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**Academic Accommodations and Support Services Desired by Students with Autism  
Spectrum Disorders During their Postsecondary Educational Careers**

by

Tamberlie Berndt

A Starred Paper Proposal

Submitted to the Graduate Faculty

of

St. Cloud State University

in Partial Fulfillment of the Requirements

for the Degree

Master of Science in Special Education

St. Cloud, Minnesota

May 2023

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## Chapter 1: Introduction

Students with Autism Spectrum Disorder struggle when transitioning from high school to a college or university. One-third of youth with autism spectrum disorder go to college within 8 years of exiting high school. After leaving high school 81% attend a 2-year college either solely or as a steppingstone to a 4-year college (Roux et al., 2015). One-third of college students with autism spectrum disorders (ASD) who received special education services during their high school career, do not view themselves as having a disability or special need during young adulthood. Only one in five or 17.7% of students with ASD attend a 2- year college and only an additional 9.2 % attend both a 2 and 4- year college, however 4.6% only attend a 4- year college, 7.4% attend a vocational or technical college and 61.1% of students with ASD never attend any type of college at all (Roux et al., 2015).

Young adults with ASD are less likely to enroll in a 2-year community college (27.66%) or a 4-year college (14.95%) than all other disability groups, except for intellectual disabilities (ID) or multiple disabilities (MD). Young adults with ASD had a higher proportion of majoring in a STEM related field (34.31%) than any other disability group (Wei et al., 2013). Students with ASD struggle to find schools and programs that will meet their accommodations and support service needs. Autism - Specific College Support Programs or ASPs are disproportionately located at 2- and 4-year colleges (Nachman et al., 2021). These programs are only at about 63 4-year institutions and are almost absent from 2-year colleges. About 1.1% of the nation's 1,003 2-year colleges host such a program. Autism – Specific College Support Programs (ASPs) were present in 29 different states. Half of the nation's ASPs are located in just 10 states. There are 20 additional programs located in the southeast. However, 21 states

including the entire New England region did not host any ASPs. Only between 1.3% and 3.1% of postsecondary institutions in any region even host ASPs. Unfortunately, 81% of autistic college students who attend 2-year colleges have access to only 11 ASPs across the entire country (Nachman et al., 2021).

### **Research Question**

- 1) What accommodations and support services are desired by students with autism spectrum disorders to achieve postsecondary education achievement?

### **Importance of the topic**

I am currently a special education teacher at the primary level, working with kindergarten through second grade students. As part of a special education team, we are always looking for ways to help our students be successful and we are reaching out to the students showing them ways that they can be more successful during their time with us in elementary school. At the same time, we are trying to instill the moral that they need to learn to self-advocate and not depend on others.

As more and more students with autism spectrum disorder attend postsecondary schools the need for more supports and supportive services are needed. Students will continue to struggle and not graduate if the support services are not there. When a student enrolls into a postsecondary school and they make it known that they are ASD, support services should be made known for them even if they are seeking them out on their own, they may not understand how to obtain the needed services. Therefore, if we can continue to show students with ASD how to obtain the support services they need, the rate of graduation and the employment rate for these students will continue to rise.

### **Autism Spectrum Disorder Criteria**

To meet diagnostic criteria for ASD according to DSM-5, a child must have persistent deficits in each of three areas of social communication and interaction, plus at least two of four types of restricted, repetitive behaviors (Center for Disease Control, 2022).

- A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history.
  - a. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.
  - b. Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.
  - c. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.
- B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history.

- a. Stereotyped or repetitive motor movements, use of objects, or speech.
- b. Insistence in sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior.
- c. Highly restricted, fixated interests that are abnormal in intensity or focus.
- d. Hyper- or hypo reactivity to sensory input or unusual interest in sensory aspects of the environment (CDC, 2022).

### **Historical Background**

In 1973, Congress enacted the first series of civil rights statues protecting individuals with disabilities: Section 504 of the Rehabilitation Act of 1973 (Dragoo & Cole, 2019). Section 504 was the last section of the Act and the only section concerned with the civil rights of people with disabilities. Section 504 guarantee of nondiscrimination stretches over, not just Preschool – 12<sup>th</sup> grade in public schools, but also postsecondary education, employment, and access to public facilities. The Americans with Disabilities Act of 1990 (ADA), as amended, has been described as “the most sweeping anti-discrimination measure since the Civil Rights Act of 1964.” Title II of the act, in particular, prohibits any “public entity,” such as a public school, from discriminating based on disability, while Title III similarly forbids discrimination by “public accommodations,” including nonparochial private schools (Dragoo & Cole, 2019). The ADA Amendments Act extends the ADA and Section 504 coverage to encompass more clearly all public, and some private, Preschool – 12<sup>th</sup> grade schools and nearly all postsecondary Institutions of Higher Education (IHE). Under both law, Section 504, and ADA, an “individual with a disability” includes “any person who (1) has a physical or mental impairment which substantially limits one or more major life activities, (2) has a record of such impairment, or (3) is regarded as



having such an impairment.” Also, unlike the definition used in IDEA, the definition found in Section 504 and the ADA is broadly functional, protecting individuals with any “impairment” affecting a bodily or intellectual function, such as seeing, hearing, walking, or thinking. As a result, an impairment qualifying as a “disability” under the IDEA will generally also be covered by Section 504 and the ADA, though not the reverse (Dragoo & Cole, 2019). IDEA does not extend to students with disabilities in college or other postsecondary education and training programs. However, Section 504 does, and the U.S. Department of Education has issued separate regulations specifically elaborating that provision’s application to preschool, elementary, and secondary education, as well as to postsecondary education. At the postsecondary level, Section 504 and the ADA require IHEs to provide broad nondiscrimination protection to students who have a disability or who are regarded as having a disability, but Section 504 and the ADA do not require IHEs to seek out students with disabilities to provide them with these protections, to evaluate the students who are suspected of having a disability, or to arrange proactively for accommodations. Students at the postsecondary level, must self-identify as having a disability, provide appropriate documentation, and make arrangements with the campus disability support services for any accommodations and support services that they may be entitled for (Dragoo & Cole, 2019). FAPE or Free Appropriate Public Education does not extend to students in colleges, universities, or any other postsecondary education or training programs. However, Section 504 and the ADA, have no such limit. They instead protect students of all ages from discrimination based on the disability, both during the admission process and while enrolled as a student (Dragoo & Cole, 2019).

## Definition of Terms

*Americans with Disabilities Act* – “Prohibits discrimination against people with disabilities in several areas, including employment, transportation, public accommodations, communications, and access to state and local government’ programs and services” (U.S. Department of Labor, n.d.).

*Autism Spectrum Disorder* – “Is a developmental disability caused by differences in the brain. Some people with ASD have a known difference, such as a genetic condition. Other causes are not yet known. Scientists believe there are multiple causes of ASD that act together to change the most common ways people develop” (CDC, 2022).

*IDEA* – “Is a law that makes available a free appropriate public education to eligible children with disabilities throughout the nation and ensures special education and related services to those children” (U.S. Department of Education, n.d.).

*Intellectual Disabilities* – “Is a condition characterized by significant limitations in both intellectual functioning and adaptive behavior that originates before the age of 22” (American Association on Intellectual and Developmental Disabilities, 2023).

*Multiple Disabilities* – “Multiple disabilities means concomitant impairments (such as intellectual disability-blindness or intellectual disability-orthopedic impairment), the combination of which causes such severe educational needs that they cannot be accommodated in special education programs solely for one of the impairments. Multiple disabilities do not include deaf blindness” (U.S. Department of Education, n.d.).

*Rehabilitation Act of 1973* – “The Rehabilitation Act of 1973 is the foundation of all the later disability-related legislation and was a milestone for individuals with disabilities across the

nation. Sometimes it is called “The Rehab Act.” This federal law prohibits discrimination on the basis of disability in federally funded programs and authorizes state vocational rehabilitation (VR) programs, client assistance programs, and independent living centers. Sections of this law are often referred to by their Title or Section number, e.g., Section 504 or Title I” (Pacer, 2023).

*Section 504* – “Section 504 of the Rehabilitation Act of 1973 is a national law that protects qualified individuals from discrimination based on their disability” (U.S. Department of Health and Human Services, 2006).

*STEM* – “STEM is an acronym for Science, Technology, Engineering and Math education. It is an interdisciplinary approach that helps students succeed in college and in their future careers. The focus of a STEM education is hands-on, problem-based learning” (Southern Illinois University, 2023).

## **Chapter 2 Summary**

I located 13 articles that were chosen for review in which they pertained to students with autism spectrum disorder and postsecondary support services. Table 1 located at the end of chapter 2 shows these articles in the order they appear in chapter 2.

## **Chapter 2: Review of Literature**

### **Introduction**

The purpose of this literature review is to find what accommodations and support services are desired by students with autism spectrum disorders during their postsecondary education careers. This chapter is organized in chronological order of the studies that were reviewed in previous chapter.

### **Review**

In the past 20 plus years the diagnostic specifications of autism spectrum disorders (ASD) have changed and have led to increasingly more children and adults being diagnosed. At the time of this article 1 out of every 166 children in the United States had ASD (VanBergeijk et al., 2008). This would translate to over 500,000 Americans having ASD. In 2002 it was estimated that between 284,000 and 486,000 individuals diagnosed were under the age of 20 years old (VanBergeijk et al., 2008). Many of the individuals with ASD are intellectually capable of moving on to a postsecondary educational career, they will require some accommodations and support services to help them be successful and independent during the postsecondary career. Approximately 70%-80% of these individuals diagnosed in childhood will continue to be demonstrated social impairment well into their adulthood (VanBergeijk et al., 2008). Currently colleges and universities are required to make academic modifications for students with disabilities. Although approximately 3% of the college student population self-identifies as having some sort of disability, it is suggested that faculty have limited understanding of ADA in postsecondary setting (VanBergeijk et al., 2008). Accommodations that can be used can vary depending on the needs of the student. Large assignments may be broken down, explicit

instructions may be given as to when a student should write a rough draft, and the final draft of a large writing assignment. Testing accommodations can be a use of a quiet testing room with minimal distractions or even extra time to complete test or assignment. However, only confirmed, registered students with a disability are entitled to accommodations and support services set by the law in each of their classes (VanBergeijk et al., 2008). Social functioning can also be a hindrance on a student working through their postsecondary career. Many students are often unprepared to address non-academic concerns. These concerns can include socializing, doing laundry, budgeting, and getting along with roommates. Although young children have the luxury of being taught social skills in school, the postsecondary student does not have the support of a social skills class to help them learn the adult life skills they begin learning during their postsecondary career (VanBergeijk et al., 2008).

