

The Pennsylvania State University

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**TRANSITIONING TO COLLEGE DURING A PANDEMIC:  
EXAMINING THE CONTRIBUTIONS OF ACTIVITIES, BELONGING, AND  
PERSONAL EXPERIENCES TO FIRST-YEAR OUTCOMES**

A Dissertation in

School Psychology

by

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## ABSTRACT

The purpose of the proposed study was to investigate the relationship of personal and contextual variables with the first-year experience of full-time undergraduate students during the COVID-19 pandemic. Drawing upon Astin's (1970) input-environment-output model of change, first-year students' active engagement, sense of belonging, and personal experience with COVID-19 as predictors of staying in school, college adjustment, and flourishing. Data were drawn from the Fall 2020 Student Experience Survey distributed by the Student Affairs Research and Assessment (SARA) office at a public land-grant research university. Full-time first-year students at the flagship campus were included in each analysis sample ( $N = 152$ ). Multiple hypotheses were tested regarding the effect of environment on college adjustment and flourishing as well as the likelihood of first-year students staying in school during a pandemic. Sense of belonging emerged as a meaningful predictor of college adjustment and flourishing, while active engagement and personal experience with COVID-19 did not. The findings of the current study may guide recruitment and retention efforts for first-year students as well as assist student affairs professionals as they develop and implement future college transition programming.

*Keywords:* first-year students, retention, college adjustment, pandemic, transition

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*“Let us not grow tired of doing good, for in due time we shall reap our harvest,  
if we do not give up.” Galatians 6:9*

In the summer of 2020, I completed the Research Project Conceptualizer for the current project, which is a document Dr. DiPerna passed onto me not only for the dissertation, but also for my pre-dissertation research. The conceptualization came during a time of uncertainty as universities began to plan for the Fall 2020 semester—the first semester post-building closures during the COVID-19 pandemic. In the time since, I am confident I fulfilled the intended purpose to investigate the impact of active engagement, sense of belonging, and personal experience with COVID-19 on the college transition. However, the completion of this project would not be possible without the support of my loved ones; advisor, Dr. DiPerna; doctoral committee; and colleagues, including Dr. Dowhower, Dr. Christensen, Dr. Lee, and Mr. Murphy.

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## CHAPTER ONE

### INTRODUCTION AND REVIEW OF RELEVANT LITERATURE

First-year undergraduate students often experience significant disruption as they transition from high school to college. As these students navigate the onset of emerging adulthood, the developmental period between 18 and 25 years old (Arnett, 2000), they are asked to embrace the disruption to their previous routines and welcome newness—new school, new friends, new classes, new faculty, and, at times, new cities. Therefore, not surprisingly, instability and identity exploration are common during this time (Arnett, 2004). Emerging adults may focus on themselves, dream of possibilities, and jockey “feeling in-between” (Arnett, 2004). As students begin to allocate their time, build community, and strive for success, higher education professionals gain insight into how first-year students adjust to the disruptions of the college transition.

Although these disruptions prove to be challenging under typical circumstances (Stoklosa, 2015), first-year college students were faced with another significant challenge as they began their post-secondary education in the fall of 2020 — transitioning to school during a global pandemic. Prior studies have examined other disruptive historical events (e.g., September 11<sup>th</sup>, H1N1 pandemic) and observed changes in students’ academics (Gold et al., 2001) and behavior (Van et al., 2010). How first-year students spend their time and who they spend it with shifted beginning, for some, during their senior year of high school and continued into their Fall semester. The connection first-years students typically make with their University community may change as a result. Without hallmark in-person events (e.g., “Be a Part from the Start”), higher education professionals wondered if first-year students felt connected to their University in the same way. As such, the purpose of this study is to investigate the impact of active



engagement, sense of belonging, and personal experience with COVID-19 (e.g., loss of work) on the college transition during the COVID-19 pandemic. The ultimate goal is to help provide insight regarding which personal and environmental factors help students achieve positive intermediate outcomes (i.e., adjustment to college, staying in school, and flourishing) when transitioning to college during a significant disruption.

Previous models regarding student experiences and outcomes within higher education offer a starting point for identifying such factors. For example, Astin's (1970) inputs-environment-outputs (IEO) model of change includes personal and environmental factors as well as intermediate outcomes when conceptualizing the first-year student experience. Additionally, the IEO model has been examined within the context of outputs such as student engagement, personal learning, and social learning (Strayhorn, 2008). In the proposed project, Astin's (1970) IEO model of change has informed the selection of predictors within the current context—transitioning to college during the COVID-19 pandemic.

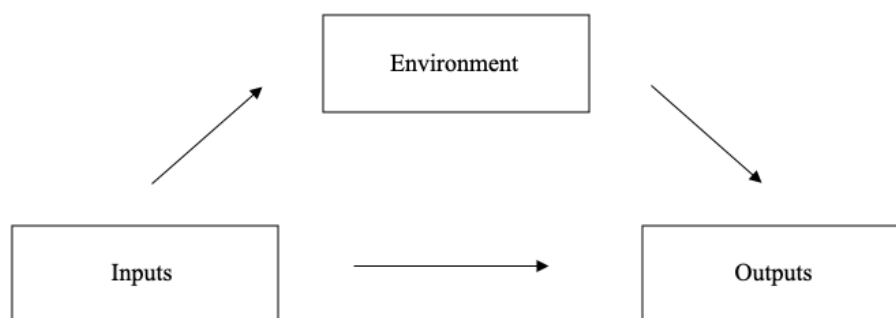
### **Conceptual Framework for Understanding College Students' First-Year Experience**

Astin's (1970) IEO model of change (Figure 1) can serve as a useful framework for considering the first-year student experience. Astin (1993) explained that students bring knowledge, skills, and prior experiences with them to college (i.e., inputs) and encounter others along the way (i.e., environment). Higher education professionals often refer to Astin's (1970) IEO model of change to predict how inputs and environment will impact intermediate (e.g., staying in school between semesters) and long-term "outputs" (e.g., graduating from college). Additionally, as first-year students' transition factors, such as the availability of resources and student engagement, may influence the students' perception of their environment. The importance of intermediate outcomes has been reinforced by the Multi-Institutional Study of

Leadership (2020) in their effort to understand how higher education plays a role in developing student leaders.

### Figure 1

*Astin's (1970) inputs-environment-outputs model of change*



The global pandemic and sociocultural concerns present during the college transition period in the fall of 2020 were unique to this cohort of incoming students. Astin's (1970) IEO model is useful for thinking about important variables within the context of COVID-19. Historical context was not originally included in Astin's (1970) conceptualization of environment because environment was defined as programs and resources students were exposed to in college (i.e., micro level) rather than the factors existing both within *and* outside the college campus (i.e., macro level; Astin, 1993). Given the widespread impact of the COVID-19 pandemic at the macro level, COVID-19 has been incorporated into Astin's original model, and the resulting model was used as a framework to organize the variables of interest in the current study. Specifically, these variables included active engagement and sense of belonging given their impact on college adjustment (Bowman et al., 2019; Goudih et al., 2018), staying in school (Fraysier et al., 2020), and flourishing (Low, 2011; Volstad et al., 2020) in a typical academic year. In addition, the switch to primarily virtual experiences (e.g., virtual orientation, meeting classmates via Zoom) throughout the entire 2020-2021 academic year changed how students

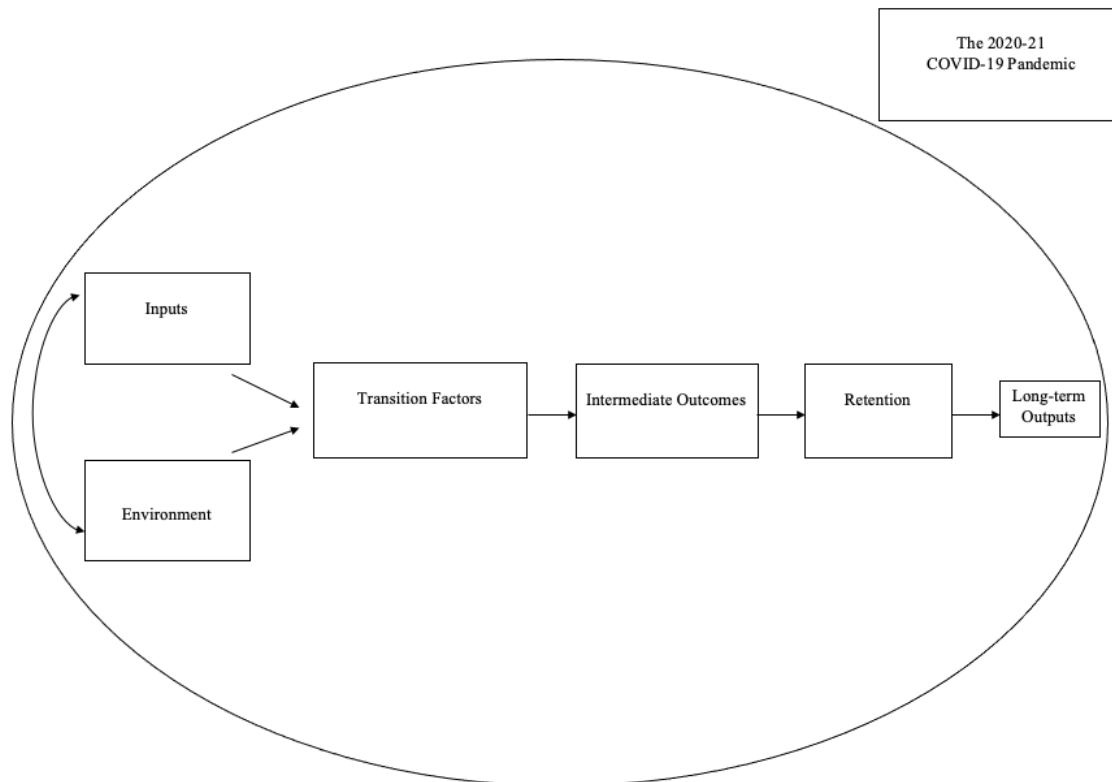
experienced their first semester of college (e.g., how students spent their time). As such, the purpose of this study is to investigate active engagement and sense of belonging as predictors of three intermediate outcomes (i.e., college adjustment, staying in school, and flourishing) during a global pandemic.

### **COVID-19 and the College Transition**

Several studies (e.g., De Clercq et al., 2018; Kuh et al., 2006) identified the obstacles first-year students encounter during their transition to college and on their path to success. At the individual level, students may experience grief and loss during the college transition. Gold and colleagues (2001) found that “higher grievers earned significantly lower fall GPAs and returned to campus for spring semesters in fewer numbers” (p. 37). Sometimes there are forces beyond the individual that disrupt the college transition (e.g., the COVID-19 pandemic). COVID-19 surrounds the variables discussed relative to the first-year student transition (see Figure 2). In the first part of the 21<sup>st</sup> century, disruptive events (e.g., terrorist attacks, financial crises, pandemics) impacted the lived experiences of college students. Leading up to and including their transition to college, first-year students faced the historical context of an ongoing, pervasive pandemic.

**Figure 2**

*Astin's (1970) inputs-environment-outputs model of change adapted for the study, including COVID-19*



As the confirmed cases of COVID-19 began to rise in January 2020, travel restrictions were put in place to “stop the spread” (i.e., international travel banned, U.S. citizens abroad returned home abruptly). By March 2020, a national 2-week shutdown forced many colleges, universities, and businesses to temporarily close. Mask-wearing, hand sanitizer usage, and physical distancing became the norm; many people did not socialize with anyone outside their household throughout the winter and spring months. Though some restrictions loosened in the summer months, schools were apprehensive to plan for full in-person learning for the Fall 2020 semester. The “second wave,” or second rise of COVID-19 cases in the colder, fall months prompted schools to provide remote learning to their students. Ultimately, virtual programming

and online classes persisted throughout the academic year across the United States. Although scholars are just now beginning to examine the impact of COVID-19 on college students, reflecting upon the lived experiences of other students during previous historical disruptions allows higher education professionals to pause and prepare for conversations with students today.

