Autism-Related Support Services on Mental Health and University Connectedness

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Abstract

College is notoriously challenging, with many student concerns associated with adapting to the new expectations for lifestyle, workload, and socializing that come with transitioning to college and/or university (Gelbar et al., 2015). For college students with autism spectrum disorder (ASD), the impact of these changes can be far more challenging, as their needs can be different from their neurotypical peers. This study implemented an online survey to gather data on autistic students’ feelings of depression, anxiety, stress, university connectedness, experiences with university autism support programs, and basic demographics. Unfortunately, the results found from this study were contaminated by a large number of bot responses. As such, the results cannot provide fully accurate representations of current attitudes among autistic students, but do speak to a larger question of the growing issues associated with online studies. Results are discussed in light of these limitations and can nevertheless suggest promising areas for future inquiry. This research is significant for the field because the ideas explore current attitudes of an under-researched population and address shortcomings of institutional support services.
Acknowledgments

I would like to thank my professor, Dr. Jennifer Ma, for her useful advice and constant support in every situation that arose. Additionally, I would like to thank Scripps College for providing me with invaluable experiences and knowledge that I will treasure forever. Finally, I would like to thank my family and friends, whose encouragement and love kept me going through the most stressful days and the longest nights.
Autism-Related Support Services on Mental Health and University Connectedness

College can have a major effect on the mental health of students, as 27.9% of college students in the American College Health Association’s (ACHA, 2024) most recent assessment reported diagnoses of chronic depression. Feelings of connectedness to a university also can impact experiences of mental health. Farrell et al. (2018) studied college student connectedness on a midsized college campus, for example, and found that students who feel connected to their universities were likely to have better academic and social experiences, as well as overall wellbeing. Autistic college students report heightened discomfort and unhappiness with their college experiences, represented by higher rates of loneliness, depression, and anxiety compared to neurotypical peers (Petcu et al, 2021). This could be for multiple reasons, such as the high comorbidity between autism and mental health disorders (Mills et al., 2023), which makes added challenges of higher education more worrisome. Additionally, as described in both a popular press source (Mitchell, 2018) and academic sources (Gelbar et al., 2015; Petcu et al., 2021), many students with autism have expressed feelings of being ignored, with their needs being overlooked by the school and their identities being overlooked by their peers. Although the number of autistic students in higher education increased in the 21st century, both the participation rate and completion rate for college was drastically lower for autistic students than neurodivergent peers (Petcu et al., 2021). Additionally, while the mental health of all college students was impacted during the COVID-19 pandemic, the impact on autistic college students was reportedly far greater during the height of the pandemic compared to experiences before the outbreak (Noble et al., 2023), indicating negative changes in the autistic college student experience. This thesis examined the current (post-COVID-19) impact of university-based
autism support services on depression, anxiety, and stress, as well as feelings of university connectedness among autistic college students.

**Mental Health in College**

The Center for Disease Control and Prevention (CDC, 2023a) defines mental health as a broad category that encompasses the emotional, psychological, and social wellbeing of a person, which impacts the thoughts, feelings, and actions of everyone differently. Mental health is incredibly important, as it can impact how one handles stress, communicates with others, and lives daily life (World Health Organization (WHO), 2022). This construct is determined by a plethora of factors that can impact the feelings of the individual, like genetics, personal experiences, and the surrounding environment (WHO, 2022). Some of the main constructs for the identification and analysis of mental health experiences include feelings of stress, anxiety, and depression (Granlund et al., 2021). Anxiety and depression are among the most prevalent mental health problems among students in higher education, and the prevalence has increased in the past decade. Blanco et al. (2008) found that of over 2,000 college students interviewed, around 7% were diagnosed with a depressive disorder and around 12% were diagnosed with an anxiety disorder. However, a more recent national data report indicates that around 28% of students are diagnosed with a depressive disorder and 36% are diagnosed with an anxiety disorder (ACHA, 2024).

It is widely understood that mental health concerns are common among college students for many reasons, such as increased stress load or interpersonal problems (Pedrelli et al., 2014). In Pedrelli et al.’s (2014) commentary on mental health in college, they posited that the persistence of mental health problems among college students might in part be due to denial of symptoms or inadequate treatment. Many students may not be seeking help due to stigma around
mental health, lack of time, or understanding of symptomology, as these factors can act as barriers for students who are struggling (Gannon et al., 2024; Pedrelli et al., 2014). Gannon et al. (2024) studied whether perceptions of support for students and academic help-seeking related to mental health could be predicted by the students’ perceptions of their campus’ mental health climates. Using data from the 2020 to 2021 Healthy Minds Study about US undergraduate students, Gannon et al. (2024) found that on college campuses the climate surrounding mental health can have significant negative impacts on perceived academic support and mental health help-seeking, indicating that mental health challenges can interfere with academic success and feelings of university connectedness, negatively impacting college experiences. Because of the tremendous impact that mental health has on the academic and personal success of college students, there is a need for higher education institutions to prioritize well-being and offer related support resources to their students. Individuals with autism spectrum disorder experience heightened mental health risks compared to neurotypical peers, with higher reports of suicidal thoughts, anxiety, depression, and need for belonging (Pelton et al., 2023).

**Autism Spectrum Disorder**

Autism spectrum disorder (ASD) is defined by deficits in communication and social interaction, as well as restricted and repetitive patterns of behaviors, activities, and/or special interests (American Psychiatric Association (APA), 2013a). The deficits associated with ASD vary in the degree to which they impact daily functioning for an autistic person (APA, 2013a). It is also important to note that autism is highly comorbid with mental health disorders, such as anxiety and depression. As the field has continued to learn more about ASD, its definition has become increasingly broadened, as it now includes other disorders that had initially been classified as separate diagnoses (Faroy et al., 2016). Specifically, the Diagnostic and Statistical
Manual of Mental Disorders (APA, 2013b) eliminated separate diagnoses like Asperger’s Syndrome in its 5th addition to create a continuum that allows for greater generalizability to the population (Faroy et al., 2016). This means that the current definition encompasses people who are diagnosed as having the qualities for ASD on a spectrum, with everyone’s experiences and deficits looking different. Research on autism is far more limited among older adults, meaning that research surrounding aging and future outcomes is not as readily available as that of autistic children (Sonido et al., 2020).

In 2018, autism was prevalent in 1 of 44 children, but when last measured in 2020 the prevalence rate increased to 1 in 36 children (CDC, 2023c). Although reasons for the increase in autism diagnoses are contestable, this is in part due to the increasing awareness of ASD, which caused more people to be assessed (Hayes et al. 2022). Hayes et al. (2022) interviewed 21 clinicians and found that diagnosticians described feeling overwhelmed with caseloads and patients more recently, given such a high need for diagnostic assessment. Experiences with overwhelmed diagnosticians and service unavailability may cause some students to avoid diagnosis due to unavailable resources. A clinician interviewed by Hayes et al. (2022) described diagnosing autism as a socially situated activity, meaning that in order to accurately diagnose ASD one would need to see the client in a social situation, requiring additional resources that non-private clinicians often do not have. Because autism is associated with social challenges, individuals with ASD may benefit by finding means of social engagement better suited to their abilities and interests (Grove et al., 2018).