The following case vignette shows how our student Mike was successful through his postsecondary career due to accommodations given to him by his professors and the support given from home and his college roommate. Although Mike was born over 30 years ago, he was diagnosed with autism at the age of 2 years old. When Mike school his I.Q. scores were in the normal range. However, there was a severe discrepancy between his verbal and performance abilities. Mike was exceptionally talented in non-verbal math skills. Throughout Mikes public school experience, he received minimal educational supports. Mike was talented, he was a competitive track runner and he exceled in math during high school. When Mike took the Scholastic Aptitude Test (SATs), he did exceptionally well on the math portion, however, he only did fair on the verbal portion (VanBergeijk et al., 2008). Mike decided to attend a midsize college in a small town which was close to his home. Mike joined the college track team and was

provided a roommate that was also on the track team. This roommate acted as Mike's life coach. Mike's roommate helped him navigate the social complexities of dorm life and taught him independent living skills. A key function that Mike's roommate provided him with was a list of rules on how to behave under certain circumstances. Mike loved music and he decided to join the college radio station. Mike was assigned a shift in the wee hours of the morning, during this time he would use his vast knowledge to provide the listeners with extremely detailed background information about different recordings. Mike's knowledge earned him a reputation and a following of devoted listeners (VanBergeijk et al., 2008). Mike's active participation in the college radio and other clubs contributed to his sense of well being and social success. Mike had a tutor to help with research, organization and writing papers in the fast paced classes. Mike was able to use accommodations such as a distraction free environment, extra time on test and assignments. A final factor that contributed to Mike's success was the continuation with his therapist from home. Mike graduated college, but had difficulty finding employment, he returned to college to earn his masters degree in computer science. He is now currently employed with a large organization involving data management. Mike lives independently in his own apartment (VanBergeijk et al., 2008).

In the vignette Mike was able to attend a postsecondary school of his liking and be successful during his career due to accommodations and supports provided to him by the college and his family. Many students like Mike have aspirations to attend postsecondary school. Students with ASD can fulfill these dreams and aspirations and become independent contributing members of society with the proper supports, just as Mike was able to.

Little research has examined the popular belief that individuals with autism spectrum disorders (ASD) are more likely than the general population to gravitate toward science, technology, engineering, and mathematics (STEM) fields. This study analyzed data from the National Longitudinal Transition Study-2 (NLTS-2), a nationally representative sample of students with ASD in special education (Wei et al., 2013). The NLTS-2 is the largest and richest dataset available to study transition experiences from high school to postsecondary education and postsecondary outcomes of students with disabilities (Wei et al., 2013). NLTS-2 was conducted by SRI International for the US Department of Education with data collected from parents and/or youth in 5 waves, 2 years apart, from 2001 to 2009. The initial sample included more than 11,000 high school students receiving special education, ages 13 through 16 on December 1, 2000. About 1,100 of them received special education services in the autism category by IDEA (Wei et al., 2013).

The NLTS-2 includes data about students with ASD as well as students in other special education disability categories from multiple sources on a wide range of topics using parent telephone interviews and mail surveys; school, teacher, and school program surveys; transcript data; and in-person student assessments and interviews (Wei et al., 2013). This study used postsecondary data from wave 5 parent and young adult telephone interviews and mail surveys, collected in 2009. The information collected at wave 5 was reported by the young adults with ASD through either a telephone interview or a self-administered mail survey. The parents did provide the information when the youth were not able to respond to an interview or complete a questionnaire. Data was collected on a total of 660 young adults with ASD in wave 5 (Wei et al., 2013).

Table 1 below shows that young adults with ASD are less likely to enroll in a 2-year or 4-year college than all other disability groups except intellectual Disabilities (ID) or multiple disabilities (MD) (Wei et al., 2013).

**Table 1**

*Prevalence of postsecondary enrollment among young adults with ASD versus peers with other types of disability*

<b>Disability</b>	<b>2-year Community College</b>	<b>4-year University</b>	<b>2-year or 4-year</b>	<b>Unweighted N</b>	<b>Weighted N</b>
<b>ASD</b>	27.66	14.95	31.95	630	13,803
<b>LD</b>	48.54***	21.30	53.09***	420	1,275,843
<b>SLI</b>	44.80***	31.54***	57.97***	460	82,317
<b>ID</b>	18.75*	6.29***	19.63**	470	244,468
<b>ED</b>	36.65	10.21	39.66	400	234,391
<b>HI</b>	50.39***	34.04***	64.13***	490	26,808
<b>VI</b>	49.27***	38.34***	63.81***	420	9,655
<b>OI</b>	48.62***	24.76**	53.34***	550	23,350
<b>OHI</b>	51.44***	19.55	55.88***	590	93,686
<b>TBI</b>	41.57*	18.24	47.25*	210	5,855
<b>MD</b>	18.61*	6.20***	20.75**	510	36,510

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

*Note.* Prevalence of postsecondary enrollment among young adults with ASD versus peers with other types of disability. From Science, Technology, Engineering, and Mathematics (STEM) Participation Among College Students with an Autism Spectrum Disorder (p.1542), by X. Wei et al., 2013, retrieved from <https://doi-org.scsuproxy.mnpals.net/10.1007/s10803-012-1700-z>

One of the hallmarks for autism is routine and consistency; changes in routine and exposure to new and larger social dynamics can derail a person with ASD (Wei et al., 2013). This may be particularly evident at the postsecondary level. Young adults with higher levels of mental functioning skills had higher odds of attending colleges, which may suggest that young adults with ASD require certain life skills early on so that they are better prepared to deal with challenging life situations, such as transitioning from high school to college (Wei et al., 2013).



This study had several limitations. First, ASD diagnosis was based on district reports of students receiving special education services under the autism category. Consequently, students with ASD who were not qualified for special education services were not included in this study, which limited the ability to generalize finding to the total population of young adults with ASD. Second, the analyses were correlational and do not all casual inferences. Third, the postsecondary enrollment and major data were collected by using parent or young adult surveys instead of college registration records (Wei et al., 2013).

The presence of a disability, such as autism spectrum disorder (ASD), has been associated with poor postsecondary outcomes. According to findings from the National Longitudinal Transition Study-2 (NLTLS-2), college enrollment for individuals with ASD is among the third lowest of all 11 disability categories, making it difficult for individuals to gain employment. It is estimated that only 37% of young adults with ASD are employed, most work part-time and few receive benefits (Fleury et al., 2014).

Research indicates that for those with ASD, academic performance not only plays a role in postsecondary education outcomes, but also in employment opportunities, wages earned, and hours worked (Fleury et al., 2014). Although most high school students with ASD attend regular public schools (84%), only one third of their courses are taken in general education classrooms, and only 36% of those courses are academic courses. The number of adolescents with ASD who receive the majority of their academic instruction in general education classrooms and take standard state assessments has increased over recent years (Fleury et al., 2014).

Though the diagnostic criteria for ASD does not imply academic difficulties, impairments in the social communications domain, as well as engagement in restricted, repetitive, and

stereotypic behaviors may contribute to the challenges around academic performance, and may be predictive of future academic achievement (Fleury et al., 2014). In addition, students with ASD may have difficulty disengaging from repetitive or stereotypic behaviors, which can interfere with school activities (Fleury et al., 2014). More specifically, social communication impairment is a significant predictor of reading comprehension. A recent study indicated these deficits limit reading comprehension above and beyond the influence of word recognition and oral language deficits. Research indicates individuals with ASD may process auditory or linguistic information at a slower rate than their peers (Fleury et al., 2014).

The data on dismally poor postsecondary outcomes for individuals with ASD highlight the urgent need to reevaluate the quality and quantity of academic preparation individuals with ASD receive in schools (Fleury et al., 2014). Although knowledge about how to effectively instruct individuals with ASD has grown over recent years, much more work needs to be done, particularly around adolescence and the transition to adulthood. Schools are experiencing increasing numbers of individuals with ASD who are accessing the general education curriculum and subsequently entering college or pursuing jobs (Fleury et al., 2014).

The prevalence rate of ASD is currently estimated to be 1 in 68, which is an increase from 1 in 88 just 2 years earlier. The number of students with ASD taught in inclusive classrooms is increasing. Teachers have reported students with ASD at the secondary level are less likely than their peers to respond aloud to questions, make in-class presentations, or work collaboratively with their peers (Able et al., 2015).

Six focus groups and one interview were held over a 1-year period in one school district in a southeastern state. The school district served approximately 7,500 students and employed

slightly more than 600 educators and support staff. The district's Exceptional Children's Coordinator (ECC) recommended specific schools based on their enrollment of students with ASD (Able et al., 2015). General and special education teachers who had experience with students with ASD were invited to participate in the focus groups via their school principal and the ECC. The 34 teachers came from 6 different schools, 2 at each level of elementary, middle, and high school. Participants across the school levels included: 10 elementary teachers in which 1 was a special education teacher; 12 middle school teachers, 2 were special education teachers; and 12 high school teachers, 4 were special education teachers and 1 was a student teacher (Able et al., 2015). The participants included 31 females and 3 males; 30 were European Americans, 3 were African American, and 1 participant did not disclose their ethnicity. Teacher participants' ages included the following: 9 were less than 30 years old, 16 were 31 to 50 years old, and 8 were 50 and older. Their years of experience included 1 at 1 year, 15 at 5-10 years, and 18 at 10 or more years. Seventeen of the participants had their bachelor's degree and the remaining 16 had a master's degree. The focus groups were held at the schools immediately after the school day had ended. One teacher at the high school level was unable to attend the focus group and requested to be interviewed by the research team (Able et al., 2015).

All the focus groups were audio taped and transcribed verbatim. A member of the research team listened to all the audio tapes and reviewed each transcript to check for accuracy. All data were coded by two members of the research team. Coders compared their categorizations of the data to serve as an inter-rater reliability index. The average inter-rater reliability across the six focus groups and one interview was 87%. If there was a disagreement in

the coding, the coders discussed those disagreements to ensure a consensus coding process (Able et al., 2015).

The results of the focus groups the teachers described the student and contextual characteristics of the school environment to include peer perceptions and needs, as well as teachers' needs interfering with the students' full inclusion. Below are the issues highlighted by teachers during the focus groups, to include salient characteristics of their students with ASD, social support needs, and recommendations for changes in teacher preparation (Able et al., 2015). Teachers across all grade levels noted several key characteristics of their students with ASD interfering with their full inclusion in the school setting. Teachers mentioned social support needs in the following areas: Social relationships, social academics, self-advocacy, transitioning, and peer-related needs (Able et al., 2015).

### **Social relationships**

Across all age levels, students were described as being socially isolated. Students in the elementary grades were noted as often being on the playground alone with very few, if any, skills to engage peers or join in peer play (Able et al., 2015). Students at the middle and high school levels were described as being disinterested in peers because they operated in a fantasy world or seemed to prefer the company of adults for social interactions (Able et al., 2015). Students with ASD were also described as not understanding social rules, which often contributed to their social isolation. Teachers felt strongly that their students needed to be taught to approach peers in socially appropriate ways and to engage in small talk (Able et al., 2015). Aberrant behaviors often resulted in students with ASD being bullied. As a middle school teacher emphasized, "They make themselves targets for bullying because they do not know how to adapt to new

situations.” High school teachers recalled a student with ASD who ran for a student government position being made fun of and discredited as a viable candidate by his peers. Teachers often felt overwhelmed and helpless in knowing how to negotiate the social support needed of their students in the inclusive classrooms (Able et al., 2015).

### **Social academic needs**

Because students with ASD often display a rule-bound nature, teachers stressed how their students had no tolerance for peers who did not take school work as seriously as they did. Secondary teachers recalled incidents when students with ASD called their peers’ names such as idiot, moron, and stupid when the peers did not understand academic information as quickly as the student with ASD (Able et al., 2015).

