 5405)=659.625, p<.001$, partial $\eta^2=.109$, which were more moderate in magnitude. The sex x referent interaction was also significant, $F(1, 5405)=16.302, p<.001$, partial $\eta^2=.003$, but also very small in magnitude. Main effects analyses indicated that females perceived more frequently attending campus activities than males and that students perceived other students as attending campus activities more frequently than themselves. The significant interaction effect suggested that this self-other discrepancy was more pronounced for females (Figure 2).

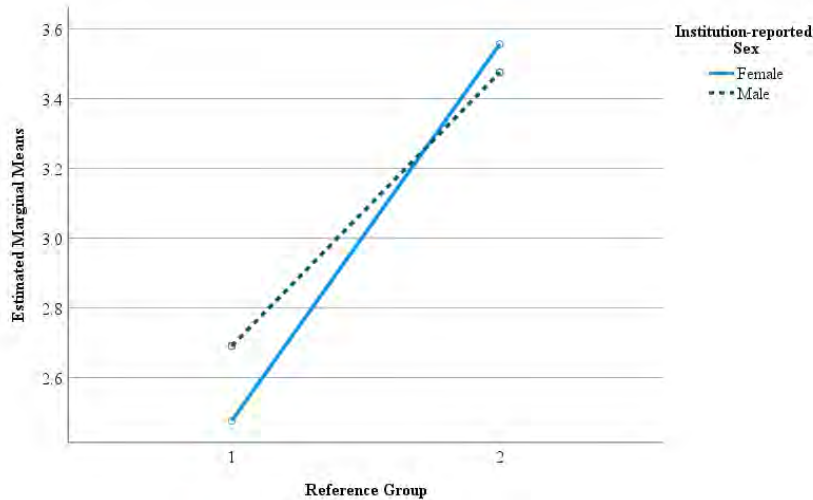
Figure 2. *Interaction Effects for Senior Perceptions of Attended Campus Activities and Events*



Note. Reference Group = reference type; 1 = self; 2 = other.

For time spent participating in co-curricular activities, results were somewhat comparable regarding self-other discrepancies. For first-year students, there was a significant main effect for reference group, $F(1, 4843)=1096.4405$, $p<.001$, partial $\eta^2=.185$, which is a large difference in magnitude, but no significant main effect for sex. The sex x referent interaction was also significant, $F(1, 4843)=27.488$, $p<.001$, partial $\eta^2=.006$, albeit much smaller in magnitude. Main effects analyses indicated that students perceived other students as spending more time participating in co-curricular activities than themselves. The significant interaction effect suggested that this self-other discrepancy was more pronounced for females (Figure 3).

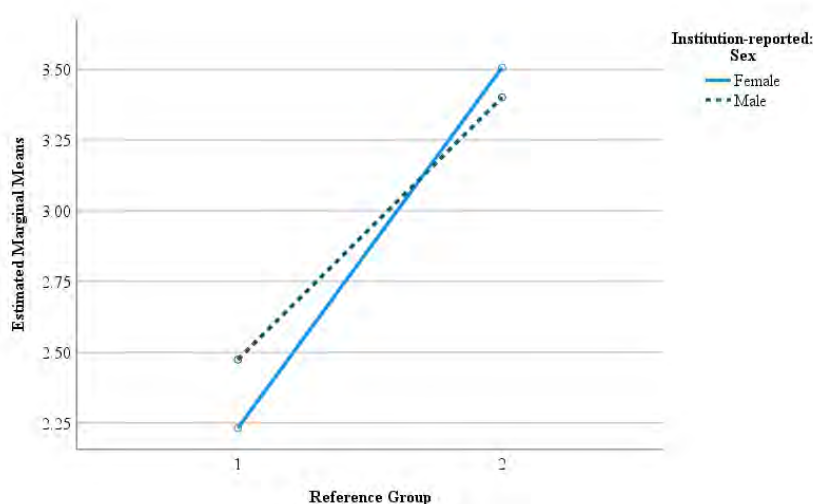
Figure 3. Interaction Effects for First-year Perceptions of Time Spent in Co-curricular Activities



Note. Reference Group = reference type; 1 = self; 2 = other.

A similar pattern emerged for the seniors, with a significant main effect for reference group, $F(1, 5272)=1512.932$, $p<.001$, partial $\eta^2=.223$, and also very large in magnitude, and a significant sex x referent interaction, $F(1, 5272)=37.730$, $p<.001$, partial $\eta^2=.007$, and much smaller in magnitude. Main effects analyses indicated that students perceived other students as spending more time in co-curricular activities than themselves. Again, the significant interaction effect suggested this self-other discrepancy was more pronounced for females (Figure 4).

Figure 4. Interaction Effects for Senior Perceptions of Time Spent in Co-curricular Activities



Note. Reference Group = reference type; 1 = self; 2 = other.

Lastly, there is also some variation by sex in campus involvement. For both first-year and senior students, males and females report similar attendance rates to campus activities and events. In contrast, males report spending more time participating in co-curricular activities than their female counterparts (statistically significant difference at $p < .001$). For more details, all group means and standard deviations can be found in Tables 1 (for first-year students) & 2 (for senior students).