While ASD is associated with deficits in social skills, it is important to note that although levels of socialization vary from person to person, autistic individuals are still interested in social engagement, and are found to have similar levels of social motivation within friendships as non-
autistic students (Gurbuz et al., 2018). Wittig, an Advisory Board Chair for the AFSS (Aspies for Social Success), identified in an article for Autism Spectrum News that many autistic individuals report difficulties finding communities that they relate to, but that frequently these safe spaces are found through one’s specialized interests and/or talents (Wittig, 2021). This is supported by Winter-Messiers (2007), who found that autistic individuals who connected with others over a shared interest exhibited greater self-confidence and improved social skills than those who felt socially rejected due to their interest. Special interests vary greatly by individual, but some common examples are computers, music, and nature (Grove et al., 2018). This is consistent with research conducted by Bross et al. (2022), who found that specialized interests were not only beneficial to connecting with a community, but also with everyday mental health experiences.

**Mental Health and Autism**

Autistic individuals can be more impacted by poor mental health outcomes compared to their neurotypical peers due to the restrictive behaviors and deficits in socialization associated with the diagnosis (Pelton et al., 2023). White et al., (2011) found that autistic students who reported more symptoms of ASD also reported worse symptoms of depression and social anxiety compared to peers with fewer ASD symptoms. Additionally, it is common for autistic individuals to receive a comorbid diagnosis with one or more psychiatric disorders; Ghaziuddin & Zafar (2008) found that 21 of 28 autistic adults in their sample experienced symptoms of at least one other psychiatric disorder at the time of evaluation, although many experienced more than one. Of these, the most common comorbid disorders were ADHD, anxiety, and depression. Because depression and anxiety are common indicators of mental health, there will be a larger focus on these two variables.
Depression, in a clinical sense, is defined by the American Psychological Association (APA, 2018) as a consistently low mood and/or loss of interest in activities that were once enjoyed. The APA defines anxiety as an emotion characterized by somatic symptoms of tension in which an individual anticipates impending danger or misfortune (APA, 2018). These comorbid diagnoses contribute to overall impairments experienced by individuals with ASD, which can make treatment and intervention more difficult (Ghaziuddin & Zafar, 2008). Because of the heightened stressors for autistic individuals on a day-to-day basis, autistic adults have been found to exhibit reduced coping, low mood, and suicidal thoughts (Pelton et al., 2023). Due to these experiences and the heightened risk for comorbid psychiatric disorders among autistic individuals, it is very important to manage and improve mental health in this population.

**ASD Student Experiences**

While autistic enrollment in college has been increasing (Petcu et al., 2021), autistic students continue to face challenges unlike their neurotypical peers, as social-emotional behavioral expectations for adults in school are heightened and can interfere with classwork and ability to perform (Justice, 2021). For instance, many individuals with autism described feeling like an outsider, a burden, or uncared for; making socializing far more challenging (Pelton et al., 2023). In fact, previous studies suggest that social isolation may contribute to reduced quality of life and poor mental health in autistic adults (Pelton et al., 2020). There are many new and overwhelming social dynamics to learn in college for most students, which are amplified for autistic students, particularly when their peers and faculty lack general understanding about neurodivergence (Gelbar et al., 2015). Specifically, a lack of faculty understanding of autism and its characteristics can add challenges to the academic aspects of college, as positive social interactions and academic support can improve the completion rate for autistic college students.
Because of the overwhelming transition to higher education, autistic students reported the need for additional assistance (Gelbar et al., 2015). Due to the increase in autistic college student enrollment, schools have been working to implement support services targeted towards neurodivergent students beyond academic accommodations. For example, Gelbar et al. (2015) found that 56% of their sample of 35 autistic college students reported feeling lonely at school, indicating the importance of supporting autistic students by developing social supports and providing psychological counseling. There have been mixed opinions concerning types of support services in place for college students, but studies have suggested that options for support can improve the transition to college for autistic students (Meiring et al., 2016).

There are no clear data on how many autistic college students are diagnosed while enrolled in their university, although for adults who have not received a diagnosis, college can play a role in developing their self-understanding and in finding correct supports (Prince-Hughes, 2002). In some cases, diagnoses are more common in adulthood, as signs and behaviors from childhood can often be misunderstood, or high levels of intelligence can lead parents and teachers to assume their children are neurotypical (Prince-Hughes, 2002). With age comes new experiences and increased awareness of autism as a disorder, potentially leading individuals who have been questioning aspects of their identity to search for answers in the form of a diagnosis, sometimes after years of discouraging experiences and mental health issues (Prince-Hughes, 2002). Because autism is in part defined by a social deficit, and the diagnostic process for autism is socially situated (Hayes et al., 2022), new social worlds brought by college can add new layers of socialization, shedding light on behaviors and experiences that had not been as perceptible before. Because receiving a diagnosis often leads to more accessible support resources, having a diagnosis as a student with a disability can drastically alter one’s college experience (Petcu et al., 2021).
Petcu et al.’s (2021) data analysis of two first-year surveys from UCLA found that college retention and overall success was impacted by social interactions. In fact, at many institutions a diagnosis is necessary to receive accommodations, which can impact the graduation rate of autistic students who are not diagnosed or do not disclose their diagnosis (Petcu et al., 2021). This supports the importance of autism-specific disability services in college, as well as general student wellness support, to help improve college retention and graduation rates for autistic students (Petcu et al., 2021).

**Impact of COVID-19**

The impact of the COVID-19 restrictions on school programs was immense, and many college students experienced increased challenges with mental health (Copeland et al, 2021; Justice, 2021). The lack of control and predictability combined with daily challenges surrounding flexibility for individuals with autism made the restrictions even more stressful because everyone had very little control over the amount of information, guidelines, and rules that were put in place (Justice, 2021). An Australian study in 2021 suggested that among adults with autism (20 to 71 years old) the application of COVID-19 restrictions was associated with poorer well-being (Hedley et al., 2021). Experiences of social exclusion, anxiety, and feelings of depression were found to be more prevalent amongst autistic college students as a result of the pandemic (Pelton et al., 2023; Shakeshaft et al., 2023). With restrictions in place preventing autistic individuals from attending their usual interest groups or social classes, social communication deficits associated with ASD were not improved (Justice, 2021; Morris et al., 2023). Data collected longitudinally suggested that symptoms of anxiety dramatically increased, with an overall decrease in mental well-being after the start of the pandemic (Shakeshaft et al., 2023). Individuals with autism or other neurodevelopmental disabilities reported worsened mental
health in the form of maladaptive thoughts and behaviors, as well as worsened self-injurious behavior in comparison to feelings from before the surge of the pandemic (Sanders et al., 2022). If these negative academic experiences continue for long enough there is a potential that students with autism are more likely to drop out of school due to unmet needs such as social isolation and lack of guidance (Dijkhuis et al., 2020; White et al., 2011).

