College of Science and Health Theses and Dissertations

College of Science and Health

Spring 6-14-2024

First-Generation College Students' Sense of Belonging During COVID-19

Yesenia Garcia
DePaul University, ygarci17@depaul.edu

First-Generation College Students' Sense of Belonging During the COVID-19

Pandemic

A Dissertation Presented in

Fulfillment of the

Requirements for the Degree of

Doctor of Philosophy in

Community Psychology

By

Yesenia Garcia Murillo, MA

May 22, 2024

Department of Psychology

College of Science and Health

DePaul University

Chicago, Illinois

Dissertation Committee

Bernadette Sánchez, PhD, Chair

Susan D. McMahon, PhD

Jocelyn Carter, PhD

Luciano Berardi, PhD

Horace Hall, PhD

Acknowledgements

I would like to acknowledge and give my warmest gratitude to my advisor Bernadette Sánchez whose guidance and advice carried me through all the stages of writing this dissertation and graduate school. I would also like to thank my committee members for sharing their expertise, insightful comments, and suggestions.

Without the ongoing support of a few special people in my life, completing a PhD would have seemed unattainable. I am grateful for all of the wonderful friendships I made in graduate school that never hesitated to offer their help. To my community of family and friends that served as constant reminders of the support and love that surrounds me; thank you for providing the space to laugh and create wonderful memories. My dog Cody, who sat by my side through all of the early mornings and the very late nights. To my husband Alejandro who witnessed all of the highs and lows of writing this dissertation; thank you for your unwavering patience, understanding, and love at every stage of it all. The most significant acknowledgement is reserved for my mom, for her endless encouragement and words of wisdom in moments when I needed it the most and throughout all of my education.

Para mi mamá, gracias por siempre ser mi ancla y llenarme de apoyo y amor en momentos donde quizás tú lo ocupabas más que yo. Todos mis logros son tan tuyos como son míos; sé que no habría llegado a este punto sin ti.

Biography

The author was born in León, Guanajuato, Mexico on October 3, 1994. She graduated from Bloom High School in Chicago Heights, Illinois in 2013. She received her Associate of Arts degree in Psychology from Prairie State Community College in 2015, her Bachelor of Arts degree in Psychology from Saint Xavier University in 2017, and a Master of Arts degree in Community Psychology from DePaul University in 2021.

Table of Contents

List of Tables

List of Figures

Abstract

First-generation college students (FGCSs) make up one-third of all college students in the

U.S. (Whitley et al., 2018). Yet, retention of FGCSs continues to fall behind that of their

non-first-generation peers (Act, Research and Policy, 2012; Cataldi et al., 2018).

Understanding FGCSs' sense of belonging, and its predictors, is a key component to

helping promote retention. The onset of the COVID-19 pandemic brought many shifts

and adaptations to education that impacted the overall college experience for students

(Burki, 2020). This adaptation strained opportunities for social engagement, which

deterred students' abilities to feel a sense of belonging at their institution. The current

study examined how institutional support services, programs for underrepresented college

students, and natural mentoring relationships with faculty and staff influenced a sense of

belonging throughout the pandemic. Participants were drawn from a larger multi-wave

study on FGCS persistence (17-23 years old; 74.1% ethnic minority). Baseline data

collection occurred the summer prior to participants' entering their first year in college.

After the baseline, participants completed four additional surveys throughout their first

and fourth year in college (Times 1, 2, 3, and 4). A multilevel model was used to estimate

within-person associations of use of programs for underrepresented college students,

academic support services, and institutional natural mentoring relationships with a sense

of belonging throughout the COVID-19 lockdown. Overall, the trajectory of

belongingness was shown to be low pre-lockdown (before 2020) then increased during

the lockdown (Spring 2020) before slightly decreasing in Spring 2021 and then

increasing again during post lockdown (Spring 2022). Moreover, the mixed-model

demonstrated that the number of institutional natural mentors reported and academic

support services were significantly associated with students' sense of belonging across all time points. However, participation in programming for underrepresented students was not significantly associated with students' sense of belonging. Findings provide insight about how FGCSs experienced belongingness throughout the COVID-19 lockdown as well as how academic and support services and faculty relationships can foster a sense of belonging in underrepresented college students.

First-Generation College Students' Sense of Belonging During the COVID-19 Pandemic

The journey toward a baccalaureate degree is filled with a combination of challenges and triumphs, and the educational pathway to a college degree can be more complicated for some students, particularly for first-generation college students (FGCSs). First-generation students made up one-third of all college students in the U.S. (Whitley et al., 2018). Students who embark on this educational journey do so in hopes of being the first in their families to obtain a higher education at the baccalaureate level. Despite the rise in the number of enrolled FGCSs, national data conclude that retention of FGCSs continues to fall behind that of their non-first-generation peers (Act, Research and Policy, 2012), with only about half (55%) of all FGCSs graduating college within six years, compared to approximately 75% of non-FGCSs (Cataldi et al., 2018). The low rates of FGCS retention are often a direct result of the significant disadvantages FGCSs face in their navigation of college (Choy, 2001; Pascarella et al., 2004).

Existing research suggests that student retention is connected to student adaptation and sense of fit in college (Hausmann et al., 2007; Tovar et al., 2009; Yeager et al. 2016). Institutions of higher education play a critical role in helping students cultivate a sense of belonging, and its development is multidimensional, depending on various factors. Although student *belongingness* in college may be interpreted as synonymous with being actively present and involved in campus life, the upsurge of the COVID-19 pandemic demonstrated that college life and belonging can take different forms in a remote setting. Institutions limiting their students' access to on-campus life meant that classes, support services, and university programming had to be adapted

accordingly. This adaptation strained opportunities for social engagement, which deterred students' opportunities to feel a sense of belonging at their institution (Dotson et al., 2022; Kiebler & Stewart, 2021).

The shift in the educational experience disproportionately impacted FGCSs (Lorio et al., 2022; Soria et al., 2020) by heightening the existing disparities that encumber first-generation students' college journey. This was evident in FGCSs' lack of access to online resources, financial burdens (Soria et al., 2020), and poor mental health (Hoyt et al., 2021) during the COVID-19 pandemic. The difficulties of adjusting to higher education while balancing the unique modalities adapted during the pandemic could make belongingness feel further out of reach for FGCSs. The aims of this study are to investigate the trajectory of FGCSs' sense of belonging in college during the COVID-19 pandemic and how the use of academically focused institutional support, programming for underrepresented students, and the number of natural mentors influenced this trajectory.

First-Generation College Students (FGCSs)

First-generation status is defined as neither parent having earned a bachelor's degree (Choy, 2001). The college journey for FGCSs is unique compared to their non-first-generation peers, and life circumstances of FGCSs can make this journey more difficult. For example, FGCSs are more likely than non-FGCSs to delay their entry into postsecondary education after high school (Engle, 2007) enter college with less academic preparation, and have limited access to information about the college experience (Arnold et al., 2012; Gamez-Vargas & Oliva, 2013). For example, FGCSs' may not know of available resources such as faculty hours that could be instrumental in their college

success (Winograd & Rust, 2014). FGCSs tend to come from low-income families with 27% coming from families that earn $20,000 or less and 50% from households earning between $20,000 and $50,000 a year (Redford & Hoyer, 2017). FGCSs usually attend college part-time and work full-time during enrollment in college. In fact, 43.2% of first-generation students work between 20 and 40 hours a week, and 36.4% work over 40 hours a week (National Center for Education Statistics, 2016). A national study found that four out of the top five stressors reported by students were related to personal finances: the need to repay loans, cost of education, borrowing money for college, and needing to find a job after graduation (Trombitas, 2012). Working more hours per week is often related to having more financial stress or commitments outside of school that take away from time spent on campus and focusing on their schoolwork (Trombitas, 2012). FGCSs are nearly twice as likely as students whose parents had a bachelor's degree to leave school before their second year (20% vs. 12%), even when considering delayed enrollment after high school, working full-time, financial aid, and demographic factors (Pratt et al., 2019).

In addition to financial stressors, students' perceived difficulty in forming relationships and a lack of a sense of belonging, which are associated with being a FGCS, put them at higher risk for dropping out (Pratt et al., 2019). The financial need to work more hours than their non-first-generation peers has repercussions for other aspects of college life, often impeding adjustment and involvement with campus activities that are non-course-related and are often predictors of college success (Pascarella et al., 2004). Although the nature of the challenges may be similar for both FGCSs and non-

FGCSs, FGCSs are disproportionately impacted by those challenges and other compounded barriers, consequently leading to lower levels of retention.

The dominant Western values of U.S. universities may further influence how a FGCS is able to integrate, seek support, or obtain academic success (Fischer, 2008; Inkelas et al., 2007). U.S. universities promote Western independent norms that conflict with interdependent social norms shared by nontraditional FGCSs whose cultural values (e.g., Asian and Hispanic) emphasize the role of group members over individual accomplishment (Stephens et al., 2012). The self-directed model of study in most U.S. universities (e.g., individual success via academic competition) minimizes collaborative aspects of learning that may be a better fit with FGCSs' traditional cultural background. This mismatch in values may result in first-generation students feeling left out or ostracized by their peers, which likely contributes to the high-attrition rate in FGCSs (Stephens et al., 2014).

Additionally, considering campus environments shape students' sense of belonging, students' perceptions of and experiences within the campus environment, including institutional policies and practices and campus climate, may determine how much they engage with the campus community, including the utilization of student support services. For example, Mcdossi et al. (2022) found that some academic and social experiences that have financial, bureaucratic, and GPA prerequisites, such as academic, professional societies and Greek life, could feel unattainable or out of reach for FGCSs.

It is important to recognize that FGCSs are not a homogeneous group; their first-generation status can intersect with other socially marginalized identities. Therefore, the barriers to establishing a sense of belonging on campus can be wide-ranging and diverse

for FGCSs (Nguyen & Nguyen, 2018). Racial or ethnic minority groups make up nearly half of all FGCSs (Aud et al., 2012), which means many FGCSs also have to overcome racial disparities and discrimination on their college campuses. This can create perceptions of an unwelcoming university environment (Langhout et al., 2007). FGCSs who identify as White or are from middle-income families find adjustment to college less difficult than first-generation students from ethnic minority or low-income backgrounds (Thayer, 2000). These greater barriers to adjustment for low-income or ethnic-racial minority FGCSs can lead to alienation, marginalization, and loneliness, which can reinforce to the student that they do not belong in those spaces.

Theoretical Framework

Belonging is a fundamental human motivation characterized by the need for frequent, sympathetic interactions within an ongoing relational bond to maintain relationships in which the individual feels a part of something greater than themself (Baumeister & Leary, 1995). Through his work on college student retention, Strayhorn (2019) provides a basis for understanding the significance of sense of belonging for college students. A sense of belonging is students' perceived social support on campus, a feeling or sensation of connectedness, the experience of mattering or feeling cared about, accepted, respected, valued by, and important to the group (e.g., campus community) or others on campus (e.g., faculty, peers; Stayhorn, 2019). Strayhorn's Model of College Students' Sense of Belonging stems from Maslow's (1970) hierarchy of needs where love and belongingness are in the middle of the hierarchy above physiological needs and security and safety needs. The gratification of physiological needs permits the emergence and pursuit of other goals, including the need to belong, and taking steps to satisfy that

need. If students successfully satisfy their need to belong, they are rewarded with positive outcomes, such as achievement, growth, persistence, and happiness. However, the deprivation of belonging prevents movement toward knowledge and understanding (i.e., self-actualization), both of which are related to the consummate goals of higher education. Additionally, Strayhorn points out that belongingness takes on heightened importance in certain times, contexts, and among populations that are marginalized or inclined to feel marginalized in certain contexts (2019). Given that FGCSs may experience feelings of marginalization and isolation on college campuses, it is possible they have a greater need to belong.

Strayhorn (2019) defines this fundamental motive as one that drives behavior and leads students to become involved in campus clubs and organizations, establish relationships with supportive others, and/or learn the values of the profession they aspire to pursue. Frequently, students' involvement in both academic and social spheres significantly impact their feeling of belonging within the campus community, and conversely, this sense of belonging can influence their level of engagement. For example, research has shown how underrepresented students' interaction with academic campus services and programming for underrepresented students is critical in their education (Murphy et al., 2020). Through regular and positive interactions with peers and staff, students cultivate meaningful connections, such as friendships and mentoring relationships, which validate their presence, care, and importance within the community (Strayhorn, 2008). These supportive relationships serve as crucial assets that contribute to the overall college experience. Robust support systems often enhance students'

commitment, connections to the campus, and ultimately, their likelihood of staying enrolled.

