

# “I’m Having a Little Struggle With This, Can You Help Me Out?”: Examining Impacts and Processes of a Social Capital Intervention for First-Generation College Students

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## Highlights

- Social capital plays a key role in college and career success.
- Social capital is unequally distributed during the transition to college.
- Workshops can change students’ attitudes and behaviors related to the acquisition of social capital.
- A social capital workshop can improve first-generation college students’ academic outcomes.

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**Abstract** Social capital plays a key role in college and career success, and research indicates that a dearth of on-campus connections contributes to challenges first-generation college students face in effectively navigating the college environment. This study investigates a novel intervention that focuses on the development of skills and attitudes to empower first-generation college students to cultivate social capital and on-campus connections during the transition to college. A mixed methods, explanatory design was used to evaluate impacts and processes of the intervention among first-generation college students ( $n = 164$ ) in the context of an ethnically diverse, urban, public university in the Northeast. Results indicated that students who participated in the intervention demonstrated improved attitudes and behaviors around seeking support in college, closer relationships with instructors, and higher GPAs at the end of their first year in college. These results suggest the potential benefits of a relatively scalable approach to supporting the needs of first-generation college students.

**Keywords** First-generation college students · Transition to college · Social capital · Intervention

## Introduction

There has been heightened emphasis on increasing access to higher education in recent years, particularly for historically underrepresented groups including first-generation college students (i.e., students from families in which neither parent/guardian has a college degree). Approximately 32% of students at 4-year institutions come from families where neither parent/guardian completed an associate’s or bachelor’s degree (U.S. Department of Education, 2014). Despite efforts to increase enrollment in postsecondary education, disparities persist in retention and degree completion, particularly between first-generation college students and their continuing-generation peers, leaving students not only without a degree but often saddled with debt (Chen & Carroll, 2005; Dumais & Ward, 2010; Ho & Wei, 2011). These disparities in postsecondary education contribute to income inequality, particularly within the context of widening wage divides in the United States (Gamoran, 2015; Snyder & Dillow, 2015). This suggests a need for new approaches that attend to the unique experiences of first-generation college students to support their success. Research and theory indicate that social capital (i.e., the information, support, and resources available to an individual through connections and networks of relationships; Bourdieu, 1986) plays a critical role in academic

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attainment and success, and that unequal distribution of social capital contributes to the lower college completion rates among first-generation college students (e.g., Guifrida, 2006; Stanton-Salazar, 2011; Tinto, 1993). In the current paper, we examine a new approach that focuses on the development of skills and attitudes to empower first-generation students to cultivate connections with professors, campus staff, and other individuals who can support their academic and career goals throughout college.

## Background

### First-Generation College Student Experiences

A wealth of research has examined the academic experiences of students who are the first in their family to attend college. Although first-generation college students have often overcome the odds to attend college, they have dramatically higher college attrition rates than their continuing-generation peers, with data indicating that they are approximately twice as likely to leave college without a degree (Chen & Carroll, 2005). Studies have also shown that they tend to have lower GPAs than their peers and that these academic differences may emerge as early as the end of the first year (Chen & Carroll, 2005; Ramos-Sanchez & Nichols, 2007; Vuong, Brown-Welty & Tracz, 2010). First-generation college students are also more likely to have difficulty choosing a major and tend to take fewer credits (Chen & Carroll, 2005; Pascarella, Pierson, Wolniak & Terenzini, 2004). Finally, first-generation college students tend to report lower levels of belonging and greater experiences of exclusion in college, which have implications for life satisfaction and well-being (Allan, Garriott & Keene, 2016; Stebleton, Soria & Huesman, 2014; Stephens, Brannon, Markus & Nelson, 2015).

### The Role of Social Capital

Social capital has been shown to be associated with a range of positive outcomes among college students, from academic indicators such as retention and GPA to feelings of comfort or satisfaction with school (Crisp & Cruz, 2009; Stanton-Salazar, 2011). During the transition to college, students' access to social capital can diminish as previously strong connections from high school and from their home communities begin to weaken, particularly for low-income, minority, and first-generation college students (Rios-Aguilar & Deil-Amen, 2012; Sánchez, Esparza, Bernardi & Pryce, 2011). As such, college students must both work to maintain relationships from communities outside of college as well as establishing new connections pertinent to college and professional development.

On-campus connections with faculty and staff members are an especially valuable form of social capital (Baker, 2013; Barbatis, 2010). A survey of recent college graduates indicated that about a third of students obtained an internship or job related to their major through a professor (Gallup Inc., 2016). More generally, studies demonstrate that supportive interactions with faculty both in and outside of the classroom contribute to students' retention, academic success, and general well-being (Deil-Amen, 2011; Garriott, Hudyma, Keene & Santiago, 2015; Ishitani, 2016; Padgett, Johnson & Pascarella, 2012; Umbach & Wawrzynski, 2005; Woosley & Shepler, 2011). Stanton-Salazar (2011) also described the importance of connections with institutional agents, or those in key positions to facilitate access to services, opportunities, and resources, especially for lower status students who may be less likely to have such access.