### **Self-advocacy**

Teachers expressed concerns about the future of students with ASD who seemed to lack self-advocacy skills. As a middle school teacher described, “He needs to be able to say ‘these are my strengths and this is what I need help with.’” (Able et al., 2015)

### **Transition**

As students enter middle school, their rule bound nature interferes with the ambiguity of the adolescent social culture. The context of the changing and different school environments was highlighted by teachers as they described their dilemmas in meeting the needs of the other students in their classrooms. Characteristics of students with ASD were not the only challenge; teachers also noticed issues related to peers as a contributing factor in the successful inclusion of students with ASD (Able et al., 2015).

## **Peer related Needs**

Teachers noted how peers need to be informed about ASD to be more understanding and accepting of students with ASD. Teachers were overwhelmed with conflicting demands of meeting the needs of students with ASD in their classrooms, in addition to meeting the academic and social needs of their “typical” students (Able et al., 2015). Teachers described how elementary aged peers were more understanding of the student with ASD, but with limits. At the middle and high school levels, teachers discussed the need for peers to be able “to walk the walk and not just talk the talk.” Teachers, however, relayed incidences when the peers were teased and ostracized for being nice to the student with ASD. Thus, the need for building a school community of acceptance and tolerance was emphasized (Able et al., 2015).

In conclusion teachers feel they need more practice and professional development when it comes to working with students with ASD in an inclusive classroom. General education teachers strongly expressed their need to know more about ASD and how to accommodate for students with ASD in the classroom. Teachers discussed how they were baffled by the range of ASD characteristics and were unclear about how to address individual students’ personalities and needs (Able et al., 2015). A greater emphasis on practical strategies to include students with ASD in the classroom was noted as a strong need in teacher preparation and ongoing professional development. Teachers highlighted the importance of understanding their students’ individual learning needs at the beginning of the school year (Able et al., 2015). Elementary teachers stressed the need for collaboration between professionals to include general and special education teachers, school counselors, and school psychologists as well as parents. Thus, sharing goals and strategies that work for individual students with ASD in a collaborative manner was

viewed as essential (Able et al., 2015). Teachers felt conflicted about when and how to emphasize students' social and academic needs within the inclusive classroom setting. Teachers repeatedly emphasized knowing how and when to intervene was an important skill for them to learn (Able et al., 2015). Other helpful academic accommodations included the need for structure in the students' schedule. High school teachers emphasized the need for careful scheduling for the students' school day. Teachers at all levels emphasized that school structure and routine provided the order students with ASD need so they won't get distracted and anxious (Able et al., 2015). Teachers noted that structuring students' schedules required advocacy and support from special education teachers as well as the school administration. Teachers at all levels and across disciplines expressed concerns about the lack of social skills (Able et al., 2015). Moreover, teachers expressed their strong desires to help their other students understand their peers with ASD so the students with ASD are not dehumanized. The issue of disclosure of the student's disability was a major concern (Able et al., 2015). Another useful strategy by teachers was parental and teacher advocacy for the student with ASD. Parents know their children more than anybody else and when parents can provide helpful tips about what makes their child tick or not is so helpful. General education teachers suggested their special education colleagues could do much in encouraging parents to take an active role in their child's academic and social success in school (Able et al., 2015).

The results of this study present several limitations and areas for future research. First, although the focus groups included elementary, middle, and high school educators, all participants were from one school district. Inclusive programming is often facilitated differently across school districts; therefore, a more nationally representative sample exploring the social

challenges of students with ASD and their teachers for full inclusion in school settings is needed (Able et al., 2015). Educators may have chosen to participate depending on their previous positive or negative experience educating students with ASD in an inclusive classroom, which may have potentially biased the opinions expressed. Second, the perspectives of students with ASD and their families were not included, so it is unknown whether they feel the challenges expressed by teachers are the same obstacles they feel as students with ASD and parents. Future research needs to investigate the perspectives of students with ASD and their parents/guardians from pre-school to the high school levels (Able et al., 2015). Third, the focus of this study was to better understand the social related challenges students with ASD experience in inclusive classrooms. Students with ASD may, however, likely experience academic related challenges that could also affect their successful inclusion in general education classrooms. More research is needed on the academic related challenges these students experience in inclusive classrooms from the perspective of their educators (Able et al., 2015). Finally, teachers expressed concern about their knowledge of providing necessary accommodations for students with ASD. Future research is needed to investigate the most effective method to provide professional development (Able et al., 2015).

The reported prevalence of autism has been increasing for over a decade. Most of the increasing prevalence is among children with average to above average intelligence. Approximately one-third of youth on the autism spectrum in the United States go to college within 8 years of exiting high school and college attendance is projected to increase in this population (Roux et al., 2015). Youth on the autism spectrum in the U.S. who attend college, the vast majority of (81%) attend a 2-year college either solely or as a stepping stone to a 4-year



college. Approximately 70% of 2-year public institutions in the U.S. report enrolling students with autism spectrum disorders (Roux et al., 2015). Little research has specifically examined the characteristics of 2-year college students on the autism spectrum as a whole, their educational experiences, and whether they receive the help they may need to complete a degree or certificate or to advance to a 4-year college (Roux et al., 2015). Colleges in the U.S. are required to offer reasonable accommodations to students with self-disclosed disabilities. Some interpret these accommodations to include help aimed at organizational and social skills needed for academic success (Roux et al., 2015). Two-year college support programs for students on the autism spectrum vary widely: from noncredit college experience programs with residential component and classroom-based supports, to center-based disability support services delivered to degree seeking students, to off-campus supports provided by outside agencies or family members (Roux et al., 2015). College students on the autism spectrum may require services and accommodations due to impairments in executive functioning (such as inattentiveness and poor organizational skills), communication (such as maintaining the topic of conversation and comprehending abstract language), social interactions, and social relationships. Additionally, psychiatric comorbidities are known to affect about 70% of children and adolescents on the autism spectrum (Roux et al., 2015). Challenges associated with psychiatric comorbidities can impact a student's ability to succeed in college and navigate the dynamics of the social environment. Still other students may have significant functional skill deficits that necessitate more intensive services to support the student on campus (Roux et al., 2015).

The data in this study was analyzed from wave 5 of the National Longitudinal Transition Study-2 (NTLS2), collected in 2009 when participants were age 21-25 years old. The NTLS2

used a two-stage sampling plan. First, 500 local education agencies were randomly selected from across the U.S. Second, students who received special education services were sampled (Roux et al., 2015). This yielded 1,012 students who received special education services under the federal eligibility category of autism who were targeted for recruitment. To ensure that results represented the target population, survey weighting was specifically calculated for each wave of data, and bias analysis was conducted at each wave as well (Roux et al., 2015). At wave 5, responses from 620 young adults who received special education services for autism during high school were available for analysis, yielding a retention rate of 67% at wave 5 based on number of participants at wave 1 (Roux et al., 2015).

The young adults on the autism spectrum represented in the NTL2 at wave 5, nearly one in five (17.7%) attended a 2-year college only, and an additional 9.2% attended both a 2-year and a 4-year college. Fewer students attended only a 4-year college (4.6%) or postsecondary vocational/technical education (7.4%). Most (61.1%) never attended any type of postsecondary education (Roux et al., 2015). Nearly half (48.6%) of those who attended a 2-year college, and who disclosed their disability to the school, reported that they had received services, accommodations, or other help for their disability from the 2-year college. Further, 17.6% reported receiving services or help on their own outside of school (Roux et al., 2015). The most common accommodations were human aides (62.5%), testing accommodations (56.4%), and physical adaptations in the classroom (34.3%). Most of the students who attended a 2-year college (87.3%) reported feeling that they had received enough services, accommodations or help although only 68% reported that these services were somewhat or very helpful (Roux et al., 2015). Issues of disability identity present another unique challenge in this population. College

students must acknowledge and disclose their disability as a first step toward receiving disability support services in the college setting. Yet, only one-third of college students on the autism spectrum who received special education services during their high school career, do not view themselves as having a disability or special need during young adulthood. There is little research to explain the lack of disability reporting among students on the autism spectrum. However, college students with other mental health disorders report feeling that they do not need services, lack time for services, or prefer to deal with the issues on their own (Roux et al., 2015).

The limitations in this study were primarily related to the nature of the survey data. First, it was impossible to know whether students were enrolled in general or specialized postsecondary education programs. Next, while this study examined outcomes of those who were out of high school, there was no way to differentiate students who were able to access dual enrollment (in both high school special education and postsecondary education) during their transition age years, which may have provided some benefit to their postsecondary education outcomes (Roux et al., 2015). Finally, the study was unable to accurately account for the potential effect of comorbid psychiatric diagnoses on postsecondary outcomes, as measures of medical diagnoses are limited in the NTL2. Future research should delineate more specific needs of students in this setting and identify what supports are needed to improve persistence and completion rates as well as increase rates of transition into 4-year college programs (Roux et al., 2015).

According to the Center of Disease Control, in 2012, reports of the prevalence of ASD among children in the United States represents a 23% increase from 2006 to 2008 (Cullen, 2015). Some 50,000 adolescents with ASD were 18 years of age in 2012. While not all

individuals with ASD are qualified to attend college, the numbers of individuals with ASD that are able to attend postsecondary institutions may increase. Postsecondary institutions may need to consider programming to meet the needs of students with ASD attending their school and seeking services (Cullen, 2015). While specific data related to the number of students with ASD in college are not currently available, one study conducted at a university indicated that about 1 in 130 and 1 in 53 college students likely meet criteria for high-functioning autism spectrum disorder (HFASD) (Cullen, 2015). Students with average or even superior intellectual ability but who require support in social interactions and social communication, such as those with ASD without language or intellectual impairments, may have difficulty finding the support they need at the postsecondary level (Cullen, 2015). Terminology within the legislation mandates that reasonable accommodations be made to ensure equal access to education provided the accommodations do not alter the essential elements of the academic programs. Services provided by institutions are at the discretion of the service coordinators to determine the appropriateness of an accommodation. Meaning that social support services are usually not indicated as a form of accommodation through disability service offices (Cullen, 2015).

The challenges for families and individuals with ASD is that there continues to be a notable lack of research on supports for students with ASD in college or the perspectives of individuals regarding their social needs in college, in spite of the increase in research on etiology and treatment (Cullen, 2015). There are several institutions that have program for students with ASD, such as Drexel University and Saint Joseph University's Kinney Center for Autism and Support, or the College Program at Marshall University in West Virginia. However, these programs may have additional costs to the university's tuition. In order for services to benefit

individuals with ASD they must provide supports that the individual identifies as meeting their needs (Cullen, 2015). Support services in college are voluntary and individuals with ASD must seek out these services independently, which is a transition from specialized education services many received in high school (Cullen, 2015).

Participants for the online questionnaires were obtained through disability services offices at 4-year colleges or universities, through snowball sampling as well as through postings on message boards of internet support websites. Based on the inclusion criteria, 24 students participated in the study (Cullen, 2015). This was a qualitative study that employed a naturalistic inquiry where the researcher is the human instrument that conducted the interviews and focus groups as well as the data analysis.