FGCS' Sense of Belonging

University campuses put in a lot of effort into creating a community environment that promotes a sense of belongingness for their students given its importance for students' inclusion and smooth adjustment to college life. However, efforts made by universities may not be effective across all students. A growing body of literature indicates that in general, FGCSs report greater uncertainty about their belonging (Irlbeck et al., 2014; Means & Pyne, 2007; Strayhorn, 2012) and less belonging (Gopalan & Brady, 2020) in college compared to non-FGCSs. Stebleton and colleagues (2012) compared 58,017 FGCSs and non-FGCSs' sense of belonging and mental health outcomes across six large public institutions. The researchers found that FGCSs reported significantly lower levels of belonging on campus and poorer mental health outcomes (Stableton et al., 2012). For some FGCSs, they may even begin their college education already feeling doubts about their belongingness in those spaces. A qualitative study revealed that some FGCSs entered higher education with internalized messages and doubts about their belonging (Means & Pyne, 2017). Doubts of their belonging were further heightened when FGCSs from low-income backgrounds realized the stark differences between their own high school background and their peers who had unlimited access to rigorous, college-preparatory curriculum (Means & Pyne, 2017). Such findings warrant further understanding of the institutional and interpersonal underpinnings that lead FGCSs to feel a lower sense of belonging.

Academic Implications of Belonging

Belongingness has implications for students' long-term success in college such that greater sense of belonging and attachment to one's campus predict increased likelihood of college persistence (Hausmann et al., 2007; Tovar et al., 2009; Yeager et al. 2016). The greater a college student's sense of belonging, the more likely the student will persist toward graduation (Hoffman et al., 2002). Conversely, research has also demonstrated that a reduced, or low, sense of belonging has been linked to poorer grades for all students (Kuh et al., 2006) and a commonly reported reason for the decision to leave college before graduation (Azmitia et al., 2018). Additionally, Davis and colleagues (2019) found that social belonging was a strong predictor of retention during college students' first year, and therefore, suggests that when examining prediction models of retention, students' social belonging risk should be considered with as much rigor as academic performance risk.

FGCSs' feelings of belongingness are related to their persistence and school engagement. A literature review on FGCSs (Tym et al., 2004) concluded that a higher sense of belonging predicted better persistence and engagement for FGCSs attending 4-year schools when compared to FGCSs attending 2-year schools (e.g., community college). This might be explained by a greater availability of resources or established clubs and communities in 4-year institutions. Gillen-O'Neel (2021) found that students with a higher sense of belonging for any given day were more likely to report higher daily behavioral and emotional engagement (i.e., in-class engagement, help-seeking, academic self-efficacy, daily feelings towards school, and time spent procrastinating). This association was notably stronger for FGCSs, who were more sensitive to day-to-day

fluctuations in sense of belonging compared to non-FGCSs. The factors that can serve to promote or deter FGCSs' feelings of belongingness need to be better understood to endorse the positive components within institutions and address the barriers that impede its development.

COVID-19 Pandemic for College Students

Considering the importance that sense of belonging plays in the educational experiences of FGCSs, and the modification of higher educational institutions during the COVID-19 pandemic, the present study seeks to better understand FGCSs' belongingness within this historical context. As the levels of COVID-19 cases rose in the U.S. in early 2020, a national emergency was declared. Amidst the adverse physical, emotional, and social impacts of the virus, the social distancing orders put in place to prevent further contagion created disruptions to daily life, employment, and education. Stay-at-home and lockdown orders were executed by mid-March of 2020 (Moreland et al., 2020), and more than 1,300 institutions of higher education adhered to Emergency Remote Learning (Hodges et al., 2020). As a result, these changes led to added stress and challenges for students. In a study of 14 campuses and more than 18,000 students, the American College Health Association (2020) found that 66% of students reported increased financial stress, 41% witnessed racial discrimination, and 60% had difficulty accessing mental health resources during the COVID-19 pandemic.

Recent studies show that since the onset of the COVID-19 pandemic, there have been increased reports of college students suffering from negative mental health and well-being. Charles and colleagues (2021) compared two groups of students on their stress and anxiety levels. One group surveyed during Fall 2019 (pre-lockdown) and the

other during Spring and Fall 2020 (during the lockdown). They found that the group

surveyed during the COVID-19 lockdown reported higher levels of stress, mood disorder

symptoms, and alcohol use (Charles et al., 2021). Lanza et al. (2021) found that in a

sample of more than 4,000 college students surveyed in November 2019 (pre-lockdown)

and again in May 2020 (during the lockdown), there were increased levels of depression

and decreases in physical activity and sexual activity. Given these mental health concerns

for college students during the COVID-19 pandemic, it is important to also examine

FGCSs' experiences during this period.

FGCSs' Experiences during the COVID-19 Pandemic

Not surprisingly, the changes in learning deepened the existing disparities in

higher education negatively impacting underrepresented groups, including FGCSs and

low-income students. With classes transferred to an online modality, disadvantaged

students' lives were heavily impacted during this time because many were forced to

return to their homes and faced additional financial burdens (i.e., lost on-campus jobs,

places of employment closed down). Emergency remote learning revealed a significant

"digital divide" among socioeconomically disadvantaged students who were less

equipped for technology-based learning (Goudeau et al., 2021; Karakose, 2021).

Goudeau et al. (2021) suggests that distance learning amplified the digital, cultural, and

economic and structural divides between working class and middle/upper class families.

The accumulation of these divides, especially when students had to rely on resources and

support available in their home, amplified the academic inequalities and can widen the

social class achievement gap (Goudeau et al., 2021). When compared to non-FGCSs,

FGCSs faced more challenges adapting to online instruction because they often lacked a

proper study space and had difficulties in accessing resources for online instruction and in being able to meet virtually for scheduled times (Soria et al., 2020). Soria and colleagues (2020) also found that FGCSs were significantly more likely than non-first-generation students to experience higher levels of anxiety and stress during the pandemic. FGCSs' higher levels of anxiety and stress may have been due to financial hardships, food insecurity, concerns about paying for their education, and living in unsafe environments.

Sense of Belonging During the Pandemic

With the disruption of academic life and the COVID-19 pandemic guidelines prohibiting some students from being on campus for weeks and in some cases months, and others confined to their dorm rooms, students' feelings of belongingness likely changed. Baumeister and Leary (1995) argue belongingness is a dynamic construct in which changes in one's belongingness will produce commensurate changes in emotions. Further, belongingness is not just a static trait that differentiates people, it is also a state that varies within people over time. Can a student feel like a valued member of their institution's community when they are not stepping foot on campus and only interacting with faculty, peers, and student services via zoom meetings and phone calls? College students have revealed that the "emotional distancing" caused by the COVID-19 pandemic and maintaining connections through online platforms created change and tension in many of their relationships (Dotson et al., 2022). Understanding students' feelings of belongingness during the COVID-19 pandemic is critical because it could inform other academic and social changes they experienced during this time. Benson and Whitson (2021) found that students' sense of community, which is comprised of a sense

of belongingness, a sense of mattering, integration and fulfillment of needs, and shared emotional connection, acted as a protective factor against college students' perceived stress, and to a lesser extent against disruptions to their daily routine that were caused by the COVID-19 pandemic. The researchers suggest that their findings point to the important protective qualities of a sense of community in boosting college students' ability to cope with the COVID-19 pandemic (Benson & Whitson, 2021).

Sense of belonging differed across student groups during the pandemic, in a similar way to how it differed before the pandemic. A longitudinal study by Gopalan and colleagues (2022) analyzed how sense of belonging varied for key socio-demographic groups (i.e., FGCSs, underrepresented racial minorities, first-year students) amidst the COVID-19 pandemic and whether feelings of belonging buffer adverse mental health in students. FGCSs reported significantly lower belonging than their non-FGCS peers at both before and during the COVID-19 pandemic. Additionally, belonging was negatively associated with depression during COVID-19 and to a lesser extent with anxiety. Results from a longitudinal model showed that for all students, sense of belonging during early COVID months and campus closure was not significantly different compared to their sense of belonging pre-COVID despite more isolation (Gopalan et al., 2022). In accordance with previous studies, FGCSs reported a lower sense of belonging during pre-lockdown times compared to non-FGCSs, and this disparity persisted through the early months of the COVID-19 pandemic (Gopalan et al., 2022). However, any potential changes in belonging from pre-lockdown to the early months of remote learning might not have been detectable and is worth observing after a longer term of remote learning.

The present study aims to take a more comprehensive look at the trajectory of sense of belonging after multiple months of remote learning through students' return to campus.

Predictors of Sense of Belonging

It is imperative to understand the factors that promote a strong sense of belonging in students considering the existing research that establishes a sense of belonging as a crucial link to student retention (e.g., Davis et al., 2019; Hausmann et al., 2007; Hoffman et al., 2002; Tovar et al., 2009; Yeager et al., 2016). This study will explore the role of academic-focused support services (e.g., tutoring, writing centers), programs for underrepresented students (e.g., TRIO programs, Educational Opportunity Programs), and institutional natural mentoring relationships in predicting sense of belonging for FGCSs.

Use of On-Campus Programming

Research shows that there is a positive relationship between involvement in academic activities (e.g., institutional support services) and students' sense of belonging (Hoffman et al., 2002; Means & Pyne, 2007; Strayhorn, 2008). Students' use of academic support services and programming, such as tutoring, academic achievement programs, or academic advising, reap many academic benefits, including a stronger sense of belonging (Hurtado & Ponjuan, 2005; Maestas et al., 2007). Strayhorn (2019) summarizes the four ways in which involvement in academic or social activities engenders belongingness: 1) connecting students with others who share their interests, values, and commitments, 2) familiarizing students with campus environment and ecology, 3) affirming students' identity, interests, and values as "a part of the campus," and 4) generating feelings among students that they matter, and others depend on them. Despite the positive impact of

support services on belonging, experts say a lack of sense of belonging and support services are exacerbated for marginalized students, such as FGCS, and this ultimately contributes to lower rates of persistence (Weber et al., 2022). This only adds more urgency to better understand the ways academic services and activities can be effective. This study will explore whether the use of academic services (i.e., institutional support services and programming) lead to stronger feelings of belongingness.

Studies show that participating in academic support services is significantly associated with a higher sense of belonging in later college years. In a qualitative study with FGCSs, students were asked which institutional support structures enhance their feelings of belongingness in school, and academic support services were frequently referenced (Means & Pyne, 2017). Students further discussed how the presence of academic support structures—such as tutoring centers, writing centers, and scholarship programs with established cohorts and mentoring—were important for their sense of belonging and academic adjustment (Means & Pyne, 2017). This study suggests that academic-focused support programs have multiple effects beyond positive academic outcomes and are conducive to making students feel a part of their institution.

In addition to academic support services, institutional programs for underrepresented college students provide avenues of support for FGCSs to develop a sense of belonging in their college campus. Examples of federally funded programs for underrepresented college students are TRIO Student Support Services, TRIO McNair Scholars Program, and the Educational Opportunity Program. A study found that participation in TRIO programs is significantly associated with belongingness and college persistence (Kuh et al., 2006). The specific focus and structure of these programs

may vary. For example, some programs target students who want to pursue graduate degrees, others offer tutoring services to first-generation college students, but the premise of these programs is to identify and provide services for students who are historically underrepresented in higher education, including first-generation college students, low-income students and students from underrepresented racial/ethnic groups. Program services range from financial support, tutoring, research opportunities, and typically include access to academic support and sometimes mentoring (e.g., peer mentoring, or faculty mentor).

Programs geared specifically towards FGCSs have been found to increase their sense of belonging. A mixed-method evaluation of an institutional program for FGCSs located in a Southern state found that program participants reported high levels of belongingness (Bartee, 2021). When asked about which components of the program students found meaningful in creating a sense of belonging, students mentioned four types of activities: academic engagement (i.e., Summer Scholars program, Summer Bridge TRIO program, service-learning class), peer support, and community (i.e., socials/mixers, mentorship, game nights), and personal skill development (i.e., opportunities to network with career and alumni professionals, graduate school panel, tutoring center study sessions; Bartee, 2021). Moreover, there were two emergent themes about *why* these components were thought of as meaningful: 1. Social and academic engagement activities enabled FGCSs to interact with others, and 2. Participants felt a sense of belonging because members of the program interacted with them in an encouraging environment. Experts state that the benefit of such programs is that they can prepare and assist students from underrepresented backgrounds early in their college

years (Kuh et al., 2006), which may not only increase their belonging but also their retention.

Programs aimed at underrepresented college students often use cohort-based models to provide students with a supportive community of peers who share similar experiences and challenges. Studies have found that peer support can improve students' sense of belonging and academic outcomes (Crisp et al., 2009; Anderman & Freeman, 2004). In addition to the support from a cohort-based model, these programs may provide students with access to mentors who can offer guidance and support, which is discussed in the next section. Overall, these types of programs play a critical role in promoting first-generation college students' sense of belonging by providing them with the resources, support, and community they need to succeed in college and beyond.