Two earlier events parallel the current historical context, the terrorist attack on the World Trade Center on September 11<sup>th</sup>, 2001 and the H1N1 pandemic of 2009, both of which occurred during college transitions. Related to social-emotional concerns, first-year students in the fall of 2001 recounted feelings of sadness, uncertainty, and confusion as the tragedy unfolded in real time (MetaFilter, 2013). Educationally, some students attended their typical morning classes while others gathered with students and professors in common areas to watch the news (MetaFilter, 2013). Depending on the institution, the reactions varied. A freshman at Norwich University, a military college, recalled psychological implications as the students anticipated going to war upon graduation in response to the attack (MetaFilter, 2013). First-year advising day was on September 11, 2001 at Princeton University, according to another blogger (MetaFilter, 2013). One postdoc instructor remembered meeting with first-year students about their course schedules, acknowledging that the advising event and their personal routine had not changed despite the news of the attacks (MetaFilter, 2013). Relationally, students appeared to rely on each other not only for comfort, but also, for information since cell phones were less common among students at the time (MetaFilter, 2013). Although limited research exists regarding the implications of the terrorist attack on the college transition, clearly a disruption to the college transition occurred. Research has emerged for other disruptions even more similar to those in the current study, including the H1N1 pandemic.

In 2009, the H1N1 (i.e., “swine flu”) pandemic impacted young adults at an alarming rate. Van and colleagues (2010) discussed the awareness of the H1N1 pandemic among staff and students 18 years old and younger at a university in Sydney, Australia. The emerging adults’ attitudes of the pandemic and any changes in behavior were also investigated (Van et al., 2010). Many participants were highly aware of the pandemic (99.6% of respondents), but fewer reported anxious feelings about its implications (59.6% of respondents; Van et al., 2010). “Face masks or hand hygiene products” were the most common behavior changes reported during the H1N1 pandemic among emerging adults (Van et al., 2010). The subgroup of staff and students who made at least one behavior change were predominantly those feeling anxious about the pandemic (Van et al., 2010).

Educational implications were apparent in that students who changed their behavior also indicated they would miss class or an exam if infected with the virus (Van et al., 2010). However, most students reported that they would attend class and fulfill academic deadlines in person despite being symptomatic, which raised concerns about university outbreaks of viruses (Van et al., 2010). In 2009, the option of online learning in the event of an outbreak was well-received by students, but resisted by faculty members (Van et al., 2010). Van and colleagues (2010) encouraged universities to adopt online resources as a contingency plan for student learning. Although there has been previous research looking into college students’ lived experience during a pandemic, the timing of the current disruption led to the following question: How will the disruption of COVID-19 impact the college transition? By exploring what students bring to college and the role of environmental factors during the college transition, higher education professionals may better understand intermediate and long-term outcomes as students transition to college during the COVID-19 pandemic.

## **What Students Bring to College**

Under Astin's (1993) model, characteristics of emerging adults prior to entering the college environment are "inputs." Mindful that certain personal variables may change over time during college (e.g., change in major), Astin (1993) made it clear that inputs are strictly variables that exist prior to the college transition (e.g., intended major). Other variables that may evolve would more closely mirror a "bridge," or "input-environment" variable, as defined by Astin (1993). Using Astin's (1970) IEO model of change as a framework, Strayhorn (2008) included sex, marital status, age, year in college, and race/ethnicity as inputs to study student engagement. Differences in student learning were detected based on sex (Strayhorn, 2008). However, in a more recent study, Aderi and colleagues (2013) found minimal differences in college adjustment based on sex, which they "attributed to the changing female roles" (p. 177) in North Jordan. Age (Aderi et al., 2013) and race (Strayhorn, 2008) also emerged as significant inputs related to college adjustment and student learning, respectively. Additionally, age may impact how students spend their time in college. For instance, the New England Board of Higher Education (2011) found that older students spend more time on schoolwork compared to their peers. Given previous research as well as the data that were available for analysis, the inputs selected for inclusion in the current study were race/ethnicity and gender.

## **The On-Campus Environment**

Astin (1993) reviewed nearly 200 environmental factors and placed them into four categories: "institutional characteristics," "curricular measures," "faculty environment," and "peer environment." A distinction was made between environmental variables students knew prior to attending college (e.g., residence hall assignment) and experiences the student had following exposure to the college environment (e.g., peer interactions; Astin, 1993). The current

study focuses on three domains within the college environment (i.e., transition factors; e.g., active engagement, sense of belonging, and personal experiences with COVID-19) and how they predict intermediate outcomes (i.e., college adjustment, staying in school, flourishing).

### ***Transition Factors***

**Active Engagement.** During New Student Orientation (NSO) programming, student affairs professionals share an array of University resources with incoming students (Student Orientation and Transition Programs [SOTP]), 2020a). Often included in these presentations are campus offices (e.g., Counseling and Psychological Services, Student Activities) and engagement opportunities, with the hope that students will become involved on campus (e.g., join a registered student organization). The importance of the out-of-classroom experience is fittingly emphasized throughout the NSO programming given its relationship to desired learning outcomes (SOTP, 2020a; Strayhorn, 2008). Because first-year students “adapt their learning strategies to the resources available” (Huon et al., 2007), higher education professionals often prioritize the dissemination of university resources to promote diverse learning strategies and retain more students.

Even if students learn about the resources available at the University, how they spend their time is ultimately up to them. Between schoolwork, leisure activities, and sports, a study by the New England Board of Higher Education (2011) indicated that students spent, on average, 3.3 hours per day “in class and doing homework.” As universities dedicate space and finances to initiatives related to “ethical leadership,” “civic learning,” and “co-curricular opportunities,” the purpose of higher education appears to extend beyond the classroom (Center for Character, Conscience, and Public Purpose, 2021; Student Engagement Network, 2021). Therefore, active



engagement remains a critical variable of interest—higher education professionals need to understand how students allocate time to support their success, academic or otherwise.

Out-of-class experience varies by student and includes personal study time, class time, and work. McCormick (2011) discussed the relationship between credit hours and suggested personal study time. Students should spend approximately 2 hours per credit hour studying per week (e.g., a student with 15 credit hours should study 30 hours per week; McCormick, 2011). However, this standard is rarely upheld by students. Personal study time decreased from 24 hours per week in 1961 to 14 hours per week in 2003 (McCormick, 2011). While some may credit this change to the increase in social media usage, others posit that less homework may be assigned due to the current weight of professor evaluations (i.e., assigning more homework may lead to a poor evaluation of the course, which professors do not want), time saved due to technological advances (e.g., copy and pasting text using a keyboard as opposed to rewriting by hand), and an increased emphasis on research experiences (stateuniversity.com, n.d.). In addition to personal study time, spending time in class plays a role in the college transition, particularly in terms of academic success and sense of belonging. For instance, Credé et al. (2010) found a relationship between class attendance and course grades. Interestingly, “online classroom resources and improved textbooks have not decreased the importance of attending class” (p. 280). During a more typical academic year, college attendance also predicts student engagement and sense of belonging (Bergin & Ferrara, 2019). The utility of educational resources as well as the relationship between class attendance, particularly online class attendance, and sense of belonging during the COVID-19 pandemic remains unknown.

As study time continues to decrease among college students (McCormick, 2011), other commitments add up. McCormick (2011) emphasized the uptick in students working for pay in

general and indicated that the percentage of students working over 20 hours per week has tripled between 1961 and 2003. This finding remains concerning due to the relationship between working over 20 hours per week and retention for students living at home (Bozick, 2007). Given the financial challenges during the global pandemic and that many students continue to learn at home, students may find themselves juggling work and school responsibilities at even higher rates. First-year students who work over 20 hours per week may not persist to their second year let alone graduation (Bozick, 2007). However, there is a balance. Students who work less than 20 hours per week seem to earn better grades than their non-working peers (Hess, 2017). Overall, working seems to benefit students—to a point. Higher education professionals should care about how students are spending their time in order to anticipate changes in college adjustment, retention, and flourishing during the global pandemic.

**Sense of Belonging.** Many first-year students begin their post-secondary education in a new space. Students and higher education professionals alike hope that the University environment will help foster connections (e.g., connections between people, connections to the University, connections to their studies) to help students feel like they belong. Strayhorn (2018) defined sense of belonging as follows:

In terms of college, sense of belonging refers to students' perceived social support on campus, a feeling or sensation of connectedness, and the experience of mattering or feeling cared about, accepted, respected, valued by, and important to the campus community or others on campus such as faculty, staff, and peers (p. 4).

Relationships help first-year students build a sense of belonging on campus. For instance, as first-year students interact with peers at their respective universities, they may form new friendships to integrate in their new environment. Kuh and colleagues (2006) emphasized the

importance of social integration relative to student success. Sense of belonging, however, goes beyond “fitting in” and captures feelings of connectedness and acceptance of one’s authentic self (Strayhorn, 2018).

To promote sense of belonging, University offices organize social events and other student engagement opportunities (e.g., service projects, leadership development programs) based on interests and learning outcomes. These events help first-year students develop “first friends,” or people first-year students meet right away, which marks the onset of friendship development for first-year students (D. Murphy, personal communication, July 14<sup>th</sup>, 2020). Some students bond with first friends right away, while others continue to search for a desirable social group. Those who maintain their initial friendships and experience feelings of connectedness may also report more academic success. For instance, Strayhorn (2008) found that peer interactions had the greatest impact on student learning. Not only do relationships appear to foster academic success, but also relationships help students feel supported at their institution, which leads to other positive outcomes (e.g., sense of belonging). Some first friendships are maintained, profound, and continue to grow throughout the course of the academic year. Dixon Rayle and Chung (2008) found that when first-year students perceive themselves as supported by college friends, they “reported a greater sense of mattering and significance to their college environments” (p. 30), which mirrors Strayhorn’s (2018) definition. More recently, Bowman and colleagues’ (2019) findings continued to support the association between building relationships and sense of belonging during the first semester of college.

To examine the evolution of friendships further, Pittman and Richmond (2008) surveyed 79 first-year students at two time-points during their first year with a focus on several topics, including “relationships with parents and friends” (p. 347). Pittman and Richmond (2008)

described friendships and social acceptance as “specific links to adolescent adjustment” (p. 356). To assess the students’ friendships, they administered the Inventory of Parent and Peer Attachment developed by Armsden and Greenberg (Pittman & Richmond, 2008). Pittman and Richmond (2008) found that when first-year students experienced “positive changes in friendship quality” (p. 354), they also reported fewer problem behaviors. Friendship quality and sense of belonging were identified as separate constructs, which is reflected in the proposed study (Pittman & Richmond, 2008).

In addition to friendships among peers, relationships with family play a role in first-year students’ outcomes. Emerging adults and parents may experience “relational turbulence” as their relationships are redefined during the college transition (Scheinfeld & Worley, 2018). Relational turbulence creates challenges relative to college adjustment (Scheinfeld & Worley, 2018). If parent-student relationships become unclear or remain in conflict (i.e., characteristics of relational turbulence), students begin to associate seemingly positive parent behaviors as negative (Scheinfeld & Worley, 2018). Conversely, “parents who are able to provide support in a way that does not appear intrusive or interfering may be able to help their children navigate the transition to emerging adulthood most smoothly” (Scheinfeld & Worley, 2018, p. 456). Though they are the focus of this study, emerging adulthood is not limited to college students (Mitchell & Syed, 2015).

Family and faculty support during emerging adulthood may also impact psychological outcomes (e.g., academic stress, social stress). Bowman and colleagues (2019) found that students who were satisfied with their parental relationships also reported feelings of belonging and adjustment. Dixon Rayle and Chung (2008) determined that perceived support from family remains inversely related to academic stress, which may persist as demands on students increase

over time. Both “academic and social stresses” were contributing factors in the decline in psychological well-being for undergraduate students (Astin, 1993). When students feel like they belong at their university, students may cope with stressors and preserve their mental health (Mayo Clinic, 2019). Astin (1993) noted that students’ psychological well-being declines as students advance through college. Therefore, developing a sense of belonging in students’ first year may serve as a protective factor for the remainder of their time in college. In addition to family support, undergraduate students may seek guidance from faculty and staff, particularly for academic feedback. Overall, students benefit from faculty-student interaction more often than not (Kuh et al., 2006) and these relationships help foster a sense of belonging for all students (Strayhorn, 2018).