The purpose of this research study was to identify the needs of students with ASD in college to provide information to administrators and service providers at the postsecondary level to assist in the development of supports for students. The main category of Needs Related to College further diverged into four subcategories: Social Needs, Academic Needs, Daily Living Needs, and How Those Needs Are Met (Cullen, 2015).

### **Social Needs**

Social needs were prevalent although not an exclusive need. Thirty-nine responses from all 3 data collection methods related to the subcategory of social needs (Cullen, 2015).

### **Academic Needs with Group Work**

College students with ASD who may be challenged by social communication skills may find that the group work environments simply accentuate their difficulties with social

communication. This was a common theme that emerged in terms of Academic Needs, while addressing social needs relevant to college (Cullen, 2015).

### **Daily Living Needs**

Participants reported a variety of living arrangements: some lived at their parents' homes, others reported living in dorms, while others reported commuting from their own apartments (Cullen, 2015).

### **How Needs Are Met**

Analysis of the data clusters of Needs Related to College revealed a subcategory entitled, How Needs Are Met. In discussion of their needs, students identified 3 avenues for having their needs met: Family, School, or Social media (Cullen, 2015).

### **Family**

Thirty-three responses to questions related to needs pertained to How Those Needs Are Met. Of those 33, 11 responses indicated that students had their social needs met through family. Responses to online questionnaires indicated that several students, particularly those who indicated that they commuted, regularly socialized with their parents (Cullen, 2015).

### **School**

While family satisfied the social needs of many students, others indicated that some of their socialization needs were met through friends they had made at college. Of the 33 responses regarding how social needs are met, 15 responses indicated that students socialized with classmates or through other school related activities (Cullen, 2015).

## **Social Media**

The third divergent theme related to How Needs Are Met was through social media. Students indicated that they utilized internet sites and social media sites to engage other individuals with similar interests (Cullen, 2015).

While changes to the ADA in the Amendments of 2008 do not specify accommodations to made for college students with disabilities, many Disability Service (DS) programs provide an array of services that meet the needs of students from academic accommodations to accommodations to support individuals with physical needs such as those with hearing or visual impairments (Cullen, 2015). ASD may need to conceptualize accommodations for social elements of the classroom. Doing so may enhance students' access to the learning experiences that professors and postsecondary institutions are attempting to create through group assignments and collegial learning environments (Cullen, 2015). Other services that could support students with ASD would include groups through which they could meet other students with similar needs and interests. Students who reported an increase in their sense of belonging in terms of college adjustment also reported increased self-perceptions associated with academic competence. Additionally, students who participated in peer led support groups reported increased feelings of adjustment (Cullen, 2015).

Limitations to be considered in reviewing these findings involved aspects of the population studied. Specifically, due to potential communication challenges experienced by some individuals with ASD, misinterpretation of the questions in the 3 collection methods was possible (Cullen, 2015). Also related to population elements, the majority of the participants were obtained through the disabilities services offices of their college or universities. Thus,

responses and themes may only be applicable to students with ASD in college who are comfortable seeking support from DS programs at their colleges (Cullen, 2015).

In a positive light, the number of postsecondary students with disabilities (SWD) is increasing. The National Center for Education Statistics estimated that in 2003-2004 11.3% of postsecondary students reported having a disability, which compares to only 2.6% in 1978 (Lyman et al., 2016). At the postsecondary level, a large portion of the responsibility to comply with disability legislation has been carried by disabled student services (DSS) offices. Once a SWD has been disclosed and provided documentation of their disability, a disability services professional and the student identify the need for reasonable accommodations. This done on a case-by-case basis in accordance with the students' functional limitations (Lyman et al., 2016). Even with disability legislation and accommodations provided by DSS, SWD are still graduating at a lower rate than their peers without disabilities. This trend has led researchers to question the effectiveness of DSS and the accommodations they provide. Even though the literature suggests that DSS and the accommodations they provide are beneficial to SWD and boost graduation rates, there is evidence that these services are not being fully utilized (Lyman et al., 2016). Moreover, NTLS@ found that only 40% of postsecondary SWD who had used special education services in high school had informed their colleges of their disability (a necessary requirement to receive services), and that only 35% of all SWD received accommodations (Lyman et al., 2016). The large percentage of postsecondary SWD who do not choose to seek eligibility for accommodations through a DSS office suggest that barriers may complicate some students' use of this campus resource. Research on the barriers to using accommodations is limited, but what studies there are have identified the following: feelings of social disconnection, a discriminatory



attitude from other students and faculty, subpar DSS practices, ineffective accommodations, unavailable accommodations, accommodations that reduce independence, a possible lack of assistance-seeking behaviors, a stigma attached to disabilities, and insufficient knowledge among SWD about their disability (Lyman et al., 2016).

Sixteen interviews were conducted for this study. The participants were SWD who had registered with DSS at a large, private religious university whose students are predominantly white/Caucasian. They ranged in the age from 20 to 43, with a mean of 25.7 and a median of 23. Nine were male and 7 were female. The participants were identified through a DSS list of students who had been approved for accommodations but did not use some (or any) of them during the 2010-2011 school year (Lyman et al., 2016). A total of 42 students were identified and contacted by email. Participants' self-reported disabilities included depression, anxiety, severe mental health disorders, post-traumatic stress disorder, learning disabilities, Asperger's syndrome. Neurological disability, back injury, type 1 diabetes, endocrine disease, autoimmune disease, and visual impairment (Lyman et al., 2016). All interviews were conducted one-on-one. Fourteen interviews were conducted in person, and two were conducted over the phone with participants (Lyman et al., 2016).

Analysis of the interviews revealed 6 main themes related to barriers SWD face in accessing and using accommodations. Four of the identified themes contained subthemes and thus were considered complex, while the other 2 were more straightforward and contained no subthemes. The 4 complex themes were Desire for Self-Sufficiency, Desire to Avoid Negative Social Reactions, Insufficient Knowledge, and Quality and Usefulness of DSS and

accommodations. The 2 other straightforward themes were Negative Experiences with Professors and Fear of Future Ramifications (Lyman et al., 2016).

### **Theme 1: Desire for Self-Sufficiency**

Throughout the course of the interviews, many of the participants commented on the importance of being self-sufficient, while others alluded to it as they discussed the great pains, they had taken to maintain self-sufficiency (Lyman et al., 2016).

#### ***Importance of being independent***

Many of the participants talked at length about the value they placed on independence. In doing so, they explained how they intentionally did not use approved accommodations in an effort to be independent. A number of participants mentioned that this decision was due in part to a sense of pride, and that pride often stood in the way of asking for and receiving help (Lyman et al., 2016).

#### ***Being Self-accommodating***

Several participants suggested that self-sufficiency was important to them as they discussed efforts to self-accommodate. One form of self-accommodating involved going directly to professors or classmates and asking for help instead of requesting accommodations through DSS (Lyman et al., 2016).

#### ***Using accommodations as a backup***

Many of the participants wanted to address their needs on their own and only use accommodations as a backup. These participants emphasized that it was important to them to be as independent as possible, but at the same time they had the foresight that some circumstances required the use of accommodations. A few participants even talked about how having the

accommodations as a safety net would lower their anxiety, thus minimizing their need for the accommodations (Lyman et al., 2016).

## **Theme 2: Desire to Avoid Negative Social Reactions**

The interviews revealed that many participants had a strong desire to avoid negative social reactions related to their disabilities and accommodations. The participants' comments made it clear that accommodations are not used in isolation, and many of them seemed keenly aware of how their use of accommodations affected others and influenced others' perceptions of them (Lyman et al., 2016).

### ***Not wanting to be viewed or treated differently***

Many of the participants reported concerns about being viewed or treated differently. This included a strong desire to not be singled out or have attention drawn to them. Also noted was the desire to not be labeled or categorized as "the disabled student" and thus treated as less competent or fragile (Lyman et al., 2016).

### ***Fear of suspicion from others for receiving special treatment***

A number of the participants focused on being aware that others might think they were taking advantage of the system or receiving special treatment that they did not deserve (Lyman et al., 2016). A large concern involved peers' potential jealousy or suspicion of the accommodations. Many participants also said they felt like some professors questioned the legitimacy of the accommodations. Several reported being careful not to give professors any further reason to be suspicious of them (Lyman et al., 2016).

### *Not wanting to be a burden*

The accommodation process at college involves many individuals, including DSS providers, administrators, and professors. Many participants commented that they were concerned they were being too much of a burden on others. At times participants would simply choose not to use accommodations that would have helped, rather than put an extra burden on others (Lyman et al., 2016).

### **Theme 3: Insufficient Knowledge**

Many participants either did not know about available accommodations or did not use them because of incorrect or insufficient knowledge. Some of the participants' reported having insufficient knowledge related to their current situation, while others reported having insufficient knowledge earlier in their college experience (Lyman et al., 2016).

### *Questioning the fairness of accommodations*

Questioning the fairness of receiving accommodations was a common dilemma for many of the participants. This seemed to be an important moral dilemma that participants wrestled with again and again throughout their college experience. Many of the participants even struggled during the interview with whether accommodation use was fair or not (Lyman et al., 2016).

### *Lacking awareness of DSS or available accommodations*

One of the guiding questions in the interview dealt with how the participants had learned about the services available to them due to their disabilities. Many of the answers included details about how at some point during college they had been unaware of DSS and accommodations. Some participants talked about how even after registering with DSS and

receiving accommodations, they still were not completely sure of what accommodations and services were available to them (Lyman et al., 2016).

### ***Doubting whether one is disabled enough***

A common belief or misconception among many of the participants was that they were not disabled enough to use DSS or accommodations. The participants who endorsed this misconception often were students with emotional or learning disabilities. They frequently compared themselves to students with physical disabilities and deemed themselves not disabled enough (Lyman et al., 2016).

### **Theme 4: Quality and usefulness of DSS and accommodations**

The quality and usefulness of DSS and the accommodations they provide were also mentioned as major barriers to the use of accommodations. This includes problems working with DSS and the process of setting up accommodations (Lyman et al., 2016). Participants also talked about accommodations that might have been helpful to them but were unavailable. Finally, a number of participants mentioned that some accommodations were not effective and in some instances were even detrimental to learning (Lyman et al., 2016).

### ***Process of requesting and receiving accommodations***

The process of requesting and receiving accommodations included the participants' experience first approaching DSS, meeting with a DSS provider, having ongoing contact with DSS, and implementing the accommodations. A few of the participants spoke of negative experiences with the DSS and its staff that discouraged them from using accommodations (Lyman et al., 2016).

### *Certain accommodations are not available*

All the participants in the study had been approved for at least one accommodation through DSS, and many noted other accommodations that might have been helpful but were not available. Sometimes participants were not sure if certain accommodations were available, they just knew they were not currently available to them (Lyman et al., 2016).

### *Accommodations are not effective or helpful*

Participants described some accommodations as ineffective and often had stopped using those they did not find useful. In some cases, participants said they felt like some accommodations might even put them farther behind in their classes (Lyman et al., 2016).