Despite research highlighting the importance of social capital, first-generation college students tend to be less likely to report such relationships. Studies indicate that the networks of first-generation students are less varied, particularly in terms of including individuals relevant to college and professional development (Jenkins, Belanger, Connally, Boals & Durón, 2013; Nichols & Islas, 2016; Rios-Aguilar & Deil-Amen, 2012). On campus, first-generation college students are less likely to initiate contact with faculty and have less frequent interactions with faculty both in and outside of the classroom, including contributing to class discussions, reaching out via email, attending office hours, and seeking out positions in faculty research labs (Engle & Tinto, 2008; Kim & Sax, 2009; Soria & Stebleton, 2012). In part, first-generation college students' limited on-campus connections and social capital may relate to broader challenges and responsibilities. First-generation college students are more likely to be enrolled part-time, live off-campus, and work more employment hours (Engle & Tinto, 2008; Pascarella et al., 2004). These constraints and additional demands may limit opportunities for involvement in activities that can facilitate development of on-campus relationships.

Yet implicit expectations regarding the college student role may also place first-generation students at a disadvantage relative to their peers. For instance, there may be differences between students' and faculty members' expectations regarding use of support resources (e.g., faculty office hours, engaging with professors) as common practice in the college setting (Collier & Morgan, 2008). A qualitative study of Black and Latino/a first-generation college students from low-income backgrounds highlighted students' discomfort with engaging with professors and other authority figures, particularly regarding non-academic interactions. Among these students, however, those who

had encountered similar expectations or “unwritten rules” in other environments such as boarding or preparatory schools did not have such reservations and were similar to continuing-generation and middle-class peers in their approach to relationships with faculty (Jack, 2016). More generally, studies suggest that first-generation college students may be less likely to seek out help, including lower use of on-campus support services and lower disclosure of potential challenges related to the college experience (Barry, Hudley, Kelly & Cho, 2009; Stebleton et al., 2014). Although many interventions for first-generation college students have focused on academic preparation, this research suggests that finding ways to bolster social capital may be an effective strategy for increasing first-generation college students’ college persistence.

### Current Strategies to Increase Social Capital in College

Despite the growing recognition of the importance of social capital for college success, particularly among first-generation college students, academic advising remains the most prevalent strategy used to connect students with faculty and foster supportive relationships. However, a recent study showed low student satisfaction with formal advisers, and noted that 12% of survey participants reported never having met with their advisor throughout their college experience (Allard & Parashar, 2013). Another strategy employed to help students build connections on campus is assigning students to formal mentors. Research suggests that this can be an effective strategy (e.g., Crisp & Cruz, 2009). There are, however, a number of limitations to this approach, including challenges to recruiting sufficient numbers of volunteer mentors and thus scalability, as well as erosion of effects after the program ends (Campbell & Campbell, 2007). An additional concern about both traditional models of advising and mentoring programs is that students who are most in need of services may be the least likely to use those services (Alexitch, 2002). This could be due in part to such interventions relying on presumed skills and attitudes for engaging with adults in the college setting that may be less comfortable for first-generation college students than for their continuing-generation counterparts (Lareau & Cox, 2011). Recent research also points to the benefit of a broader network or “web” of support, rather than relying on a single relationship (Hynes, 2015; Murphy & Kram, 2014; Sánchez, Esparza & Colón, 2008; Wallace, Abel, & Ropers-Huilman, 2000).

### The Connected Scholars Program

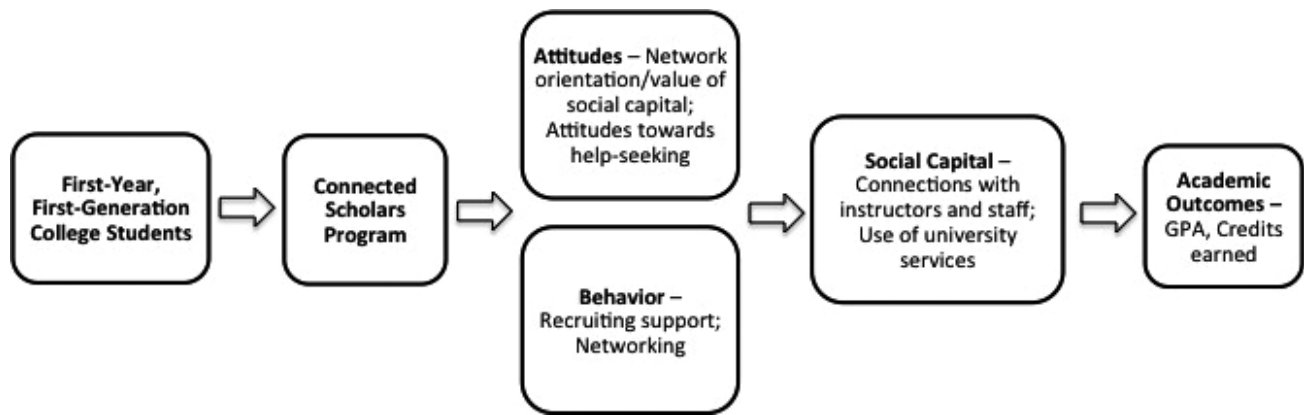
The Connected Scholars Program (CSP) may address some of the limitations of existing approaches by

empowering students to actively and intentionally recruit support. This approach is rooted in what has been referred to as Youth-Initiated Mentoring (YIM), which encourages youth to identify and recruit a mentor from within their existing social network (Millenky, Schwartz & Rhodes, 2013; Schwartz, Rhodes, Spencer & Grossman, 2013; Spencer, Tugenberg, Ocean, Schwartz & Rhodes, 2016). However, unlike YIM, which largely emphasizes a single structured relationship with a mentor, CSP focuses on cultivating the skills and attitudes needed to forge connections with an array of college instructors, staff, and mentors who could help advance students’ academic and career goals, without actually creating a formal mentoring relationship. The intervention is delivered through a series of group-based lessons including the following main components: (a) instruction and discussion of the role of social capital in advancing goals; (b) activities designed to help students identify current and potential connections; and (c) experiential activities and real-world practice reaching out to and cultivating supportive relationships, with a focus on reaching out to university faculty and staff. The intervention culminates in a “Networking Event,” in which students meet with a range of professionals and university staff members, introducing themselves and their interests, asking questions, and building connections.