Mentoring Relationships

One source of support that may help first-generation college students successfully navigate barriers in college are natural mentors in higher education, such as faculty and staff (Hagler, 2018). Natural mentoring relationships are relationships that form organically between a student and a supportive, more experienced non-parental adult (Zimmerman et al., 2005). A recent systematic review of the literature on natural mentoring relationships of underrepresented college students revealed that the presence of mentors is associated with various positive outcomes for underrepresented students, including academic and socio-emotional (Monjaras-Gaytan & Sánchez, 2023).

First-generation college students experience barriers that can be attributed to the lack of knowledge on how to navigate college. These college students may not have adults in their lives who can provide them with information and resources that will help

them be successful in college (Dumais & Ward, 2010; Engle, 2007). For example, a study found that FGCSs lacked guidance on how to manage their time, had little guidance outside of their class, and did not understand how to navigate interactions with professors compared to non-FGCSs (Collier & Morgan, 2008). When entering institutions of higher education that often function on a hidden curriculum, the implicit academic, social, and cultural messages or unwritten rules of the dominant culture in educational contexts, having supportive adults within the institution may be crucial for FGCSs' success and adaptation in such spaces.

Institutional natural mentors (e.g., instructors, college staff) may be particularly instrumental in promoting students' feelings of belongingness (e.g., Deil-Amen, 2011; Monjaras-Gaytan et al., 2021). For example, a cross-sectional study found that mentoring relationships acquired after starting college were significantly and positively associated with FGCSs' psychological sense of school membership (Hagler et al., 2021). In a study of semi-structured interviews of 125 college students, who were mostly students of color, low-income, and first-generation college students, it was found that institutional agents (i.e., adults in positions of authority who possess social and cultural capital within educational institutions) were instrumental to students' sense of belonging and adjustment in college (Deil-Amen, 2011). A recent study on historically underrepresented college students found that a higher sense of belonging was associated with having an on-campus natural mentor (Monjaras-Gaytan et al., 2021). Similarly, another study found that having natural mentors was associated with a higher sense of school belonging among Latino high school students (Sánchez et al., 2005).

Researchers suggest that if students engage in the college experience and have positive interactions with faculty, student affairs staff, and other on-campus staff, they are more likely to perceive heightened feelings of belonging and mattering on campus (Hurtado & Carter, 1997; Schlossberg et al., 1989). Additionally, when students perceive more faculty support, they view those faculty as being more empathetic and understanding, which are important factors that impact students' belongingness (Hoffman et al., 2002). Personalized support from faculty can also improve students' sense of belonging and academic outcomes (Crisp & Cruz, 2009; Anderman & Freeman, 2004). According to students, faculty relationships and support were one of the most important factors for their sense of belonging within academic life (Means & Pyne, 2017). Students explained that faculty's pedagogical approach, attitude toward students in class and during office hours, and expectations of student knowledge, behavior, and ability frequently shaped student choices about how to respond to a class, a task, or a major. Additionally, within difficult classes, faculty's moral and student-centered focus was the most frequently discussed academic-focused support mechanism for developing a sense of belonging (Means & Pyne, 2017). Considering FGCSs often face feelings of uncertainty and unfamiliarity with college (Irlbeck et al., 2014; Strayhorn, 2012), having support from institutional agents could be critical in assuring FGCSs that they are a part of the institution.

Current Study

In light of the salient role that sense of belonging has in the social experiences and academic outcomes of FGCSs, research is needed to understand how institutional support programs, academic campus support, and natural mentoring relationships with

institutional agents influence the trajectory of belongingness for FGCSs, particularly during the COVID-19 pandemic. Academic support services (Hurtado & Ponjuan, 2005; Maestas et al., 2007; Means & Pyne, 2007; Strayhorn, 2008) and natural mentoring relationships with faculty and staff (Deil-Amen, 2011; Hagler et al., 2021; Monjaras-Gaytan et al., 2021) have been linked to belongingness in college students. These may be core components of college life for FGCSs and have implications for how connected they feel to their university, particularly during a time where social connection was difficult to achieve. However, the pandemic altered the way in which students may have experienced these services and interacted with on-campus natural mentors. Additionally, existing studies have compared students' sense of belonging pre- lockdown to post-lockdown (Gopalan et al., 2022; Potts et al., 2021), but research has not been conducted to examine sense of belonging beyond the early pandemic months. The longitudinal nature of this investigation allows an in-depth look at how belongingness unfolds for students experiencing college during a global pandemic.

The current study examined whether and how academic support services, programs for underrepresented college students, and natural mentoring relationships with faculty and staff influence sense of belonging during the pandemic, in a sample of first-generation college students.

Research Question 1

What is the trajectory of FGCS' sense of belonging from pre-pandemic lockdown to post-pandemic lockdown?

- **Hypothesis 1a:** FGCS' sense of belonging will decrease from pre-pandemic lockdown (Fall 2019) to during the pandemic lockdown (Spring 2020).

- **Hypothesis 1b:** FGCSs' sense of belonging will increase from during the

  pandemic lockdown (Spring 2020) to post-pandemic lockdown (Spring 2022),

  when most of the safety guidelines (i.e., emergency remote learning) were lifted.

Research Question 2

What are the associations of academic-focused support services, programming for

underrepresented students, and the number of natural mentoring relationships with

faculty and staff with a sense of belonging throughout the pandemic lockdown (Fall

2019-Spring 2022)?

- **Hypothesis 2a:** The utilization of programming for underrepresented students

  will be associated with a higher sense of belonging *throughout* the pandemic

  lockdown.

- **Hypothesis 2b:** Using more academic-focused support services will be associated

  with a higher sense of belonging *throughout* the pandemic lockdown.

- **Hypothesis 2c:** Having more institutional natural mentoring relationships will be

  associated with a higher sense of belonging *throughout* the pandemic lockdown.

Method

The data used in this study are part of a larger longitudinal, mixed method

investigation examining first-generation student persistence. The proposed study will

examine a subsample of the larger study and four of the 10 timepoints of the larger

sample. The participants for this project were drawn from two cohorts of Drs. Ida Salusky

and Elizabeth Raposa's longitudinal study "The Roles of Identity and Supportive Social

Networks in College Persistence for First-Generation College Students" (Salusky &

Raposa, 2018).

Description of Each Site

Students across three institutions participated in the study: University A, University B, and University C[1]. University A, a private Catholic research university, specifically recruits first-generation and other marginalized students (Malone, 2010). In 2020, the incoming class consisted of 2,774 students. As of 2020, the student body at University A was 49% White, 18% Latinx/Hispanic, 11% Asian, 10% African American/Black, 4% multiracial, <1% American/Indian/Alaskan Native, <1% Native Hawaiian or Pacific Islander, and less than 8% was unknown. Nearly a third (32%) of the incoming students in 2020 at University A were first-generation college students. As of 2020, approximately 90% of students were enrolled full time, and 71% of students reached matriculation. University B is a selective public research university (Adams, 1887). In 2020, the incoming class consisted of 5,987 students. As of 2020, the student body at University B was 61% White, 8% Latinx/Hispanic, 8% Asian, 7% African American/Black, 5% multiracial, <1% American/Indian/Alaskan Native, <1% Native Hawaiian or Pacific Islander. Approximately 11% of the 2021 incoming students were first-generation college students, 88% were are enrolled full time, and 91% of students reached matriculation. University C is a historically Black college and university (HBCU). In 2020, the incoming class consisted of 6,324 students. As of 2020, the student body at University C was 83% African American/Black, 6% multiracial, 4% Latinx/Hispanic, 3% White, <1% Asian, <1% American/Indian/Alaskan Native, <1% Native Hawaiian or Pacific Islander, and less than 3% was unknown. Nearly a third (32%) of the incoming students in 2020 at University C were first-generation college

---

[1] *Pseudonyms were used for the names of the institutions in the study.*

students. As of 2020, 89% of students were enrolled full time, and 38.5% of students reached matriculation.

Table 1 includes a description of the different modalities and lockdown restrictions across the three universities during Spring 2020, Fall 2020, and Spring 2021. Spring 2020 includes the beginning of the pandemic lockdown in the U.S. when the three universities moved all of their classes online and/or students were made to leave their campus. During Fall 2020, Universities B and C offered hybrid and in-person classes in addition to the online classes. During Spring 2021 University A did the same.

Table 1.

Modalities of Classes Offered in Universities A, B, and C from Spring 2020-Spring 2021

	Spring 2020	Fall 2020	Spring 2021
University A	Classes were moved online (synchronous and asynchronous) during the final two weeks of winter quarter and all of spring quarter remote.	Classes were taken online (synchronous and asynchronous).	Some classes were taken online (synchronous and asynchronous), hybrid (mixture of online and in-person), and completely in person.
University B	Students left campus in the middle of the spring semester. Classes were moved online (synchronous and asynchronous) for the remaining semester.	Some classes were taken online (synchronous and asynchronous), hybrid (mixture of online and in-person), and completely in person.	Some classes were taken online (synchronous and asynchronous), hybrid (mixture of online and in-person), and completely in person.
University C	Students left campus in the middle of the spring semester. Classes were moved online (synchronous and asynchronous) for the remaining semester.	Some classes were taken online (synchronous and asynchronous), hybrid (mixture of online and in-person), and completely in person.	Some classes were taken online (synchronous and asynchronous), hybrid (mixture of online and in-person), and completely in person.

Participants

Participants were 372 undergraduate college students from three higher education institutions in the US. Participants were recruited in the summer prior to beginning their

first year of college. The study was primarily advertised via an email sent by the admissions office of all three institutions. This email was sent to all students who accepted an admissions offer to attend University A beginning autumn 2018 as non-transfer students and who indicated they were first-generation college students. At University B and University C, these emails were sent to all new students. All recruitment flyers sent via email included a link to a screening measure. Students who were interested completed a brief online or in-person screener. Inclusion criteria for participants were: 1) none of their parent(s)/guardian(s) had graduated from a four-year college/university in the U.S.; and 2) they were enrolled at one of the three institutions.

Secondary recruitment efforts at all sites supplemented the email advertisement. At University A and University B, the research team employed a recruitment table in common areas during orientation week. At these tables, the research team obtained contact information from interested students, and also permitted interested participants to complete the screening measure using tablets or laptops provided by the research teams. At all sites, flyers with links and a QR code directing to the screening measure were posted on campus and on bulletin boards at locations in the respective communities that were known to be frequented by students. Informed consent and assent were obtained from eligible participants before any surveys were completed.

Sample demographics are included in Tables 2 and 3. The majority of the participants were female ($n = 264$; 71%) and their mean age was 17.95 (range 17 to 23 years). The sample was racially diverse with a little under a 25% of the sample identifying as White. Participants also reported a wide range of annual income levels with nearly 20% reporting household incomes of less than $24,120 and about 50% reporting

between $24,120 - $74,280. Over half the sample is from University A (56.28%; $n = 209$) and from Cohort 2 (60.48%; $n = 225$). As shown in Table 3, where demographics are displayed by site and by cohort, the majority of participants were female across all universities and cohorts. University A was the most racially diverse with participants representing all of the major racial categories and the largest proportion of White (68.13%; $n = 62$) and Hispanic/Latinx participants (80%; $n = 77$) in the sample. The largest proportion of African American participants was from University C, an HBCU, accounting for 73.49% ($n = 61$) of African Americans in the sample. A greater proportion of participants from University B (37.65%) reported a household income greater than $74,280 compared to University A (24.88%) and University C (8.97%). Also, a larger proportion of participants from University C (37.18%) reported a household income less than $24,120 compared to University A (16.27%) and University B (10.59%).

Table 2.

Sample Demographic Information

Variable	Range	Mean (SD)
Age	17-23	17.95 (.63)
Gender	N	%
Female	264	(70.97%)
Male	80	(21.51%)
Non-binary	8	(2.15%)
Unreported	20	(5.38%)
Ethnicity		
White	91	(24.46%)
African American	83	(22.31%)
American Indian/Alaska Native	1	(.27%)
Asian American	29	(7.8%)
Native Hawaiian/Pacific Islander	1	(.27%)
Latino	96	(25.81%)
Other	6	(1.61%)
Multiracial	43	(11.56%)
Unreported	22	(5.91%)
Income		
< $24,120	72	(19.36%)
$24,120-$49,200	104	(27.96%)
$49,200-$74,280	75	(20.16%)
$74,280-$100,000	55	(14.79%)
>$100,000	36	(9.68%)
Unreported	30	(8.07%)
Site		
University A	209	(56.28%)
University B	85	(22.85%)
University C	78	(20.97%)
Cohort		
Cohort 1	147	(39.52%)
Cohort 2	225	(60.48%)

Table 3.