**Personal Experiences with COVID-19.** Building a sense of belonging may prove challenging during the COVID-19 pandemic. Additionally, first-year outcomes may vary by student based on their personal experiences with COVID-19 (e.g., loss of work). One hallmark of the pandemic in the realm of higher education has been the shift from in person to online learning, following Van and colleagues (2010) a decade earlier regarding the need to develop online educational resources. The global pandemic began during the current first-year cohort’s senior year of high school, and since that time, the implications have been significant (e.g., disrupting academic goals, in-person volunteering, and engaging in social activities). As the United States worked to stop the spread of the virus, school buildings closed, remote learning began, and facemasks became part of everyday attire. Non-essential industries were asked to shut their doors while health care, commercial delivery, postal service, and grocery workers continued to support the nation at large during periods of quarantine and, for those with symptoms of COVID-19, isolation.

Students remained at home in anticipation of returning to their daily routines (e.g., extracurricular activities, driving to school, socializing with friends). While the support students received varied by school district or university, the support needed during the pandemic may prove more similar than different (e.g., mental health counseling). There was a heightened importance in identifying the utility of University resources (e.g., Counseling and Psychological Services, advising) given the stressors placed on first-year students and their families during the COVID-19 pandemic. This cohort of students faced the start of their college transition, an already disruptive event, in the context of an unprecedented, pervasive common stressor (i.e., COVID-19)—and it did not stop throughout their first year.

During these difficult times, the “college experience” for first-year students remained different from previous years. Cohen and colleagues (*in press*, pp.1-7) anticipated that COVID-19 would impact academic plans. Without the typical formalities and celebration of high school milestones, high school seniors may have perceived their personal progress in a unique way (e.g., How did this group of first-year students perceive their senior year, high school accomplishments, sports seasons, and graduation?). Individual relationships may have been stagnant or taken on new forms as social interactions diminished. Psychologically, experiences of grief and loss, stress from economic hardship, and overarching mental health concerns during the early months of COVID-19 pandemic could impact emerging adults as well.

In addition to the disruption of their senior year of high school, the subsequent summer months leading up to their first college semester was filled with uncertainty. The college preparation stage was unique for this cohort of students (Nicholson, 1990). Rising first-year students were unsure when they would receive university announcements regarding in-person instruction, remote learning, and on-campus housing. Therefore, first-year students prepared for

multiple modes of both academic and extracurricular experiences throughout the summer (e.g., orientation, class, club meetings) and the need for flexibility heightened as the semester approached and evolved.

Decisions regarding orientation, programming, and instruction trickled in throughout the summer months (with some adjustments occurring well into the fall and spring semesters). The Student Orientation and Transition Programs (SOTP) office relies on specific programs and events to outline first-year student maturation (D. Murphy, personal communication, July 14<sup>th</sup>, 2020). Therefore, the SOTP moved ahead with new student orientation albeit in a different format, shifting from in-person to virtual experiences (SOTP, 2020b). The first-year student residence life experience also changed. Strict visitor policies and masking requirements were enforced in residence halls early on, which persisted throughout the academic year. Mindful of these restrictions and the limitations on social interaction, Dan Murphy, Director of SOTP at the flagship campus, anticipated that the COVID-19 pandemic would impact the social development of first-year students (personal communication, July 14<sup>th</sup>, 2020). First-year students may not have the opportunity to meet their “first friends,” or the connections were delayed without regular social interaction, which may have caused students to maintain friendships from high school for a longer period of time (D. Murphy, personal communication, July 14<sup>th</sup>, 2020). For students who lived on-campus, student engagement opportunities were offered for social pods (i.e., small peer groups) later in the fall semester. In addition to changes in peer interactions, parental support looked different this year. Blurred lines may remain between high school and first-year identities among parents of first-year students, especially for first-year students who continued to learn at home (D. Murphy, personal communication, July 14<sup>th</sup>, 2020). Therefore, the

support first-year students received in high school may persist rather than evolve during the pandemic.

While the changes outlined thus far apply to all first-year students, it was anticipated that some students would have personal experiences with COVID-19 unique to a smaller group of first-year students. For example, there will be some students who experienced the loss of a loved one due to COVID-19 during their first semester.<sup>1</sup> Students may also have varied work experiences during the pandemic (e.g., working on the front lines, loss of work). The impact of a singular or multiple personal experience(s) with COVID-19 on intermediate outcomes like college adjustment, staying in school, and flourishing has yet to be tested. This study aims to examine the relationship between three predictors (i.e., active engagement, sense of belonging, and personal experiences with COVID-19) and intermediate outcomes.

### **Intermediate Outcomes**

Historically, outcomes for college students centered on academic and extracurricular achievements as well as specialized skills such as typing (Astin, 1977). Higher education professionals have since expanded their interest to post-graduate outcomes such as career development and student involvement (Astin, 1993). Additionally, intermediate outcomes such as leadership development have grown in popularity (Multi-Institutional Study of Leadership, 2020). This study builds on the evolving interest in the first-year student experience (De Clercq et al., 2018; Pittman & Richmond, 2008), especially as it relates to the intermediate outcomes of college adjustment, staying in school, and flourishing.

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<sup>1</sup> The Center for Disease Control and Prevention (2021) reported 443,107 fatalities in the United States involving COVID-19 as of February 10, 2021. Of those fatalities, 626 were individuals 15 - 24 years of age (Center for Disease Control and Prevention [CDC], 2021). This is consistent with the media coverage that suggested more severe implications for the elderly, rather than children and young adults, which differs from the H1N1 pandemic.



### ***College Adjustment***

In a recent study, emerging adults described their current development as “full of changes” (Arnett & Mitra, 2020). How first-year students adapt to such changes may provide insight to their experiences as they transition to college. College adjustment is viewed as an outcome with multiple predictors (O’Donnell et al., 2018). First-years students may struggle with one, two, or all three types of college adjustment: educational, relational, and psychological (O’Donnell et al., 2018). Educational adjustment focuses on academic success whereas relational and psychological adjustment remain closely related to social connections and feelings, respectively (O’Donnell et al., 2018). Furthermore, Goudih et al. (2018) linked psychological adjustment in college to “job performance, academic engagement, and academic achievement.” Several measures were developed to assess different areas of college adjustment (e.g., College Adjustment Test, College Adjustment Questionnaire; Pennebaker, 2013; O’Donnell et al., 2018). College adjustment emerged as an intermediate outcome of interest given its relationship to long term outputs (e.g., college graduation; Goudih et al., 2018).

### ***Staying in School***

University offices (e.g., Student Orientation and Transition Programs [SOTP]) provide extensive resources designed to help first-year students stay in school between semesters (i.e., staying in school) and academic years (i.e., retention). For example, Kuh and colleagues (2006) found that finishing first-year seminar (FYS) was predictive of students staying in school when compared to first-year students who were not enrolled in a FYS course. Not only were they more likely to return to school, but also, the students who finished FYS reported that they were supported, used university resources, collaborated with faculty, and benefited more overall from

the year for which they were enrolled in FYS (Kuh et al., 2006). Orientation programs are another opportunity for education-based connection.

Retention of students benefits the individual and the institution. Students help the institution fulfill their “mission to educate” when they stay in school (Kim et al., 2010). Historically, the landmark retention theory by Tinto (1975) suggested that students who successfully integrate in their institutional environment were more likely to have high retention. Over time, additional researchers used Tinto’s (1975) theory as a foundation to explore the retention of specific populations, including first-year students. For example, Jensen’s (2011) brief, *Factors Influencing Student Retention in Higher Education*, outlined the “individual” (e.g., GPA), “institutional” (e.g., offered registered student organizations), and “social and external” (e.g., peer interactions, family support) levels impacting retention. At the individual level, retention helps students’ employability and increases their financial independence (Pratt et al., 2019). Fike and Fike (2008) found that “passing a developing reading course,” “taking Internet courses,” [and] “participating in the Student Support Services program” (pp. 75-78) were stronger positive predictors than “receiving financial aid, father having some college education, semester hours enrolled in the first fall semester, and student age” (p. 78). Interestingly, “not taking a developing reading course” (p. 78) was also a positive predictor of fall-to-spring retention (Fike & Fike, 2008). At the institutional level, universities support students’ leadership development by providing opportunities for skills workshops, consultation, and involvement in large-scale projects (i.e., hosting programs and events). Students who explore involvement opportunities on campus have “higher student retention rates and increased institutional commitment” (Burke, 2019, p. 12). The “social and external” level was examined in the context of sense of belonging in the proposed study. First-year students who do not reenroll may face

financial barriers, especially when they are the first in their family to attend college (Pratt et al., 2019). Students who stay in school between semesters their first year and enroll for their sophomore year may also persist to graduation. As students make their way through their college experience, higher education professionals remain curious as to how students perceive their journey.

### ***Flourishing***

In his more recent work, Astin (1977, 1993) included self-concept, which was an emerging construct of great interest at the time. Similarly, flourishing is included as an outcome in the current study as this construct has received increasing attention within the field of higher education (Diener & Biswas-Diener, 2009; Human Flourishing Program, 2021; VanderWeele, 2017; Volstad et al., 2020) during the past decade. In its broadest form, flourishing encompasses mental and physical health, attitudes toward challenges, view of relationships, and worries about basic needs (Human Flourishing Program, 2021). Students may flourish as they develop relationships with friends, family, and faculty. VanderWeele (2017) defined flourishing as “doing or being well in the following five broad domains (i) happiness and life satisfaction; (ii) health, both mental and physical; (iii) meaning and purpose, (iv) character and virtue, and (v) close social relationships” (p. 8149). Each aspect of flourishing remains contextually based. For example, Volstad and colleagues (2020) interviewed first-year students from Canada who transitioned to college immediately after high school. These nine students shared that their perception of flourishing was influenced by familial and environmental factors, which is consistent with previous findings (Keyes, 2007; Kuh et al., 2006).

In addition to family and environment, Keyes (2007) identified mental health as another contextual factor related to flourishing. As discussed in his work, the 13 dimensions of

flourishing were: positive affect, avowed quality of life, self-acceptance, personal growth, purpose in life, environmental mastery, autonomy, positive relations with others, social acceptance, social actualization, social contribution, social coherence, and social integration. For each dimension, students may fall on various ends of the spectrum from languishing to flourishing. Keyes (2007) emphasized the negative impact of languishing on daily life, including physical health, and how severe the impact became in the presence of a mental health diagnosis. Even in the absence of a mental health diagnosis, flourishing remained rare (Keyes, 2007). Challenges remain necessary for personal growth (Volstad et al., 2020); however, in an excessive amount, challenges may contribute to why students struggle to flourish during their first year. The exact tipping point between the number of challenges that promote personal growth and the number of challenges that prevent students from flourishing remains unclear. Additionally, the tipping point may change based on the historical context, including the chronic stressors present as a result.

Before *flourishing*, research examining the well-being of students included variables like person-environment fit (e.g., Feldman et al., 2016; Rocconi et al., 2020) or persistence (e.g., Allen & Robbins, 2008), which evolved from Holland's (1973) theory of vocational choice and Holland's (1997) theory of person-environment fit. Holland's (1997) theory suggested that person-environment fit led to positive long-term outcomes such as vocational achievement. Allen and Robbins (2008) also connected personality type to flourishing in an academic environment, including persistence within an academic major. More recently, however, Feldman et al. (2016) found that person-environment fit played less of a role in "satisfaction with...academic programs and career counseling services" (p. 542), perhaps due to the expanding mission of higher education. Student affairs professionals in higher education assist students in not only choosing

satisfying career paths, but also in developing skills in civic engagement, civil discourse, leadership, and introspection, mirroring VanderWeele's (2017) definition of flourishing. Pike (1995) found a relationship between college experiences and achievement-test results, especially in mathematics and science. When students are flourishing in college, academic outcomes may improve.

### **COVID-19's College Impact: What We Know So Far**

The ongoing disruption to student, institutional, relational, and psychological experiences for first-year students raised concerns regarding students' college adjustment and college transition. The full impact of the COVID-19 pandemic on the first-year students' experiences as well as their development and success remains unclear, but research findings are beginning to emerge. In a recent nationwide survey of 1,008 college students, motivation, class requirements, and internet connection were among the top concerns for students in the event remote learning continued during the Spring 2021 semester (Hiler et al., 2021; June, 2021). Motivation was consistently the "biggest" concern among respondents (i.e., selected by 60% of respondents; Hiler et al., 2021; June, 2021). From August to December 2020, an additional 10% ( $n = 100$ ) of respondents selected motivation as a challenge of remote learning (Hiler et al., 2021; June, 2021). Health, finances, employment, value of education, and investment were also discussed (Hiler et al., 2021). Students' worries continue relative to their family and friends being diagnosed with COVID-19, their ability to pay bills, and their ability to get a job post-graduation (Hiler et al., 2021; June, 2021). As the stressors persisted throughout the fall semester, first-year students attempted to complete their studies in the midst of an ongoing, national traumatic event.