Taken together, these components are hypothesized to increase students’ social capital, ultimately leading to increased college persistence among first-generation college students (see Fig. 1). A qualitative pilot of CSP among low-income, ethnic minority, first-generation college-bound seniors in high school provided preliminary support for the intervention, suggesting that it increased the value students placed on social capital and developed their knowledge, skills, and self-efficacy in pursuing such connections (Schwartz, Kanchewa, Rhodes, Cutler & Cunningham, 2016).

### Current Study

This study builds on the previous qualitative pilot to quantitatively evaluate the impact of CSP on first-generation college students in the context of a summer bridge program for academically at-risk incoming college students. Employing a quasi-experimental design, pre-and post-tests were administered at the start and end of the summer program, and academic records were obtained at the end of students’ first year in college. Qualitative interviews were also conducted with a subset of participants from the intervention group at the end of their first year in college to help understand how the program promoted the observed outcomes.



**Fig. 1** Connected Scholars Program model of change.

## Method

### Participants

Participants were 164 first-generation college-bound students in a summer remedial program for incoming students at a public, urban, primarily commuter campus university in the Northeast. Students in the program include promising local high school students who do not meet all requirements for admission to the university (typically not meeting the cutoff for standardized test scores) who are granted admission conditional on the completion of the summer program. The program is free of charge and includes 6 weeks of academic programming, meeting 4 days per week during the summer prior to students' first year in college. Students either are enrolled in Mathematics, Verbal, and/or English as a Second Language (ESL) classes, depending on their needs. The program also includes information and support in navigating university systems, including financial aid and academic support services. Attendance is mandatory, and missing more than 2 days during the summer jeopardizes students' completion of the program, and thus admission to the university.

This study focused on the first-generation college-bound participants in the summer remedial program, specifically, those who reported that neither of their parents (or parent figures) had a degree higher than a high school degree or GED. Students who reported that either parent had a higher degree or that they did not know the degree of either of their parents were excluded from the current sample. The majority of participants were female (63%) and of racial or ethnic minority backgrounds (89%), which is reflective of the demographics in the larger sample and of the summer remedial program in general. Almost a third of the sample identified as Asian (32.5%), 23.9% identified as Latino/a, 19% identified as Black, 11.7% identified as White, 8% identified as more

than one race (with most identifying as Black and another group), and 5% identified as Other (primarily Cape Verdean). The mean age at baseline was 18.3 years (standard deviation = 1.4). In addition, the majority of students in this sample were born outside the United States (60%), which was greater than the percentage in the larger sample (46%).

The qualitative sample included a subsample of 12 participants selected from the treatment group. Within the qualitative sample, seven students (58%) identified as female. Five students (42%) identified as Asian, two (17%) Black, two (17%) Latino/a, one (8%) mixed Asian and Latino/a, one (8%) White, and one (8%) Other without specifying race or ethnicity. All of the students were born outside the United States. Ten students (83%) reported that their mothers had less than a high school degree and two reported that their mothers had a high school degree but no higher degree; and five students (42%) reported that their fathers had less than a high school degree, and six reported that their fathers had a high school degree but no higher degree. All students were between 18 and 20 years old, with a mean age of 18.7 years old.

### Intervention

Due to program time constraints, the original eight-session intervention was cut down to four 1-hour sessions that met weekly during weeks 2 through 5 of the 6-week summer program. Prior to the intervention, the researchers who developed the original intervention met and coordinated with program administrators to discuss modification of the program. A number of factors were considered in the adaptation, including feedback about the most influential components of the intervention from the initial qualitative pilot; which components were most relevant to the college transition; and the program administrators' priorities and logistical capacities. The resulting four-session version

included the following elements: (a) discussing the role of social capital, social support, mentors, and networking in advancing students' goals in college; (b) discussing challenges to networking, including the role of forces outside of one's control such as prejudice, and how to manage perceived rejection or unavailability; (c) creating "eco-maps" or graphical representations of students' support networks including strong and weak ties; (d) role-playing how to reach out to connections, with an emphasis on potential professional connections; (e) conducting interviews with individuals from their network with whom they wanted to connect more; and (f) discussing strategies to maintain sources of support off-campus and develop sources of support on-campus during the transition to college. The Networking Event was not included due to program administrators' concerns about the logistical challenges of hosting the event. In addition, there were activities around goal-setting as well as homework assignments that were in the original program but were not included in the abbreviated version due to time constraints. Instructors were provided with a lesson plan manual that included all lessons and related handouts. Students were given individual booklets that included lesson specific worksheets and handouts.

Eleven instructors who were already teaching Verbal or ESL classes in the summer program delivered the intervention to classes of approximately 20 students. Instructors were provided with a \$350 stipend to deliver the CSP curriculum. This stipend was compensation for additional time outside of the summer program that CSP entailed (including training and delivery). Eight instructors were female, and three were male.