Sample Demographic Information by Site and Cohort During Baseline

	University A		University B		University C	
	Cohort 1 (N = 100)	Cohort 2 (N = 109)	Cohort 1 (N = 29)	Cohort 2 (N = 56)	Cohort 1 (N = 18)	Cohort 2 (N = 60)
Age						
Range (N)	17-22 (97)	17-21 (98)	17-23 (29)	17-21 (55)	17-20 (18)	17-20 (60)
Mean (SD)	17.99 (.6)	17.99 (.47)	17.79 (1.11)	17.89 (.63)	18.06 (.64)	17.91 (.59)
Gender	n %	n %	n %	n %	n %	n %
Female	72 72%	72 66.1%	20 69%	42 75%	14 77.8%	44 73.3%
Male	22 22%	24 22%	9 31%	11 19.6%	4 22.2%	10 16.7%
Non-binary	3 3%	2 1.8%	- -	2 3.6%	- -	1 1.7%
Unreported	3 2%	11 10.1%	- -	1 1.8%	- -	5 8.3%
Ethnicity						
White	29 29%	33 30.3%	7 24.1%	22 39.2%	- -	- -
African American	5 5%	6 5.5%	4 13.8%	7 12.5%	15 83.3%	46 76.7%
American Indian/ Alaska Native	1 1%	- -	- -	- -	- -	- -
Asian American	8 8%	3 2.8%	9 31%	9 16.1%	- -	- -
Native Hawaiian/ Pacific Islander	- -	1 .9%	- -	- -	- -	- -
Latino	37 37%	40 36.7%	7 24.1%	9 16.1%	- -	3 5%
Other	2 2%	4 3.7%	- -	- -	- -	- -
Multiracial	15 15%	9 8.3%	2 6.9%	8 14.3%	3 16.7%	6 10%
Unreported	3 3%	13 11.9%	- -	1 1.8%	- -	5 8.3%
Income						
< $24,120	21 21%	13 11.9%	1 3.4%	8 14.3%	6 33.3%	23 38.33%
$24,120-$49,200	30 30%	25 22.94%	10 37.04%	11 19.64%	5 27.8%	23 38.33%
$49,200-$74,280	21 21%	30 27.52%	4 14.81%	15 26.79	2 11.1%	3 5.1%
$74,280-$100,000	16 16%	17 15.6%	6 20.69%	11 19.64%	3 16.7%	2 3.3%
> $100,000	7 7%	12 11%	6 20.69%	9 16.1%	- -	2 3.3%
Unreported	5 5%	12 11%	2 6.9%	2 3.6%	2 11.1%	7 11.7%

Procedure

Baseline data collection occurred the summer prior to participants' entering their first year in college. After baseline, participants completed four additional surveys throughout their first and fourth year in college. A breakdown of the timepoints of data collection are presented in Table 4.

Table 4.

Survey Timepoints Included in the Study

	Pre-Lockdown	Pandemic Lockdown		Post-Lockdown
Term	Fall	Spring	Spring	Spring
Survey Data Collected	2019 (Time 1)	2020 (Time 2)	2021 (Time 3)	2022 (Time 4)

Baseline Surveys

Surveys were administered online and in-person at University A while surveys were only administered online for University B and University C. At University A, the Qualtrics screening instrument instructed respondents to select a date and time that they were available to attend a baseline session on-campus. Alternatively, for students who could not meet before Autumn classes began or preferred not to attend an in-person baseline survey administration, the Qualtrics screening instrument asked if they would be willing to complete the baseline instrument online.

In-person baseline surveys were administered in private classrooms on-campus, which took two hours to complete. Both in-person and online participants received $20 for their participation. The baseline survey asked participants for detailed contact information including: phone number, email address, phone number of a close family member or friend, as well as usernames for different types of social media. Providing a phone contact and email contact were requirements for participation in the study to track participants over time. All other forms of contact were optional.

Follow-up Surveys

There were a total of four follow-up surveys after the baseline. The follow-up surveys were collected during Fall 2019 (November-December 2019), Spring 2020

(April-June 2020), Spring 2021 (April-May 2021), and Spring 2022 (April-May 2022; see Table 4). The follow-up surveys were administered at or near the end of the academic term for all universities, and the measures asked students to reflect on the past term or since they took their last survey (e.g., since the end of the prior academic term). For the follow-up survey administrations, participants were contacted based on their preferred method of contact. Follow-up surveys were completed online and took between 30-45 minutes to complete, and respondents received $20 for completing each survey. When a participant dropped out, transferred, or completed school prior to the end of the study, an exit questionnaire designed to assess reasons for leaving school, as well as an estimate of the date at which they elected to depart their first institution was administered.

Materials

All of the measures included in the present study are found in Appendix A.

Demographics. At baseline, participants were asked to report their age, gender, race, and parent or guardian's highest educational degree. Race was measured with the item, "With which ethnic or racial identity do you most identify? Please select all that apply." The possible response categories were: White, African American, American Indian or Alaska Native, Asian American, Native Hawaiian or Pacific Islander, Latino, and other. Parent or guardian's highest educational degree was measured with the item, "What was the highest educational degree earned by your parents or guardians?" Response options were: 0 = No college experience, 1 = one/both parents some college (no degree), 2 = one/both parents some college (technical or vocational certificate, Associates degree, 2-year college), 3 = one parent college degree (Bachelor's degree, 4-year degree), 4 = both parents college degrees (Bachelor's degree, 4-year degree), 5 =

one parent graduate degree (Masters, Ph.D., Ed.D., or professional degrees, i.e., M.D., J.D., D.D.S., etc.), and 6 = both parent graduate degrees (Masters, Ph.D., Ed.D., or professional degrees, i.e., M.D., J.D., D.D.S., etc.).

Sense of Belonging at Institution. To assess students' sense of belonging, the Psychological Sense of School Membership Scale (PSSM; Goodenow, 1993) was administered at each follow-up survey (Times 1, 2, 3, and 4). The measure includes 18 items with a 5-point Likert-type scale (1 = Not at all true to 5 = Completely true). The PSSM was originally developed to measure adolescents' perceptions of sense of belonging in school (Goodenow, 1993). The scale has been previously used with first-generation college students and other historically underrepresented college student samples and had an adequate internal consistency (e.g., Hagler et al., 2021). The measure items were adapted to ask questions about belongingness at "college/university" instead of "school." Sample items are, "I feel like a real part of my college/university" and "people at my college/university notice when I am good at something." The measure demonstrated good internal consistency ($\alpha = .88$). Mean scores were computed; higher scores reflect a higher sense of belonging at the institution.

Use of Programs for Underrepresented Students. Participants were asked about their use of institutional programs for underrepresented students at Times 1-4 with the following item: "During THIS PAST SEMESTER (i.e., since the last survey you completed), did you/are you participating in programming targeting historically underrepresented students and/or first-generation-college students?" Response options are "yes" = 1 or "no" = 0.

Use of Academic Support Services. At Times 1-4, whether a participant used academic-focused support services was assessed with the following item, "Please select any/all of the services you have used this past academic quarter/semester." Response options included: Not used (2), Used; not very helpful (3), Used; somewhat helpful (4), and Used; very helpful (5). The services listed were: 1. faculty guidance/mentoring, 2. Academic achievement programs, 3. Academic advising, 4. Tutoring through any college/university program or the writing center, and 5. career/internship resource. Items that were selected as "Used" at any level of helpfulness were coded as 1 and items selected as "Not used" were coded as 0. A total score of academic support services selected was computed and scores ranged from 0 to 5.

Institutional Natural Mentors. Participants were asked to report whether they had a non-parental adult who is older and more experienced and who provides them with support and guidance in their lives. This question was asked at Times 1-4. Participants were instructed that this person should not be a parent or romantic partner, and could be someone who they knew before entering college or who they met since being in college (Hurd et al., 2016). If participants indicated "yes," then they were allowed to list up to six people who fit these criteria. Afterwards, participants were asked whether they met their mentor through their university/college and about their mentors' role (e.g., university professor, university advisor). The total number of natural mentors across Times 1-4 at the institution was summed.

Data Analytic Strategy

Descriptive statistics were calculated and bivariate Pearson correlations were conducted of the key study variables. Multilevel linear modeling (MLM) was used to

examine individual and timepoint (pandemic lockdown) influences on sense of belonging in FGCSs. Multilevel modeling allows the testing of both the separate and combined effects of individual and pandemic lockdown time effects for nested data (e.g., nested timepoints pre, during, and after the lockdown) while accounting for dependence in the data (Snijders & Bosker, 1999). The first latent growth curve model tested the trajectory of sense of belonging across four timepoints. The variable for Time was computed as a quadratic variable to test for the predicted quadratic shape of the trajectory for belonging. Given the lack of statistical support for the quadratic model, additional analyses were conducted to identify a better fitting model. Thus, Time was then entered as a linear variable to test for a linear growth curve of sense of belonging. The second model included the three predictors for sense of belonging from Time 1-4 and time-invariant covariates: college (site), age, gender, ethnicity, and income.

All multilevel linear modeling analyses were conducted using SPSS. Full information maximum likelihood estimation procedures were used to calculate likelihood estimates for all models, and also allowed for the estimation of model parameters when missing data were present (Snijders & Bosker, 1999). Parameters for fixed effects were tested for significance in each model in order to determine the influence of individual, predictors. The continuous predictors at the individual level were group-mean centered in order to interpret the individual level effects above and beyond the nested-level effects (Enders & Tofighi, 2007).

Results

Descriptive statistics

Table 5 presents the means, standard deviations, and bivariate Pearson's correlations of the key study variables at each time point. As shown in Table 5, the use of programming for underrepresented students was not significantly associated with sense of belonging at any time point. Belonging at Time 2 was positively and significantly associated with institutional natural mentoring relationships at Time 3. The number of academic support services used at Time 1 was positively and significantly associated with belonging at Time 2. The number of academic support services used at Time 2 was positively and significantly associated with belonging at Time 2. Moreover, belonging at Time 3 and at Time 4 was positively and significantly associated with the number of academic support services used at Time 4. Finally, the number of academic support services used at Time 4 was positively and significantly associated with belonging at Times 3 and 4.

Participants were asked to provide the name of the program for underrepresented students that they have participated in. Of the names provided, there were 20 different programs across all timepoints (Table 6). The four most common programs named were First-Generation Low-Income (FGLI) Support Group, TRIO/Student Support Services, William & Mary Sure, and Generation Success.

Table 5.

Means, Standard deviations, and Bivariate Pearson Correlations of Key Variables

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.Belonging T1	3.57	.67	-														
2. Belonging T2	3.56	.76	.66**	-													
3. Belonging T3	3.49	.74	.58**	.58**	-												
4. Belonging T4	3.48	.74	.50**	.53**	.63**	-											
5. URP use T1	.20	.40	.04	.02	.01	.01	-										
6. URP use T2	.20	.40	.06	.10	.11	.03	.51**	-									
7. URP use T3	.14	3.5	-.05	-.20	.08	.12	.32**	.38**	-								
8. URP use T4	.14	3.5	.03	-.01	.07	.10	.37**	.31**	.41**	-							
9. INMRs T1	.21	.47	.03	.01	-.02	.12	.20*	.24**	.16	.01	-						
10. INMRs T2	1.47	.93	.33	.25	.55*	.28	-.20	.24	-.29	-.23	.38	-					
11. INMRs T3	1.44	1.25	-.19	-.10	.45	.33	.44	-.19	.49*	.43	.31	.01	-				
12. INMRs T4	1.20	.41	-.16	-.16	.18	.03	-.05	-.28	.04	-.13	.43	-.09	.65	-			
13. Support T1	1.54	1.52	-.01	.13*	.10	.08	.16**	.16**	.10	.01	.20*	.22	.41	.03	-		
14. Support T2	1.36	1.45	.03	.16**	-.03	.10	.11	.07	.06	.13	-.06	.40	.11	-.10	.35**	-	
15. Support T3	.81	1.01	.13	.15	.37**	.27**	.03	.08	.15	.17	.24*	.25	.62**	.46	.07	-.0.06	-
16. Support T4	.96	1.15	.08	.16	.22*	.33**	.09	.02	.16	.17*	.14	.29	.52	.16	.15	.19*	.36**

Note: *$p < .05$, **$p < .01$. USP use = Underrepresented Student Programming Use, INMRs = Institutional Natural Mentoring Relationships, Support = number of academic support services used. T1 = Assessment Time 1, T2 = Assessment Time 2, T3= Assessment Time 3, T4 = Assessment Time 4.

Table 6.