Higher education professionals attempted to mitigate the negative impact of this major disruption. Universities are introducing resources above and beyond those typically in place to

support first-year students during this unprecedented academic year. Some resources put in place during the current disruption include telepsychiatry, asynchronous learning, and flexible paths to degree. At the institution where the current study took place, students were offered several academic program options for the Fall 2020 semester following the campus building closures of Spring 2020: keeping learning at home (i.e., students who were learning at home as of Spring 2020 remained at home rather than attending classes on campus), start learning at home (i.e., first-year students could elect to begin their studies online and potentially shift to on-campus life and instruction when they felt more comfortable), enroll in online classes through the university's 100%-online Campus, or change campuses (e.g., students may choose another campus due to smaller class size, location, etc.). Across all academic programs, the university attempted to provide engaging, creative instruction for students.

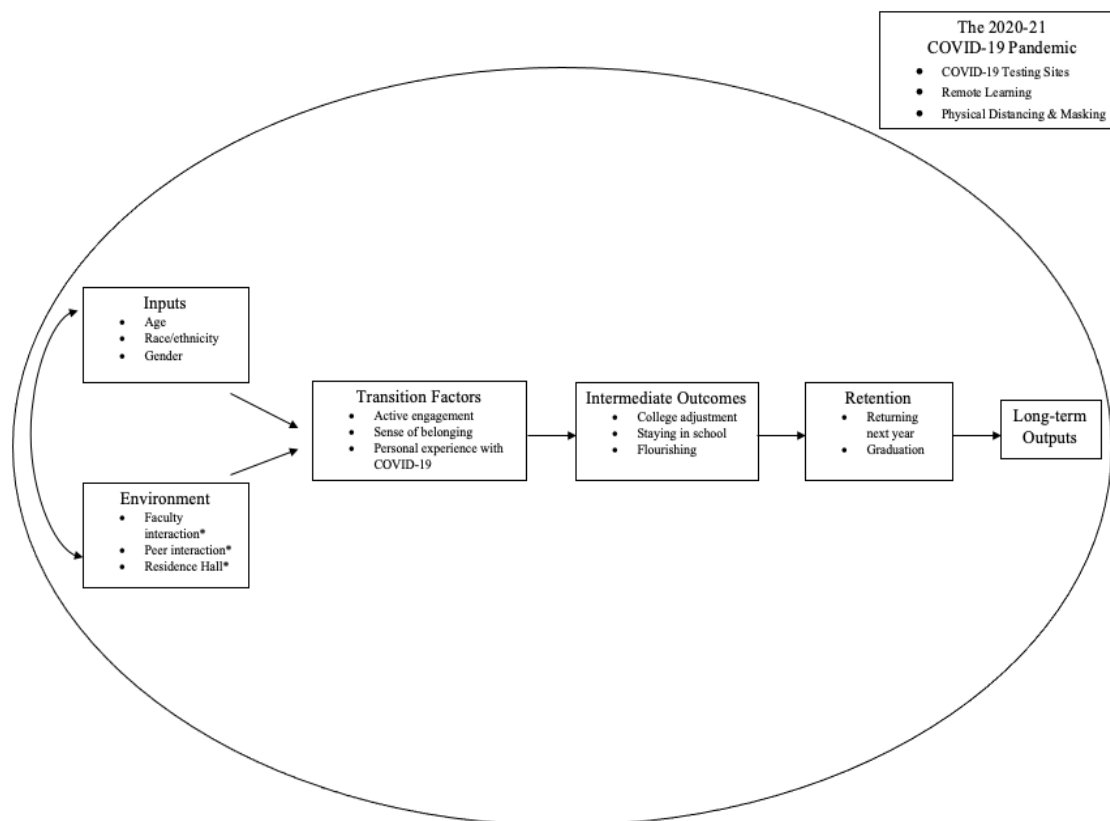
A trauma-informed care approach may mitigate some of the impacts of the COVID-19 disruption. Both Evans (2020) and Willoughby (2020) discussed how strategies to support students following the traumatic event on 9-11 may also help students now as they process the implications of the pandemic in their personal and professional lives. The National Association of School Psychologists (NASP; 2020) emphasized the fact that “[all] students and staff have experienced some level of trauma as a result of the pervasive and long-lasting effects of COVID-19 pandemic” (para. 3). The COVID-19 pandemic may have adverse impacts on students' ability to flourish, which is already a rare occurrence (Keyes, 2007). Chronic stress may also cause harm to the physical body systems (National Association of School Psychologists [NASP], 2020). The NASP PREPaRE Model provides a framework to examine the crisis exposure and how to respond (Brock et al., 2016). Higher education professionals may find it helpful to implement a trauma-informed care approach to support this cohort of first-year students now and

in years to come. If higher education professionals fail to act, relational, psychological, and physiological implications may develop over time given the pervasiveness of COVID-19, a chronic stressor.

Based on what we know so far, the need to further understand the college transition during the COVID-19 pandemic is great. Universities and workplaces rely on developmental milestones (e.g., student maturation, job skills acquired) to confidently say students are prepared for their next steps. Without a deeper understanding of the college transition as students experience a common traumatic event, higher education professionals may miss opportunities for intentional care of rising sophomore students as they move toward graduation. Many anticipate that the impact of COVID-9 will last long after this cohort's next academic year. Therefore, higher education professionals need to prepare to respond with a trauma-informed care approach and timely opportunities for students to connect, process, and be well. This study includes variables most salient to students during a typical college transition period as well as variables unique to first-year students in 2020. Figure 3 shows the alignment of key variables.

**Figure 3**

*Alignment of key variables using adapted model of change*



*Note.* Staying in school captures fall-to-spring enrollment trends for first-year students. Retention (i.e., spring-to-fall enrollment and graduation) and long-term outputs were not included in this study. Environment was not directly tested; however, transition factors were said to be impacted by the environment.

### **Rationale, Purpose, Research Questions, & Hypotheses**

During the first-year experience, students typically explore involvement opportunities, navigate old and new support networks, access university resources, and develop friendships. SOTP staff members aim to provide a similar experience, acknowledging health and safety limitations, for the 2020-2021 academic year. Parents remain eager for something to “go as planned” as their children enter their first year of college (D. Murphy, personal communication, July 14<sup>th</sup>, 2020). First-year students may express feelings of uncertainty (e.g., “I don’t know if this is how I want to start college”; D. Murphy, personal communication, July 14<sup>th</sup>, 2020). Given



the parallels between previous disruptions (e.g., September 11<sup>th</sup>, 2001, H1N1 pandemic) and the ongoing COVID-19 pandemic, we are interested in understanding how the global pandemic will play a role in the college transition. The purpose of this study is to investigate the impact of active engagement, sense of belonging, and personal experience with COVID-19 (e.g., loss of work) on the college transition during the COVID-19 pandemic. To grow in our understanding of how first-year students are doing right now, the following research questions, and corresponding hypotheses, were posed:

### ***Research Question 1***

What is the relationship between transition factors (i.e., first-year students' active engagement, sense of belonging, and personal experience with COVID-19) and college adjustment?

**Hypothesis 1a.** Active engagement is a significant positive predictor of first-year students' college adjustment during a pandemic.

**Hypothesis 1b.** Sense of belonging is a significant positive predictor of first year students' college adjustment during a pandemic.

**Hypothesis 1c.** A personal experience with COVID-19 is a significant negative predictor of first year students' college adjustment during a pandemic.

### ***Research Question 2***

What is the relationship between transition factors (i.e., first-year students' active engagement, sense of belonging, and personal experience with COVID-19) and flourishing?

**Hypothesis 2a.** Active engagement is a significant positive predictor of first year students' flourishing for students who begin college during a pandemic.

**Hypothesis 2b.** Sense of belonging is a significant positive predictor of first year students' flourishing for students who begin college during a pandemic.

**Hypothesis 2c.** A personal experience with COVID-19 is a significant negative predictor of first year students' flourishing for students who begin college during a pandemic.

***Research Question 3***

What is the relationship between transition factors (i.e., first-year students' active engagement, sense of belonging, and personal experience with COVID-19) and the retention of students returning to campus after their first semester?

**Hypothesis 3a.** Active engagement is a significant positive predictor of staying in school for first-year students who begin college during a pandemic.

**Hypothesis 3b.** Sense of belonging is a significant positive predictor of staying in school for first-year students who begin college during a pandemic.

**Hypothesis 3c.** A personal experience with COVID-19 is a significant negative predictor of staying in school for first-year students who begin college during a pandemic.

## CHAPTER TWO

### METHOD

#### Participants

All first-year student participants were enrolled at a public land-grant research institution founded in 1855. During the 2019-2020 academic year, 76,099 students enrolled, including 40,639 students at the largest campus. First-year students admitted to the largest campus for Summer 2020 or Fall 2020 semesters had a middle 50% high school GPA range of 3.55 to 3.90. Additionally, their Scholastic Assessment Test scores fell between 1080 and 1260.

At the largest campus, the survey was distributed to 10,000 full-time undergraduate students and 2,000 graduate and professional students (Student Affairs Research and Assessment [SARA], 2020). Of those who received the survey across the university ( $N = 28,850$ ), 8.4% of students responded ( $n = 2,423$ ). Of the first-year students enrolled at the largest campus, less than 200 students opened the Fall 2020 Student Engagement Survey ( $n = 194$ ) and 96.4% were 18-19 years old. Of those who opened the survey, there were 152 respondents with useable data (i.e., 42 respondents were missing majority of the survey). Table 1 reports demographic information about the initial sample and all students enrolled at the largest campus. Given slight variations in sample size based on the outcome variable for each hypothesis, demographic information is reported by analytic sample in Appendix C. The survey was distributed in partnership with the SARA office. Data were reported by SARA in other contexts. The participants for this study represent a subsample. Therefore, demographic information and other data reported may not match official SARA reports given the participants included varied by project.

**Table 1.** Initial sample demographic characteristics

Characteristic	Sample ( <i>N</i> = 194)	All Undergraduate Students on Campus
Age (years)		
18-19	96.4	--
20-21	2.6	--
27-30	0.5	--
Gender		
Woman	61.9	46.0
Man	37.6	54.0
Race/Ethnicity		
Asian or Asian American	17.0	6.40
Black/African American	7.7	5.63
Hawaiian or Pacific Islander	0.5	0.11
Hispanic or Latino/a	7.2	7.65
Native American or Alaska Native	0.5	0.13
Undisclosed	2.1	2.28
White/Caucasian	63.9	64.95
Multiple Races	--	3.44
International	--	9.36

*Note.* Percentages reported within each cell. Undergraduate student data pulled from Admissions Office at participating institution (column two). The Gender and Race Ethnicity data were collected by the Admissions Office in 2018-2019. Total enrollment is based on student enrollment data from the participating institution's planning, assessment, and institutional research office.

## Measures

Data for the proposed study were drawn from sections of the Fall 2020 Student Engagement Survey (SARA, 2020). The survey questions were developed in conjunction with the SARA team at the university during the Fall 2020 semester. The survey included eight sections (engagement, time spent per week, sense of belonging, residence life, flourishing, personal experiences with COVID-19, health and wellness, college adjustment) and 126 items (see Appendix A for questions used in this study; SARA, 2020). Questions reflecting active

engagement, sense of belonging, and personal experiences with COVID-19 were used in the current study.

### ***Transition Factors***

**Active engagement.** Questions on the SARA survey related to engagement fell in three general categories: prior engagement, barriers to engagement, and student expectations for engagement next semester. Twenty-three items were drawn upon for the current study as indicators of active engagement. Students were asked how they spent their time in a typical week during the Fall 2020 semester, including virtual (11 items) and in-person activities (12 items). Activities were identical except for one in-person option: “Participating in intercollegiate athletics” (SARA, 2020).