All CSP instructors participated in a 2-hour training session led by one of the researchers (second author) prior to the start of the intervention. The training consisted of an overview of the curriculum and a comprehensive, detailed discussion of each lesson. Instructors practiced each lesson's activities with the researcher and were able to ask clarifying questions throughout the training. After reviewing each lesson, the researcher presented the instructors with a set of questions pertaining to the lesson to assess their understanding of key components. Instructors also shared any feedback or questions regarding potential challenges to implementing the CSP curriculum. In addition to the pre-intervention training, the researcher followed up with the instructors after the first week of the intervention to ensure that the instructors were following the lesson plans and to answer any questions that arose. They also remained in contact to provide ongoing communication, support, and feedback throughout the 4 weeks of the intervention. A debrief session with the researchers, the instructors, and program administrators took place at the end of the intervention after post-surveys had been administered to students.

## Procedure

This study employed a mixed-methods explanatory, sequential research design in which quantitative data were collected first, followed by qualitative data to help explain or contextualize quantitative data (Creswell & Plano Clark, 2011). All students in the incoming 2014 and 2015 cohorts within the university summer program were invited to participate in the study, although our analyses drew only on the first-generation college students within the sample.

The quantitative component of the study used a quasi-experimental design. The comparison group was made up of students in the 2014 cohort, who received treatment-as-usual programming, including academic instruction and information about navigating university systems. The treatment group was made up of students in the 2015 cohort, who received all of the same programming as the comparison group plus the 4-hour CSP intervention. The program director and nine of the eleven instructors remained the same across the 2014 and 2015 cohorts.

All students who agreed to participate in the study completed consent forms and baseline surveys during the first week of the program. Consent forms included explicit agreement for researchers to obtain academic records from the university, including GPA and credits earned. For those in the treatment group, the CSP intervention began in the second week of the program and finished in the fifth week of the program. In the last week of the program (the sixth week), students in both the treatment and comparison group completed follow-up surveys. Trained research assistants administered all surveys in classrooms during the summer program. This study focuses on the 164 first-generation college-bound students participating in the summer program who completed baseline surveys (89 in the treatment group and 75 in the comparison group). In addition, university records including grade point average (GPA) and credits earned were obtained at the end of participants' first year in college.

All first-generation college students within the treatment group were emailed in mid-April (near the end of their first year in college) to recruit them for qualitative interviews. We had originally planned to target a random subsample of the treatment group stratified by gender, but unfortunately our response rate was too low to do so, and those interviewed were thus a convenience sample. Our low response rate was likely due to a number of factors. First, some of the email addresses that students had shared with us over the summer were no longer active, whereas others simply may not have been checked regularly. In addition, the timing corresponded with the end of the semester when students were particularly busy and less likely to make

time for an interview. Within this context, although there were no refusals, only 15 students responded to the recruitment email agreeing to be interviewed. Three of the students who agreed to participate did not show up for the interview or answer their phone at the scheduled time and were unable to reschedule, resulting in a total of 12 students in the qualitative subsample. Although it was a convenience sample, the demographics were largely reflective of the full sample in terms of gender, age, and racial/ethnic background, although students born outside the United States were overrepresented.

Eight students completed in-person interviews which took place on campus, and four students completed phone interviews (determined based on participants' preference). Participants received a \$50 gift card to Amazon for their participation in the interviews. All participants completed an additional consent form agreeing both to be interviewed and to the interview being audio-recorded and transcribed. Interviews occurred at the end of the spring semester and at the beginning of the summer after students' first year in college. All interviews lasted between 30 minutes and 1 hour. Interviews followed a semi-structured protocol that covered many topics, including their recollections of the intervention and impressions of the impact of the intervention, their experiences in the first year of college, and how they did or did not draw on support networks throughout the year. The protocol was designed to probe for both positive and negative examples. Sample questions included: "How do you feel about the support network you have had this year in college, both on and off campus?"; "How have you been applying what you learned from the workshops during the school year?"; "Was there anything that prevented you from applying the skills that you learned in the program?"; "Can you tell me about a time that you used your network, or the people you knew, to help you out?"; "Is there anything you intended to do this year but have not done?" Students also were asked about whether they reached out to specific sources of support (e.g., university faculty and staff, on-campus services) and what may have prevented them from connecting with these supports.

All procedures for this study were approved by the university's Institutional Review Board prior to data collection. Potential conflicts of interest include that the first three authors were involved in the development of the intervention, although they have no financial investment (i.e., would not benefit financially from the adoption of the intervention).

## Measures

This study focuses on outcomes measures assessed at baseline and at follow-up (during the last week of the summer program), as well as university records data.

*Relationships with Instructors* was measured using a 4-item scale drawing on items adapted from mentor relationship quality scales (Rhodes, Schwartz, Willis & Wu, 2014) and the Student-Instructor Relationship Scale (Creasey, Jarvis & Knapcik, 2009). Sample items included, "I feel close to at least one staff member from this summer," and "I talked to instructors outside of class time this summer." Respondents rated each item on a 5-point scale from 1 = Strongly Disagree to 5 = Strongly Agree. The scale demonstrated acceptable reliability ( $\alpha_2 = .77$ ).

*Network Orientation* was a 9-item scale adapted from a measure of attitudes and beliefs about usefulness of seeking support (Vaux, Burda & Stewart, 1986). Specifically, items asking about seeking support from "friends" or "people" were changed to "More experienced adults." Sample items included "More experienced adults (e.g. teachers, extended family members, family friends, coaches, religious leaders) often have good advice to give" and "If you can't figure out your problems, nobody can." Respondents rated each item on a 4-point scale from 1 = Strongly Disagree to 4 = Strongly Agree. The scale demonstrated acceptable reliability ( $\alpha_1 = .76$ ;  $\alpha_2 = .79$ ).