Types of Programs for Underrepresented Students Reported

Program name	N	%
FGLI Support group	39	28.46%
TRIO/Student Support Services	21	15.33%
WM Students in Undergraduate Research	20	14.60%
Generation Success	18	13.14%
Multicultural Student Success	6	4.38%
STEP	4	2.92%
STARS	4	2.92%
First Generation College Student Group	4	2.92%
Arnold Mitchem Fellows	3	2.19%
PLUS Program	3	2.19%
EDGE Program	3	2.19%
Men of Color	3	2.19%
Wren Program	2	1.46%
Trailblazers	1	0.73%
Minority Student Leadership Program	1	0.73%
First Generation Student Mentorship Program	1	0.73%
Growth Mindset and Resilience	1	0.73%
Rising STEM Scholars	1	0.73%
Minority in Medicine	1	0.73%
Early Identification Program	1	0.73%

Note: WM = William & Mary, STEP = Student Transition Engagement Program, STARS = Students Together Are Reaching Success, PLUS =Preparing for Life as a University Student

**Multilevel Model Analyses**

To test hypotheses 1a and 1b, a growth curve model was used to examine the trajectory of sense of belonging from Time 1 to Time 4. The Time variable was computed as a quadratic variable in order to test the quadratic growth of sense of belonging across the four timepoints. The quadratic model was not significant, $F(1, 394.25) = 2.79$, $p = .100$. Given the lack of statistical support for the quadratic model, additional analyses were conducted to identify a better fitting model. Thus, Time was then entered as a linear

variable to test for a linear growth curve of sense of belonging. This model was significant $F(1, 431.40) = 15.56$, $p < .001$, and the trajectory for sense of belonging demonstrated a notable increase in the random intercepts, indicating an overall positive trend in the sense of belonging among participants. This means that students' sense of belonging increased overall from Time 1 to Time 4 (Figure 1). At Time 2, the random intercept increases to approximately 0.011, indicating a noticeable improvement in the sense of belonging compared to Time 1, and therefore not supporting hypothesis 1a, that sense of belonging would decrease from pre-lockdown (Time 1) to during the lockdown (Time 2). At Time 4, the random intercept increases to approximately 0.004, indicating a return to a slightly higher level of sense of belonging compared to Time 3, although the change is relatively small, supporting hypothesis 1b that sense of belonging will increase from during the lockdown (Time 3) to post-lockdown (Time 4). Notably, at Time 3 there was a minor decline in the sense of belonging compared to Time 2, but still higher than the initial level at Time 1. Both Time 2 and Time 3 were recorded during lockdown at Spring 2020 and Spring 2021 respectively.

Figure 1.

Growth Curve of Students' Sense of Belonging from Time 1 to Time 4
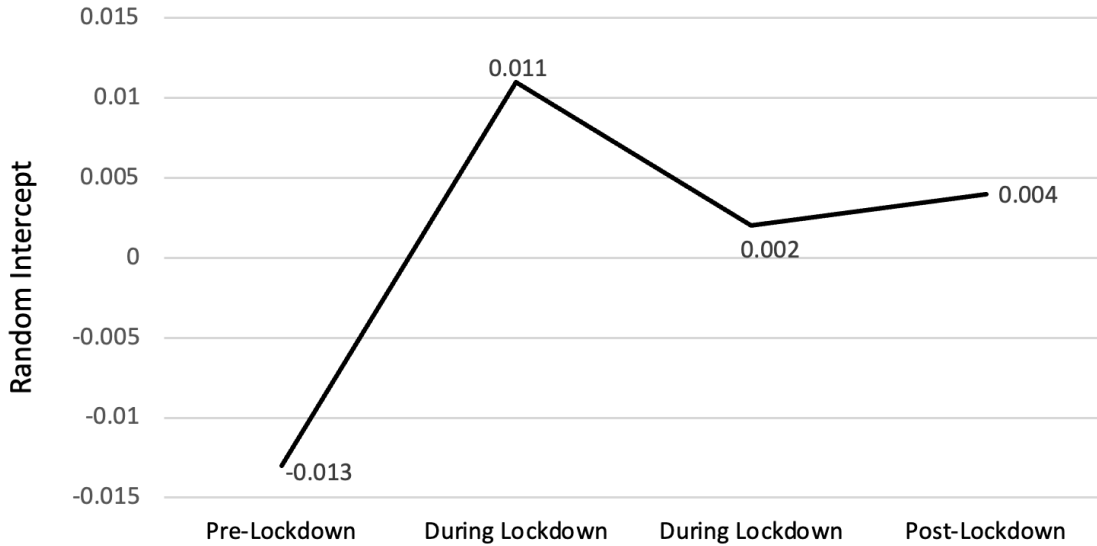
A linear mixed model was used to test the relationship between each of the predictors and sense of belonging as well as other demographic variables recorded at baseline (Table 7). Cohort was entered as a covariate in the model. Hypothesis 2a that the use of programming for underrepresented students (USP Use) would be associated with higher sense of belonging throughout Time 1-4 was not supported. Although the positive coefficient for underrepresented student support programs indicates that the presence of programming for underrepresented students was associated with a higher sense of belonging throughout Time 1-4, this association was not statistically significant. Hypothesis 2b that higher use of academic support services would be associated with higher sense of belonging throughout Time 1-4 was supported. A one-unit increase in the utilization of academic support services was significantly associated with an increase of approximately 0.0676 units (6.76%) in sense of belonging. Hypothesis 2c that more institutional natural mentors reported (INMR) would be associated with higher sense of

belonging throughout Time 1-4 was supported. A one-unit increase in INMR is significantly associated with an increase of approximately 0.1917 units (19.17%) in sense of belonging. Additionally, Income was also a statistically significant predictor ($p <$ 0.05), indicating that income level has significant effects on students' sense of belonging. For every one unit increase in income level, sense of belonging increases by 0.010 units (1.0%). The other demographic predictors were not statistically significant.

Table 7.

Fixed effects of MLM Estimate of USP Use, Academic Support, and INMRs predicting Students' Sense of Belonging

Variable	*B*	*SE*	*DF*	*t*	*p*
Intercept	4.35	0.80	953	5.44	<.001
USP Use	0.10	0.06	953	1.65	.100
Academic Support	0.07	0.02	953	4.25	<.001
INMRs	0.19	0.06	953	3.30	.001
College	0.01	0.03	953	0.46	.645
Age	-0.07	0.04	953	-1.54	.123
Gender	-0.02	0.02	953	-0.99	.323
Race/Ethnicity	0.01	0.01	953	1.62	.106
Income	0.01	0.01	953	2.21	.028

Note: USP use = Underrepresented Student Programming use; INMRs = Institutional Natural Mentoring Relationships.

Discussion

The purpose of this study was to gain a better understanding of the trajectory of FGCSs' sense of belonging in college during the COVID-19 lockdown and how the use of programming for underrepresented students, the amount of academic support services, and the number of institutional natural mentors influenced this trajectory. This study fills a gap in the literature by exploring how supportive relationships and programmatic support could predict FGCSs' levels of belongingness that usually fall behind that of their non-first-generation peers (Gopalan & Brady, 2020). Moreover, this study's unique

context and longitudinal design adds to the literature on sense of belonging because it analyzes multiple waves of data prior to, during, and after the COVID-19 lockdown from Fall 2019 (Time 1) to Spring 2022 (Time 4). Observing belongingness in this context is important because of the change in the educational environment that had a great effect on FGCSs, exacerbating the already existing inequalities that hinder their academic journey (Lorio et al., 2022; Soria et al., 2020).

Overall, based on the mixed model results, the number of institutional natural mentors reported and academic support services are significantly associated with students' sense of belonging across all time points. However, participation in programming for underrepresented students was not significantly associated with students' sense of belonging. Exploring and improving our understanding of these associations are key due to the implications they have for FGCSs' connectedness to their university, particularly during a time when social connection was difficult to achieve. Moreover, this study highlights some key factors that could alter those feelings in the college experience for FGCSs moving forward.

Strayhorn's Model of College Students' Sense of Belonging, based on Maslow's (1970) hierarchy of needs, states that a sense of belonging is students' perceived social support on campus, a feeling of connectedness, the experience of mattering or feeling cared about, accepted, respected, valued by, and important to the group (e.g., campus community) or others on campus (e.g., faculty, peers; Stayhorn, 2019). According to Strayhorn (2019), when students attain the feeling of belongingness, achieved through student involvement on campus and establishing relationships with supportive others, students are then rewarded with positive outcomes, such as achievement and happiness.

Existing literature has established the link between sense of belonging and student support services (Hurtado & Ponjuan, 2005; Maestas et al., 2007; Means & Pyne, 2007; Strayhorn, 2008) and natural mentoring relationships (Deil-Amen, 2011; Hagler et al., 2021; Monjaras-Gaytan et al., 2021). Given that the COVID-19 lockdown altered the college experience for all college students, especially for FGCSs (Soria et al., 2020), the ways that FGCSs experienced belongingness throughout and after the lockdown was likely impacted as well.

The hypothesis that sense of belonging would decrease from pre-lockdown (Time 1) to during lockdown (Time 2) was not supported. Interestingly, sense of belonging was very low during Time 1 at pre-lockdown and had a notable increase in Time 2 during Spring 2020. Time 2 was in the early weeks of the lockdown that started on March 16, 2020. Monitoring for potential meaningful changes in sense of belonging from before the lockdown to the initial months of remote learning may have been challenging to detect. Thus, this study's analysis includes timepoints over a more extended period of remote education to get a more comprehensive idea of how belongingness progressed. One potential explanation for the apparent increase in belongingness during Time 2 could be that since Time 2 was administered only one to three months after the onset of the pandemic lockdown (April – June 2020), students may still have felt a sense of belonging that was lingering from the early months in the academic term before the lockdown began (i.e., January – March, 2020). Another possible explanation for the low levels of belongingness during pre-lockdown is that many of the participants were in their first academic term at Time 1 and may not have had enough time to develop a connection.

While there is not a precise duration for students to develop a sense of belonging in their college campuses, prolonged exposure to university life may promote a students' feeling of connectedness to their institution than earlier in their college career. This can be seen in the increased student belongingness during Time 2, even though it was during lockdown. Murphy and colleagues (2020) found that when disadvantaged students (i.e., first-generation low-income, underrepresented students of color) felt a secure sense of social and academic fit on a daily basis during their first year, they reported feeling more confident about their overall fit a year later. Conversely, if a sense of belonging is not fostered during a students' first year, they may experience low levels of belongingness in the subsequent years. For example, researchers found that a correlation between a low sense of belonging pre-lockdown and high rates of depression and anxiety during lockdown was strongest for first-year students, who had little time during their first year to build community and adjust to college before the pandemic hit (Gopalan et al., 2022). FGCSs also consistently reported lower levels of belonging compared to their non-first-generation peers both before and during the pandemic (Gopalan et al., 2022). Thus, it could be the case that students in the present study had low levels of belongingness due to not having enough time to develop it during the transition, but after some time, it gradually increased despite being in the early onset of the pandemic lockdown.

Belongingness was shown to decrease from Time 2 to Time 3 in Spring 2021 after a year in lockdown. This decline in belongingness could be explained by the lack of resources to support remote learning and the eventual burnout and isolation from peers and their university community. Researchers have found that FGCSs encountered greater difficulties in transitioning to online instruction compared to non-FGCSs, as they

frequently lacked suitable study environments and encountered obstacles in accessing resources and attending virtual meetings at scheduled times (Soria et al., 2020). The inadequate space for remote learning among FGCSs likely persisted throughout the pandemic. Overall, the learning and college experience was far from what most students would consider a "normal college experience." A meta-analysis of the impact of virtual learning on students in higher education found that almost every study consistently found that online instruction led to decreased student performance compared to in-person classes, with males and students who were less academically prepared (e.g., FGCSs) experiencing especially significant negative effects (Riegg Cellini, 2021). Additionally, a follow-up survey one year later indicated that those in online courses felt less engaged with both their peers and instructors compared to those attending in-person classes (Riegg Cellini, 2021). Hence, feeling less engaged with classmates and professors after a long period of time could be indicative of declines in students' sense of belonging, especially for FGCSs who often experience more pronounced negative impacts of remote learning (Bird et al., 2022; Riegg Cellini, 2021).

It was hypothesized that after the pandemic lockdown, when remote learning and campus closure mandates were lifted, students would be able to form connections and participate in opportunities not available during the lockdown and develop a greater sense of belonging. The growth curve demonstrated that sense of belonging slightly improved after the lockdown in Spring 2022 compared to during the lockdown in Spring 2021, but not as high as it was in Spring 2020. Though this increase in belongingness was small, it may be indicative of a trend towards a continued rise beyond Spring 2022. While it has not been an easy shift for students to fall back into college life after living through and

experiencing the lingering effects of a global pandemic, colleges and universities were eager to welcome back their students while simultaneously learning how their unique educational experiences will shape their return. The return to in-person classes now meant also repairing students' dissatisfaction with their learning experience and learning quality (Hu et al., 2022), closing the gap in "emotional distancing" to build those relationships (Dotson et al., 2022), and promoting community to instill a sense of belonging. Post-lockdown reinstated access and modality of academic services, campus involvement opportunities, and in-person classes that were not possible during the lockdown. Students' continued exposure to such experiences and fortifying meaningful relationships with faculty and staff over time may be promising for their sense of belonging as they settle into a new "normal" college routine.