**Sense of belonging.** The survey included a 15-item matrix to measure sense of belonging. All items were comprised of “I” statements. First-year students indicated their level of agreement to each statement using a 4-point Likert scale (SARA, 2020): *Strongly Disagree* = 1, *Somewhat Disagree* = 2, *Somewhat Agree* = 3, *Strongly Agree* = 4. A composite score of 15 indicated the student strongly disagreed with all 15 “I” statements, while a score of 60 indicated the student endorsed *Strongly Agree* for all items. Below the 15-item matrix, the survey included one open-ended question asking students to list experiences they enjoyed this semester.

**Personal experiences with COVID-19.** To examine the role of COVID-19 during this time, the SARA survey team included questions specific to COVID-19 and its impact on students. The list included seven options, and students were asked to select all options applicable to themselves or someone they knew. Areas of direct COVID-19 impact included: working on the front lines, loss of work, receiving COVID-19 diagnosis, and loss of someone (SARA, 2020).

### ***Intermediate outcomes***

The College Adjustment Questionnaire (CAQ; O'Donnell et al., 2018), questions about students' plans for Spring 2021, and a flourishing scale were included to measure the intermediate outcomes of the proposed study (college adjustment, staying in school, and flourishing).

**College adjustment.** Within the Fall 2020 Student Engagement Survey, the SARA team included items from the CAQ (O'Donnell et al., 2018). The CAQ was selected due to its strong convergent validity with the Student Adaptation to College Questionnaire (SACQ), a 67-item college adjustment measure developed by Baker and Siryk in 1989 (O'Donnell et al., 2018). O'Donnell and colleagues (2018) identified a three-factor structure for the CAQ using confirmatory factor analysis. The three subscales of the CAQ include: Educational Adjustment, Relational Adjustment, and Psychological Adjustment (O'Donnell et al., 2018). Each subscale has *acceptable to good* internal reliability (O'Donnell et al., 2018). The 14-item CAQ requires first-year students to indicate their responses using a 5-point Likert scale: *Very Inaccurate* = 1, *Moderately Inaccurate* = 2, *Neither Inaccurate Nor Accurate* = 3, *Moderately Accurate* = 4, *Very Accurate* = 5. Items include statements such as, *I feel that I am doing well emotionally since coming to college*. The internal reliability of the Fall 2020 Student Experience Survey will be examined via Cronbach's alpha. A composite score will be created using these 14 items, reflecting the average of each item rating. Five items require reverse scoring (e.g., *I have had a hard time making friends since coming to college*).

**Flourishing.** Diener and Biswas-Diener developed a Flourishing Scale with eight total items. Diener et al. (2010) reported the psychometric statistics for the Flourishing Scale: Cronbach's alpha = .87, temporal stability = .71, and the scale range was 8 to 56. In developing

the Fall 2020 Student Engagement Survey, the SARA included six of the eight items for their survey and the Cronbach's alpha = .891, which indicated that the high level of internal consistency was maintained despite removing two items. An Exploratory Factor Analysis ran with the six items used still yielded one factor (See Appendix B). The Flourishing Scale items asked students to rate their level of agreement on a 4-point Likert scale from *Strongly Disagree* to *Strongly Agree*. The six items asked about students' social relationships, life outlook, self-view, and interests (SARA, 2020). For example, one item said, *I am competent and capable in the activities that are important to me* (SARA, 2020). All responses were coded as *Strongly Disagree* = 1, *Somewhat Disagree* = 2, *Somewhat Agree* = 3, and *Strongly Agree* = 4. A composite score will be created using these six items, reflecting the average of each item rating. No items require reverse scoring.

**Staying in school.** First-year students were asked two questions regarding their plans for Spring 2021 including enrollment and where they planned to live (SARA, 2020). If students intended to enroll for the Spring 2021 semester, they were asked to specify which campus they planned to attend (i.e., the same or different campus; SARA, 2020). Staying in school, treated as a dichotomous variable, includes coded responses of *yes* or *no*. If students did not plan to return for Spring 2021, they were asked to explain via an open-ended response (SARA, 2020).

## **Procedure**

The Fall 2020 Student Engagement Survey was distributed via e-mail to students on December 2<sup>nd</sup>, 2020. Reminder emails were sent to unfinished respondents on four occasions: December 4<sup>th</sup>, December 8<sup>th</sup>, December 11<sup>th</sup>, and December 14<sup>th</sup> (SARA, 2020). The Qualtrics survey closed on December 18<sup>th</sup>, 2020 (SARA, 2020). Data from the current study were drawn from the results after the survey closed. Students completed the survey on their own devices in a

location of their choice. The e-mails described the survey as “voluntary” and “confidential” (SARA, 2020). Additionally, the students were advised that the completion time would be about 10 minutes (SARA, 2020). Information was collected from enrolled students who submitted responses to the survey, however, only data from first-year students were included in the current study. As noted, previously, the complete survey contained 126 items, and students were thanked for their participation upon completion of the last item (SARA, 2020).

### **Data Analyses**

The hypotheses associated with Research Questions 1 and 2 were tested using hierarchical multiple regression. For hypotheses focused on the continuous outcome variables (i.e., college adjustment and flourishing), analyses conducted used hierarchical multiple regression to see how well each variable predicts college adjustment or flourishing for full-time first-year undergraduate students. Hierarchical multiple regression allows for the examination of the *additional* variance explained by each added predictor (Laerd, 2018), which is advantageous for the proposed study. For example, it will be useful to know if active engagement predicts intermediate outcomes over and above personal experiences with COVID-19 during the college transition. Hierarchical multiple regression requires a continuous dependent variable (DV), at least two independent variables, independent observations, and a linear relationship between the DV and each independent variable (IV) as well as the DV and IV overall (Laerd, 2018). Homoscedasticity of residuals, multicollinearity, outliers, and normality were tested (Laerd, 2018). Statistical significance ( $p < .05$ ) will also be reported. Standardized beta coefficients allowed for comparisons across variables to determine which predictors had the strongest effect.

The demographic variables of race/ethnicity and gender were included in the full model. Gender was coded as dichotomous based on the endorsed categories (i.e., woman = 1 and man =



0 were endorsed) and effect coding was used for race/ethnicity. Effect coding values assigned for Effect Code BIPOC/Hispanic were -1 = White, 0 = Asian, and 1 = BIPOC/Hispanic. Effect coding values assigned for Effect Code Asian were -1 = White, 0 = BIPOC/Hispanic, and 1 = Asian. To review missing data, variables were dummy coded (i.e., 0 and 1) prior to running an aggregate command to count how many observations had missing data for critical variables (i.e., predictors and outcomes). The Little MCAR's test was used to detect missing data patterns, or if the data were missing completely at random.

Binary logistic regression was selected to test the hypotheses associated with Research Question 3. This analysis was selected because the outcome variable (i.e., staying in school) is dichotomous. Additionally, these equations determine the likelihood of staying in school relative to withdrawing based on each of the predictor variables. Binary logistic regression equations require independence of observations, dichotomous outcome variables, and inclusion of all relevant predictors (Garson, 2016; Wright, 1995). However, given no respondents indicated that they did not plan to return in Spring 2021, the binary logistic equations to test the hypotheses for Research Question 3 were not conducted. The results reported in Chapter Three refer exclusively to Research Questions 1 and 2 (i.e., hypotheses related to flourishing and adjustment).

## CHAPTER THREE

### RESULTS

The research questions for the study were: (a) What is the relationship between transition factors (i.e., first-year students' active engagement, sense of belonging, and personal experience with COVID-19) and college adjustment? (b) What is the relationship between transition factors (i.e., first-year students' active engagement, sense of belonging, and personal experience with COVID-19) and flourishing? Each research question had multiple hypotheses. The hypotheses for both research questions were tested based on the data available. Therefore, results included in this chapter refer to the college adjustment and flourishing of students at the end of their first semester.

#### **Adjustment to College During the Pandemic**

The first three hypotheses focused on predictors of college adjustment during a pandemic. The sample size for the Hypothesis 1 analyses was 152 first-year undergraduate students at the largest campus (See Appendix C for demographic characteristics of the Hypothesis 1 sample). For each variable, means, standard deviations, ranges, tolerance, VIF, skewness and kurtosis appear in Table 2. In general, students spent the most time engaged in class related activities followed by extracurriculars and work, respectively. The mean sense of belonging score was 34.47 and the mean number of endorsed personal experiences with COVID-19 was below 2 (maximum possible = 6). The assumptions of normality, homoscedasticity of residuals, and multicollinearity were tested for each equation, and outliers were examined. The data were normal based on the predicted probability (P-P) plot, and the homoscedasticity of residuals assumption was met based on the residual plot (e.g., the data points have a similar spread or scatter; Statistics Solutions, 2021). Multicollinearity, or a high correlation between

predictors, was tested, and all VIF values were below 2.5, which is considered acceptable (Johnston et al., 2018). A review of box plots was used to detect outliers; however, no outliers were found. There were less than 22% missing data for the adjustment and flourishing samples, thus, those cases were simply removed for analysis. Follow up Little's MCAR testing was completed with each analysis sample. The Little's MCAR test of the adjustment sample indicated the data were missing at random  $\chi^2(17, N = 152) = 12.389, p = .776$ . The Little's MCAR test of the flourishing sample indicated the data were missing at random  $\chi^2(12, N = 152) = 10.343, p = .586$ .

Results of the regression analysis used to test the first three hypotheses appear in Table 3. Results indicated that sense of belonging had the greatest  $\Delta R^2$ , accounting for over a third of the variance in predicting first-year students' adjustment during the fall semester of the pandemic. Other variables demonstrated small relationships accounting for negligible amounts of variance. (See Appendix D for correlation table.) Interactions were tested for gender and race/ethnicity; however, they did not significantly contribute to the model. As such, Hypothesis 1b, which indicated that sense of belonging was a significant positive predictor of first-year students' college adjustment, was supported. Hypotheses 1a (active engagement is a positive predictor) and Hypothesis 1c (personal experiences with COVID-19 is a negative predictor), however, were not.

**Table 2.** Descriptive statistics for college adjustment, engagement, belonging, and personal COVID-19 experience

	Mean	Std. Dev.	Min.	Max.	Tolerance	VIF	Skewness	Kurtosis
Engagement								
Work	2.77	8.57	0.00	56.00	.94	1.06	3.91	17.20
Class Related	42.36	27.25	0.00	136.00	.85	1.17	1.32	1.79
Extracurricular	6.47	7.44	0.00	40.00	.86	1.16	1.76	3.95
Sense of Belonging	34.47	5.95	17.00	44.00	.90	1.11	-.17	-.67
Personal Experience(s) with COVID-19	1.74	1.51	0.00	6.00	.94	1.06	.58	-.53
College Adjustment	45.20	12.19	15.00	70.00	--	--	-.080	-.490

*Note.*  $N = 152$ . Engagement is reported in hours per week. Maximum possible score on Sense of Belonging, College Adjustment, and Personal Experiences with COVID-19 match maximum observed value reported by participants.

**Table 3.** Regression results for prediction of first-year college adjustment at the end of Fall 2020 semester

	<i>B</i>	<i>t</i>	<i>p</i>	$\Delta R^2$
<b>Predictors</b>				
Gender	.08	1.19	.24	< .01
Race/Ethnicity				
Asian/Asian American	.11	1.22	.22	< .01
BIPOC/Hispanic	-.08	-.93	.35	.04
Engagement				
Work	-.14	-2.35	.02	.05
Class Related	-.14	-2.26	.03	.01
Extracurricular	.12	1.90	.06	.05
Sense of Belonging	.61	9.78	< .001	.36
Personal Experience(s) with COVID-19	-.14	-2.30	.02	.02

*Note.*  $N = 152$ ; Total  $R^2 = 0.525$ .

### Flourishing During the Pandemic

The next three hypotheses focused on predictors of flourishing during a pandemic. The sample size for the Hypothesis 2 analyses was 152 first-year undergraduate students at the largest campus (See Appendix C for demographic characteristics of the Hypothesis 2 sample). For each variable, means, standard deviations, ranges, tolerance, VIF, skewness and kurtosis appear in

Table 4. Consistent with the Hypothesis 1 sample, students spent the most time engaged in class related activities followed by extracurriculars and work on a weekly basis. To test the normality assumption, the P-P plot was reviewed, and the data were normal. The residual plot met the homoscedasticity of residuals assumption. The VIF values were below 2.5, which are considered acceptable to meet the multicollinearity assumption (Johnston et al., 2018). A review of box plots was used to detect outliers, and one outlier was found. The outlier had a composite flourishing score of 7.0, which was considered a low value. The outlier was not excluded to maintain the integrity of the sample. By removing the outlier, the salience of the predictors would only apply to students who were flourishing a set amount (flourishing scales values of 10 and above). Following tests of assumptions, the second regression analysis was conducted.