University Support Programs

Colleges and universities are generally expected to provide support services for their students to contribute to their academic success and increase chances of degree completion, although the type and utility of services vary between institution (Johnson et al., 2022; Julal, 2013). A study conducted by Johnson et al. (2022) found a positive association between student success and service utilization, indicating that students who participate in support services improve their college experience. A wide array of services can be offered to support students, such as professional counseling, academic support, and mental health resources like therapy (Johnson et al., 2022). These services are considered useful for individuals seeking support, as Julal (2013) found that students who experienced personal difficulties during the academic year were 34 times more likely to use one or more support services at their school. These services are generally offered to all students, regardless of ability, and can be useful for autistic students, although autism-specific support services exist to support students on the spectrum more directly.

University support programs/services tailored towards autistic students, although not found at every institution, can come in many different forms because there is never a one-size-fits-all approach to autism support. One common program designed for autistic students is a social skills group, which is used either to teach social skills or simply to enable interactions...
between individuals with similar disabilities (Justice, 2021). Another common program, peer mentoring, offers individualized social and/or academic support from fellow peers. These are programs that are more widely used among autistic college students at schools where they are offered, although student opinions of these programs vary greatly. Accardo et al. (2018) studied which support services autistic college students preferred by using a mixed methods approach over a two-year period among a sample of 23 autistic college students. They found that the most preferred support services were academic coaching, freshman summer transition programs, tutoring, writing center, and counseling. On the opposite end, only 26% of the participants claimed to use the specialized social skills groups, with one participant in the study having described these groups as “cheesy” and not helpful in ways students needed (Accardo et al., 2018). It is important to note that while certain programs work better for some autistic students, a variety of options are necessary to provide support for everyone. This is exemplified in the results of Accardo et al.’s study, where they found that a personalized approach can contribute significantly to each student’s individual success. It is important to note that there is not an official consensus about what indicates “success” among autistic individuals, but these outcomes are predominantly based on objective indicators, like independence and employment, as well as subjective indicators, like quality of life (Lounds Taylor, 2017).

As mentioned earlier, in order to receive accommodations, it is necessary to self-disclose one’s diagnosis to the school, which only 24% of students with disabilities do before enrollment (Newman et al., 2011; Petcu et al., 2021). Gelbar et al. (2015) found that while autistic college students can receive necessary academic accommodations, there is often little to no specific supports for other areas of life such as comorbid mental health disorders, social and emotional supports, and organizational skills outside of general support services for students. It is critical
for universities to offer emotional support for their autistic students through specialized counseling services (Gelbar et al., 2015) and to increase accessible social support communities that build connections among like-minded peers (Wittig, 2021).

**Impact of COVID-19**

Because COVID-19 restrictions forced college wellbeing programs to either be postponed or canceled, interventions that had been available to provide aid for mental health concerns and social learning were widely lost (Noble et al., 2023). Multiple studies show that programs focused on connecting students to their school, therapy support services, or general ASD support programs were either cancelled or moved online, making it harder for many to connect to them (Justice, 2021; Noble et al., 2023; Sanders et al., 2022; Spain et al., 2021). Additionally, students with autism have reported feeling less connected to their universities due to social limitations, as affinity groups and social programs became harder to maintain through the pandemic (Justice, 2021). As COVID-19 treatment has become more accessible in our country (CDC, 2023b), schools have been able to continue autism related support programs for their autistic students (Amirova et al., 2022).

**Autistic Student Communities**

Potentially due to the lack of participation in university-provided autism-relates support programs, autistic college students often find social support through shared interests in clubs (Wittig, 2021) as well as school programs designated to be a safe space for students to come together and socialize (Justice, 2022). These communities can also include identity groups and student alliances, which act as spaces for building connections and finding support amongst peers (Solís García et al., 2024). Not only can these groups be beneficial for community building internally between autistic students but they can also bring about increased general awareness of
ASD on college campuses and help to destigmatize diagnoses (Mitchell, 2018). In fact, social interactions impact college completion and overall academic success of autistic students (Petcu et al., 2021).

Many institutions fail to provide adequate community spaces for students with disabilities. For instance, Mitchell (2018) in an opinion piece in a student newspaper described the need for autistic role models and inclusive communities at the Claremont colleges (a consortium made up of five liberal arts colleges in Claremont, California: Claremont McKenna College, Harvey Mudd College, Pitzer College, Pomona College, and Scripps College; as well as two graduate universities: Claremont Graduate University and Keck Graduate Institute). There are few student spaces for autistic communities, let alone disabled communities as a whole. A student opinion piece noted the lack of awareness of autism prevalence on these campuses (Mitchell, 2018). The present lack of autism support options and general awareness lead to worsened feelings of mental health, raising pressing questions about how much of a priority these students are to their institutions (Mitchell, 2018, Solís García et al., 2024). We can see similar patterns at colleges and universities across the country, as many autistic and otherwise disabled students perceive a lack of community and inclusion on their campuses (Mitchell, 2016; Solís García et al., 2024). This is not representative of all institutions, but information about this situation can be helpful in exemplifying institutional availability of services for students.

**University Connectedness**

According to Maslow (1943), a sense of belonging is considered a fundamental human need, because if an individual’s safety and physiological needs are in order they will strive for close relationships. This sense of belonging is expressed by perceiving oneself as an important member of the community, sharing some characteristics with it (Charzyńska, 2019). This is
consistent with social identity theory (Tajfel & Turner, 1986), which suggests that people build their self-images from groups they identify with. This theory argues that one’s self esteem and sense of self can be heavily impacted by the groups they belong to, meaning that someone who does not feel connected to a community will experience associated negative impacts. Students who are connected with their university feel as though they belong, are appreciated by others, and engaged with community life, relating the human desire for belonging to experiences on college campuses. Social belonging and connectedness can impact a person’s experiences dramatically, whether at home, in the workplace, or at school. Relatedly, university connectedness was measured by Charzyńska (2019), who found that positive experiences of university connectedness helped lead students to identify their goals and values due to the influence of perceived similarities with others. Feelings of university connectedness are largely impacted by services available and interpersonal connections (Justice, 2021). Autistic students can have more negative experiences with university connectedness, as many individuals do not reveal their diagnosis to peers or professors, unless they require disability services (Cox et al., 2017).