*Help-Seeking Avoidance* and *Help-Seeking Threat* were measured using two subscales from a Help-Seeking scale measuring students' intention to seek help from teachers (Karabenick, 2004). *Help-Seeking Avoidance* was a 3-item scale including items such as, "If I didn't understand something in a class I would guess rather than ask someone for assistance." *Help-Seeking Threat* was a 3-item scale including items such as, "Getting help in a class would be an admission that I am just not smart enough to do the work on my own." Respondents rated each item on a 5-point scale from 1 = Not True at All to 5 = Very True. Both scales demonstrated acceptable reliability (Help-Seeking Avoidance,  $\alpha_1 = .75$ ;  $\alpha_2 = .74$ ; Help-Seeking Threat,  $\alpha_1 = .81$ ;  $\alpha_2 = .80$ ).

*Intention to Recruit Support* was an 11-item self-constructed scale to assess students' report of how likely they were to connect with professors and staff on campus in the upcoming academic year. Students were asked to rate how likely they were to engage in various behaviors related to recruiting support, based on the stem "In the coming academic year, how likely is it that you will...?", using a 5-point scale from 1 = Very Unlikely to 5 = Very Likely. Sample behaviors included, "Go to professors' office hours, even if I don't need extra help" and "Reach out to professionals in a career or interest area of mine." The original scale included 12 items, but one item was dropped ("Use tutoring services") based on the results of an exploratory factor analysis (EFA). The resulting scale showed strong reliability ( $\alpha_1 = .92$ ;  $\alpha_2 = .91$ ).

*Grade Point Average (GPA)* and *Credits Earned* were obtained from university records at the end of students' first year in college.

Demographic information about participants was also collected including: age, gender, race/ethnicity, whether the student was born in the United States, and maternal and paternal education. For *race/ethnicity*, participants were asked to check all that applied from the following list: Asian, Black/African American, Latino(a)/Hispanic, Native American/Indigenous, Pacific Islander, White/Caucasian, Other (please specify). Dummy variables were created for each group, including a dummy variable for students who checked more than one category. Status as a *first-generation college-bound student* was calculated based on participant reports of maternal and paternal education. For maternal education, participants were asked, "How far did your mother (or the person that is like your mother) go in school?" Respondents could select from the following response options: Less than high school graduate; High school graduate or GED; Technical school or 2-year college (associate's degree); 4-year college (bachelor's degree); More than a 4-year college degree (e.g., Master's, MD, doctoral, law); I don't know. A corresponding question was asked about paternal education. First-generation status included only students who reported that *both* parents/parent figures' highest degree was high school or GED.

### Statistical Analyses

First, all variables were examined for skew, kurtosis, and normality. Normality was examined through several methods using the Shapiro–Wilk and Kolmogorov–Smirnov tests of normality as well as visual methods for which we employed Q–Q plots, histograms, and box and whisker plots. These methods confirmed that all variables were within reasonably normal distributions. Tests were also conducted to examine initial equivalence between the treatment and comparison group. In addition, reliability was examined for all measures, and EFA was conducted on the *Intention to Recruit Support* since it was a self-constructed scale. Then, we used a one-way multivariate analysis of covariance (MANCOVA) to investigate overall impacts of the intervention on students' attitudes and behaviors related to the cultivation of social capital at the end of the summer program (i.e., relationships with instructors, intention to recruit support, network orientation, help-seeking threat, and help-seeking avoidance). A MANCOVA was employed to account for the interrelated nature of the outcome variables assessed on the post-test. The following baseline covariates were included in the MANCOVA: age, gender, race/ethnicity, and whether the student was born in the United States, along with baseline

measures of all outcome variables, with the exception of relationships with instructors which was not available at baseline since students had just started the program. We did not include GPA and credits earned in the MANCOVA, since these outcomes differed from the post-test outcomes based on the constructs that they measured, the timepoints at which they were assessed, and the reporter. Hierarchical linear regressions were conducted to investigate the impact of the intervention on the two academic outcomes (GPA and credits earned) assessed at the end of students' first-year in college, with age, gender, race/ethnicity, and whether the student was born in the United States included as covariates.

### Qualitative Analyses

All 12 interviews from the qualitative subsample were transcribed verbatim, verified for accuracy, and analyzed using thematic analysis (Braun & Clarke, 2006). Two coders individually coded a randomly selected transcript to identify initial themes. The full qualitative research team (three coders and two supervisors) then met to discuss these emerging themes. An initial codebook was developed based on this discussion, previous research, and the semi-structured interview protocol. The codebook covered areas seen in the conceptual model of the intervention, including attitudes toward help-seeking and development of social capital. Another randomly selected case was then coded by the same two coders, based on this iteration of the codebook, followed by another team discussion. This process was repeated three times in total, until no new relevant codes emerged. After this initial development of the codebook, all interviews were coded by three coders using the qualitative analysis program NVivo. The codebook was continuously evaluated and refined based on themes that emerged from the data. Additions through this process included codes addressing how the participants navigated the supports available to them. Coders met weekly with supervisors throughout this process to discuss questions and clarify definitions related to coding categories.