Results of the regression analysis used to examine student flourishing appear in Table 5. Similar to college adjustment, results indicated that sense of belonging had the greatest  $\Delta R^2$ , accounting for more than 40% of the variance in first-year students flourishing. Remaining predictor variables showed small relationships (See Appendix D for correlation table for analyses). Interactions were tested for gender and race/ethnicity; however, they did not significantly contribute to the model. As such, Hypothesis 2b, which indicated that sense of belonging was a significant positive predictor of first-year students' college adjustment, was supported. Hypothesis 2a (active engagement as a positive predictor) and Hypothesis 2c (personal experiences with COVID-19 as a negative predictor) were not.

**Table 4.** Descriptive statistics for continuous predictors of flourishing

	Mean	Std. Dev.	Min.	Max.	Tol.	VIF	Skewness	Kurtosis
Engagement								
Work	2.78	8.57	0.00	56.00	.94	1.06	3.91	17.20
Class Related	42.90	27.19	0.00	136.00	.83	1.20	1.32	1.81
Extracurricular	6.34	7.40	0.00	40.00	.86	1.16	1.83	4.23
Sense of Belonging	34.63	5.94	17.00	44.00	.89	1.12	-.21	-.64
Personal Experience(s) with COVID-19	1.76	1.50	0.00	6.00	.94	1.06	.53	-.56
Flourishing	20.10	3.55	7.00	24.00	--	--	-.914	.755

*Note.*  $N = 152$ . Engagement is reported in hours per week. Maximum scores on Sense of Belonging scale, College Adjustment scale, and Personal Experiences with COVID-19 match maximum value reported by participants.

**Table 5.** Predictors of first-year flourishing at the end of Fall 2020 semester

Predictors	<i>B</i>	<i>t</i>	<i>p</i>	$\Delta R^2$
Gender	.10	1.60	.11	.00
Race/Ethnicity				
Asian/Asian American	.03	.27	.79	.00
BIPOC/Hispanic	.02	.25	.80	.01
Engagement				
Work	.05	.82	.41	.01
Class Related	.02	.26	.79	.00
Extracurricular	.10	1.53	.13	.05
Sense of Belonging	.69	10.90	< .001	.44
Personal Experience(s) with COVID-19	-.02	-.39	.70	.00

*Note.*  $N = 152$ ; Total  $R^2 = 0.502$ .

## CHAPTER FOUR

### DISCUSSION

The purpose of this study was to investigate the impact of active engagement, sense of belonging, and personal experience with COVID-19 (e.g., loss of work) on first-year students' college transition. Studies of previous significant disruptions (e.g., September 11<sup>th</sup>, 2001, H1N1 pandemic) during the college transition revealed changes in students' academics (Gold et al., 2001) and behavior (Van et al., 2010). Few of these previous studies, however, examined the impact of such disruptions on students' psychosocial outcomes such as adjustment or flourishing. The present study aimed to fill this gap. Informed by Astin's (1970) inputs-environment-outputs model, predictors and outcomes of interest were selected to learn more about the college transition during the COVID-19 pandemic (see Figure 3). Six hypotheses were tested to determine which predictors were most salient for first-year students' college adjustment and flourishing during the COVID-19 pandemic.

#### **College Adjustment**

*Engagement and Adjustment.* The first set of hypotheses focused on the relationships between active engagement, sense of belonging, personal experience(s) with COVID-19, and college adjustment. Specifically, the first hypothesis was that active engagement would be a positive significant predictor of college adjustment. Active engagement was defined by the amount of time spent in class, work, and extracurricular activities (e.g., involvement in a club, volunteering). Contrary to predictions, though, active engagement was *not* a salient predictor of first year students' college adjustment during the COVID-19 pandemic.

The lack of a relationship between engagement and adjustment in the current study runs counter to prior research examining college adjustment under "normal" circumstances (i.e., when

a historical disruptive event is not occurring). For example, Goudih et al. (2018) conducted a study of undergraduate students at International Islamic University of Malaysia (IIUM) and found a moderate correlation between academic engagement and psychological adjustment. Similarly, Conley et al. (2013) found a moderate positive relationship between intervention engagement and psychosocial adjustment, with student-related skills practice significantly predicting adaptation to college. Van Rooij et al. (2017) also reported a relationship between engagement and academic adjustment such that engaged learners were more adjusted than their disengaged peers.

There are several methodological differences that may explain the differences in observed findings between the current and previous studies. For example, the samples in previous studies included students from Malaysia and the Netherlands, respectively, while the current study took place in the United States. In addition, though Goudih et al. (2018) and the current study measured adjustment, each study used a different questionnaire to do so. Specifically, Goudih et al. (2018) selected items from the SACQ (Baker & Siryk, 1989), and the current study used the CAQ (O'Donnell et al., 2018). Interestingly, the CAQ has strong convergent validity with the SACQ as mentioned previously (O'Donnell et al., 2018); however, Goudih et al. (2018) did not include items from the SACQ Attachment (to the Institution) subscale. Several items from each of the remaining three subscales of the SACQ (Baker & Siryk, 1989) also were removed to decrease the length of the survey (Goudih et al., 2018). The decision regarding, and rationale for, which items to remove from the three other subscales was local and the justification was not clear. Nonetheless, the removal of the Attachment to the Institution items alone may have eliminated a critical adjustment indicator that was relevant to the engagement-adjustment relationship—particularly during the pandemic.



Conley et al. (2013) calculated adjustment using subscales from 16 measures rather than a single adjustment questionnaire, which differs from the current study. While they reported demographic information and correlations with measures separated by time point (i.e., pre-intervention and post-intervention), it is unclear how they determined the overall adjustment values used to complete their multiple regression analyses. Both Conley et al. (2013) and van Rooij et al.'s (2017) research studies also focused on a subcategory or different type of engagement than the current study. Next, van Rooij et al. (2017) measured behavioral, cognitive, and intellectual engagement rather than active engagement as in the current study. Similarly, van Rooij et al. (2017) examined academic adjustment (i.e., "coping with the academic demands of the university experience") rather than college adjustment overall. The construct of academic engagement does not include other areas of college adjustment such as personal-emotional adjustment and social adjustment (Baker & Siryk, 1989). The relationship between academic engagement and engagement may have been more similar to the current study, if additional aspects of each construct (i.e., adjustment and engagement) had been included.

The university settings for previous studies also differed – ranging from Malaysia to the Netherlands. In addition, at least one of the previous university settings was substantially smaller in size than the university where the current study was completed. For instance, the IIUM's total enrollment in 2020 was approximately 24,000 (University Fairs, 2022); whereas the campus where the current study took place had approximately 46,000 students enrolled in fall 2020. Given the frequency and nature of student-faculty interactions may change based on class size and larger universities tend to offer larger, lecture-style classes (CollegeData.com, 2022), the quality of student engagement, and in turn, its relationship with academic adjustment, may vary

based on university size and related resources. Therefore, the size of the university must be considered when comparing prior findings to the current study.

Beyond these methodological differences, and central to the primary purpose of the current study, was the context of a sustained, disruptive, historical event (the COVID-19 pandemic) that coincided with participants' transition to college. Van et al. (2010) examined the impact of another recent pandemic (the H1N1 flu) on the experiences of Australian college students. Specifically, they focused on students' perception of the H1N1 pandemic and potential changes in student behavior. Van et al. (2010) concluded that the Australian student experience during H1N1 was not very different from students' experience under normal times (i.e., student behavior and their college environment did not drastically change during the H1N1 pandemic).

Conversely, students in the current study had major daily disruptions resulting from COVID-19. For instance, while Van et al. (2010) reported that only 20.8% of their participants purchased hygiene products (e.g., face masks) during the H1N1 pandemic at an Australian university (Van et al., 2010), 100% of students were required to following masking and social distancing protocols during the COVID-19 pandemic at the institution where the current study took place. These restrictions and others were in place during engagement opportunities (excluding virtual events) throughout the fall semester during which the current data were collected. The effects of masking on students' active engagement during the COVID pandemic are not clear, though it is possible that attunement to emotions decreased (Gori et al., 2021; Goodwin, 2021), which could impact how often students engage with each other. Students' happenstance connections also likely were minimized dramatically as they were expected to attend class virtually from their dormitories, participate in engagement opportunities virtually, and limit time unmasked among others. As such, the opportunities for in-person engagement

(e.g., meeting people for lunch after classes) lessened or became absent. Students were not only asked, but required, to change their behavior above and beyond previous historical disruptions of the 21<sup>st</sup> century.

Thus, perhaps the most likely explanation for the lack of an engagement-adjustment relationship in the current study is that students' engagement was fundamentally changed during the current pandemic. Examples of such changes specific to first-year students included the shift to virtual new student orientation, pep rally, and other welcome week activities. The Fall 2020 semester prompted many student organizations to spend time meeting through a virtual platform (e.g., Zoom) rather than in person as well, and first-year students experienced virtual classes throughout their first semester. Students may have been apprehensive to commit to sustained levels of engagement (e.g., weekly event) given restrictions seemed to become more restrictive on a daily basis.

In addition, student organizations' leadership structures were unclear. Because the COVID-19 pandemic prompted abrupt changes in engagement mid-semester, student organization leaders did not have ample opportunity to transition their student leadership from Spring 2020 to Fall 2021, particularly when the transition involved a graduating senior. First-year students then arrived on campus seeking engagement at a time when student organizations were catching up from transition time lost, making it more difficult to find quality engagement opportunities. Potts (2021) affirmed this point by identifying the need to develop programs to fill the gap in student leadership roles caused in part by decreased engagement during the disruption.

The COVID-19 pandemic led to changes to typical engagement activities and processes, including socializing in "pods" and shifting events online. When prior studies focused on different areas of engagement and adjustment (e.g., Goudih et al., 2018, van Rooij et al., 2017),

they still demonstrated a relationship between these two variables. Though it is possible that the results in the current study differed from previous studies due to methodological differences, it is very possible that changes in the quality and nature of student engagement during the pandemic led to the lack of relationship between college adjustment and active engagement in the current study.

***Sense of Belonging and Adjustment.*** The second hypothesis was that sense of belonging would be a significant and meaningful predictor of first year students' adjustment to college during the pandemic. Sense of belonging was defined by students' perceptions of the level of support they received, the relationships they built on campus, and how well they fit in. As predicted, sense of belonging was a salient predictor of first year students' college adjustment during the COVID-19 pandemic. Regarding magnitude, sense of belonging accounted for a relatively large amount of variance (36%) in the model – much more so than the next largest predictor variable (extracurricular engagement, 5%).

The relationship between sense of belonging and adjustment in the current study aligns with prior research examining college adjustment under “normal” circumstances (i.e., when a historical disruptive event is not occurring). These findings are consistent across samples, institution types, and historical contexts (disrupted, typical). For example, during a non-disruption year, Ostrove and Long (2007) found that sense of belonging mediated the relationship between social class and college adjustment. Similarly, O'Donnell et al. (2018) attempted to identify “important contributors to evaluating college adjustment” (p. 120) and at least two domains emerged that were related to Strayhorn's (2018) conceptualization of sense of belonging: relational and psychological. Bowman et al. (2019) described sense of belonging as a “critical component” of college adjustment, including students' perception of their belonging

prior to the first day of the semester. Though Bowman et al. (2019) focused on identifying variables to predict sense of belonging rather than college adjustment, there are several methodological similarities between the current and previous studies that may explain the consistency in observed findings. For example, both student samples included first-semester students (rather than first-year students as in other studies). Additionally, the measures of sense of belonging in both studies included items focused on social connections, connection to the university, friendship satisfaction, and academic support.