**Current Gaps in the Literature**

Autistic children are widely researched in the field, but autistic adults are often overlooked in research. Many studies on autistic individuals are also focused on outcomes that have been deemed “successful” by the field instead of individual perceptions of success, which are deeply important for the experiences of the autistic individual themselves. The current study analyzed current lived experiences of autistic college students themselves, including what programs are still considered useful and how are they currently being perceived.
Study Overview

Using a correlational method, the study aimed to investigate the current impact of participation in support services and programs for autistic students offered by their colleges on feelings of mental health (as indicated by depression and anxiety scores). Additionally, it aimed to examine the current perceptions held by autistic college students of their university’s autism services. Using an online survey, the study assessed current feelings of depression, anxiety, stress, and university connectedness alongside the participation in and perception of university-based autism-related support programs. The current study was designed to investigate whether autistic college students who utilized autism support services available at their schools would also perceive their university’s support programs to be adequate. Additionally, the study hypothesized that autistic college students who reported not participating in autism-related support services and/or intervention groups on their campus would experience worsened feelings of mental health compared to those who participate in such services. It was also hypothesized that the college students who perceived their school’s autism support services to be inadequate would also report worsened mental health experiences. Additionally, the study anticipated that autistic students who reported feeling less connected to their university would also report experiencing worse mental health. It was expected as well that college students who perceived their school’s autism support services to be inadequate would also report feeling less connected to their university than students who perceived their school’s services to be better. Finally, it was hypothesized that those who perceived their school’s support services to be adequate would also have greater feelings of university connectedness, which might in turn improve their mental health (see Figure 1 for anticipated mediational pattern).
Method

Participants

Participants were adults with autism who were enrolled in an undergraduate program at an institution for higher education in the United States. While the population targeted were college students with autism throughout the U.S., participants were predominantly recruited through selected colleges and universities in Southern California via Facebook pages targeted towards students or Buy/Sell pages associated with the school, as well as through emails sent to related affinity groups. Participants were compensated with a $10 gift card upon completion of the survey.

Before beginning data collection, an a priori power analysis was conducted to assess the ideal sample size for the current study. According to Jacob Cohen’s (1992) power table, for a medium effect size the proposed study would have required 85 participants to get the desired power of 0.8 with an alpha of .05 for a correlational analysis. The survey received 108 responses, but upon closer inspection the majority of the data could not be trusted (to be explained in further detail later), so the total participants with reliable responses dropped to seven. Additionally, due to an error in programming, the first 11 participants, five of whom were deemed reliable, were
not prompted with demographic questions. Of the seven participants, at least four attend private liberal arts colleges within a larger southern California consortium. All participants are at least 18 years old and have autism. Due to the lack of data and some individuals choosing not to answer the demographic questions, there is not more information about the participant demographic characteristics.

Materials

Depression

Participants’ depression level was measured using an adapted version of the Beck Depression Inventory (Beck, 1961), which originally consisted of 21 sets of depression symptom statements (see Appendix A for full text). These statements express different intensities of depression symptoms that participants select based on their experience in the last two weeks. An example of an item presented in this scale is as follows:

1 - I am not particularly discouraged about the future.
2 - I feel discouraged about the future.
3 - I feel I have nothing to look forward to.
4 - I feel the future is hopeless and that things cannot improve.

One question related to suicidality was removed for this study in order to minimize potential risk to the mental wellbeing of participants. The test is scored on a corresponding 4-point Likert scale by summing responses on individual items, with higher scores signifying more extreme feelings of depression. This measure was deemed internally reliable by the APA (2011), which found that with alpha coefficients of .86 for psychiatric populations and .81 for non-psychiatric populations. This measure was determined to have high content validity and convergent validity, meaning that the items accurately speak to the construct and that it correlates highly with other self-rating scales (Richter et al., 1998). The measure also has strong face validity, as it appears to directly measure depressive symptoms in the participant.
Anxiety

Participants’ anxiety level was measured using the Beck Anxiety Inventory (Beck et al., 1988), which consists of 21 anxiety symptoms that correspond to feeling statements, asking participants to rate symptom severity experienced in the past month (see Appendix B for full text). Some of the symptoms include feeling nervous, wobbliness in legs, feeling faint, and difficulty breathing. The scale is scored on a 5-point Likert scale using the corresponding response options: *not at all*, *mildly but it didn’t bother me that much*, *moderately- it wasn’t pleasant at times*, and *severely- it bothered me a lot*. The scale is scored by summing across responses, with higher scores indicating more serious symptoms of anxiety. This inventory was deemed internally reliable with a Cronbach’s alpha of 0.92, and externally reliable with a test-retest reliability of 0.75 (Beck et al., 1988). Additionally, it was deemed to have strong discriminate validity and convergent validity, meaning that it measured what it intended to and related well to other similar tests (Beck et al., 1988). The measure also appears to have strong face validity, as it directly measures anxiety symptoms in the participant.

Stress

Feelings of stress amongst participants were measured using the Perceived Stress Scale (PSS-10; Cohen et al., 1983; see Appendix C for full text). The PSS-10 contains 10 statements that indicate the stress-related feelings of participants in the last month, with questions like: *How often have you felt nervous and stressed?* The response options vary from *never* to *very often* on a 4-point Likert scale, although to have further delineation an additional point was added to the scale for the current study. Four of the items are reverse scored, and the construct is scored by summing across responses, with higher scores indicating higher levels of stress. The PSS-10 has
strong internal reliability with a Cronbach’s alpha and test-retest reliability above 0.70, as well as structural and hypothesis validity, (Lee, 2012).

**University Connectedness**

Participants’ feelings of university connectedness were measured using Stallman & Shochet’s University Connectedness Scale (UCS, 2008; see Appendix D for full text). According to Charzyńska (2019), this measure includes two main themes: support and belonging, which make up the general university connectedness construct. The scale is made up of 18 items that ask participants to rate their experience with connectedness, such as: *I feel very different from most other students here*. The original version was adapted slightly to change terms that are less familiar in the US today, so as to better reflect current experiences. For example, instead of “university staff” the item read “faculty.” These items are rated based on the extent to which each of the statements applies to the participant’s current experience using a 7-point Likert scale (1 - not at all, 4 - some of the time, 7 - all the time). There are eight items that must be reverse scored before analysis. Scores are calculated by summing responses on relevant items, with higher results indicating more positive feelings of university connectedness. The measure was found to be highly reliable with an alpha of .85 (Charzyńska, 2019). The measure also appears to have strong face validity, as it directly measures feelings of university connectedness.

**University Support Programs**

**Type of support program.** To gauge what types of school provided autism-related support programs are most participated in, a multiple-choice qualitative list of eight of the most common autism related support programs was created (see Appendix E for full text). This list was developed from information found in Johnson et al. (2022) and Accardo et al. (2018). Participants were asked to select any type of program that they had participated in (in any
During their undergraduate program. The list included an option, \textit{N/A}, if they have not participated in such a program, and an \textit{other} category to add additional options. This measure was analyzed by summing the program selections to see which types of were most highly participated in. Any \textit{other} selections were grouped categorically for analysis. This measure appears to have high face validity because it directly measures the types of programs students have participated in.