### **Theme 5: Negative experiences with professors**

Negative experiences with professors in relation to the use of accommodations seemed to be a major barrier. While many participants mentioned that most of their experiences with professors were positive, almost all of them could recount, often with great detail and passion, a negative experience. In many cases a professor simply did not honor the accommodations the participant had been approved for (Lyman et al., 2016).

### **Theme 6: Fear of future ramifications**

Many participants worried about how accommodations might disadvantage them in the future. Potential disadvantages ranged from professors writing less positive letters of recommendations to fewer job opportunities (Lyman et al., 2016).

Limitations on this study is that the participants were attending a large, private, religion oriented university. Participants were older than the typical college age undergraduate, and the study did not include any ethnic minorities. Another limitation is the lack of information

obtained about the participants' experiences using accommodations in high school. Without this information, it is difficult to know how much of their reported barriers to accommodation use result from the potentially difficult transition from high school (Lyman et al., 2016).

The prevalence of young adults on the autism spectrum entering college/university life over the last decade has resulted in increased attention on how to best meet the postsecondary education needs of this growing population (Accardo et al., 2019). In fact, less than 40% of individuals on the autism spectrum complete postsecondary education compared to closely 60% of their neurotypical peers (Accardo et al., 2019). Autism spectrum had the lowest rate of employment and the highest overall rates of no participation in work or school post high school compared to other disability categories. The employment rate for autistic young adults ranges between 4.1 and 11.8%, with only 14% of students on the autism spectrum group of secondary school graduates earning a postsecondary degree (Accardo et al., 2019). Autistic students transitioning to college report a need for increased high school supports during this critical period, including parental involvement, as well as supports to overcome mental health issues and the impact of co-occurring conditions noted as anxiety and fear (Accardo et al., 2019).

Students were recruited to participate in the study through disability service centers and/or invitation from university faculty. Forty-eight college students on the autism spectrum participated in the study (Accardo et al., 2019). The majority of the students were male (86%), Caucasian (83%), and full-time students (98%). Students self-reported co-occurring conditions of learning disabilities (12%), psychological conditions (8%), physical or health related disabilities (4%), communication needs and hearing impairments (both 2%). In the study 79% of students reported a goal of receiving an undergraduate degree, and 19% reported a goal of a graduate

degree (Accardo et al., 2019). Mixed methods data collection included a survey with follow-up semi-structured interviews. The students were asked to identify accommodations or supports needed but not currently available at their university (Accardo et al., 2019).

Thirteen themes emerged that speak to student perceptions and experiences relating to factors that influence college access, success, and equity. These themes encompass student's developing aspirations for attending college, finding a college that meets their needs, defining and evidencing success, facing barriers to college success, and achieving success (Accardo et al., 2019). Students reported an apparent lack of understanding from university staff which created barriers for their success. Two accommodations emerged as preferred by more than 50% of students, extra time on tests (reported by 84% of students) and copies of notes (54%). These two accommodations also emerged as most highly reported among the top three preferred accommodations by students. Only 2 accommodations were identified by a majority of students as non-preferred accommodations: reader-scribe (54%) and audio recorded lessons at 54% (Accardo et al., 2019).

**Table 2**

*Student preferred accommodations*

<b>Accommodations</b>	<b>Use/prefer to n (%)</b>	<b>Do not use n (%)</b>	<b>Ranked in top 3 preferred n (%)</b>
<b>Extra time on tests</b>	37 (84) *	3 (7)	26 (59) *
<b>Copy of notes</b>	24 (54) *	9 (20)	18 (41)
<b>Priority registration</b>	21 (48)	9 (20)	17 (39)
<b>Use of technology</b>	17 (39)	15 (34)	9 (20)
<b>Note-taker</b>	16 (36)	15(34)	10 (23)
<b>Tests taken in disability center</b>	15 (34)	14 (32)	9 (20)
<b>Housing accommodations</b>	11 (25)	19 (43)	9 (20)
<b>Reduced course load</b>	8 (18)	19 (43)	5 (11)



<b>Audio recorded lecture</b>	6 (14)	24 (54) *	4 (9)
<b>Reader-scribe</b>	2 (4)	24 (54) *	2 (4)

\*Indicated >50% of students n=44 responses to accommodations students use and not use. n= 41 responses ranking top 3 preferred accommodations

*Note.* Student preferred accommodations. From College Access, Success and Equity for Students on the Autism Spectrum (p.4886), by Accardo, A. L. et al., 2019, <https://doi-org.scsuproxy.mnpals.net/10.1007/s10803-019-04205-8>

In terms of support services. Academic coaching, the writing center, and tutoring were highly preferred with academic coaching and the writing center preferred by 54% of students and tutoring preferred by 52% of students (Accardo et al., 2019). Participating in a social skills group was preferred by 23% of the respondents, with specialized advisement (17%) and self-advocacy training (7%) ranked as the lowest preferred supports (Accardo et al., 2019).

**Table 3**

*Student preferred support services*

<b>Support services</b>	<b>Use/prefer to use n (%)</b>	<b>Do not use n (%)</b>	<b>Ranked in top 3 preferred n (%)</b>
<b>Academic coaching</b>	24 (54) *	11 (25)	19 (43)
<b>Writing center</b>	24 (54) *	9 (20)	11 (25)
<b>Tutoring</b>	23 (52) *	7 (16)	16 (36)
<b>Peer mentor</b>	19 (43)	11 (25)	13 (29)
<b>Summer transition program</b>	17 (39)	16 (36)	7 (16)
<b>Faculty mentor</b>	17 (39)	11 (25)	13 (29)
<b>Weekly check-ins</b>	8 (35)	7 (16)	6 (27)
<b>Counseling</b>	14 (32)	13 (29)	9 (20)
<b>Support group</b>	14 (32)	14 (32)	7 (16)
<b>Social skills group</b>	10 (23)	13 (29)	5 (11)

\*Indicated by >50% of students n=44 responses to accommodations students use and do not use. n=43 responses ranking top 3 preferred accommodations

*Note.* Student preferred support services From College Access, Success and Equity for Students on the Autism Spectrum (p.4886), by Accardo, A. L. et al., 2019, <https://doi-org.scsuproxy.mnpals.net/10.1007/s10803-019-04205-8>

Limitations in this study are that some students reported apprehension about participating in the study and worried about possible effects on their future opportunities. Some students agreed to complete the online questionnaire portion of this study but felt uncomfortable scheduling a face-to-face follow-up interview as they worried disclosure of their autism diagnosis may affect potential job opportunities (Accardo et al., 2019).

Students with ASD are entitled to accommodations and support services through the Americans with Disabilities Act and section 504 of the rehabilitation Act of 1973 (Accardo et al., 2019). It is reported that fewer than 40% of students with ASD complete postsecondary education. This contrasts with a college graduation rate of nearly 60% for neurotypical peers (Accardo et al., 2019). In response to the needs of students with ASD, colleges and universities have begun to provide accommodations and supports, In reported results from a survey of 30 colleges and universities that indicated they provide accommodations and/or support services for students with ASD. The most commonly reported accommodations were providing an advisor, a tutor, and making modifications to testing procedures (Accardo et al., 2019). A need to provide additional support services emerged, specifically to help students manage time, manage anxiety and depression, manage social demands, navigate unexpected changes, and disclose their disability. It is suggested that colleges and universities provide related non-academic supports in addition to academic supports to facilitate success for college students with ASD (Accardo et al., 2019).

All students participating in the study had a documented diagnosis of ASD as confirmed by the university disability service center. Prior to attending the university, 21 of the 23 students received accommodations in high school, 22 attended public high school, and 13 attended a

community college prior to attending the university. The research was conducted at a mid-size university with 16,000 students in southern New Jersey. The resource center serves over 1450 students with disabilities including 84 students on the autism spectrum (Accardo et al., 2019).

**Table 4**

*Student preferred accommodations (N=23)*

<b>Accommodations</b>	<b>Use/prefer to use n (%)</b>	<b>Do not us n (%)</b>	<b>Ranked in top 3 preferred n (%)</b>
<b>Extra time on tests</b>	19 (83) *	2 (9)	16 (70) *
<b>Copy of notes</b>	16 (70) *	3 (13)	13 (57) *
<b>Priority registration</b>	15 (65) *	2 (9)	10 (43)
<b>Use of technology</b>	11 (48)	6 (26)	5 (22)
<b>Test taken at disability center</b>	10 (43)	6 (26)	6 (26)
<b>Housing accommodations</b>	10 (43)	7 (30)	6(26)
<b>Reduced course load</b>	8 (35)	7 (30)	5 (22)
<b>Note-taker</b>	7 (30)	9 (39)	2 (9)
<b>Audio recorded lectures</b>	4 (17)	12 (52) *	1 (4)
<b>Reader-scribe</b>	1 (4)	13 (57) *	0

\*Indicated by >50% of students

*Note.* Student preferred accommodations. From Accommodations and support services preferred by college students with autism spectrum disorder (p.578), by Accardo et al., 2019, <https://doi-org.scsuproxy.mnpals.net/10.1177/1362361318760490>

The accommodations preferred by more than 50% of students included extra time on tests (83%), receiving a copy of instructor notes (70%), and priority registration (65%). All accommodations appeared to meet the need of at least one student. Only two accommodations were identified by more than 50% of students as not preferred, the reader-scribe, and the ability to audio record lectures (Accardo et al., 2019).

**Table 5***Student preferred support services (N=23)*

<b>Support services</b>	<b>Use/prefer to use n (%)</b>	<b>Do not use n (%)</b>	<b>Ranked in top 3 preferred n (%)</b>
<b>Academic coaching</b>	21 (91) *	1 (4)	17 (74) *
<b>Transition program</b>	16 (70) *	3 (13)	5 (22)
<b>Tutoring</b>	15 (65) *	1 (4)	9 (39)
<b>Writing center</b>	13 (57) *	4 (17)	8 (35)
<b>Counseling</b>	11 (48)	4 (17)	9 (39)
<b>Faculty mentor</b>	11 (48)	4 (17)	9 (39)
<b>Peer mentor</b>	7 (30)	9 (39)	7 (30)
<b>Support group</b>	6 (26)	7 (30)	1 (4)
<b>Social skills group</b>	6 (26)	8 (35)	2 (9)
<b>Self-advocacy training</b>	2 (9)	8 (35)	1 (5)

\*Indicated by &gt;50% of students

*Note.* Student preferred accommodations. From Accommodations and support services preferred by college students with autism spectrum disorder (p.578), by Accardo et al., 2019, <https://doi-org.scsuproxy.mnpals.net/10.1177/1362361318760490>

The support services preferred by more than 50% of students include academic coaching (91%), the freshman summer transition program (70%), tutoring (65%), and the writing center (57%) (Accardo, et al., 2019). The most frequently identified supports as those students do not use or plan to use include specialized non-academic supports: peer mentor (39%) and social skills groups (35%). Finally, only one support service emerged as preferred by a majority of students with ASD, that of academic coaching (Accardo et al., 2019).

Students requested one new accommodation, access to faculty office hours prior to course registration, requested improvement to an existing accommodation, that of classroom note-taker, and requested an overall more personalized approach to accessing university provided supports (Accardo et al., 2019). The personalized supports requested by college students, may exceed the level of support required by ADA, yet there is a need for universities to expand

services to meet the unique challenges of the growing population of college students with ASD (Accardo et al., 2019).