Findings from the current study were consistent with those from previous studies as it appears that students were still able to establish sense of belonging during the pandemic. One potential explanation for this finding may be the leveraging and use of communication technology during the COVID-19 pandemic. The first-year students who participated in remote learning relied extensively on technology to attend class, complete assignments, and attend events. The technological connections first-year students built among their peers via Zoom and/or on social media as they engaged with university-managed accounts, for example, may have helped establish and maintain students' sense of belonging during the pandemic.

Another potential reason that sense of belonging was not disrupted by the pandemic may have been students' shared sense of hardships and resilience (Potts, 2021). Some students have reported a sense of pride in their ability to overcome obstacles beginning their senior year of high school and continuing throughout the summer leading up to their first year of college (Potts, 2021). Similarly, students participating in the current study may have experienced an increased affiliation and sense of belonging as they navigated uncertainty together due to the pandemic. In addition, resources and programming available to first-year students at the participating university may have promoted sense of belonging. For instance, access to food pantries,

counseling services, online wellness tools, and online student programming (e.g., virtual orientation) were offered to students.

At all campuses, student affairs professionals were tasked with finding creative ways to promote sense of belonging. For example, students were encouraged to come together for university-sponsored physically-distanced events as well as virtual opportunities to build social connections. Such efforts made by student activities professionals may have mitigated the possible negative impact of the COVID-19 pandemic on sense of belonging and provide insights to directions for future programming efforts to facilitate students' sense of belonging during the first-year transition.

***Personal COVID Experiences and Adjustment.*** The third hypothesis relative to college adjustment was that personal experiences with COVID-19 would have a small negative relationship with college adjustment. Personal experiences with COVID-19 included losing or knowing someone who lost work; working or knowing someone who worked the front lines; being diagnosed or knowing someone who was diagnosed with COVID-19; and knowing someone who passed away due to COVID-19. Despite the seemingly widespread impact of COVID-19 during the Fall 2020 semester, students' personal experiences with COVID-19 were not a significant predictor of first year students' college adjustment.

Although there currently are no other known studies of personal experiences with COVID-19 and adjustment, Yong and Suh (2022) found a relationship between COVID-19 *stress* and college adjustment. To measure COVID-related stress, Yong and Suh (2022) asked students if they worried about financial circumstances, being able to complete their degree, or the future in general. Conversely, items within the current study asked participants to simply endorse whether a COVID-related personal experience (e.g., X, Y) occurred or not. The stress-related

questions in the Yong and Suh (2022) appear more personal, salient, and impactful than the personal COVID experiences included in the student survey featured in the current study. As such, it is perhaps not surprising that Yong and Suh (2022) found a relationship between COVID-induced stress and college adjustment; whereas the current results did not find such a relationship between general COVID-related experiences and adjustment. Beyond these construct and measurement differences, there were other methodological differences that may have contributed to the findings including geographic location and cultural context as the Yong and Suh (2022) study occurred in Singapore while the current study occurred in the United States.

### **Flourishing**

*Active Engagement and Flourishing.* The second set of hypotheses focused on the relationships between active engagement, sense of belonging, personal experience(s) with COVID-19, and flourishing. Although the first of these hypotheses was that active engagement would be a positive significant predictor of flourishing during the COVID-19 pandemic, results were inconsistent with this prediction and prior research. For example, Harris (2013) postulated lower levels of flourishing and higher levels of floundering when student engagement was low or absent altogether. In a more recent study conducted during the pandemic, Tabuenca et al. (2021) found a link between one aspect of engagement, effective time management, and student success.

Interestingly, Tabuenca et al.'s study was conducted in Spain, where only 7% of universities shifted instruction online for the Fall 2020 semester (ICEF Monitor, 2021). Conversely, many students in the current study experienced strictly online learning for the Fall 2020 semester despite being on campus. Although a positive relationship between engagement and flourishing was not observed in the current study, the positive relationship between time

management and student success in Tabuenca et al.'s (2021) study may have occurred because schools were open more frequently than other nations (Zafra, 2021) and more students were in person throughout the fall semester (ICEF Monitor, 2021).

Furthermore, Keyes (2007) identified sense of accomplishment and/or personal growth as a key aspect of flourishing. Students who are actively engaged “plug in” to various opportunities outside of class to crystalize skills, or explore new interests outside their comfort zone, increasing their opportunity to flourish over time. During the Fall 2020 semester, however, such opportunities were severely limited or nonexistent due to the many restrictions that the participating university implemented in response to COVID, and the nature of students’ engagement was fundamentally changed. As with the previous hypothesis regarding engagement and adjustment, the relationship between engagement and flourishing appears to have been negated due to the disruptions of the pandemic on the quality and types of students’ engagement experiences.

***Sense of Belonging and Flourishing.*** The second hypothesis was that sense of belonging would be a positive significant predictor of flourishing. Consistent with previous research, sense of belonging was a salient predictor of first year students’ flourishing during the COVID-19 pandemic. One potential explanation for this relationship is the underlying impact of mental health on student flourishing (Keyes, 2007). Given sense of belonging has been shown to predict mental health outcomes for college students during the COVID-19 pandemic (Gopalan et al., 2022), it seems plausible that higher levels of sense of belonging could also lead to high levels of flourishing. Additionally, students who perceive a higher level of support from the university may be more likely to overcome obstacles and remain optimistic, which both contribute to flourishing (Diener & Biswas-Diener, 2009; Keyes, 2007).



The strength of the relationship between sense of belonging and flourishing in the current study was moderate to strong. As mentioned previously in the context of the adjustment-related hypotheses, the relationship between sense of belonging and flourishing was likely maintained during the pandemic because students continued to seek out social support, feelings of mattering, connectedness, and community (Strayhorn, 2018). Additionally, students' sense of belonging may have been strengthened by shared hardships and demonstrated resilience despite the disruption (Potts, 2021).

***Personal Experiences with COVID and Flourishing.*** The third and final hypothesis relative to flourishing was that personal experiences with COVID-19 would have a small negative relationship with flourishing. Similar to the aforementioned findings for adjustment, personal experience with COVID-19 was not a significant predictor of first year students' flourishing. The lack of a relationship runs counter to prior research examining college adjustment under "normal" circumstances (i.e., when a historical disruptive event is not occurring) as well as during a historical disruptive event (e.g., H1N1 pandemic). For example, Matsuishi et al. (2012) reported that exposure to environments with high infection rates negatively impacted well-being. Similarly, Volstad et al. (2020) found a relationship between overcoming challenges and flourishing. Both Volstad et al. (2020) and the current study focused on first-year students as they navigated the challenge of the college transition. Additionally, these two studies were similar in that they focused on personal growth rather than restricting the flourishing construct to academic growth (Volstad et al., 2020). Given these findings and the fact that COVID-19 pandemic was a challenge embedded in the college transition (e.g., changing orientation plans), it is somewhat surprising that the relationship between personal experiences with COVID-19 and flourishing was not significant in the current study.

There are, however, methodological differences between the current and previous studies that may explain the inconsistency in observed findings with prior studies. Matsuishi et al. (2012), for example, focused on the well-being of working professionals (hospital staff) rather than college students. Arguably, the difference in findings between the two studies could be due to the level of stress among participants in the hospital setting as well as the severity of infection encountered by the participants in Matsuishi et al. (2012). In the current study, the stress level and severity of diagnosis among participants were unknown.

One potentially significant contextual consideration regarding the current findings is that the study was conducted at a large university that provided substantial resources and supports to students to help mitigate the negative impact of the COVID-19 pandemic. This consideration is connected to flourishing more so than adjustment given the resources listed here targeted wellbeing directly: the university provided support via the student care and advocacy center, food pantries, and access to testing sites, all of which enabled students to continue learning. The institution also expanded their telehealth options, including mental health support, which may directly contribute to positive flourishing outcomes given the connection between mental health and wellbeing as previously mentioned. Access to resources may have decreased stressors that typically interfere with a student's ability to flourish. Thus, a potential explanation for the lack of a relationship in the current study is that the "intervention" in place (i.e., access to resources) mitigated the negative impact of COVID-19 on student well-being and therefore deflated the relationship between personal experiences with COVID-19 and flourishing in the current study. Also, items related to personal experiences with COVID-19 may not have been salient to students and/or sufficient or sensitive enough to reflect students' stress levels brought on by the COVID-19 pandemic.

## **Staying in School**

The third set of hypotheses focused on the relationship between active engagement, sense of belonging, and personal experiences with COVID-19 and staying in school. Results of the survey in the current study indicated that all respondents reported plans to enroll for the Spring 2021 semester. This may have been due to the resources offered at the institution to continue making academic progress on-campus as well as the extensive social distancing and quarantine protocol in place. Available testing sites and university health services also enabled students who experienced symptoms to seek support. For some students, the resources available on campus exceeded those available in their hometown, particularly for students living in rural areas. Nonetheless, the 1 year retention rate for the 2020 cohort at the participating university was 93.1% (Penn State Planning, Assessment, and Institutional Research, 2022b). As such, it is somewhat surprising that no respondent in the current study indicated they were leaving the university at the end of the fall semester. Given the low overall response rate for the survey, it is quite possible, and perhaps even likely, that students who did not plan to enroll in Spring 2021 simply were less motivated to share feedback and respond to the survey. Unfortunately, the lack of available data precluded testing of the proposed hypotheses regarding student retention.

## **Limitations**

The current study had several limitations that must be considered relative to the findings. First, the public, land-grant university where the study took place had sizable COVID-19 related resources on campus for students (i.e., resource sufficient), which limits generalizability to similarly-sized universities with similar levels of resources. Given the financial impact of COVID-19 pandemic, the list of such universities may be small. Second, the response rate for the current study was lower than other student surveys distributed by the university's assessment

office in the years prior to the pandemic. In addition to the survey content perhaps diminishing interest, timing may have played a role in that the survey was administered relatively close to final exams, which was the first final exams experienced by participants given they were in their first year. In addition to limiting generalizability, the relatively small sample size did not allow for running analyses separately by subgroups (e.g., based on individual race/ethnicities).

Another potential limitation may be that students who were most likely to respond were those who adjusted most easily despite the challenges of the pandemic. Similarly those who volunteered to participate may have been students who were more attentive, rule-bound, engaged, etc. Given no respondent indicated that they were leaving after the fall semester, the findings are limited to students who intended to continue their studies following their first semester of college. In addition, the university office that administered the survey hypothesized survey fatigue may have contributed to relatively high levels of students who did not complete the survey after opening it (22%).

One final noteworthy limitation relates to survey design. For example, the wording of the question about personal experiences with COVID-19 unintentionally prevented further exploration of the responses. Because the question was worded “I or someone...” it was not possible to differentiate between personal (“I”) or others’ (“Someone”) experiences. Similarly, another question asked students to indicate the time spent on class related activities, work, etc. For the “class related engagement” category, a few students indicated over 100 hours spent on class-related activities during a typical week in the semester. Though technically possible, it seems quite possible that they may have misunderstood the question or inflated their responses. Although the survey also included a question asking participants to indicate the total hours within a specific date range, at least some students still appeared to over-estimate the amount of

time spent on class-related activities in that question as well. As such, future studies should incorporate validity checks (e.g., prompt students who enter a number that is excessive to the point of being highly questionable) to further ensure obtained data are accurate.

### **Future Directions**

In addition to addressing the methodological limitations noted in the previous section, there are several important future research directions regarding the impact of the pandemic on students' long-term college experience and outcomes. Future research may examine student engagement, sense of belonging, flourishing, and retention during each of the post-pandemic college years for this cohort of students. For instance, future research may explore retention trends both individually (i.e., Which students who intended to enroll in Spring 2021 actually did? Were there trends based on academic college or major?) and collectively to determine the effectiveness of the resources in place to maintain and/or increase retention year-to-year and persistence through graduation. Given the drastic change in students' college experience, other outcomes of interest include social-emotional skills and mental health.

Future research should examine differences in any of these outcomes by race, gender, and/or socioeconomic status. In the current study, gender and race/ethnicity were included as predictors in the model. There were no significant differences in college adjustment based on sex, which is consistent with Aderi and colleagues (2013). Interactions were tested based on gender and race, and none were significant; however, the small sample sizes limited power and the degree to which interactions could be tested for members of certain groups. Less is known about differences in flourishing based on sex, though it was not detected in the present study.