**Participation in the university’s autism support programs.** To measure participation in autism-related support programs, participants were posed an open-response qualitative question that asked them to describe their participation in any autism-related support program, such as their frequency of program usage and specific experiences at their university. These qualitative data were compiled by sorting the responses into groups based on themes, such as perceived benefits of services and overall program awareness. This measure appears to have face validity because it is directly asking about the amount of participants’ experience with their school’s autism-related support programs.

**Perception of the university’s autism support programs.** The participants’ perceptions of autism-related support programs were measured in two ways. The first was with five self-made scale items assessing attitudes and emotions about university autism support programs, with statements like “My school does a good job helping me connect to my peers” (see Appendix F for full text). Participants were asked to rate their perception according to how much they relate to the statement on a 7-point Likert scale (1 - \textit{strongly disagree}, 7 - \textit{strongly agree}). A composite was determined by totaling scores for each response, with lower scores indicating a more negative perception and vice versa. The second way the construct was measured was through two open-ended questions. The first question asked the participants to describe their
overall perception of their school’s autism support services. The second question asked the participants to talk more specifically about their perceptions of each program that they had participated in individually (e.g., what was the efficacy of the program?). These responses were grouped categorically based on types of perceptions. These measures appear to have high face validity because participants are directly asked about the construct of interest, perception of their university’s autism support programs.

**Demographics**

A series of open-response demographic questions asked for the participant’s gender identity, name of the school they currently attend, and graduation year. This information was not for personal identification, but to compare school program usefulness by type of school and individual experiences more accurately.

**Procedure**

This study was conducted online via Qualtrics, a software system that helps researchers to create surveys and data reports. After providing informed consent, participants were asked to complete the measures of depression, anxiety, and stress, which were presented in a random order. After these scales were completed, participants completed an assessment on their feelings of university connectedness. Following this, participants were asked about their experiences and perceptions of participation in autism-related support services. Next, participants completed the open-ended questions surrounding their experiences participating in autism support programs at their schools and provide explanations of their perceptions of their school’s services. Finally, participants completed the demographic items. The survey ended with a debriefing page before participants were given a unique identifying 3-digit number and redirected to a separate compensation survey. In this second survey, participants were asked to provide the unique
identifier they had been given at the end of the study, followed by their name and email address for the Amazon gift card.

**Ethical Considerations**

The intention of the current study was to benefit college students with autism, as the findings may have been able to provide insights for autistic students seeking to mitigate the challenges in higher education. This could impact future choices in educational institutions, programs, and understanding of personal experiences, as well as aid in the discovery of what support systems in place for college students are most beneficial for students with autism. This is especially important because autistic adults are in an understudied vulnerable population according to the preexisting standards of the Office of Human Research Protections (OHRP). The population of autistic students, although vulnerable, was necessary to understand current attitudes surrounding autistic experiences in higher education. Precautions such as a consent and debriefing form, as well as removal of any potentially upsetting items were taken to protect these participants. This study did not anticipate posing a greater than minimal risk and was not expected to produce any direct benefits for participants.

Because of the anticipated population’s vulnerability, the study required more careful attention. Participants were presented with an informed consent form before beginning the study, detailing the expected risk of the questions, and clearly stating that there was no obligation to answer every question. They were also offered compensation of a $10 Amazon gift card for completing the study. Compensation was provided with the purpose of encouraging people to participate and in recognition of the level of work and mental energy needed for the survey, but in an amount considered not to exert undue influence. The survey concluded with a debriefing page to ensure that all participants knew why they were participating in the study and could be
pointed to external support resources, which included links to a search service for psychological counselors provided by the American Psychological Association, as well as autism-related resources and services in their area. In terms of privacy, data were anonymously collected through Qualtrics using the feature “anonymize responses.” While participants were asked to state what school they attend, the survey asked for no personally identifiable information. This information was not combined with other demographics to identify participants, nor were results reported in a way where one could identify intersectional characteristics. The Qualtrics account collecting data was password protected and the data were stored on a password protected computer as well as on the Qualtrics server.

The current study primarily included items that would not cause more discomfort than is experienced in daily life, so it would fit the classification of minimal risk and did not ask participants to provide overly sensitive information. The Beck Depression Inventory had an item about suicidal ideation, but as this is considered sensitive this question was removed from the survey, preventing the added risk. Additionally, participation in the survey was entirely optional, so participants were entitled to skip as many questions as they would like or stop at any point, as clearly stated in the consent form. Furthermore, there was no use of deception in this study. However, due to the anonymity of participants, the only way to support individuals who had reported severe depression or anxiety symptoms was to provide contact information for autism and mental health specific resources in the debriefing section. In all, the benefits of the proposed study outweighed its risks.

Results

Although the target sample size was 85 participants, 108 submissions were recorded through the Qualtrics data collection system within the first five days of being published.
Although each response was different and could appear to have been submitted by a real participant, upon closer inspection it became clear that many of the responses were likely false. Although the “prevent multiple submissions” option was activated in Qualtrics, multiple responses seemed to have been submitted by the same person, potentially through alternating browsers and the use of Artificial Intelligence (AI), which is able to generate large sums of responses at a time. There were distinct overlaps in the data across participants, such as unusual phraseology and patterns in data that were not related to true experiences of an autistic student, causing concern for the data’s reliability.

**Data Cleaning**

In order to separate real responses from fake ones, three main methods were used. The first was looking at the time the participant’s survey was submitted, as there were nine separate groups of responses that all came in at the exact same time, suggesting that a hacker may have programmed AI to generate and submit multiple falsified responses in a very short time frame. For example, eight responses all came in at 7:29 pm, followed by nine responses at 8:27 pm. Responses from the same time frame were flagged, allowing for larger groups of responses to be reviewed together in a quarantine. In this first step, 74 responses were placed in the quarantine. The next step was to look at the words themselves being used in open response questions. For one time period, a whole group of responses followed the same type of structural pattern with varying words and topics. Some were very visibly fake, as they would give random descriptions of services, not actually answering the question, while others would have identical language and irregular grammar errors that repeated across participants. For example, three respondents claimed to participate in “self-propaganda training,” which is not a real autism support service. If any participants did not answer the open response questions, or if it was unclear if the
responses were real based on only some issues being present, their data were placed in quarantine alongside the other questionable responses for the time. During this step, 15 additional responses were placed in quarantine. Finally, the compensation survey also showed irregularities, as 80 of the names that had been recorded were clearly different from the corresponding emails provided, evident by different genders, joke addresses, and visibly different names. Four responses were subsequently placed in quarantine based on this issue.