Strayhorn (2019) outlines four avenues through which participation in academic or social endeavors fosters a sense of belonging: 1) facilitating connections with like-minded individuals who share similar interests, values, and goals, 2) acquainting students with the campus atmosphere and dynamics, 3) validating students' identities, passions, and principles as integral components of the campus community, and 4) instilling feelings among students that they matter and others depend on them. The study examined how the use of academic support services and programming for underrepresented students could achieve this. Findings demonstrated that belongingness was significantly promoted through students' use of academic support services but not through the use of programming for underrepresented students. This supports prior research that found that utilizing academic support services and programs, such as tutoring, academic achievement initiatives, or academic advising, yields numerous academic advantages,

notably fostering a deeper sense of belonging among students (Hurtado & Ponjuan, 2005; Maestas et al., 2007).

Observing whether the benefits of academic support services on belongingness persist throughout the pandemic lockdown are invaluable to our understanding of how to reach FGCSs. FGCSs often enter higher education with less preparation (Gamez-Vargas & Oliva, 2013) and pre-existing doubts about their belongingness in higher education (Means & Pyne, 2017). Ensuring student awareness and accessibility to academic support services can foster a sense of connection to their institution, and allow the emergence of associated outcomes such as academic achievement and overall happiness (Arslan, 2020; 2021; Lambert et al., 2013; Strayhorn, 2019).

Whereas past research has demonstrated that the use of programming for underrepresented students has been linked to students' sense of belonging (Bartee, 2021; Kuh et al., 2006), the present study did not find that participation in this programming was a significant predictor of belonging. A possible explanation for this nonsignificant finding could be the way in which this variable was measured in the present study. A single item was used to assess whether or not students had participated in "programming targeting historically underrepresented students and/or first-generation-college students?" Considering that this was collected across three institutions, the type of programming available to students at their respective sites varied as well as the modality and/or availability during the pandemic lockdown. It is also possible that that students may be unaware of whether programs were specifically geared to underrepresented groups, especially if they did not participate much. Moreover, this question did not capture the frequency of participation or duration in the program. There was likely a wide range of

participation frequency among students; some may have participated in a one-time transition program for FGCSs whereas others could be in a multi-year program like TRIO. Thus, it is possible that the link to sense of belonging may not have been detected given this range in program participation.

Furthermore, mentoring relationships, which are often a component of programs for underrepresented students, were found to be a positive predictor of belongingness in this study. It is possible that these types of programs in the study were a launching point through which many of these relationships formed. The nonsignificant result should not take away from the advantages and value of programming geared towards FGCSs as there are indisputable benefits relating to community building, academic achievement, and retention (Bartee, 2021; Kuh et al., 2006), especially during the early college years.

Findings support the hypothesis that students with more institutional natural mentoring relationships tend to have a stronger sense of belonging. This study contributes to the growing body of research affirming that students who actively participate in the college environment and foster positive connections with faculty, student affairs personnel, and other campus staff are inclined to perceive increased feelings of belonging and significance within the campus community (Deil-Amen, 2011; Hagler et al., 2021). Moreover, this study demonstrates that active participation could be particularly salient for historically underrepresented college students (Monjaras-Gaytan et al., 2021). The number of institutional mentors that students had throughout the pandemic lockdown seems to have made a difference for FGCSs' belonging even if classes and faculty/staff face-to-face interactions were not always possible. This sheds light on the value in continuing to foster and make efforts to develop these relationships with FGCSs given

institutional agents' instrumental role in promoting students' feelings of belongingness (Monjaras-Gaytan et al., 2021) and adjustment in college (Deil-Amen, 2011).

It is important to acknowledge the intersectionality of the study's sample and how that may hinder participation and use of campus programming. FGCSs tend to come from low-income families with 27% coming from families that earn $20,000 or less and 50% from households earning between $20,000 and 50,000 a year (Redford & Hoyer, 2017). Given the negative financial effects brought on by the pandemic lockdown through loss of employment of family members or the inability to work due to illness, it is likely that many FGCSs had to take on additional financial responsibilities. Having to spend more time working and taking care of family members, a role that many FGCSs take on in their family, FGCSs may have had limited opportunities to utilize resources or forge relationships with faculty and staff.

Strengths, Limitations, and Future Directions

The present study demonstrates many strengths that are worth noting. One of these strengths is the focus on FGCSs' sense of belonging. It is critical to shed light on this population because the number of FGCSs has been rising in recent decades, yet the rates of retention lag behind enrollment (Act, Research and Policy, 2012). Considering that a sense of belonging is a meaningful indicator of student retention and academic success (Suhlman et al., 2018), exploring avenues to promote belonging is key. Another strength is the use of multiple time points of data that permit the mapping of the trajectory of sense of belonging. Including the four timepoints in the analysis shows rises and dips in sense of belonging throughout the COVID-19 lockdown. Additionally, while previous studies have compared students' sense of belonging pre-lockdown to post-

lockdown (i.e., Gopalan et al., 2022; Potts et al., 2021), this study examined sense of belonging beyond the early months into the lockdown period and while taking into account the factors that could alter belongingness during this period.

Although there were many strengths to the study, it is not without limitations. The first limitation is the way in which pre-, during, and post-lockdown were defined and the timepoints of data that were included in the analyses within each period. The three universities from which the data were collected had different modalities throughout lockdown. For example, during Spring 2021, which was during lockdown in this study, all sites reinstated some in-person classes while keeping the options of being completely online or hybrid. Although some students may have returned to in-person classes, Spring 2021 is still considered to be during lockdown because of the COVID-19 regulations still in place across the country and the precautions still required in public spaces (e.g., masking, social distancing; Dorn et al., 2021; Henderson et al., 2020; NCES, 2020). Also, in Spring 2022, which was post lockdown in this study, some students may have continued taking online classes and therefore did not change their "during" versus "post" lockdown modality. This could be considered a limitation because what is interpreted as being in "lockdown" differs across the sites and across students and, could have an impact on how results are interpreted during that time. Last, a final limitation is how the use of support services and programming for underrepresented students was measured. This was captured as a yes/no response at each timepoint but did not capture frequency or the length of time for the use of these services, which limited variability. The level of helpfulness for academic support services was measured but not included in this study. It

is possible that future analysis would include level of helpfulness and shed light on how it could be associated with on-going use of programs or sense of belonging.

This study has implications for research and policy in higher education. Future research would benefit by examining support services and programming more closely and how programming was provided and executed while students were on lockdown or online modality. There were likely differences in the program or service components that were available or offered and their effectiveness for students. These differences could exist across programs as well as across the participating sites. Moreover, participants were asked whether they participated in support programming for underrepresented students and then asked to list the name of that program. However, this study did not measure how or whether the different programs promoted a sense of belonging. Last, future research should include measures that captures the frequency of use and dosage in support programming and frequency of contact, closeness, and length of relationship with institutional natural mentors. Also, while belongingness is sometimes organically developed in programming for underrepresented students, it would be beneficial to know how and through which avenues programs may be doing this. Capturing these nuances could provide insight into how the high or low use of services and strength of a mentoring relationship can have an impact on sense of belongingness.

Study findings can also inform the on-going development of support services and programming for underrepresented groups to make them more effective and improve their reach to FGCSs. In a recent study, Meehan and Howells (2019) indicated that a combination of environmental, social and cognitive elements is necessary for students in higher education to have a sense of connection with their university and a sense of

purpose regarding their studies and career goals. Academic support services and programming for underrepresented students are potential avenues where this sense of connection can be maximized for FGCSs. Oftentimes, only a fraction of the FGCSs on a campus utilize the services intended for underrepresented groups either because they are not aware of the services or availability is limited to a number of students (Winograd & Rust, 2014). Campus-wide initiatives should be available to all FGCSs to have support programming and services available to them in ways that benefit their sense of belonging as well as their retention (Longwell-Gracie, 2021). Culturally competent interventions could provide valuable educational support that focuses on differences in achievement (Prospero et al., 2012). Services should be specialized and attuned to cater to both academic and social barriers faced by FGCSs (Longwell-Gracie, 2021). Longwell-Gracie puts it quite simply: "Institutions have a responsibility for assessing what works and bringing what works to all students" (2021, p. 10).

Moreover, the findings from this study demonstrate the significance of having systems and supports in place when virtual and remote access is the only option for students. Many FGCSs slipped through the cracks when colleges went completely online, and a lack of infrastructure to support these students set them behind their peers academically and emotionally (Goudeau et al., 2021). Colleges and universities could use the findings from this study to learn about the types of support FGCSs need as well as safety nets needed. Goudeau et al (2021) suggest university initiatives that improve the support of educators (i.e., increasing awareness of material, cultural, and psychological barriers faced by working-class students and families) as well as helping students and families handle potential lockdown situations (e.g., training families and students in the

use of technology, implementing evidence-based interventions for family support when applicable). Providing professional development opportunities for faculty and staff to enhance their understanding of the unique needs and challenges faced by FGCSs can improve the overall support infrastructure.

Finally, the return to in-person university life for students should be handled with care and empathy. Students have been through the traumatic experience of a global pandemic in a way that made these cohorts of college students distinct from other cohorts. Administrators have the opportunity to fully capitalize on the advantages of greater diversity by purposefully establishing inclusive systems and environments that nurture and strengthen a student's feeling of belonging. Programs that cultivate student leaders, peer mentors, and allow students to talk about the things that matter to them could be effective (Duong, 2023). Experts also suggest asking the necessary question about who shows up to available programming, who else needs to be invited, who is the programming appealing to and creating actionable steps to ensure accessibility (Duong, 2023).

Staff and faculty can also take steps to create welcoming spaces for FGCSs. Gopalan (2022) offered practical guidance to instructors, advising them to refrain from merely telling students they belong, but rather to demonstrate it through actions. Referencing a recent op-ed by Greg Walton (2021), she emphasized the importance of portraying belonging as a gradual process and reassuring students that they are not isolated (Gopalan, 2022). This can be achieved by sharing personal experiences of belonging and providing students with opportunities to exchange stories and insights with

their peers. In accordance with Dr. Gopalan, it is more than just telling students time and time again "You belong here!"

Conclusion

The current study examined how institutional support services, programs for underrepresented college students, and natural mentoring relationships with faculty and staff influenced a sense of belonging throughout the pandemic. The current study also examined how students experienced a sense of belongingness to their institution during the pandemic lock-down. Findings showed that institutional support services and institutional natural mentoring relationships predicted positive sense of belonging among FGCSs, while involvement in programming for underrepresented students did not. This study expands on the research aimed to improve the overall college experience and retention for FGCSs. Findings will help inform policy and university initiatives that are still searching for the best ways to serve all students, particularly the most vulnerable. Continuously assessing students' campus environments and experiences is essential to evaluate the impact on their sense of belonging. This process allows campus stakeholders to gain insight into the factors that either bolster or hinder belongingness, ultimately influencing college retention and degree completion.

References

Act Research and Policy. (2012). *College persistence rates by economic status and college readiness*. Retrieved from:

http://www.act.org/research/researchers/briefs/pdf/2012-27.pdf

Adams, H. B. (1887). The College of William and Mary: A contribution to the history of higher education. US Government Printing Office.

American College Health Association. (2020) The impact of COVID-19 on college student well-being. https://healthymindsnetwork.org/wp-content/uploads/2020/07/Healthy_Minds_NCHA_COVID_Survey_Report_FINAL.pdf

Anderman, L. H., & Freeman, T.M. (2004). Students' sense of belonging in school. *Advances in Motivation and Achievement, 13*, 27-63. https://doi.org/https://doi.org/10.1016/S0749-7423%2803%2913002-6

Arnold, K. D., Lu, E. C., & Armstrong, K. J. (2012). The ecological view of college readiness. ASHE Higher Education Report, 38(5), 91-107.

