

# Rehabilitation Services for Young Adults with ASD

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**Abstract:** Adolescents with Autism Spectrum Disorders (ASD) and their families face many obstacles when they conclude their secondary education. Pilot programs to support the development of life skills for young adults with autism, aiming to improve job outcomes and postsecondary educational prospects, have been increasing to meet the demand for support. Despite an increase in empirically based reports on pilot programs, data show significant differences in the efficacy of existing pilot programs, even when empirically supported methods are applied to programming. To understand how to best utilize existing data to improve outcomes for young adults with ASD transitioning into university and the workforce, a critical review of existing pilot programs is provided. A call is made for the continuous dissemination of data regarding the efficacy of pilot programs as they continue to adjust methods based on available data, as is a call for more data on the effect of community partnerships between pilot programs and employers and universities.

**Keywords:** autism, awareness, support services, behavioral management

## Introduction

Young adults with autism face drastic barriers when entering the workforce, with statistics estimating upwards of 75% of adults with autism spectrum disorder (ASD) being unemployed.<sup>1</sup> This is a staggering rate, considering that many adults with autism hold the skill sets required for employment. Studies suggest that this disproportionate rate of unemployment is due to difficulties with skills needed to secure a job in the modern work environment for ASD individuals. People with autism have reported difficulty participating in face-to-face interviews, adjusting to public transportation, changing daily routines, and communicating with employers regarding necessary accommodations. While unemployment remains disproportionately high among individuals with ASD with a college education, young adults have reported similar barriers when transitioning to postsecondary education. Difficulty advocating for learning accommodations, participating in college interviews, and changing daily routines prevent many individuals with ASD from achieving desired equitable educational opportunities after high school.<sup>2</sup> To address this deficit in employment and education, there has been an increasing number of programs targeting young adults with autism to address the necessary life skills as they transition from high school to college or the workforce.<sup>2-4</sup> However, results among pilot programs vary significantly despite measures to control factors including students' academic performance, socioeconomic status, race and gender. One such pilot program that continues to develop its methodology based on available data is that of Tarrant County College (TCC), reviewed by Johnson in 2020.<sup>2</sup>

Johnson's 2020 article "US Pilot Curriculum for Transitioning Students with Autism Spectrum Disorders from High School to College and the Workforce" examined the pilot program developed by TCC for young adults with ASD transitioning from high school to college and vocational opportunities. The pilot program involved 2-semester courses that coached 123 enrolled high school students with ASD on job applications, job interviews, and interview skills to target the transition period to higher education and careers. While 14 students did receive employment, the pilot program did not result in statistically significant outcomes to ensure success in this transition. Analysis of the results of this pilot program in Johnson's 2020 research indicates that one course is not sufficient to meet ASD students' needs in transitioning to college or the workforce. Johnson's suggestions to improve outcomes of this pilot program include



a need for ongoing mentorship, increased parental support, and continuous communication between employers and college advisors regarding the needs of young adults with ASD.<sup>2</sup>

Although the TCC pilot program did not produce statistically significant results in college admission rates for participants in the program, following the publication of Johnson's article, Autism Speaks provided a grant to the TCC pilot program to expand services.<sup>5</sup> As TCC's pilot program is supported by county funds, the county provided permission for secondary data analysis in order to improve the outcomes of the newly developed program. This news reiterates the importance of disseminating information to improve outcomes and resources for young adults with ASD, in particular for the development of emerging pilot programs. The following review covers empirically based studies of pilot programs that showed statistically significant results in improving the experience of young adults with ASD transitioning into university and the workforce.

## Aim

The purpose of this article is to review various college programs for transitioning students with ASD to understand the most applicable methods and practices to maximize college success for students with ASD. As the novel TCC program is in continuous development, research and analysis of other programs is needed to ensure successful development of emerging pilot programs similar to that of TCC. Thus, pilot programs that work with young adults with ASD in their transition to university or the workforce which report statistically significant success in meeting the needs of transitioning students with ASD are reviewed.

## Methods

Several local pilot programs focusing on students with ASD transitioning into university life were reviewed to understand their methods and success rates. While the variables used to measure success varied among pilot programs, all studies focused on pilot programs that catered to young adults with ASD transitioning into university life.

### Feeney and Burke (2021)

Feeney and Burke's 2021 article explores the limitations for services provided to those with ASD in their transition to postsecondary education, and how mentorship may improve social skills training in this transitory period.<sup>6</sup> Utilizing data on over 27,000 adolescents with ASD under the National Survey of Children's Health, the association between Adult Mentorship and moderating social engagement in those with ASD was examined in Feeney and Burke's correlational research design. Results found a positive correlation between adult mentorship and social engagement after accounting for ASD severity, family income, sex, and intellectual ability. The need for mentorship programs in postsecondary transitions is emphasized for their positive correlation with improved outcomes in social engagement and social support.<sup>6</sup> Such factors may improve the outcomes of participation in other necessary activities for the postsecondary transition, such as volunteering and participating in interviews and finding work. The authors suggest that peer mentorship programs may be considered a valuable factor to improve the efficacy of transitioning program models that seek to provide support to ASD students transitioning to college and the workforce.