While this study had a larger number of participants than generally found in prior studies of college students with ASD, it remains limited to the perspectives of 23 students from one university in the eastern United States (Accardo et al., 2019).

Faculty are responsible for accommodating students with learning disabilities. However, since learning disabilities are hidden, faculty may question the need for accommodations, and question whether accommodations provide an unfair advantage or compromise the course integrity (McCarron, 2020). Faculty do not determine accommodations but are responsible for providing them. Therefore, faculty attitudes toward accommodating students with disabilities may be particularly salient in student success. If students with learning disabilities sense that faculty have issues with providing accommodations, they will not self-identify and will not get the help they need (McCarron, 2020).

Due to the Americans with Disability Act protections, faculty are told only that they must accommodate a student a certain way, and nothing about the student's disability. The willingness to accommodate declines when faculty feel the accommodation compromises the integrity of the school, the program, and the course. Faculty struggle with the ethical concerns of helping students with learning disabilities to the detriment of academic integrity (McCarron, 2020). Studies have shown that faculty believe in a hierarchy of disabilities are more comfortable dealing with students who have visible disabilities (medical disabilities like blindness, deafness, or physical impairments) and less comfortable with invisible disabilities (learning disability and psychological disabilities). The hidden nature of learning disabilities has made it hard for faculty

to distinguish between students with learning disabilities and students who are unprepared (McCarron, 2020).

This study used an explanatory sequential design. It started with quantitative data collection and analysis, followed up with selection of interview participants and development of an interview guide, proceeded to qualitative data collection and analysis, and concluded with the integration and interpretation of results (McCarron, 2020). For the quantitative portion of the study, the population was the faculty of a medium-sized private institution in the northeastern United States that is considered a business school, but also offers degrees in liberal arts. All current faculty received an email explaining the study's purpose and inviting them to participate in the online survey (McCarron, 2020).

For the quantitative sample this study used two non-probability sampling methods to find survey participants: (1) a voluntary sample, made up of people who self-selected into the survey and (2) a convenience sample, made up of people who were easy to reach (McCarron, 2020). A link to the online survey was sent to all faculty on the institution's faculty email distribution list and 136 faculty responded (26.7%). Of the 136 respondents, 19 did not finish the survey (13.9%); two of the 19 completed all but the demographic questions so their data was included (McCarron, 2020).

For the qualitative sample 42 respondents volunteered to be interviewed, and 14 (33.3%) were purposefully selected from among the four faculty types; three faculty each from the reluctantly compliant and the committed faculty groups, and four each from the skeptically compliant and well-intentioned groups. Nine interviewees were from business departments and five were from arts and sciences departments (McCarron, 2020).

Most faculty reported that they were willing to accommodate. However, their willingness was affected by personal beliefs and the perceived ease of providing an accommodation (McCarron, 2020). The findings showed that the different types of faculties have different commitment to accommodating students with learning disabilities. Knowledge, especially personal experience, and effort, especially how cumbersome faculty believe an accommodation is to provide, can have a significant effect on willingness and ability (McCarron, 2020).

The limitations for this study are that it was completed at a single institution which may affect the generalization of findings to a larger population and therefore the external validity (McCarron, 2020). The quantitative data collection limitations included a small sample size; the online survey was only accessible to respondents via computers or smartphones which may have precluded some people from responding (McCarron, 2020).

Autism spectrum disorders are a constellation of life-long neuro-developmental disorder, characterized by deficiencies in social communication skills, as well as patterns of restricted or repetitive behavior and interests/activities (Sefotho et al., 2021). Approximately, about 1 in 68 children, and 1 in hundred adults are in the spectrum of ASDs. It is expected that individuals with ASDs seeking to enroll in higher education are likely to continue to rise (Sefotho et al., 2021). Studies suggest that difficulties associated with ASD often create significant difficulties in primary and secondary educational settings. Studies also indicate that compared to typically developing students, students with ASD are more likely to experience difficulties coping with postsecondary experiences. Though about 46% of learners with ASD demonstrate normal intelligence quotient (IQ) to attain optimum academic height, lower percentages of ASD students are retained across postsecondary school graduation and subsequent employment (Sefotho et al.,

2021). Further it has been shown that individuals with ASD experience significant transition challenges across their lifespan. Transition difficulties in the ASD population limit their academic progress, functional participation, and independent functioning. Increased transition difficulties account for drop-out and poor school and adulthood outcomes in students with ASD (Sefotho et al., 2021).

Using purposeful sampling, this study drew 10 first year students with ASD in higher education institutions in south-east Nigeria. Thematic content analysis was used to analyze data for this study. Data was coded inductively to find recurring categories that defined perceived transition challenges (Sefotho et al., 2021). There were 5 overarching themes and 8 sub-themes that emerged from the study.

### **Theme 1: Academic functioning difficulties**

Participants identified that they encounter difficulties in different areas of academic functioning.

#### ***Assignment Completion***

Most of the participants reported challenges to their academic functioning to include assignment completion. Participants pointed out factors around the completion of the assignment in high education that limits their participation and completion of the assignment to include working in small group and having to submit the assignment as a group and or having to submit an assignment in a fixed time (Sefotho et al., 2021).

#### ***Poor organizational skills***



Participants recorded that they have difficulty in organizational skills such as time management, academic planning, problem-solving, and self-regulation as well as having to establish and sustain a balance between academic demands and self-care (Sefotho et al., 2021).

## **Theme 2: Social difficulties**

Data in the study showed that social functioning constitutes a considerable challenge.

### *Social skills challenges*

The participants reported that they found it difficult to initiate and sustain social interactions, to express themselves to others, and to make new friends (Sefotho et al., 2021).

### *Social participation challenges*

According to the interview data, students with ASD find it difficult to find people with similar interests to mingle with. This limits their participation in social and recreational activities (Sefotho et al., 2021).

## **Theme 3: Structural Issues**

Participants were consistent with the complexity of higher education institutions (Sefotho et al., 2021).

### *Difficulties navigating lecture venue distances*

The majority of the students interviewed saw the issue of lecture venues as a challenge that created much stress during their first year in higher education institutions (Sefotho et al., 2021).

### *Overwhelming school environment*

The participants surprisingly echoed that higher education schools were complex and that they found it difficult to operate in complex environments (Sefotho et al., 2021).

**Theme 4: Mental Health**

The study participants reported having mental issues enough to interfere with their daily activities during their first year in higher education. Some of the mental health challenges identified were isolation/loneliness, stress, anxiety depression, and sinking feelings (Sefotho et al., 2021).

**Theme 5: Lack of Resources and Support**

Most of the students who participated in the study described their experiences of lack of materials and support that impacted negatively on their academic progress (Sefotho et al., 2021).

***Lack of material aids***

All the students with ASD who participated in this study expressed their limitations due to a lack of material resources to support the learning and social limitations of ASD conditions (Sefotho et al., 2021).

***Lack of disability support***

There was a total lack of disability support staff in tertiary institutions as reported by the participants. Participants disclosed that they have not accessed any assistance from nor are they linked to any disability support staff (Sefotho et al., 2021).

***Lack of academic support***

No support is received from lecturers in terms of alternative arrangements, adjustments in teaching style to accommodate the learning needs, and the importance of flexibility and support that addressed the specific needs of individual students (Sefotho et al., 2021).

Social functioning difficulties found in this study include difficulty in social interactions, and lack of interpersonal skills, and lack of social participation. Students reported difficulties in

social/interpersonal skills challenges, social participation challenges, and confusing social clues as challenges to a smooth transition to higher education (Sefotho et al., 2021). The studies findings, that poor social participation is a challenge to transition success in higher education with ASD is in line with other studies identifying social participation difficulties as challenges to adaptive functioning on persons with ASD in universities. The results also correspond with the general research outcomes that throughout adulthood, individuals with ASD continue to struggle with issues related to communication, social skills, repetitive behaviors, resistance to change, and social participation (Sefotho et al., 2021). The increasing demand for social success in the university creates considerable mental health issues such as stress and anxiety. Lack of resources and support that hamper transition success emerged in the areas of lack of material aids, lack of disability/social support, and lack of academic support (Sefotho et al., 2021). The findings in this study concluded that students with ASD transitioning to higher education experience a range of challenges in the dimensions of academic and social functioning, school structure, mental health, and lack of support (Sefotho et al., 2021).

Twenty-seven autistic undergraduate students attending 15 higher education institutions in the United States were interviewed online about their experiences with disability support offices. Participants appreciated receiving academic support such as extended time on exams, being housed in single rather than shared rooms, and having opportunities to meet other autistic students (Kim et al., 2021).

While recent trends suggest that college attendance of autistic undergraduate students is expected to increase, previous studies also showed that many academically qualified autistic individuals left their university prior to receiving a diploma. National census statistics have

reported that only 38.8% of autistic undergraduate students graduate from either a 2-year or 4-year college, while the graduation rate of all first-time, full-time undergraduate students in the United States was 60% (Kim et al., 2021). Systematic review indicated that autistic undergraduate students reported concerns related to anxiety, loneliness, depression, and marginalization throughout their college education. Furthermore, autistic students indicated having a psychological disorder, feeling depressed, and having lower levels of social support when compared to students without reported disabilities (Kim et al., 2021).

Many studies that used quantitative surveys found that extra time on tests was the accommodation most preferred by autistic students attending universities in the US and in Belgium. Academic accommodations such as an alternate testing location and extended time for exams reduced students stress during the exam. However, some US autistic students indicated negative experiences regarding academic accommodations, particularly when professors neglected to fulfill the accommodation request (Kim et al., 2021). Students indicated that registering with the disabilities service office often served as a gateway to other support systems. Participants reported that they did not use or plan to use social support services such as peer mentoring or social skills groups. Meanwhile, 43% of students used or preferred to use peer mentor support, only 23% attended or preferred to attend social skills groups (Kim et al., 2021). Participants also expressed the need for improvements in timeliness of processing paperwork and delivering support, eliminating unsuitable or inadequate support, and the procedures to provide proof of autism spectrum disorders diagnosis. Students experienced challenges adjusting to new expectations and routines, meeting social demands, processing the abundance of information on campus, dealing with disclosure, and coping with mental health issues (Kim et al., 2021).

Of the 27 participants in the study, 23 participants were registered at the disability services office at the time of the interview, and 18 students were only receiving academic support (Kim et al., 2021). Some students appreciated academic accommodations from the disability services office, as they increased their academic competency, reduced anxiety, and facilitated communication with faculty members. However, some students reported negative experiences, such as when a professor did not want to provide the requested accommodations and when they were unable to ask clarification questions to professors while taking an exam in an alternate location. Students reported that academic accommodations provided by the disability services office helped them pass classes, focus on exams, and earn credits needed for graduation (Kim et al., 2021). Participants explained that their increased academic competence may be related to the reduced stress and anxiety that occurred as a result of the academic support the disability services office provided. At the same time, students also reported how lack of or ineffective communication between a liaison and the professor resulted in students not feeling supported academically. If professors were unwilling to provide the academic accommodations asked of them in the letter from the disability services office, the disability services office staff often did not take the necessary steps to resolve the situation with the professors (Kim et al., 2021). Interestingly one third of the participants indicated that at some point during their college education, they did not receive support from a disability services office. Some students did not receive support because they believed that not receiving accommodations would lead them to have a normal college experience. These students all had Individual Educational Programs (IEPs) throughout their K-12 education, and wanted to see how they would do without accommodations. Some of the students were not receiving any accommodations because they did

not think the disability services office could help them, especially if their difficulties were not academic (Kim et al., 2021).