In addition to future research examining longitudinal or demographic trends, qualitative research would be equally beneficial to learn more about students' experiences during the

pandemic. For instance, researchers could conduct individual interviews or small focus groups with students to better understand their experiences during the pandemic, including what they found helpful (or not) in terms of the university's response to the pandemic. Given half the variance was unaccounted for in the regression analyses, there likely are additional salient predictors of college adjustment and flourishing that were unintentionally omitted from the current project; qualitative and mixed methods approaches can help begin to identify these variables and understand their potential contributions.

Although the participants in the current study attended the university's largest campus, data were collected at the university's smaller campuses during the Fall 2020 semester as well. The campuses differ in population size, class size, and engagement opportunities. Additionally, each campus is nested in a different community within the state. Future efforts could expand upon the current study by examining data from the other campuses to determine if the findings replicate. If so, the current findings may prove relevant to smaller colleges and universities with fewer resources and/or different demographic and community factors than the participating campus. If the findings were unique to each campus, though, it would underscore the importance of conducting additional studies with different types of institutions, resources, and student populations to determine what other variables may be important for students' adjustment and flourishing in those settings.

Lastly, specific to future research on disruptions, another opportunity for future research would be to determine the role of proximity of a historical disruption on long-term adjustment and flourishing outcomes. Contextual factors to consider are personal connections to victims of the disruption, including death during a pandemic, war, or terrorist attack as well as the physical distance (e.g., within miles of an attack vs. across the country). Exposure to a disruption should

remain a predictor in future studies to bolster the research on disruptions and identify if different types of disruptive events differentially impact college adjustment, flourishing, and/or staying in school to further inform triage efforts among higher education professionals.

### **Implications**

If disruptions such as pandemics, wars, or terroristic attacks occur during college transitions in the future, the current study provides some potential insights regarding what universities should do to increase positive college adjustment and flourishing outcomes. Across Research Questions 1 and 2, the sense of belonging variable remained central and salient in predicting college adjustment and student flourishing during a historical disruption. Findings from previous studies also have identified sense of belonging as a priority in first-year student transition planning. As student affairs professionals plan for high school students' future college transitions, identifying what obstacles may stand in the way of developing a strong sense of belonging should be identified (e.g., social anxiety). Opportunities for staff to facilitate peer connections are encouraged, especially as COVID-19 restrictions on events decrease or disappear. When students build connections as their authentic selves, sense of belonging stretches beyond social integration (Kuh et al., 2006; Strayhorn, 2018).

In addition, the current findings can help inform how on-campus student organizations prioritize their recruitment and retention efforts among first-year students. For example, student organizations could use virtual tools to expand and promote a sense of belonging among students who were previously "out of reach." Potts (2021) suggested that hybrid programming may emerge as a permanent fixture to support students beyond the pandemic. Given the results of the current study regarding active engagement, it will be important for student organizations and

affairs professionals to consider how best to leverage technology to increase engagement in meaningful ways that are likely to further enhance students' collegiate experience.

### **Conclusion**

Students who began college in the Fall 2020 semester experienced a transition unlike any other due to the COVID-19 pandemic. Many had to attend orientations and onboarding events virtually and then endured a number of restrictions (masking, social distancing, etc.) throughout the fall semester and beyond. Given these significant changes, the primary aim of the present study was to investigate the impact of active engagement, sense of belonging, and personal experiences with COVID-19 on students' college transition. Consistent with previous research regarding more typical transition contexts, active engagement and sense of belonging were expected to positively predict college adjustment and flourishing. In addition, students' personal experiences with COVID-19 were expected to negatively predict the same outcomes. Hypotheses for active engagement and personal experiences with COVID-19 were not supported, however. The former finding raised questions about the impact of the pandemic on the quality of students' engagement experiences; while the latter raised questions about the extent and nature of many students' personal experiences with COVID. Nonetheless, sense of belonging did emerge as a significant predictor of college adjustment and flourishing despite the COVID-19 disruption. As such, results of the current study underscore the importance for student affairs professionals and student organizations to create meaningful opportunities that enhance first-year students' sense of belonging as they transition to college during typical and unprecedented times.



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## APPENDIX A

### Survey Information

**Table A1.** Active engagement survey questions

Item	Virtual Section	In-Person Section
<p><b>During <u>this current semester</u>, how many hours did you spend in a typical week (7 days) doing the following (virtually/remotely or in-person) between DATES?</b></p>		
Working (for pay) employed by Penn State		
Working (for pay) employed by someone other than Penn State		
Studying/doing homework or team projects outside of class		
Volunteering/participating in community service		
Participating in intercollegiate athletics*		
Being involved in student club- or organization-sponsored activities		
Participating in Penn State Campus Recreation activities (e.g., non-credit fitness classes on campus, ESports leagues, virtual escape rooms)		
Participating in other health and wellness activities organized by the University		
Class sessions		
<p><b>How many (<u>virtual/in-person</u>) class sessions do you skip in an <u>average week</u>?</b></p>		
None		
1-3		
4-6		
7-9		
10 or more		

*Note.* \* indicates the item was not included in the virtual/remote section.

**Table A2.** Sense of belonging survey questions

---

Please select your level of agreement for the following statements:

---

I feel that I belong at Penn State.

I feel a sense of safety from the coronavirus on my campus.\*

I feel that I am respected on my campus.

I feel that I am welcomed on my campus.

I feel a sense of pride as a Penn State student.

I have developed close friendships with other Penn State students.

I have developed strong connections with faculty.

I feel that I fit in on my campus.

I feel that there are others like me on my campus.

I feel academically engaged in my coursework.\*

I feel I'm learning what I need to in my courses.\*

I feel supported by the University in my academic studies.

I feel supported by the University in my mental health.

I feel supported by the University in my general well-being.

I feel safe in my current living situation.\*

---

*Note.* Respondents were asked to choose from the following options: Strongly disagree, somewhat disagree, somewhat agree, strongly agree. \* indicates the item was not included for the current project.

**Table A3.** Personal experience with COVID-19 survey questions

---

How have you been directly impacted by COVID-19? Please select all that apply.

---

I have not been directly impacted by COVID-19 beyond limiting interaction and travel.

I work on the front line of the pandemic response.

Someone I know works on the front line of the pandemic response.

I have lost work because of the pandemic.

Someone I know lost work because of the pandemic.

I or someone I know has been diagnosed with COVID-19.

Someone I know has passed away due to COVID-19.

---



**Table A4.** Items included on SARA Fall 2020 Student Engagement Survey from Flourishing Scale (Diener & Biswas-Diener, 2009)

---

Please select your level of agreement for the following statements:

---

I lead a purposeful and meaningful life.

My social relationships are supportive and rewarding.

I am engaged and interested in my daily activities.

I actively contribute to the happiness and well-being of others.

I am competent and capable in the activities that are important to me.

I am optimistic about the future.

---

*Note.* Respondents were asked to choose from the following options: Strongly disagree, somewhat disagree, somewhat agree, strongly agree. Two items from Diener & Biswas-Diener (2009) were not included. Internal consistency reported for included items in Appendix B.

**Table A5.** Staying in school survey questions

---

Do you plan to continue attending Penn State in Spring 2021?

---

Yes, I plan to continue my studies with my current campus.

Yes, but I plan to enroll with a different Penn State campus.

No

Don't know

---

*Note.* Questions were not included in final analyses.

**Table A6.** College Adjustment Questionnaire (CAQ; O'Donnell et al., 2018) items appearing on SARA Fall 2020 Student Engagement Survey

---

Please use the rating scale below to indicate how accurately each statement describes you at this point in time.

---

I am succeeding academically.

I don't have as much of a social life as I would like.

I feel that I feel that I am doing well emotionally since coming to college.

I am happy with my social life.

I am doing well in my classes.

I am happy with how things have been going in college.

I am happy with the grades I am earning in my classes.

I feel that I am emotionally falling apart in college.

I have a hard time making friends since coming to college.

I am as socially engaged as I would like to be.

I have felt the need to seek emotional counseling since coming to college.

I am meeting my academic goals.

I have performed poorly in my classes since starting college.

I am satisfied with my social relationships.

---

*Note.* Respondents were asked to choose from the following options: Very inaccurate, moderately inaccurate, neither inaccurate nor accurate, moderately accurate, very accurate.

## APPENDIX B

### Exploratory Factor Analysis

An exploratory factor analysis was completed given the flourishing scale used in the SARA survey did not include two items from the original Diener & Biswas-Diener (2009) Flourishing Scale. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's test of sphericity were used to test assumptions. The KMO value was .883, which indicated the sampling was adequate and in the meritorious range. Bartlett's test of sphericity was significant ( $\chi^2(15) = 481.330, p < .001$ ), meaning the variables are not orthogonal (i.e., the data are correlated). The principal axis factoring method used resulted in one extracted factor based on the elbow of the graph as well as the factor matrix (See Table B1 below), which confirmed that the flourishing scale used for the current project remains appropriate in measuring flourishing. The factor matrix yielded one factor despite two items being excluded from the original scale in the current study.

**Table B1.** Factor matrix results of exploratory factor analysis for flourishing composite

<b>Item</b>	<b>Factor 1 Loadings</b>
I lead a purposeful and meaningful life.	.84
My social relationships are supportive and rewarding.	.80
I am engaged and interested in my daily activities.	.76
I actively contribute to the happiness and well-being of others.	.70
I am competent and capable in the activities that are important to me.	.65
I am optimistic about the future.	.83

*Note.* One factor was extracted using Principal Axis Factoring.

## APPENDIX C

### Demographic Information

The demographics by analyses are included in Table C1 below. The initial sample included 194 full-time first-year students at the largest campus of a public land-grant research university. Nearly all participants were 18 or 19 years old. For both the Adjustment and Flourishing samples, 42 cases were excluded due to missing data; the remaining 152 cases differed slightly by sample. For example, the Flourishing sample had a higher percentage of women than the Adjustment sample. The Adjustment sample had a higher percentage of students who endorsed Asian or Asian American as their race/ethnicity compared to the Flourishing sample. Overall, however, all three samples had a similar distribution by age, gender, and race/ethnicity.

**Table C1.** Demographic characteristics by analyses

Characteristic	Initial Sample ( <i>N</i> = 194)	Adjustment Sample ( <i>n</i> = 152)	Flourishing Sample ( <i>n</i> = 152)
<b>Age (years)</b>			
18-19	96.4	97.4	97.4
20-21	2.6	2.0	2.0
27-30	.5	.7	.7
<b>Gender</b>			
Woman	61.9	61.8	62.5
Man	37.6	38.2	37.5
<b>Race/ethnicity</b>			
Asian or Asian American	17.0	18.4	17.8
Black or African American	7.7	7.9	7.2
Hawaiian or Pacific Islander	.5	*	*
Hispanic	7.2	7.2	7.9
Native American or Alaska Native	.5	.7	.7
Undisclosed	2.1	.7	.7
White or Caucasian	63.9	64.5	65.1

*Note.* Percentages reported within each cell. \* indicates no students who identify as Hawaiian or Pacific Islander were in the sample.

## APPENDIX D

### Correlation Table

**Table D1.** Correlations for college adjustment and flourishing analyses

	Adjustment	Gender	Asian	BIPOC/ Hispanic	Work Class	Class	Extra- curricular	Belonging	COVID- 19
Flourishing	--	.01	.00	-.05	-.07	.04	.23	.70	-.12
Gender	.05	--	.23	.14	-.08	-.19	-.17	-.12	-.07
Asian	.04	.24	--	.72	.04	-.07	.03	-.11	-.10
BIPOC/ Hispanic	-.11	.16	.72	--	.02	.12	-.01	-.16	.05
Work Class	-.23	-.09	.04	.02	--	-.13	-.08	-.15	.01
Class	-.10	-.18	-.05	.11	-.13	--	.26	.04	.08
Extra- curricular	.21	-.19	.02	-.01	-.09	.26	--	.21	.00
Sense of Belonging	.66	-.10	-.09	-.15	-.15	.04	.22	--	-.13
Personal Experiences with COVID-19	-.24	-.06	-.12	.03	.01	.06	.02	-.12	--

*Note.* Flourishing values are above the diagonal and Adjustment values are below the diagonal.

## VITA

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#### **Publications**

Walsh, S. E., Bertuccio, R. F., & Schwarz, G. L. (2020). Achievement testing for English learners: A need for more measures. *ASPP Insight*, 40(3), 2-4.