Table 1. *First-year Group Means and Standard Deviations for Campus Activities*

	Attended campus activities and events		Time spent participating in co-curricular activities	
	Mean	SD	Mean	SD
Self reference group	2.50	.979	2.54	1.577
Other reference group	2.77	.760	3.53	1.321
Female self reference group	2.50	.970	2.48	1.535
Female other reference group	2.78	.760	3.56	1.335
Male self reference group	2.50	1.00	2.69	1.657
Male other reference group	2.74	.758	3.48	1.288

Table 2. *Senior Group Means and Standard Deviations for Campus Activities*

	Attended campus activities and events		Time spent participating in co-curricular activities	
	Mean	SD	Mean	SD
Self reference group	2.13	1.013	2.31	1.628
Other reference group	2.59	.747	3.47	1.383
Female self reference group	2.13	1.011	2.23	1.548
Female other reference group	2.63	.752	3.51	1.381
Male self reference group	2.14	1.017	2.47	1.767
Male other reference group	2.51	.729	3.40	1.386

DISCUSSION

Research Question 1: *Do within-group (self vs. other) differences exist among college students concerning their perceptions of a) frequency of attending campus activities and events and b) time spent participating in co-curricular activities?*

As with other behaviors (such as sexual behaviors, alcohol and drug use, and binge eating) that were explored in past literature using the concept of pluralistic ignorance (e.g., Hines et al., 2002; Kuperberg & Padgett, 2017; Suls & Green, 2003), students believe that their own behaviors are less frequent than those of their college peers. Thus, the current study extends the idea of pluralistic ignorance to more socially positive behaviors like participating in campus activities. This study also added nuance to the gap between their own perceptions of their campus involvement and those of their peers as being larger for female students.

The results of this study would suggest that students do not have realistic perceptions of how much time their peers spend attending campus activities and events and participating in co-curricular activities, which also indicates that they do not understand the norms around these activities. These misunderstandings may, in fact, then lead to students spending more time involved in these campus activities to “keep up” with their peers. While this may not seem like a bad thing because most of the literature supports the positive outcomes of campus involve-

ment (Astin et al., 2011; Chang et al., 2004; Chang et al., 2006; Denson & Chang, 2009; Dugan et al., 2012, 2013; Hurtado, 2005; Hurtado et al., 2011; Kim & Sax, 2014; O'Neill, 2012; Park & Millora, 2012; Sax, 2008; Vetter et al., 2019), there is literature that suggests that these positive relationships are not so linear and clear cut. The positive effects may, in fact, turn to negative effects when students participate in higher levels of co-curricular involvement because of the time taken away from academic endeavors (Armstrong & Hamilton, 2013; Babcock & Marks, 2010; Clotfelter, 2011; Lingo & Chen, 2022; Nathan, 2005; Taylor et al., 2020; Zacherman & Foubert, 2014). If this curvilinear relationship is true, students spending more time in these activities to mistakenly “keep up” with their peers could be doing harm. Given the large effect sizes for the reference group found in this study, this warrants further exploration of the potential negative impacts of the self-other discrepancy.

Research Question 2: *Do between-group (e.g., sex) differences exist among college students concerning their perceptions of a) frequency of attending campus activities and events and b) time spent participating in co-curricular activities?*

While this study did not find any differences by sex in the frequency with which students attend college activities and events, it did uncover differences by sex in time spent participating in co-curricular activities. Surprisingly, in contrast to some previous studies (Kwon et al., 2020; Zacherman & Foubert, 2014), the results of this study, for both first-year and senior students, suggest that males, on average, spend more time than their female counterparts in co-curricular activities. This is cause for concern as previous research has suggested that for males, in particular, spending too much time in co-curricular activities was detrimental to their academic performance (Zacherman & Foubert, 2014). While this was not the focus of this study, it does provide evidence for a continued need to look at this area in future studies.

As for the discrepancy between the perception of self and peer involvement on campus, the results of this study would suggest that there are also differences by sex in the realistic perceptions of how much time their peers are spending attending campus activities and events and participating in co-curricular activities. However, these were relatively small in magnitude. The discrepancy is more pronounced for females, suggesting they are more likely to have an unrealistic understanding of peer norms than their male counterparts. That this difference by sex is not reversed could be a good thing when combined with the previous findings by Zacherman and Foubert (2014) since they found that females participating in higher numbers of hours of co-curricular activities were not damaging to their GPA, although it was for male students. Male students having a more realistic perception of peer norms might keep them from overextending themselves.

Implications for Practice

These findings can help guide faculty, advisors, student affairs professionals, and administrators in understanding how students' perceptions of peers' campus involvement might relate to their own participation and considering how those perceptions of their classmates might affect their own behavior in both positive and negative ways. This insight might help higher education administrators, faculty, and staff advise students on how much time they should spend outside the classroom in co-curricular activities and perhaps even which activities to prioritize with time management strategies. For instance, in fields where females are underrepresented, like engineering, this might encourage faculty and administrators to recognize the participation of female students in activities like undergraduate research, as the females in that field may think that everyone but them is having these experiences. This research will hopefully invite faculty, advisors, and administrators to discuss and even counter the misconceptions of social cues and norms that students may have.