There were limitations to be considered when interpreting the findings in this study. First the study relied on the participants' report of their ASD diagnosis and did not verify the status. Moreover, although attempts were made to recruit participants attending various higher education institutions and in different states, because volunteer sampling was utilized in this study, sampling bias may have occurred (Kim et al., 2021). Also despite efforts to recruit participants through many routes rather than rely solely on the disability services office networks, it is possible that many or most participants received information about this study via their disability services office. This study did not check how the students learned about the study, the findings suggest that many were registered with their disability services office, in which case the study may not accurately represent the experiences of a wide range of autistic students, especially those who chose not to disclose their diagnosis. Finally, the institutions that participants attended varied in terms of levels of support provided to autistic students (Kim et al., 2021).

As increasing numbers of autistic college students enter higher education, they are confronted by an abundance of challenges and opportunities that influence their experiences and outcomes in higher education (Nachman et al., 2021). While traditional disability accommodations are available at nearly every college, and several private organizations offer programs designed to help college students with autism, many postsecondary institutions have begun their own Autism-Specific College Support Programs (ASPs) (Nachman et al., 2021).

Autism-Specific College Support Programs are designed to support autistic students' success by capitalizing on strengths and providing them with support that meets their distinctive needs (Nachman et al., 2021). Despite programmatic differences, ASPs typically include some combination of up to 10 types of supports, services, and accommodations:

- Testing accommodations
- Curriculum planning accommodations
- Tutoring services
- Specialized orientation or transition services
- Parent involvement
- Social skills training
- Life skills training/support
- Mental health support/therapy
- Accommodations for class activities
- Peer mentors

The mix of services offered by specific programs vary dramatically, as do their administrative structures, program fees, and student enrollment (Nachman et al., 2021). Individual programs often change from year to year as they grow and evolve, most ASPs have began in only the last 6 years (Nachman et al., 2021).

Using the Carnegie Classification of Institutions, the team identified all degree-granting institutions in the United States. The 3,298 schools were then split by region, with each team member independently reviewing colleges and universities in each region. This data collection ran from August 2018 to August 2019 (Nachman et al., 2021). The ASPs needed to fit 3 criteria

to be included: cater exclusively to, or primarily serve, autistic college students seeking a degree at a college or university; feature a webpage on the college website; and be active during the time of the study. To ensure the program was formally supported by the institution and would be recognizable as such to students, the program had to be found through a search from the college or university homepage (Nachman et al., 2021).

The search yielded 74 total ASPs, representing 2.2% of the nations public and not-for-profit colleges and universities. Table 6 below provides a list of all 74 programs. (Nachman et al., 2022).

**Table 6**

*Complete list of autism-specific college support programs (ASPs)*

<b>College/University</b>	<b>Program</b>	<b>City</b>	<b>State</b>	<b>Control</b>	<b>Level</b>
<b>Far West</b>					
<b>Bellevue College</b>	Neurodiversity Navigators	Bellevue	WA	Public	2-year
<b>California Lutheran University</b>	Autism and Communication Center	Thousand Oaks	CA	Private	4-year
<b>California Polytechnic State University-San Luis Obispo</b>	Connections	San Luis Obispo	CA	Public	4-year
<b>California State University-East Bay</b>	College Link Program	Hayward	CA	Public	4-year
<b>Golden West College</b>	Puzzle Piece	Huntington Beach	CA	Public	2-year
<b>Seattle Central College</b>	Supported Academic and Independent Life Skills (SAILS)	Seattle	WA	Public	2-year
<b>Southwest</b>					
<b>Tarrant County College District</b>	Autism Spectrum Disorder Program	Fort Worth	TX	Public	2-year
<b>Texas A&amp;M University-College Station</b>	Spectrum Living Learning Community	College Station	TX	Public	4-year
<b>Texas Tech University</b>	Connections for Academic Success and Employment (CASE)	Lubbock	TX	Public	4-year



<b>University of Houston-Clear Lake</b>	Connecting to College (CtC)	Houston	TX	Public	4-year
<b>University of Science and Arts of Oklahoma</b>	Neill-Wint Center for Neurodiversity	Chickasha	OK	Public	4-year
<b>Rocky Mountains</b>					
<b>University of Idaho</b>	Raven Scholars Program	Moscow	ID	Public	4-year
<b>University of Montana</b>	Mentoring, Organization, Social Supports for Autism/All Inclusion Campus (MOSSAIC)	Missoula	MT	Public	4-year
<b>Plains</b>					
<b>Dakota State University</b>	STRONG	Madison	SD	Public	4-year
<b>Kirkwood Community College</b>	ASK Program	Cedar Rapids	IA	Public	2-year
<b>Loras College</b>	Autism Resources for Career and Higher Education (ARCH)	Dubuque	IA	Private	4-year
<b>Westminster College-Fulton</b>	College Transition Program (CTP)	Fulton	MO	Private	2-year
<b>Great Lakes</b>					
<b>Ancilla College</b>	Autism Program at Ancilla College (APAC)	Donaldson	IN	Private	2-year
<b>Defiance College</b>	ASD Affinity Program	Defiance	OH	Private	4-year
<b>Eastern Illinois University</b>	Students with Autism Transitional Educational Program (STEP)	Charleston	IL	Public	4-year
<b>Eastern Michigan University</b>	College Supports Program	Ypsilanti	MI	Public	4-year
<b>Kent State University at Kent</b>	Autism Initiatives	Kent	OH	Public	4-year
<b>Marquette University</b>	On Your Marq	Milwaukee	WI	Private	4-year
<b>Michigan State University</b>	Building Opportunities for Networking and Discovery (BOND)	East Lansing	MI	Public	4-year
<b>Ohio State University-Main Campus</b>	Ace!	Columbus	OH	Public	4-year
<b>Ohio University-Main Campus</b>	Autism Spectrum Peer Coaching Team (ASPeCT)	Athens	OH	Public	4-year
<b>Saint Norbert College</b>	SNC ASD Support Program	De Pere	WI	Private	4-year
<b>Trinity International University-Illinois</b>	Access Program	Deerfield	IL	Private	4-year

<b>Western Michigan University</b>	Autism Services Center (ASC)	Kalamazoo	MI	Public	4-year
<b>William Rainey Harper College</b>	Transition Autism Program (TAP)	Palatine	IL	Public	2-year
<b>Wright State University- Main Campus</b>	RASE Transition Coach Program	Dayton	OH	Public	4-year
<b>Xavier University</b>	X-Path Program	Cincinnati	OH	Private	4-year
<b>Southeast</b>					
<b>Austin Peay State University</b>	Full Spectrum Learning (FSL)	Clarksville	TN	Public	4-year
<b>Central Baptist College</b>	Autism Spectrum Assistance Program (ASAP)	Conway	AR	Private	4-year
<b>Clemson University</b>	Spectrum Program	Clemson	SC	Public	4-year
<b>Concord University</b>	The College Program	Athens	WV	Public	4-year
<b>George Mason University</b>	Mason Autism Support Initiative (MASI)	Fairfax	VA	Public	4-year
<b>Marshall University</b>	The College Program for Students with Autism Spectrum Disorder	Huntington	WV	Public	4-year
<b>Nicolls State University</b>	Bridge to Independence	Thibodaux	LA	Public	4-year
<b>Nova Southeastern University</b>	Access Plus	Fort Lauderdale	FL	Private	4-year
<b>Reinhardt University</b>	Strategic Education for Students with Autism Spectrum Disorder (S.E.A.D.)	Waleska	GA	Private	4-year
<b>Santa Fe College</b>	Spectrum of Success	Gainesville	FL	Public	2-year
<b>Seminole State College of Florida</b>	Full Spectrum Support (FSS)	Sanford	FL	Public	4-year
<b>University of Alabama</b>	The University of Alabama, ASD College Transition and Support Program (UA-ACTS)	Tuscaloosa	AL	Public	4-year
<b>University of Arkansas</b>	Autism Support Program	Fayetteville	AR	Public	4-year
<b>University of Central Arkansas</b>	Autism Advocacy Program	Conway	AR	Public	4-year
<b>University of Florida</b>	Social Gators	Gainesville	FL	Public	4-year
<b>University of North Florida</b>	Transition to Health, Resources, Independence, Viable Careers, and Education (THRIVE)	Jacksonville	FL	Public	4-year

<b>University of Tennessee-Chattanooga</b>	MOSAIC	Chattanooga	TN	Public	4-year
<b>University of Tennessee-Knoxville</b>	Postsecondary Autism Support Services (PASS)	Knoxville	TN	Public	4-year
<b>University of West Florida</b>	Argos for Autism (AAP)	Pensacola	FL	Public	4-year
<b>Western Kentucky University</b>	Kelly Autism Program (KAP) Circle of Support	Bowling Green	KY	Public	4-year
<b>Mid-East</b>					
<b>Adelphi University</b>	Bridges to Adelphi	Garden City	NY	Private	4-year
<b>CUNY Brooklyn College</b>	Project REACH: Resources and Education on Autism as CUNY's Hallmark	Brooklyn	NY	Public	4-year
<b>CUNY College of Staten Island</b>	Project REACH: Resources and Education on Autism as CUNY's Hallmark	Staten Island	NY	Public	4-year
<b>CUNY LaGuardia Community College</b>	Project REACH: Resources and Education on Autism as CUNY's Hallmark	Long Island City	NY	Public	2-year
<b>Daemen College</b>	College Autism Transition Support (CATS)	Amherst	NY	Private	4-year
<b>Drexel University</b>	Drexel Autism Support Program (DASP)	Philadelphia	PA	Private	4-year
<b>Eastern University</b>	The College Success Program (CSP)	Saint Davids	PA	Private	4-year
<b>Edinboro University of Pennsylvania</b>	The Boro Autism Support Initiative for Success	Edinboro	PA	Public	4-year
<b>Fairleigh Dickinson University-College at Florham</b>	The Compass Program	Madison	NJ	Private	4-year
<b>Fairleigh Dickinson University-Metropolitan Campus</b>	The Compass Program	Teaneck	NJ	Private	4-year
<b>Indiana University of Pennsylvania-Main Campus</b>	Labyrinth	Indiana	PA	Public	4-year
<b>Kutztown University of Pennsylvania</b>	My Place	Kutztown	PA	Public	4-year

<b>Manhattanville College</b>	Pathways and Connections Program (PAC)	Purchase	NY	Private	4-year
<b>Mercyhurst University</b>	Autism Initiative at Mercyhurst (AIM)	Erie	PA	Private	4-year
<b>Pace University-New York</b>	OASIS	New York	NY	Private	4-year
<b>Ramapo College of New Jersey</b>	ENHANCE	Mahwah	NJ	Public	4-year
<b>Rochester Institute of Technology</b>	Spectrum Support Program	Rochester	NY	Private	4-year
<b>Slippery Rock University of Pennsylvania</b>	Autism Transitions for Learning Achievement and Support (ATLAS)	Slippery Rock	PA	Public	4-year
<b>SUNY at Purchase College</b>	Cornerstone	Purchase	NY	Public	4-year
<b>Towson University</b>	College Autism Peer Program (CAPS)	Towson	MD	Public	4-year
<b>University of Delaware</b>	Spectrum Scholars	Newark	DE	Public	4-year
<b>West Chester University of Pennsylvania</b>	Dub-C Autism Program (D-CAP)	West Chester	PA	Public	4-year

This list includes the 74 institutions identified during the 2018-19 systematic search. Periodic updates to the list are posted to the college Autism Network website

[www.CollegeAutismNetwork.org](http://www.CollegeAutismNetwork.org)

*Note.* Complete list of autism-specific college support programs (ASPs). From Brief Report: Autism-Specific College Support Programs: Differences Across Geography and Institutional Type (p.865-866), by Nachman et al., 2022, <https://doi-org.scsuproxy.mnpals.net/10.1007/s10803-021-04958-1>

Table 6 above, shows ASPs were disproportionately located at 4-year institutions and largely absent from 2-year colleges. Indeed, barely 1.1% of the nation's 1,003 2-year colleges host such programs, with 2 exceptions, only between 1.3% and 3.1% of postsecondary institutions in any region host ASPs (Nachman et al., 2021).