After this initial round of analysis, the coded interview transcripts were then analyzed again to discern whether these data could shed further light on the findings from the analysis of the survey data, following the explanatory, sequential research design (Creswell & Plano Clark, 2011). Sections of the interview transcripts with data relevant to the concepts measured quantitatively (i.e., relationships with instructors, network orientation, intention to recruit support, and help-seeking behaviors) were selected out and examined by two members of the coder team for how the participants described these aspects of their experiences. These two researchers started with codes relevant

to each of these concepts, and reviewed the quotes associated with each code to examine how these participants' described their experiences of the outcomes tested.

## Results

### Initial Equivalence and Attrition

Initial *t*-tests and chi-squared analyses revealed no significant differences in demographic characteristics or baseline levels of outcome variables, indicating initial baseline equivalence between the treatment and comparison groups. In addition, attrition between the baseline and follow-up surveys was examined, revealing a 5% attrition rate overall. Specifically, of the 164 students who completed baseline surveys, eight students did not complete follow-up surveys. In addition, university records were available for 140 students. University records were not available for the remaining 24 students (15%), indicating that they enrolled at a different university or they did not enroll in any university. Baseline differences in demographic characteristics and baseline measures of outcome variables were examined both between those who completed follow-up surveys and those who did not, and between those who enrolled in the university and those who did not. No significant differences in any of the analyses were observed with the exception of one marginally significant difference ( $p = .07$ ) in network orientation between those who enrolled in the university and those who did not, with those who enrolled in the university having a slightly higher baseline network orientation.

### Quantitative Impacts

A MANCOVA was used to evaluate quantitative impacts based on pre- and post-survey data. A non-significant Box's M test ( $p = .16$ ) indicated homogeneity of covariance matrices of dependent variables across groups. Results demonstrated a significant multivariate effect,  $F(5,112) = 2.97$ ,  $p < .05$ , partial  $\eta^2 = .12$ . Univariate tests showed that there were significant effects on four of the five outcomes tested, including: *Relationships with Instructors*,  $F(1,116) = 5.00$ ,  $p < .05$ , partial  $\eta^2 = .04$ ; *Intention to Recruit Support*,  $F(1,116) = 4.74$ ,  $p < .05$ , partial  $\eta^2 = .04$ ; *Help-Seeking Avoidance*,  $F(1,116) = 6.19$ ,  $p < .05$ , partial  $\eta^2 = .05$ ; and *Network Orientation*,  $F(1,112) = 4.03$ ,  $p < .05$ , partial  $\eta^2 = .03$ . Specifically, results indicated that students in the intervention group reported better relationships with instructors, increased intention to engage in help-recruiting behaviors, increased network orientation (belief in the usefulness of seeking support), and decreased help-seeking avoidance. No

significant differences between the intervention and comparison groups were detected for *Help-Seeking Threat*,  $F(1,116) = 2.62$ ,  $p = .11$ , partial  $\eta^2 = .02$ .

Hierarchical linear regressions were used to evaluate effects on academic outcomes based on university records obtained at the end of students' first year in college. Significant differences between the treatment and the comparison group at follow-up were observed for *GPA*, with students in the intervention group having higher first-year grade-point-averages than those in the comparison group,  $\beta = .13$ ,  $t(129) = 2.01$ ,  $p < .05$ ,  $R^2$  change = .03. No significant differences were observed for *Credits Earned*,  $\beta = .03$ ,  $t(129) = .39$ ,  $p = .70$ ,  $R^2$  change = .00.

### Qualitative Results

The qualitative data were examined to help illustrate and understand how the intervention may have influenced participants' experiences during their first year in college, focusing on their attitudes and behaviors. Specifically, based on the quantitative results indicating significant impacts for *Relationships with Instructors*, *Intention to Recruit Support*, *Network Orientation*, and *Help-Seeking Avoidance*, qualitative analysis was conducted to explore the presence of these themes. Pseudonyms were created for all participants in the qualitative subsample to protect participants' confidentiality.

#### *Closer Relationships with Instructors*

Participants generally reported positive relationships with instructors from the summer program, describing how instructors actively worked to help them be successful. Some students reported maintaining contact with staff from the summer program and described how these relationships helped them to develop and navigate a wider network of support: "My guidance counselor is the same one from [the program]...if I need something...he tells me 'oh, go here, you might need to talk to this person, or you might need to go to the library at this time.'" (Hugo, 18-year-old male). Students reported especially close relationships with instructors from the summer program who were also connected to them in other ways during their first year in college, such as in the role of professor or advisor. Students described feeling comfortable approaching them for help, for example, noting: "Those two professors that I met through [the program], I've been going to their office a lot...sometimes I would just go once a week..." (Laura, 18-year-old female). Although most participants reported favorable relationships with staff from the summer program, it should be noted that students could not always articulate which campus supports were related directly to the summer program versus other campus programs.



### *Increased Intention to Recruit Support and Network Orientation*

One of the major goals of the intervention was to instill in students the importance of building relationships and how these relationships can promote success, ideally increasing students' motivation to recruit support. Consistent with the quantitative results, most students in the qualitative interviews clearly articulated intentions to recruit support, with an emphasis on how building a network can ultimately help students be successful in college. One student described the importance of building relationships explaining how "resources are connected to each other, like this program is connected to that program, and connected to this program, so if you want to do the latter program, you wouldn't be able to get in without you doing the first one" (Jocelyn, 18-year-old female). This interconnectivity was noted by many as a motivator for the efforts to expand their network.