After identifying potential trolls in the earlier steps, the corresponding data were removed, as identified by submitted unique identifiers, during data cleaning. Although most of the falsified data included all of these problems, eight responses which had been moved to the quarantine for meeting certain requirements, but not all, were also separated as false, so as to err on the side of caution. In the end, 101 responses were deemed unreliable. Responses that did not have any of these problems were put in another list, with a total of seven altogether. This sample is not likely generalizable to the greater population of autistic college students due to its incredibly small size and the large number of fake responses collected. As such, qualitative observations to examine themes are applied alongside the initial proposed analyses.

**Participation in Autism-Related Support Programs**

As shown in Table 1, among the autism-related support programs respondents claimed to participate in from the fixed-format autism-related support list, one-on-one psychological services were reported to be most utilized. Behind this, tutoring was another more widely used support. A few survey respondents indicated participating in social support groups and peer mentoring, while nobody indicated participating in social skills groups, self-advocacy training, college transition programs, or faculty/professional staff mentoring. Three individuals indicated participating in a type of program not listed: one participant indicated participating in grief
counseling group, another who indicated the use of individual meetings with academic deans, and a third claimed to utilize ADHD drop-in hours.

**Table 1**

*Reported participation in autism-related support programs through one’s university or college. N=7*

<table>
<thead>
<tr>
<th>Type of program</th>
<th>One-on-one psychological services</th>
<th>Tutoring program</th>
<th>Peer mentoring</th>
<th>Social support group</th>
<th>Other</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

**Perception and Participation**

The data analysis plan for the first hypothesis involved conducting a 2 (independent) samples t-test to analyze whether college students who participated in autism support services at their school would also perceive their university’s support programs to be adequate. Again, the sample size was insufficient for the complicated analysis. Six of seven respondents reported having participated in one or more of the listed autism-related support programs. Responses to the perception scale indicated that participants held neutral perceptions of autism-related support programs at their school (*M* = 17.43, *SD* = 1.46). The low variance between the perceptions of participants indicates that these feelings were generally similar between them.

**Mental Health**

Although the sample was smaller than anticipated, the results from the seven participants whose data were deemed reliable were still analyzed. These participants indicated a mild level of depression (*M* = 39.00, *SD* = 2.98) as well as mild to moderate experiences of anxiety (*M* = 49.57, *SD* = 3.32). These participants also indicated more severe experiences of stress (*M* = 36.71, *SD* = 1.43). These feelings were generally similar across participants, as the smaller
variability between these constructs indicated more similarities between participants, although with a larger sample size these effects would likely be less significant.

**Participation and Mental Health**

The data analysis plan to analyze the second hypothesis involved conducting a multivariate analysis of variance (MANOVA) to analyze whether college students with autism who did not participate in autism-related support services and/or intervention groups on their campuses would experience worsened feelings of depression, anxiety, and stress compared to those who were involved in services. Because data from only seven participants were deemed likely to be real, this sample size was not sufficient for such a complicated analysis.

**Perception and Mental Health**

The third hypothesis stated that college students with autism who reported perceiving their school’s support services as more helpful would also report lower feelings of depression, anxiety, and stress than those who do not feel like their school’s services are adequate, was analyzed with three correlational analyses. Perception of autism support program did not significantly predict feelings of depression, anxiety, and stress, all $r$ (5)'s < |.27|, n.s.

**University Connectedness**

**Mental Health and University Connectedness**

Three correlational analyses were conducted to test the fourth hypothesis, which predicted that college students with autism who recorded feeling less connected to their university would also report worse experiences of mental health, as indicated by depression, anxiety, and stress, compared to students who reported feeling more connected to their school. Scores from the UCS indicated more positive feelings of university connectedness than were initially anticipated ($M = 86.00, SD = 6.19$). However, because these scores showed significant
variability, these feelings are not consistent across participants. The data analysis indicated that the less connected the student felt to their university, the stronger feelings of depression they reported, $r(5) = -.77, p = .042$. Additionally, there was a significant negative correlation between indications of anxiety and university connectedness, $r(5) = -.76, p = .048$. However, feelings of stress were not significantly related to university connectedness, $r(5) = .26, n.s.$

**Perception and University Connectedness**

A correlational analysis was conducted to test the fifth hypothesis, which considered whether college students with autism who perceived their school’s autism support services as inadequate would report less university connectedness than students who perceived better services. While the perceptions of autism-related support programs indicated neutral levels of perception, the results from the UCS indicated more positive feelings of university connectedness than were initially anticipated. However, the data analysis indicated that the university connectedness was not significantly related to the students’ overall perceptions of their school’s services, $r(5) = .12, n.s.$ Nevertheless, the variance in the standard deviation of the university connectedness results signifies a wide range of perceptions of experiences between participants.

**Mediational Analyses**

The Baron and Kenny method for mediation was going to be used to determine whether mediation occurred for the sixth hypothesis, which predicted that autistic college students who perceived their school’s support services as adequate would have greater feelings of university connectedness, which would in turn improve their mental health. This method requires the following three regressions to provide significant results: the perception of services predicting mental health, perception predicting university connectedness, and university connectedness
predicting mental health. Because perception did not significantly predict university 
connectedness or experiences of mental health, the Baron and Kenny method could not be used 
in the present study to answer this hypothesis because there was nothing to mediate.

**Qualitative Analysis**

A descriptive analysis of the open-response questions posed in the study was conducted. 
The first open response question asked participants to describe their experiences with 
participation in autism-related supports through their schools. Responses indicated that academic 
tutoring, meetings with academic deans, and psychological counseling were most participated in. 
These findings line up with the reported program participation, as one-on-one psychological 
services and tutoring were most highly participated in (see Table 1 for participation frequency). 
This was reinforced by other answers in which participants stated that their levels of participation 
in student-based affinity and support groups was more common than school-based skill building 
programs. Overall, participation was explained to be impacted by experience within the program 
itself, as participants described varied experiences based on specific therapists, programs, and 
groups. For example, one respondent who indicated participation in multiple affinity groups 
expressed a preference for the disability related groups over queer-focused affinity groups 
because they felt more comfortable in those spaces. Other responses indicated that autism-
specific support resources were less used, which is supported by the slightly lower frequency of 
participation in autism-specific support services like peer-mentoring and social support group 
(see Table 1 for participation frequency).