The study showed that 81% of autistic college students who attend 2-year institutions have access to only 11 ASPs across the entire country. Likewise, the complete absence of these programs in 21 states, including all New England, severely limits the options available to students in large parts of the country (Nachman et al., 2021).

The primary limitations of this study relate to identifying individual ASPs. Because the study focused on ASPs, the study intentionally excluded programs that served disabled students broadly but did not reference autism-specific components, even if they may have robust participation by autistic students (Nachman et al., 2021).

### Chapter 2 Summary

I was able to review 13 studies in chapter 2 that looked at multiple opinions from study participants. Table 7 summarizes and presents the 13 articles in the same order as they appeared in chapter II. Conclusions and recommendations will be discussed in chapter 3.

**Table 7**

*Summary of Chapter 2 Findings*

<b>Authors</b>	<b>Study Design</b>	<b>Participants</b>	<b>Procedure</b>	<b>Findings</b>
VanBergeijk, Klin, and Volkmar (2008)	Qualitative	Case Vignette	Analyzation of policies and data	Students with ASD are an increasing population. Many have postsecondary aspirations.
Wei, Yu, Shattuck, McCracken, and Blackorby (2012)	Quantitative	Data from the NLTS2 that included ASD and other disability groups.	Parent telephone interviews, mail surveys, school, teacher, and school program surveys, transcript data and in-person student assessments and interviews	Young adults with ASD were less likely to enroll in a 2-year college or a 4-year than all other disability groups except ID or MD.
Fleury, Hedges, Hume, Browder, Thompson, Fallin, Zein,	Quantitative	Data from NLTS2	Analyzed data from NLTS2.	The data on dismally poor postsecondary outcomes for individuals with ASD highlight the urgent need to reevaluate the

Reutebuch, and Vaughn (2014)				quality and quantity of academic preparation individuals with ASD receive in schools.
Able, Sreckovic, Schultz, Garwood, and Sherman (2015)	Qualitative	School Educators	6 focus groups and one interview held over a 1-year period in one school district in a southeastern state.	Teachers mentioned social support needs in the following areas: <ul style="list-style-type: none"> <li>▪ Social relationships</li> <li>▪ Social academics</li> <li>▪ Self-advocacy</li> <li>▪ Transitioning</li> <li>▪ Peer-related needs</li> </ul>
Roux, Shattuck, Rast, Rava, Edwards, Wei, McCracken, and Yu (2015)	Qualitative	Data was analyzed from wave 5 of the NLTS2 in 2009, ages were 21-25.	Data came from NLTS2 primarily conducted by telephone interviews.	48.6% who attend 2-year college and disclosed disability received services.
Cullen (2015)	Qualitative	Based on the inclusion criteria, 24 students participated in the study.	This was a qualitative study that employed a naturalistic inquiry where the researcher is the human instrument that conducted the interviews and focus groups as well as the data analysis.	The purpose of this research study was to identify the needs of students with ASD in college to provide information to administrators and service providers at the postsecondary level to assist in the development of supports for students. The main category of needs related to college further diverged into four subcategories: <ul style="list-style-type: none"> <li>▪ Social needs</li> <li>▪ Academic needs</li> </ul>

				<ul style="list-style-type: none"> <li>▪ Daily living needs</li> </ul> <p>How those needs are met</p>
Lyman, Beecher, Griner, Brooks, Call, and Jackson (2016)	Qualitative	16 interviews were conducted	The participants were SWD who had registered with DSS at a large, private religious university and are predominantly white/Caucasian.	<p>Analysis of the interviews revealed six main themes related to barriers SWD face in accessing and using accommodations.</p> <ul style="list-style-type: none"> <li>▪ Desire for self-sufficiency</li> <li>▪ Desire to avoid negative social reactions.</li> <li>▪ Insufficient knowledge and quality and usefulness of DSS and accommodations</li> <li>▪ Negative experiences with professors</li> </ul> <p>Fear of future ramifications</p>
Accardo, Bean, Cook, Gillies, Edgington, Kuder, and Bomgardner (2019)	Qualitative and Quantitative	Students were recruited to participate through disability service centers or invitation from university faculty. 48 college students on the autism spectrum participated in the study.	Mixed methods data collection included survey with follow-up semi-structured interviews	Thirteen themes emerged that speak to student perceptions and experiences relating to factors that influence college access, success, and equity. The themes encompass student's developing aspirations for attending college, finding a college that meets their needs, defining and evidencing success, facing barriers to college success, and achieving success.

Accardo, Kuder, and Woodruff (2019)	Qualitative and Quantitative	All students had a documented diagnosis of ASD by the university disability services center. 21 of the 23 students received accommodations in high school	Mixed methods of student data were collected by a researcher-created survey and follow-up semi-structured interviews.	The accommodations preferred by more than 50% of students included extra time on test. Only accommodations not preferred were reader-scribe and the ability to audio record lectures
McCarron (2020)	Quantitative and Qualitative	<b>Quantitative sample:</b> The study used two non-probability sampling methods to find survey participants: 1 a voluntary sample, made up of people who self-selected into the survey, which also 2 a convenience sample, made up of people who were easy to reach. <b>Qualitative sample:</b> 42 respondents volunteered to be interviewed, and 14 were purposefully selected from 4 faculty types.	<b>Quantitative:</b> Surveys were used. <b>Qualitative:</b> Interviews were done	<b>Quantitative;</b> data was downloaded in CSV format and uploaded into SPSS for analysis. <b>Qualitative:</b> data showed that different types of faculties have different commitment to accommodating SWLD
Sefotho and Onyishi (2021)	Qualitative	10 first year students with ASD in higher education	Thematic content analysis was used to analyze data.	Five overarching themes emerged from the coding process.



		institutions in South-East Nigeria	Data was coded inductively to find recurring categories that defined perceived transition challenges.	<ul style="list-style-type: none"> <li>▪ Academic functioning difficulties</li> <li>▪ Social difficulties</li> <li>▪ Structural issues</li> <li>▪ Mental health problems</li> <li>▪ Lack of resources and supports</li> </ul>
Kim and Crowley (2021)	Qualitative	27 autistic undergraduate students attending higher education institutions in the United States	Students were interviewed about their experiences with disability support offices.	Participants appreciated receiving academic support such as extended time on exams, being housed in single rather than shared rooms, and having opportunities to meet other autistic students. There were also negative experiences as well, which included the lack of helpfulness when professors refused to grant requested accommodations
Nachman, McDermott, and Cox (2021)	Quantitative	3,298 degree-granting institutions in the United States.	Systematic census of postsecondary institutions in the US to identifying ASPs.	Search yielded 74 total ASPs, representing 2.2% of the nation's public and not-for-profit colleges and universities.

### **Chapter 3: Results**

When I began my research for this paper, I researched topics that I believed would guide me and help me find what accommodations and support services students in their postsecondary school careers would prefer. The reasoning of students using and not using accommodations and support services was very interesting. The preferred accommodations and support services were not as surprising to me. What shocked me the most is that many students in their postsecondary school careers are not using any accommodations or support services at all.

#### **Conclusions**

What accommodations and support services are desired by students with autism spectrum disorders to achieve postsecondary education achievement? The most interesting information was the change in the number of children diagnosed with autism spectrum disorders over the years. My research first found that 1 out of 166 children in the United States was diagnosed with ASD (VanBergeijk et al., 2008). After further research I had found that the numbers jumped to 1 in 88 and then jumped again to 1 in 68 (Able et al., 2015).

According to Cullen (2015) and Lyman et al. (2016), the population of students with disabilities is going to continue to grow over the years and postsecondary institutions are going to have to meet the needs of this growing population with accommodations and support services. Due to the rise of students with autism attending postsecondary institutions, many have begun to create their own autism-specific college support programs (Nachman et al., 2021). However, this still leaves a vast majority of the institutions out because on 81% of autistic college students attend 2-year institutions and that only leaves 11 autism-specific programs available throughout the entire country (Nachman et al., 2021).

In the studies of Cullen (2015) Lyman et al. (2016) and Accardo et al. (2019), students stated that staff and faculty were unwilling to follow the accommodations set by the disability centers. Many felt this became a barrier and they then just went without the accommodation. This causes many students to not self-identify and to go without the help that they need (McCarron, 2020).

Students that do get the help they need and deserve, according to Accardo et al. (2019) Kim et al. (2021) and Nachman et al. (2021), have identified that having the accommodation of having extra time on test, instructor notes and single dorms as being the most important accommodations and supports services. Students did also state that (Accardo et al., 2019) they did not like to use the testing center because they were not able to speak with the professor during the test for any needed clarification.

### **Recommendations for Future Research**

As I completed my research, I feel that all schools need to be more open and understanding with autistic students. There needs to be more postsecondary institutions that create autistic-specific programs. I do believe that future research needs to include all students with disabilities during any study being conducted rather than just those students who have registered with the disability service centers. Students also need to be informed that participating in such studies will not harm them or get them looked at differently because of their disability. I believe this would allow future studies of accommodations and support services for postsecondary students with disabilities more participants and that it would give a more clear picture of who is being left out due to misunderstandings of accommodations and support services.

### **Implications for Practice**

As an elementary special education teacher, I feel that myself and other teachers need to instill confidence into our students at a very young age so that when they reach the time they can attend a postsecondary institution they have the ability to use their voice. As an elementary special education teacher we need to teach our students to stand tall and be proud about who they are. We need to instill the confidence, so they and feel comfortable to ask for help and not worry about being looked down upon because they require extra help to be successful. The articles that I read truly opened my eyes that we need to be more open and understanding about our students with autism. They deserve the same opportunities and education as any other student that desires to pursue a postsecondary education.

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