Arslan, G. (2021). Psychological well-being in college students: Psychometric properties of the Brief Inventory of Thriving (BIT) and the Comprehensive Inventory of Thriving (CIT). *Journal of School and Educational Psychology, 1*(1), 6–16. https://doi.org/10.47602/josep.v1i1.6

Arslan, G. (2020). Loneliness, college belongingness, subjective vitality, and psychological adjustment during coronavirus pandemic: Development of the College Belongingness Questionnaire. *Journal of Positive School Psychology, 5*(1), 17–31. https://doi.org/10.47602/jpsp.v5i1.240

Aud, S., Hussar, W., Kena, G., Bianco, K., Frohlich, L., Kemp, J., Tahan, K. (2011). *The Condition of Education 2011 (NCES 2011-033)*. U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

Aud, S., Hussar, W., Johnson, F., Kena, G., Roth, E., Manning, E., Wang, X., and Zhang, J. (2012). *The Condition of Education 2012 (NCES 2012-045)*. U.S. Department of Education, National Center for Education Statistics. Washington, DC. Retrieved [March 20, 2023] from http://nces.ed.gov/pubsearch

Azmitia, M., Sumabat-Estrada, G., Cheong, Y., & Covarrubias, R. (2018). "Dropping out is not an option": How educationally resilient first-generation students see the future. *New Directions for Child and Adolescent Development, 2018*(160), 89–100. https://doi.org/10.1002/cad.20240

Bartee, A. (2021). *Understanding first-generation student perspectives on sense of belonging and a student success program: A program evaluation.* [Unpublished doctoral dissertation]. The College of William and Mary in Virginia.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*(3), 497–529. https://doi.org/10.1037/0033-2909.117.3.497

Benson, O. M. & Whitson, M. L. (2021). The protective role of sense of community and access to resources on college student stress and COVID-19-related daily life disruptions. *Journal of Community Psychology, 50*, 2746-2764. https://doi.org/10.1002/jcop.22817

Bird, K. A., Castleman, B. L., & Lohner, G. (2022). Negative impacts from the shift to

online learning during the COVID-19 crisis: Evidence from a statewide

community college system. (EdWorkingPaper: 20-299). Retrieved from

Annenberg Institute at Brown University: https://doi.org/10.26300/gx68-rq13

Burki, T. (2020). The indirect impact of COVID-19 on women. *Lancet Infect Dis. 20*(8),

904-905. https://doi.org/ 10.1016/S1473-3099(20)30568-5

Cataldi, E. F., Bennett, C. T., & Chen, X. (2018). First-Generation students: College

access, persistence, and postbachelor's outcomes. Stats in brief. NCES 2018–421.

National Center for Education Statistics, 1-31.

https://nces.ed.gov/pubs2018/2018421.pdf

Charles, N. E., Strong, S.J., Burns, LC, Bullerjahn, M.R. & Serafine, K. M. (2021).

Increased mood disorder symptoms, perceived stress, and alcohol use among

college students during the COVID-19 pandemic. *Psychiatry Research, 296,* 1-11.

https://doi.org/10.1016/j.psychres.2021.113706

Choy, S. (2001). Essay: Students whose parents did not go to college: Postsecondary

access, persistence, and attainment. In J. Wirt, et al. (Eds.), *The condition of

education 2001* (pp. XVIII–XLIII). Washington, DC: National Center for

Education Statistics, U.S. Government Printing Office.

Collier, P. J., & Morgan, D. L. (2008). "Is that paper really due today?": Differences in

first-generation and traditional college students' understandings of faculty

expectations. *Higher Education, 55*(4), 425–446. https://doi.org/10.1007/s10734-

007-9065-5

Crisp, G., & Cruz, I. (2009). Mentoring college students: A critical review of the

    literature between 1990 and 2007. *Research in Higher Education, 50*(6), 525–545.

    https://doi.org/10.1007/S11162-009-9130-2

Davis, G. M., Hanzsek-Brill, M. B., Petzold, M. C., & Robinson, D. H. (2019). Students'

    sense of belonging: The development of a predictive retention model. *Journal of*

    the Scholarship of Teaching and Learning, 19(1), 117-127.

    https://doi.org/10.14434/josotl.v19i1.26787

Deil-Amen, R. (2011). Socio-academic integrative moments: Rethinking academic and

    social integration among two-year college students in career-related programs.

    The Journal of Higher Education, 82(1), 54-91. https://doi-

    org.ezproxy.depaul.edu/10.1080/00221546.2011.11779085

Dorn, E., Hancock, B., Sarakatsannis, J., & Viruleg, E. (2021). Mind the gap: COVID-19

    is widening racial disparities in learning, so students need help and a chance to

    catch up. McKinsey & Company. https://www.mckinsey.com/industries/public-

    andsocial-sector/our-insights/covid-19-and-learning-loss-disparities-grow-

    andstudents-need-help

Dotson, M. P., Castro, E. M., Magid, N. T., Hoyt, L. T., Suleiman, A. B., Cohen, A. K.

    (2022). "Emotional distancing": Change and strain in U.S. young adult college

    students' relationships during COVID-19. *Emerging Adulthood, 10*(2), 546-557.

    https://doi.org/10.1177/21676968211065531

Duong, M. (2023, April 15). *Colleges can boost students' sense of belonging with these 6*

    strategies. Smart Brief. https://www.smartbrief.com/original/colleges-sense-of-

belonging#:~:text=Peer%20mentoring%20programs%20are%20effective,things%
20that%20matter%20to%20them

Dumais, S., & Ward, A. (2010). Cultural capital and first-generation college success.
Poetics, 38, 245–265. https://doi.org/10.1016/j.poetic.2009.11.011

Enders, C. K., & Tofighi, D. (2007). Centering predictor variables in cross-sectional
multilevel models: A new look at an old issue. *Psychological Methods*, 12(2),
121. doi: 10.1037/1082-989X.12.2.121

Engle, J. (2007). Postsecondary access and success for first-generation college students.
American Academic, 3(1), 25–48. http://hdl.voced.edu.au/10707/328327

Fischer, C. S. (2008). Paradoxes of American individualism. *Sociological Forum, 23*(2),
363-372. https://doi.org/10.1111/j.1573-7861.2008.00066.x

Gamez-Vargas, J., & Oliva, M. (2013). Adult guidance for college: Rethinking
educational practice to foster socially-just college success for all. Journal Of
College Admission, (221), 60-68.

Gillen-O'Neel, C. (2021). Sense of belonging and student engagement: A daily study of
first- and continuing-generation college students. R*esearch in Higher Education,
62*(4), 45-71. https://doi.org/10.1007/s11162-019-09570-y

Goodenow, C. (1993). The psychological sense of school membership among
adolescents: Scale development and educational correlates. *Psychology in the
Schools, 30*(1), 79–90. https://doi-org.ezproxy.depaul.edu/10.1002/1520-
6807(199301)30:1<79::AID-PITS2310300113>3.0.CO;2-X

Gopalan, M., & Brady, S. T. (2020). College students' sense of belonging: A national perspective. *Educational Researcher, 49*(2), 134-137. https://doi.org/10.3102/0013189X19897622

Gopalan, M., Linden-Carmichael, A., Lanza, S. (2022). College students' sense of belonging and mental health amidst the COVID-19 pandemic. *Journal of Adolescent Health, 70*(2), 228-233. https://doi.org/10.1016/j.jadohealth.2021.10.010

Goudeau et al. (2021). Why lockdown and distance learning during the covid-19 pandemic are likely to increase the social class achievement gap

Hagler, M. (2018). Processes of natural mentoring that promote underrepresented students' educational attainment: A theoretical model. *American Journal of Community Psychology, 62*(1–2), 150–162. https://doi.org/10.1002/ajcp.12251

Hagler, M. A., Christensen, K. M., & Rhodes, J. E. (2021). A longitudinal investigation of first-generation college students' mentoring relationships during their transition to higher education. *Journal of College Student Retention: Research, Theory & Practice.* https://doi-org.ezproxy.depaul.edu/10.1177/15210251211022741

Hausmann, L. R. M., Schofield, J. W., & Woods, R. L. (2007). Sense of belonging as a predictor of intentions to persist among African American and white first-year college students. *Research in Higher Education, 48*(7), 803–839. https://doi.org/10.1007/s11162-007-9052-9

Henderson, M. B., Peterson, P. E., & West, M. R. (2020). Pandemic parent survey finds perverse pattern: Students are more likely to be attending school in person where COVID is spreading more rapidly. *Education Next*.

https://www.educationnext.org/pandemic-parent-survey-finds-perverse-patternstudents-more-likely-to-be-attending-school-in-person-where-covid-is-spreadingmore-rapidly/

Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020). The difference between emergency remote teaching and online learning. *Frontiers in Education, 27*, 1-3. https://doi.org/10.3389/feduc.2022.921332

Hoffman M., Richmond, J., Morrow, J., & Salomone, K. (2002). Investigating sense of belonging in first-year college students. *Journal of College Student Retention: Research, Theory, and Practice, 4*(3), 227-256. https://doi.org/10.2190/DRYC-CXQ9-JQ8V-HT4V

Hoyt, L. T., Cohen, A. K., Dull, B., Castro, E. M., & Yazdani N. (2021). "Constant stress has become the new normal": Stress and anxiety inequalities among US College students in the time of covid-19. *Journal of Adolescent Health, 68*(2), 270–276. https://doi.org/10.1016/j.jadohealth.2020.10.030

Hu, K., Godfrey, K., Ren, Q., Wang, S., Yang, X., & Li Q. (2022) The impact of the COVID-19 pandemic on college students in USA: Two years later. *Psychiatry Res. 315*, 114685. https://doi.org/10.1016/j.psychres.2022.114685.

Hurd, N. M., Tan, J. S., & Loeb, E. L. (2016). Natural mentoring relationships and the adjustment to college among underrepresented students. *American Journal of Community Psychology, 57*(3–4), 330–341. https://doi.org/10.1002/ajcp.12059

Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate on Latino college students' sense of belonging. *Sociology of Education, 70*(4), 324–345. https://doi.org/10.2307/2673270

Hurtado, S., & Ponjuan, L. (2005). Latino educational outcomes and the campus climate.

Journal of Hispanic Higher Education, 4(3), 235–251.

https://doi.org/10.1177/1538192705276548

Inkelas, K., Daver, Z., Vogt, K., & Leonard, J. (2007). Living–learning programs and

first-generation college students' academic and social transition to college.

Research in Higher Education, 48, 403-434. https://doi.org/10.1007/s11162-006-

9031-6

Irlbeck, E., Adams, S., Akers, C., Burris, S., & Jones, S. (2014). First generation college

students: Motivations and support systems. *Journal of Agricultural & Food

Information, 55*, 154-166. https://doi.org/10.5032/jae.2014.02154

Karakose T. (2021). Emergency remote teaching due to COVID-19 pandemic and

potential risks for socioeconomically disadvantaged students in higher education.

Educational Process, 10(1), 53-61. https://doi.org/10.22521/edupij.2021.103.4

Kiebler, J. M., & Stewart, A. J. (2021). Student experiences of the COVID-19 pandemic:

Perspectives from first-generation/lower-income students and others. *Analyses of

Social Issues and Public Policy, 22*(1), 198-224.

https://doi.org/10.1111/asap.12288

Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2006). What

matters to student success: A review of the literature. National Postsecondary

Education Cooperative, 1-105. https://nces.ed.gov/npec/pdf/kuh_team_report.pdf

Lambert, N. M., Stillman, T. F., Hicks, J. A., Kamble, S., Baumeister, R. F., & Fincham,

F. D. (2013). To belong is to matter: Sense of belonging enhances meaning in life.

Personality and Social Psychology Bulletin, 39(11), 1418–1427.

https://doi.org/10.1177/0146167213499186

Langhout, R. D., Rosselli, F., & Feinstein, J. (2007). Assessing classism in academic

settings. *The Review of Higher Education, 30*(2), 145–184.

https://doi.org/10.1353/rhe.2006.0073\

Lanza, S. T., Whetzel, C. A., Linden-Carmichael, A. N. & Newschaffer, C. J. (2022).

Change in college student health and well-being profiles as a function of the

COVID-19 pandemic. *PLoS ONE 17*(5): e0267724.

https://doi.org/10.1371/journal.pone.0267724

Longwell-Gracie 2021. https://www.routledge.com/At-the-Intersection-Understanding-

and-Supporting-First-Generation-Students/Longwell-Grice-Longwell-

Grice/p/book/9781642670615

Lorio, M. F., Seavey, T. L. & Becerra, B. J. (2022). Experiences participating in online

synchronous lectures during COVID-19 emergency remote teaching for first- and

non-first-generation students. *Internet Journal of Allied Health Sciences and

Practice, 20*(4). https://nsuworks.nova.edu/ijahsp/vol20/iss4/15

Maestas, R., Vaquera, G. S., & Zehr, L. M. (2007). Factors impacting sense of belonging

at a Hispanic-serving institution. *Journal of Hispanic Higher Education, 6*(3),

237-256. https://doi.org/237-256. 10.1177/1538192707302801

Malone, T. (2010, May 19). *Banking on education.* Chicago Tribune.

https://www.chicagotribune.com/news/ct-xpm-2010-05-19-ct-met-depaul-250-

million-20100519-story.html

Maslow, A. H. (1970). *Motivation and Personality* (2nd ed.). New York: Harper & Row.