The second open-response question asked participants to describe their perceptions of 
their school’s autism-related support services. Notably, two participants indicated that they only 
experienced support through the school when they presented a diagnosis, which was needed in
order to get any accommodations. Receiving accommodations was reported to be a confusing process, as one participant described needing a professor to step in to help them through the process. Once having received them, accommodations were perceived to be most helpful to these two students, as their needs were better listened to and resourced, with accommodations such as specialized housing requests or academic support. While accommodations were reportedly beneficial to those with a diagnosis, at certain institutions professors are allowed to refuse accommodations, effectively causing one of the participants to report greater challenges in their academic work. Also, responses indicated that five participants were unaware of autism-specific programs at their school despite being diagnosed. A respondent reported feeling like the school portrayed their services as better than they were in practice, with the real experience being much less accessible than advertised. While going to deans for specific concerns improved some experiences, overall methods of support for social experiences and executive functioning are not perceived as available or useful. One respondent acknowledged that their autistic friends at the same institution are not remotely connected to support services because they are not able to do as much outreach to get the support they need, while they put a lot of extra effort into participating in the autistic community. Additionally, one participant openly stated the institutional need for expansion and increased accessibility of services for autistic students, as well as more weight on the importance of accommodations and accessibility needs. When asked to further describe their perceptions of the programs, two participants expressed generally more positive experiences with student-based programs such as affinity groups than university programs like peer mentoring. Again, this sample is not generalizable to the greater population of autistic college students due to the small number of real responses.
Discussion

The results amongst reliable participants were analyzed using mixed methods approaches. Overall, these exploratory findings suggested that both feelings of depression and anxiety were negatively impacted by poor feelings of university connectedness among these students. Additionally, the types of programs participants claimed to participate in were for more general mental wellness and academic support, potentially suggesting that the methods for supporting autism-specific needs, such as social skills groups and peer mentoring, are actually less beneficial to the needs of autistic students than general mental health support and academic counseling. This is supported by findings in Accardo et al.’s (2018) study, which identified that academic coaching and psychological counseling were highly preferred by autistic students, while specialized supports like peer mentoring and social skills groups were most frequently identified as programs that would not be used. Furthermore, although six of seven participants reported participating in one or more of the listed autism-related support programs, the open response descriptions of perceptions and overall service awareness indicate a lack of service accessibility and usefulness. The significance found in the correlational analyses between university connectedness and depression/anxiety cannot represent the larger population due to the small sample size, but could indicate a potential statistically significant result with a larger sample size. The lack of awareness of autism-specific support programs among five of seven participants, as well as the reported effort needed to engage in autistic community, indicated a lack of program availability and outreach from the school and overall insufficient institutional support for students diagnosed with autism and potentially other disabilities. Although these exploratory results are not generalizable to the broader population of autistic college students, they provide areas of inquiry that are promising and would benefit from further research. No
other significant results were found, which could have been due to the lack of real data and statistical power.

Although the results of this study may not be generalizable, there are valuable consequences that came indirectly from the likely unreliable influx of data. These unreliable responses raised questions about the trustworthiness of internet research, indicating the current necessity in the field to question the reliability of this method entirely with the rise of AI and other technological advances. While this may indicate a need to revert to in-person studies so researchers could have more reliable results, this would limit the scope of data collection that is possible with online research. For future online research it may be beneficial to include more checks for identification, such as a school/work email, if needing responses from a specific population like autistic adults. Additionally, similar problems of reliability could be prevented by not offering compensation and allowing the study to be open for a longer period of time, so students who want to share their experiences will respond to the survey because of their interest in participating in a study they recognize as relevant to them, rather than for payment.

**Limitations of the Current Study**

The current study had several drawbacks. Firstly, although the population of interest was autistic college students across the country, due to accessibility, the majority of participants were enrolled at the consortium of colleges that the researcher attends, which does not adequately represent all university experiences because of its small size and liberal arts educational focus. Secondly, some of the questions in the UCS are not as relevant today as they may have been when initially created. For example, the UCS had a statement about the library staff, although many students today use technology and may not have spoken to the librarian at the school. Out of date questions like this could have confused the participant and caused them to respond in a
way that did not accurately reflect their experiences of university connectedness. Finally, and most notably, with the tremendous influx of false responses it is possible that a response that was real may have been discounted as fake, or vice versa.

If this study were to be run again using online data collection, there would need to be some changes in the procedure and distribution. One way this method could be improved is by changing the requirements for compensation of a name and personal email, which would have occurred if there had been enough time to reopen the survey for the current study. By requesting the participants’ Venmo accounts to send their Amazon gift cards, the same person would be prevented from receiving money more than once, as a credit or debit card is required to open an account and a card can only be linked to one account. If they did not have a Venmo account, they could provide their school email address where the Amazon gift card would be sent (as opposed to their personal email), as institutional accounts are connected to a school and more directly verifiable, ensuring the participant’s status as a college student. Another way online data collection could be improved for this study is if it remained open for longer without offering compensation. Because the study did not end up taking participants very long, it could have been possible to publish it and wait for enough respondents to fill it out because of personal interest instead of for the gift card, which could prevent people from manipulating the system to get more money. This was not possible in the current iteration of the study due to time constraints. Additionally, recruiting through private and secure channels could prevent fake responses. Finally, using the Qualtrics feature “prevent ballot box stuffing,” a cookie would be placed on the participant’s browser which would prevent them from being able to take the survey again.
Scholarly Merit and Broader Implications

Accessible literature surrounding autistic adults is particularly slim (Accardo et al., 2018), with many researchers calling for more research on programs at colleges (and elsewhere) focused on individual services and general service usefulness. Furthermore, most research around autism does not actually concern the perceptions and experiences of the autistic individuals themselves. Instead, it is focused on societal standards for “normal,” which are not necessarily based on individual needs. The current study attempted to address these issues by gauging the first-hand experiences of autistic college students and to base the results on the perceptions of the students instead of ideas of “success” as determined by others.

One must be cautious before generalizing the findings of the current iteration of this study, because although similar results may possibly occur with a larger population, the current results cannot be a trusted representation. However, the originally proposed study, if conducted with safeguards to reduce the possibility of fake submissions, may have positive implications for autistic students looking into more information about school programs and autistic experiences, as well as school administrators looking for information on current student attitudes. If the intended study found significant results these topics may be discussed more widely, which could help increase inclusivity through spreading understanding of autistic experiences and helping provide useful resources and indicate what kinds of programs people might look for from their universities. Finally, the findings of this study speak directly and urgently to the security of conducting online research, which can in itself benefit future researchers, as this experience is becoming more common and is increasingly important to know how to avoid.
References


Solís García, P., Real Castelao, S., & Barreiro-Collazo, A. (2024). Trends and challenges in the
mental health of university students with disabilities: a systematic review. *Behavioral Sciences (Basel, Switzerland),* 14(2), 111. https://doi.org/10.3390/bs14020111


Appendix A

Beck Depression Inventory (Beck, 1961)

This questionnaire consists of 21 groups of statements. Please read each group carefully, then pick out the one statement in each group that best describes the way you have been feeling during the past two weeks, including today. Click the button beside the statement you have picked.

1) I do not feel sad.
   I feel sad.
   I am sad all the time and I can't snap out of it.
   I am so sad and unhappy that I can't stand it.