Almost all students interviewed could readily identify new individuals within the university environment who provided them with support, such as help choosing classes, understanding course content, navigating the university environment, and managing their stress related to being in college. One student even described explicitly asking a professor to be his mentor: "We made an appointment because our classes were arranged so there was a time when she would go outside and talk to people. I went and talked to her, asked if she wanted to be my mentor, and she said that's fine." (Andrew, 20-year-old male). Although it was less common for students to report making formal requests for mentoring relationships, almost all of the participants indicated that they had recruited individuals from the university environment to help meet their needs as students, and many viewed these helpers as mentors. As one student put it: "You pick up a mentor as you go. Sometimes you don't even know you have a mentor until you actually stand back and be like, 'Oh, well I told this person everything anyways, so it's cool.'" (Karla, 19-year-old female).

In addition to facilitating connections on campus, some students also described how reaching out for help increased their future opportunities. Many students discussed how a relationship with a mentor could help them develop additional connections and grow their networks in ways that would promote better employment outcomes:

Having a good relationship with your mentor can like give you a lot of connections. And like... getting an internship or a job is all about like networking, that person knows someone, someone knows the other person, you know? That mentor helps you build that connection and he also prepares you on what to expect,

because they already know the process, so they'll just tell you the direction to go"

(Jocelyn, 18-year-old female).

### *Decreased Help-Seeking Avoidance*

Many students conveyed a sense of comfort with asking for help and being explicit about their needs. Their descriptions of their own experiences and the advice they would offer to others indicated that, generally, they felt empowered to seek out support directly and unapologetically and were mostly confident that such help would be available when needed. One student stated, "I'd say that anytime [students] need help, they should go to ask people. Some people, they need help but they don't go to seek and find help, they don't ask. That's why they struggle in life in college." (Tiffany, 18-year-old female). Another student, when describing how she handles difficulty with course material, explained, "If I stay after the class and I talk to the teacher about it, then I clear it up. 'You're a teacher. I'm having a little struggle with this, can you help me out?'" (Angela, 18-year-old female).

At the same time, students also described instances in which they encountered faculty and staff members who were not helpful or even harmful. Examples were offered of staff who were perceived to be too busy, unhelpful, or judgmental. Some students recognized that faculty wanted to help but were not available at times that worked for the students, for example, stating, "It's not that they're not willing, they're always willing to help you, it's just the times they pick, I couldn't deal with it, I couldn't work with it" (Michael, 19-year-old male). One student recounted frustration with efforts to connect with a professor: "I've been in line for like 15 minutes. She would be like 'Oh, I have to go. Sorry about that. Email me.' I would email her and she gets back to me 2 or 3 days later. I was like, I can't do this" (Angela, 18-year-old female). Yet this student was able to reach out to other sources, including instructors, peers, and off-campus support, where she found the help she was looking for "clear and easy." Another student perceived comments from a professor to whom she reached for support to be judgmental and triggering of insecurities about her academic abilities, noting, "In [this subject], I always have been having trouble, especially now in college...and the teacher was saying that if I start needing assistance right in the beginning of the semester, I wouldn't be belonging in the class...I didn't like his comments" (Laura, 18-year-old female). Importantly, however, Laura was able to approach another campus staff member to discuss this negative experience and weigh her options in navigating the situation. Based on advice from the staff member, Laura ultimately decided to drop the class, but planned to

take the course in the future when she felt better prepared to be successful. More generally, students interviewed described continuing to reach out for support from additional sources even if the first person they reached out to was unavailable or unhelpful.

## Discussion

The results of this study suggest that CSP can significantly influence first-generation college students' attitudes and behaviors related to the cultivation of social capital, as well as contributing to improved academic outcomes, namely GPA. These results provide partial support for the hypothesized model of change. As expected, the intervention resulted in shifts in students' attitudes and behaviors. Findings suggested that students participating in the intervention strengthened their belief in the importance of social capital, increased their self-reported likelihood to seek support, and improved their relationships with instructors. This was supported by qualitative data indicating that students were able to articulate the benefit of building connections and seeking support. Finally, quantitative data suggested that the intervention may improve students' grades in their first year in college.

These results build on an earlier qualitative pilot study of high school seniors' perceptions of the intervention, in which participants reported an increased understanding of the value of social capital and increased self-efficacy in cultivating support (Schwartz et al., 2016). This study provides quantitative support for the capacity of CSP to increase students' network orientation and willingness to cultivate connections and extends these findings by indicating that CSP may also improve students' relationships with instructors and their first-year GPAs.

Although significant differences in GPA were observed between the treatment and comparison groups, no differences were detected for number of credits earned at the end of the first year in college. It is possible, however, that such differences may emerge later in students' college trajectories, for example, as students with lower GPAs begin registering for fewer classes. Research indicates that first-year college GPA is one of the most important predictors of college retention rates among first-generation college students (e.g., Allen, 1999; Reason, 2009). Ideally, future studies would follow students for a longer period of time, which would allow for examinations of differences in college persistence and completion.

Nevertheless, it is notable that significant differences in attitudes, behaviors, relationships, and ultimately, first-year GPAs, were observed, particularly since the current intervention was only 4 hours and was delivered in a group setting prior to the start of the academic semester. Much

research has focused on the importance of social capital and supportive relationships in predicting college and career success (e.g., Gallup Inc., 2014), particularly for first-generation college students (e.g., Stanton-Salazar, 2011). Yet few interventions have sought to increase such connections, and those that have rely primarily on strategies such as assigning advisors or mentors to students. This study suggests the promise of an approach designed to teach students to reach out and recruit support, with the potential to provide students with a skill set that they can use throughout college and beyond. This strategy is consistent with other research indicating the efficacy of skills training in developing social support and connections (Hogan, Linden & Najarian, 2002). Importantly, results of this study also suggest that attitudes around help-seeking and the value of social capital may be able to be changed through a relatively brief intervention.