McDossi, O., Wright, A. L., McDaniel, A. & Roscigno, V. J. (2022). First-generation

    inequality and college integration. *Social Science Research, 105,* 1-16.

    https://doi.org/10.1016/j.ssresearch.2022.102698

Means, D. & Pyne, K. (2017). Finding my way: Perceptions of institutional support and

    belonging in low-income, first-generation, first-year college students. *Journal of*

    College Student Development, 58, 907-924. https://doi.org/10.1353/csd.2017.0071

Meehan. C. & Howells, K. (2019). In search of the feeling of 'belonging' in higher

    education: undergraduate students transition into higher education. *Journal of*

    Further and Higher Education 43(3), 1-15.

    https://doi.org/10.1080/0309877X.2018.1490702

Monjaras-Gaytan, L. Y., Sánchez, B., Salusky, I., & Schwartz, S. E. (2021). Historically

    underrepresented college students and institutional natural mentors: An ecological

    analysis of the development of these relationships at predominantly White

    institutions. *Journal of Community Psychology, 50*(2), 823–839.

    https://doi.org/10.1002/jcop.22682

Monjaras-Gaytan. L. Y. & Sánchez, B. (2023). Historically underrepresented college

    students and natural mentoring relationships: A systematic review. *Children and*

    Youth Services Review, 149, 1-9.

    https://doi.org/10.1016/j.childyouth.2023.106965

Moreland, A., Herlihy, C., Tynan, M. A., et al. (2020). Timing of state and territorial

    COVID-19 stay-at-home orders and changes in population movement—United

    States, March 1–May 31, 2020. *MMWR. 69*(35), 1198-1203.

    https://doi.org/10.15585/mmwr.mm6935a2

Murphy, M. C., Gopalan, M., Carter, E. R., Umerson, K. T. U., Bottoms, B. L., &
    Walton, G. M. (2020). A customized belonging intervention improves retention of
    socially disadvantaged students at a broad-access university. *Science Advances, 6*,
    1-7. https://www.science.org/doi/pdf/10.1126/sciadv.aba4677

National Center for Education Statistics. (2016). *Digest of Education Statistics: 2016.*
    Retrieved from: https://nces.ed.gov/pubs2017/2017094.pdf

Nguyen, T. H., & Nguyen, B. M. D. (2018). Is the "first-generation student" term useful
    for understanding inequality? The role of intersectionality in illuminating the
    implications of an accepted—yet unchallenged—term. *Review of Research in
    Education, 42*(1), 146–176. https://doi.org/10.3102/0091732X18759280

Pascarella, E. T., Pierson, C. T., Wolniak, G. C., & Terenzini, P. T. (2004). First-
    generation college students: Additional evidence on college experiences and
    outcomes. *The Journal of Higher Education, 75*(3), 249–284. https://doi-
    org.ezproxy.depaul.edu/10.1080/00221546.2004.11772256

Potts, C. (2021). Seen and unseen: First-year college students' sense of belonging during
    the COVID-19 pandemic. *College Student Affairs Journal, 39*(2), 214-224.
    Retrieved from https://ezproxy.depaul.edu/login?url=https://www-proquest-
    com.ezproxy.depaul.edu/scholarly-journals/seen-unseen-first-year-college-
    students-sense/docview/2614660095/se-2

Pratt, I. S., Harwood, H. B., Cavazos, J. T., & Ditzfeld, C. P. (2019). Should I stay or
    should I go? Retention in first-generation college students. *Journal of College
    Student Retention: Research, Theory & Practice, 21*(1), 105–118.
    https://doi.org/10.1177/1521025117690868

Próspero, M., Russell, A. C., & Vohra-Gupta, S. (2012). Effects of motivation on

      educational attainment: Ethnic and developmental differences among first-

      generation students. *Journal of Hispanic Higher Education, 11*(1), 100-119.

      https://doi.org/10.1177/1538192711435556

Raudenbush, S. W., & Bryk, A. S. (2002). Hierarchical linear models. Applications and

      data analysis methods (2nd ed.). Thousand Oaks, CA: Sage Publications.

Redford, J., & Hoyer, K. M. (2017). First-generation and continuing-generation college

      students: A comparison of high school and postsecondary experiences.

      Washington, DC: National Center for Education Statistics. Retrieved

      https://nces.ed.gov/pubs2018/2018421.pdf

Riegg Cellini: How does virtual learning impact students in higher education?

      https://www.brookings.edu/articles/how-does-virtual-learning-impact-students-in-

      higher-education/

Salusky, I. & Raposa, E. B. (2018). The Roles of Identity and Supportive Social

      Networks in College persistence for First- Generation College Students.

Sánchez, B., Colón, Y., & Esparza, P. (2005). The role of sense of school belonging and

      gender in the academic adjustment of Latino adolescents. *Journal of Youth and*

      Adolescence, 34, 619-628. https://doi.org/10.1007/s10964-005-8950-4

Schlossberg, N. K., Lynch, A. Q. & Chickering. A. W. (1989). Improving higher

      education environments for adults: Responsive programs and services from entry

      to departure. San Francisco, CA: Jossey-Bass Publishers.

Snijders, T., & Bosker, R. (1999). Multilevel analysis: An introduction to basic and

      advanced multilevel modeling. Thousand Oaks, CA: Sage.

Soria, K. M, Horgos, B., Roberts, B. J. (2020). The COVID-19 pandemic and students'

    mental health. *New Directions for Student Services,176,* 37–45.

    https://doi.org/10.1002/ss.20404

Stebleton, M. & Soria, K. (2012). Breaking down barriers: Academic obstacles of first-

    generation students at research universities. *The Learning Assistance Review, 17*,

    7-19.

Stephens, N. M., Fryberg, S. A., Markus, H. R., Johnson, C. S., & Covarrubias, R.

    (2014). Unseen disadvantage: How American universities' focus on independence

    undermines the academic performance of first-generation college students.

    Journal of Personality and Social Psychology, 102(6), 1178–1197.

    https://doi.org/https://doi-org.ezproxy.depaul.edu/10.1037/a0027143

Stephens, N. M., Townsend, S. S. M., Markus, H. R., & Phillips, L. T. (2012). A cultural

    mismatch: Independent cultural norms produce greater increases in cortisol and

    more negative emotions among first-generation college students. *Journal of*

    Experimental Social Psychology, 48, 1389–1393. https://doi-

    org.ezproxy.depaul.edu/10.1016/j.jesp.2012.07.008

Strayhorn, T. L. (2008). A hierarchical analysis predicting sense of belonging among

    Latino college students. *Journal of Hispanic Higher Education, 7*(4), 301-320.

    https://doi-org.ezproxy.depaul.edu/10.1177/1538192708320474

Strayhorn, T. L. (2012). College students' sense of belonging: A key educational success

    for all students. New York, Routledge.

Strayhorn, T. L. (2019). College students' sense of belonging: A key educational success

    for all students (2nd ed.). New York, Routledge.

Suhlmann, M., Sassenberg, K., Nagengast, B., & Trautwein, U. (2018). Belonging

mediates effects of student-university fit on well-being, motivation, and dropout

intention. *Social Psychology, 49*(1), 16. https://doi.org/10.1027/1864-9335

Teaching + Learning Lab. *Students' Sense of Belonging Matters: Evidence from Three

Studies*. Teaching + Learning Lab. [Retrieved 2024, April 2]

https://tll.mit.edu/sense-of-belonging-matters/

Thayer, P. (2000). Retaining first generation and low-income students. *Opportunity

Outlook.* https://eric.ed.gov/?id=ED446633

Tovar, E., Simon, M. A., & Lee. H. B. (2009). Development and validation of the college

mattering inventory with diverse urban college students. *Measurement and

Evaluation in Counseling and Development, 42*(3), 154-178.

https://doi.org/10.1177/0748175609344091

Trombitas, K. (2012). *Financial stress: An everyday reality for college students.* Inceptia.

chrome-

extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.inceptia.org/PDF/Inc

eptia_FinancialStress_whitepaper.pdf

Tym, C., McMillion, R., Barone, S., & Webster, J. (2004). *First-generation college

students: A literature review.* Research and Analytical Services. chrome-

extension://efaidnbmnnnibpcajpcglclefindmkaj/https://files.eric.ed.gov/fulltext/E

D542505.pdf

Walton, G. (2021). https://www.edweek.org/leadership/opinion-stop-telling-students-

you-belong/2021/11

Weber, G., Rankin, S. & Malewski, E. (2022, September 19). *'Do I Belong Here?'*
Students' Service Experiences Through the Lens of Campus Climate. Inside
Higher Ed.   https://www.insidehighered.com/views/2022/09/20/how-campus-
climate-and-student-services-interactions-connect-opinion

Whitley, S.E., Benson, G., & Wesaw, A. (2018). First-generation student success: A
landscape analysis of programs and services at four-year institutions. Washington,
DC: Center for First-generation Student Success, NASPA–Student Affairs
Administrators in Higher Education, and Entangled Solutions.

Winograd, G., & Rust, J. P. (2014). Stigma, awareness of support services, and academic
help-seeking among historically underrepresented first-year college students. The
Learning Assistance Review, 19, 17– 41.

Yeager, D. S., Walton, G. M., Brady, S. T., Akcinar, E. N., Paunesku, D., Keane, L., ...
Dweck, C. D. (2016). Teaching a lay theory before college narrows achievement
gaps at scale. *Proceedings of the National Academy of Sciences,* 113, E3341–
E3348. https://doi.org/10.1073/pnas.1524360113.

Zimmerman, M., Bingenheimer, J., & Notaro, P. (2002). Natural mentors and adolescent
resiliency: A study with urban youth. *American Journal of Community
Psychology,* 30, 221-43. https://doi.org/10.1023/A:1014632911622

Appendix A: Measures used in the study

Demographic Questions

Age

What is your current age? (please write in answer)

Gender

What term best describes your gender?
1. Male
2. Female
3. Nonbinary
4. Genderqueer
5. Two-spirit
6. Gender-nonconforming
7. Questioning/Unsure
8. Other (Please specify)

Race

With which ethnic or racial identity do you most identify? Please select all that apply.

1. White, African American
2. American Indian or Alaska Native
3. Asian American
4. Native Hawaiian or Pacific Islander
5. Latino
6. Other.

Parent or Guardian's Highest Educational Degree

What was the highest educational degree earned by your parents or guardians?

0 = No college experience
1 = one/both parents some college (no degree)
2 = one/both parents some college (technical or vocational certificate, Associates degree, 2-year college)
3 = one parent college degree (Bachelor's degree, 4-year degree)

4 = both parents college degrees (Bachelor's degree, 4-year degree)

5 = one parent graduate degree (Masters, Ph.D., Ed.D., or professional degrees, i.e., M.D., J.D., D.D.S., etc.)

6 = both parent graduate degrees (Masters, Ph.D., Ed.D., or professional degrees, i.e., M.D., J.D., D.D.S., etc.)

Sense of Belonging at Institution

PSSM Please read each question and its accompanying options carefully before responding to each question. There are no right or wrong answers; everyone behaves and feels differently. Just answer as honestly as possible.

	Not at all true (1)	(2)	(3)	(4)	Completely true (5)
I feel like a real part of my college/university (1)	○	○	○	○	○
People at my college/university notice when I am good at something. (2)	○	○	○	○	○
It is hard for people like me to be accepted at my college/university. (3)	○	○	○	○	○
Other students in my college/university take my opinions seriously. (4)	○	○	○	○	○
Most teachers at my college/university are interested in me. (5)	○	○	○	○	○

Sometimes I don't feel as if I belong at my college/university. (6)	○	○	○	○	○
There's at least one teacher or other adult at my college/university I can talk to if I have a problem. (7)	○	○	○	○	○
People at my college/university are friendly to me. (8)	○	○	○	○	○
Teachers at my college/university are not interested in people like me. (9)	○	○	○	○	○
I am included in lots of activities at college/university. (10)	○	○	○	○	○
I am treated with as much respect as other students. (11)	○	○	○	○	○
I feel very different from most other students at my college/university. (12)	○	○	○	○	○
I can really be myself at my college/university. (13)	○	○	○	○	○

The teachers at my college/university respect me. (14)	○	○	○	○	○
People at my college/university know I can do good work. (15)	○	○	○	○	○
I wish I were in a different college/university. (16)	○	○	○	○	○
I feel proud of belonging to my college/university. (17)	○	○	○	○	○
Other students at my college/university like me the way I am. (18)	○	○	○	○	○

Use of Programs for Underrepresented Students

During THIS PAST SEMESTER (i.e., since the last survey you completed), did you/are you participating in programming targeting historically underrepresented students and/or first-generation-college students?

0. No
1. Yes

Use of Academic Focused Support Services

The next set of questions asks about resources or services that you may have used on grounds. Please select any/all of the services you used this semester.

	Not used (2)	Used; Not very helpful (3)	Used; Somewhat helpful (4)	Used; Very helpful (5)
Faculty guidance/mentoring (1)	○	○	○	○
Academic achievement programs (3)	○	○	○	○
Academic advising (4)	○	○	○	○
Tutoring (through any college/university program or the Writing Center) (6)	○	○	○	○
Career/Internship resources (e.g., University Career Services) (10)	○	○	○	○