2) I am not particularly discouraged about the future.
   I feel discouraged about the future.
   I feel I have nothing to look forward to.
   I feel the future is hopeless and that things cannot improve.

3) I do not feel like a failure.
   I feel I have failed more than the average person.
   As I look back on my life, all I can see is a lot of failures.
   I feel I am a complete failure as a person.

4) I get as much satisfaction out of things as I used to.
   I don't enjoy things the way I used to.
   I don't get real satisfaction out of anything anymore.
   I am dissatisfied or bored with everything.

5) I don't feel particularly guilty
   I feel guilty a good part of the time.
   I feel quite guilty most of the time.
   I feel guilty all of the time.

6) I don’t feel I am being punished.
   I feel I may be punished.
   I expect to be punished.
   I feel I am being punished.

7) I don't feel disappointed in myself.
   I am disappointed in myself.
   I am disgusted with myself.
   I hate myself.

8) I don't feel I am any worse than anybody else.
   I am critical of myself for my weaknesses or mistakes.
I blame myself all the time for my faults.
I blame myself for everything bad that happens.

9) I don't have any thoughts of killing myself.
I have thoughts of killing myself, but I would not carry them out.
I would like to kill myself.
I would kill myself if I had the chance.

10) I don't cry any more than usual.
I cry more now than I used to.
I cry all the time now.
I used to be able to cry, but now I can't cry even though I want to.

11) I am no more irritated by things than I ever was.
I am slightly more irritated now than usual.
I am quite annoyed or irritated a good deal of the time
I feel irritated all the time

12) I have not lost interest in other people.
I am less interested in other people than I used to be.
I have lost most of my interest in other people.
I have lost all of my interest in other people.

13) I make decisions about as well as I ever could.
I put off making decisions more than I used to.
I have greater difficulty in making decisions more than I used to.
I can't make decisions at all anymore.

14) I don't feel that I look any worse than I used to.
I am worried that I am looking old or unattractive.
I feel there are permanent changes in my appearance that make me look unattractive.
I believe that I look ugly.

15) I can work about as well as before.
It takes an extra effort to get started at doing something.
I have to push myself very hard to do anything.
I can't do any work at all.

16) I can sleep as well as usual.
I don't sleep as well as I used to.
I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
I wake up several hours earlier than I used to and cannot get back to sleep.

17) I don't get more tired than usual.
I get tired more easily than I used to.
I get tired from doing almost anything.
I am too tired to do anything.

18) My appetite is no worse than usual.
   My appetite is not as good as it used to be.
   My appetite is much worse now.
   I have no appetite at all anymore.

19) I haven't lost much weight, if any, lately.
   I have lost more than five pounds.
   I have lost more than ten pounds.
   I have lost more than fifteen pounds.

20) I am no more worried about my health than usual.
   I am worried about physical problems like aches, pains, upset stomach, or constipation.
   I am very worried about physical problems and it's hard to think of much else.
   I am so worried about my physical problems that I cannot think of anything else.

21) I have not noticed any recent change in my interest in sex.
   I am less interested in sex than I used to be.
   I have almost no interest in sex.
   I have lost interest in sex completely.
Appendix B

Beck Anxiety Inventory (Beck et al., 1988)

Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by that symptom during the past month, including today, by circling the number in the corresponding space in the column next to each symptom.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Not At All</th>
<th>Mildly but it didn't bother me much</th>
<th>Moderately - it wasn't pleasant at times</th>
<th>Severely – it bothered me a lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numbness or tingling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feeling hot</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wobbliness in legs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unable to relax</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fear of worst happening</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dizzy or lightheaded</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart pounding/racing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unsteady</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terrified or afraid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nervous</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feeling of choking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hands trembling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shaky / unsteady</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fear of losing control</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulty in breathing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fear of dying</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scared</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indigestion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faint / lightheaded</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Face flushed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hot/cold sweats</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix C

Perceived Stress Scale (10-item, Cohen et al., 1983)

The questions in this scale ask about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way on a 5-point Likert Scale. (0 = Never, 3= Sometimes, 5= Very Often)

1. How often have you been upset because of something that happened unexpectedly?
2. How often have you felt that you were unable to control the important things in your life?
3. How often have you felt nervous and stressed?
4. How often have you felt confident about your ability to handle your personal problems?
5. How often have you felt that things were going your way?
6. How often have you found that you could not cope with all the things that you had to do?
7. How often have you been able to control irritations in your life?
8. How often have you felt that you were on top of things?
9. How often have you been angered because of things that happened that were outside of your control?
10. How often have you felt difficulties were piling up so high that you could not overcome them?
Appendix D

Adapted University Connectedness Scale (Stallman & Shochet, 2008)

The following scale is made up of 18 items that are rated based on the extent each of the following statements applies to your experience on a 7-point scale (1 - not at all, 4 - some of the time, 7 - all the time).

Not at all Some of the time All the time

1 2 3 4 5 6 7

1. Class sizes are so large that I feel like a number.
2. The library staff are willing to help me find materials/books.
3. I feel very different from most other students here.
4. Faculty have been warm and friendly.
5. I do not feel valued as a student on campus.
6. Faculty have not been available to discuss my academic concerns.
7. The university seems to value diversity.
8. Sometimes I don't feel as if I belong here.
9. Faculty have been available to help outside of class.
10. The university seems like a cold, uncaring place to me.
11. Faculty have been available to help me make course choices.
12. I wish I were in a different university.
13. I feel as if no one cares about me personally on this campus.
15. There are support services available if I need them.
16. Professors are available to discuss coursework with me when required.
17. Most professors I have had at this university are interested in me.
18. People here know I can do good work.
Appendix E

Self-made Autism Program List

The following list contains 8 types of programs/services most commonly offered for autistic college students. Please read through the list carefully, then select each type of program that you have participated in (in any capacity) during your undergraduate program.

1. Tutoring program
2. Social skills group
3. Self-advocacy training
4. Counseling (one-on-one psychological services)
5. Peer mentoring
6. College transition program
7. Faculty and professional staff mentoring program
8. Social support group
9. Other: _________
10. N/A
Appendix F

Self-made University Autism Program Perception Inventory

The following scale is made up of 5 items that are rated based on the extent each of the following statements apply to your experience at your university on a 7-point scale (1 - not at all, 7 - all the time).

1. My school does a good job helping me connect to my peers.
   
   1 2 3 4 5 6 7

2. I want to participate in the autism support services offered by my school.

   1 2 3 4 5 6 7

3. I feel like my school has adequate options for services/programs designed for autistic students.

   1 2 3 4 5 6 7

4. I feel that my needs are supported by my university.

   1 2 3 4 5 6 7

5. I enjoy participating in a program at my school that is designed to help me function as an autistic college student.

   1 2 3 4 5 6 7