Although it may seem surprising that a relatively minor intervention could influence students' GPA at the end of their first year in college, qualitative data provided insight into possible mechanisms. For example, students described reaching out to professors when they were struggling with class material as well as connecting informally, using academic advisors, and more generally asking for help when they needed it, with some of these connections developing into ongoing mentoring relationships. These are precisely the types of behaviors that research suggests first-generation college students are typically less likely to engage in than continuing-generation college students, yet play a key role in academic success (e.g., Barry et al., 2009; Engle & Tinto, 2008; Kim & Sax, 2009; Soria & Stebleton, 2012; Stebleton et al., 2014). Thus, CSP may empower first-generation college students with knowledge and skills related to navigating relationships with professors and staff as well as perhaps providing insight into the "unwritten rules" of such interactions (Jack, 2016). Students also demonstrated persistence in continuing to reach out to multiple sources of support even after experiencing unhelpful or even negative interactions, making use of a broad network of supports and services. By allowing first-generation college students to better take advantage of existing on-campus resources, CSP may be an especially cost-effective intervention.

Of course, although students actively reaching out for support plays an important role in increasing their social capital, it is also necessary for those to whom they reach out to be available and willing to provide support. Importantly, research has demonstrated that factors including race, ethnicity, gender, and class influence the receptiveness of professors and potential employers to student requests (Milkman, Akinola, & Chugh, 2015; Rivera & Tilcsik, 2016). Ideally, CSP would be implemented

alongside trainings for faculty and staff on campus, as well as in the context of structures and incentive systems that would allow and encourage faculty and staff to make time to connect with students, particularly first-generation and underrepresented college students.

Although this study has a number of strengths, including the use of a mixed method longitudinal design drawing on multiple sources of data, there are important limitations that should be noted. Most significantly, this study employed a quasi-experimental design rather than random assignment due to program constraints. Although comparison of baseline characteristics across the treatment and comparison group failed to detect significant differences, the possibility that the groups differed on other unmeasured variables cannot be ruled out. For example, although the majority of staffing was consistent, two of the 11 instructors differed across the 2014 and 2015 cohorts, which may have contributed to differences in outcomes. In addition, since the instructors in the treatment group were trained to deliver the CSP intervention, it is possible that students' improved relationships with instructors were based, at least in part, on a shift in the instructors' approach to connecting with students. Nevertheless, student surveys and interviews indicated that changes in student attitudes did occur. Furthermore, if indeed being trained in delivering CSP resulted in instructors being more intentional in connecting with students, this also has important implications for intervention, although future research would be needed to explore this potential.

It also should be considered that the intervention was delivered in the context of a program that provided relatively small classes and substantial support in academics as well as in navigating university systems, including financial aid and academic support services. Many students were also referred to student support services when they started the academic year. Thus, results may not be generalizable to other contexts, particularly those with less available support, or to students with different characteristics, particularly those who might have declined a college acceptance that required pre-college remediation. Nonetheless, the fact that group differences between the treatment and comparison group emerged over and above those of an intensive summer program suggests the intervention's benefits. Future studies should evaluate the impact of this intervention in the context of an experimental design, along with data collected on implementation, including fidelity, dosage, and student engagement. Research with different populations of students and in various educational contexts (e.g., community colleges), will also be important to better understand for whom and in which contexts the intervention is effective.

In addition, although the interviews provided important data, the qualitative sample was limited by self-selection bias since, due to our low response rate, we relied on a convenience sample. It is possible, for example, that the students who agreed to be interviewed had more positive experiences in the program or were more comfortable speaking with professional adults. Also, despite intentionally using interviewers who were not affiliated with the development or implementation of the intervention and attempting to design a protocol to obtain both positive and negative experiences with seeking support, students nevertheless may have been more likely to share positive experiences when faced with a researcher asking them questions about a university-sponsored program. As such, findings from the qualitative sample should be interpreted with caution. Many students interviewed also had difficulty distinguishing the CSP intervention from the more general programming provided over the summer. Moreover, since students in the comparison group were not interviewed, it is unclear to what extent the experiences described in the qualitative data were influenced by the CSP intervention. Future studies would benefit from collecting additional follow-up data, including both quantitative and qualitative data to further understand student experiences and outcomes over a longer period of time. Likewise, it would also be helpful to measure intermediate outcomes such as psychological well-being, feelings of belonging, and academic engagement in addition to outcomes such as GPA and credits earned. In addition, more information about the connections and relationships that participants formed in college would be beneficial. For example, to what extent did connections with faculty and staff develop into mentoring relationships? Future research could also compare the benefits of CSP workshops alone versus CSP workshops plus requiring students to recruit a formal mentor, as they do in YIM models.

Although additional research is needed, this study provides initial support for a novel approach to supporting the needs of first-generation college students. As a relatively low-cost and low-burden strategy, it may also represent a particularly scalable model. Moreover, although the current intervention focused on the needs of college students, this general approach may also have implications for secondary school students as well as for youth mentoring and other youth development programs. Thus, we may more effectively leverage the broader potential of such an approach to increase the connectedness of all young people in our society.

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