In addition to faculty recognizing involvement gaps between the sexes regarding research and involvement in their major, administrators and practitioners may also specify marketing and outreach of certain involvement opportunities to particular identity groups to mitigate the gaps and ensure longevity and continuity. As the literature has shown, addressing the gaps directly could influence development to align with student success post-graduation in their fields. Understanding the highs and lows of a collegiate career, we suggest advisors and administrators (especially those who oversee involvement of organizations and groups) carefully evaluate student's academic achievements and rankings often within their groups to keep students who dedicate too many relative hours to co-curriculars from falling behind in their academic achievements.

Students tend to compare their successes to those of their peers and those around them. Thus, reminders that they are providing valuable service to their co-curricular organizations and involvements are important implications for practice as we enter an era where students' awareness of mental health and self-esteem is at an all-time high. Encouragement and support from their faculty and administration can go a long way.

Limitations

Although this study boasts various strengths, it is also important to note a few limitations. One limitation is due to the utilization of self-reported measures. Research using self-report instruments is popular because of the ease of online data collection and the possibility of large sample sizes. Still, responses to the measures are not guaranteed to be entirely objective. However, many studies using self-reports of postsecondary students indicate that self-reports and actual abilities are positively related (Anaya, 1999; Hayek et al., 2002; Pike, 1995), and social desirability bias does not have a major influence on their responses to items regarding straightforward cognitive and academic behaviors (Miller, 2012). Moreover, this is the most conventional method for measuring pluralistic ignorance in higher education student populations (Suls & Green, 2003). Another related limitation is that the survey items from this study include vague quantifier response options, and there is potential concern regarding differences in the interpretation of these vague quantifiers for men and women. While numerous studies have investigated gender differences in vague quantifier responses, many of these studies have found the gender difference to be small to nontrivial (Cole & Korkmaz, 2013; Nelson Laird et al., 2008; Rocconi et al., 2020; Schaeffer, 1991).

Additionally, it is worth pointing out that because the study took place in the context of a larger survey project, a counterbalanced design of the reference group items was not an option. Furthermore, institution-reported sex was a binary measure in this study. In 2019, NSSE requested that institutions start identifying students on more than just male/female, but this data was collected in 2018, so we only had male/female as an option. This was consistent with FAFSA and IPEDs language, but still not inclusive. Future research should include nonbinary students' perspectives and perhaps consider looking at gender identity as well.

The response rate could also be considered a limitation of the study. However, prior research using NSSE data indicates that studies with lower response rates can still provide adequate response representativeness in comparison to simulations with subsamples of data (Fosnacht et al., 2017) as well as comparisons of student and alumni responses (Lambert & Miller, 2014). Furthermore, even though the sample includes a wide range of postsecondary students from multiple universities, these institutions choose to administer NSSE to their students for various reasons (most often for institutional improvement). This institutional motivation could influence the overall context of the undergraduate student experience. Furthermore, it is worth mentioning that there is generally more variance within any given institution than between institutions (NSSE, 2008). Yet even with this caveat, the participating institutions and the survey respondents themselves, by and large, represent the diversity of postsecondary students in the United States (NSSE, 2020). In summary, although the results found in this study should be interpreted with relative caution, the strengths and contributions of the findings seem to outweigh the limitations above.

CONCLUSIONS & FUTURE RESEARCH

This study adds to the research supporting the need to provide college students with a more realistic understanding of their peers. Additionally, these findings illuminate the nonacademic activities of college students, a topic that is expanding as the needs of students continually shift with changing demographics. Our findings suggest that students are more likely to perceive their peers as more frequently attending and participating in campus activities than they themselves do, and this effect is more pronounced in females. As campus involvement is recognized as a positive element of the student experience but perhaps only within certain limits, continued attention should be given to this aspect in higher education research and practice. Faculty, advisors, student affairs professionals, and administrators might use this study to help them recognize how students' perceptions of peers' campus involvement might relate to their own participation and consider how those perceptions of their classmates might affect their own behavior in both positive and negative ways. To ensure the full participation of

all students in meaningful experiences both inside and outside of the classroom on college campuses, we must disrupt the misconceptions that often come with social cues and norms.

Future Research

This study's findings suggest that future research needs to connect how gaps between what students think their peers are doing and what they are actually doing affect the amount of time they spend on campus involvement outside of the classroom, and then how that influences student success. Past research has suggested that a misalignment of these perceptions could lead to increased participation in activities. How that increased attendance of campus events and activities and participation in co-curricular activities relates to student success is the question, though. Other studies could explore further the roles that students take on in campus involvement activities, as well as motivations and goals when participating, to interpret the impact of the differences by sex that we found. This would extend the work done by other recent studies (Kwon et al., 2020; Zacherman & Foubert, 2014). Finally, future research could delve deeper into why the gap between their own perceptions of their participation and those of their peers is larger for females and how to align student perceptions with reality better when it comes to campus involvement, such as through the development and testing of intervention programs for students early on in their undergraduate careers.

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