The TCC pilot program is referenced as a prime example of one such program which may benefit from adult mentorship to improve outcomes with college acceptance and employment. Adult or peer mentorship was one of the several evidence-based factors that were recommended to improve the efficacy of TCC's pilot program, per the discussion of Johnson's 2020 article. The findings from Feeney and Burke's 2021 article further support this recommendation.

### Rando, Huber, and Oswald (2016)

Raiders on the Autism Spectrum Excelling program (RASE) was developed as a pilot program to coach young adults with ASD transitioning into universities.<sup>7</sup> The RASE program provides intensive support over the first year of university life for students with ASD, and gradually reduces intervention over the years to foster independence among students. The program provides coaches to work with students one hour per day over the course of each weekday to focus on developing time management, social, technology, and advocacy skills. Rando, Huber and Oswald analyzed the

effectiveness of the program in 2016, collecting data on the eight students participating in the RASE program. Results showed statistically significant increased university retainment rates of participating students, increased GPAs, decreased behavioral violations, and high reports of satisfaction from the program among both students and coaches. Coaching was modeled among a method of “practice first, then engage” meaning that coaches role played scenarios students may face before encouraging them to go through the process on his or her own (ie, requesting tutoring assistance). The report also discovered that coaches who displayed the strongest interpersonal skills and patience were most likely to overcome barriers to communicating effectively in students with ASD. Coaches who were most open to learning and working with coaching supervisors were able to best connect with the students with ASD and overcome barriers to the transition process. Thus, the personality profile of the coach was found to be a strong indicator in the success of the program for the individual student.

## Lei et al (2018)

Autism Summer School provided a pilot program for autistic students transitioning into university. The program focused on helping students adjust to university life in academic, social, and daily living sectors. The authors analyzed the success of the report based on quantitative and qualitative feedback provided by the students.<sup>8</sup>

The autism summer school consisted of a curriculum over the course of three days with two overnight stays. Curriculum focused on “work”, “rest” and “play” to prepare students for academic life, self care, and socialization with peers. All sessions were conducted by trained psychologists and staff from university members in the Department of Disability and Career Services. Student Ambassadors trained in working with students with autism also provided support to participants. Results showed that the program reduced anxieties and concerns of students in their transition to university and improved overall optimism to beginning university.

Evaluating quantitative and qualitative feedback showed promising results and suggests that addressing a range of issues in the transition process improves student’s outcome and optimism to beginning university. The results reiterate the importance of improving students’ self awareness and empowerment in their transition to university life.

## Martin and Shamesh (2020)

Fairfield University partnered with the Kennedy Center to address the need for students with ASD in their transition to Postsecondary Success through their pilot program Transition Opportunities for Postsecondary Success (TOPS).<sup>9</sup> The community center program partnered with Fairfield University to address social challenges, independent living skills, and self-advocacy for young adults with ASD.

The pilot program used an intake interview to identify the strengths, abilities, and needs of the 12 participants involved in the study. Curriculum was then developed to address the individual and group needs for each student. The course lasted 10 weeks, with students meeting for a course once per week. Courses were held in a different location on the university campus each week to familiarize students with the university and help them to apply the lessons in a practical setting. Courses focused on building confidence and skills across socialization, decision-making, navigation, self care, self advocacy, and time and money management. Individual lesson plans were created for each student to track and measure their goals. Graduate students from the Department of Special Education at the Kennedy Center met with students on a weekly basis to guide participants through the process.

Data were gathered through qualitative interviews and using the PEB-R scale to measure independent living skills and social skills before and after participating in the pilot program. The pilot program and data collection allowed an opportunity to understand student’s and parent’s concerns in the transition process to allow for the university to adapt the program to meet their needs. Half of the participants reported being concerned about “not being smart enough”, while a majority of students and parents also expressed a “concern about feeling safe in school.” The TOPS program allowed graduate students focusing in special education to better understand the concerns and needs of students with autism transitioning into university and allow them to cater the university resources to promote empowerment among students and educate them on resources available to mitigate safety concerns. Responses led the TOPS program to implement communication with parents through weekly notes on the student’s progress and provide resources for both students and their parents.

## Chiang et al (2012)

Chiang et al analyzed several pilot programs to measure predictors of participation in university among students with ASD.<sup>10</sup> In total, 830 autistic students were included in the final data analysis of this longitudinal study. Findings showed that parental expectations, high school type, annual household income, and academic performance were all significant predictors of participating in university education. Also significant was participating in a successful transition plan for students who wished to attend university. While many of the predictive factors may not be in the student's control, it is imperative that students have access to a strong transition plan to ensure their success in attending university.

## Results and Evaluation of Outcomes

While there is an abundance of research on various pilot programs for transitioning students with ASD, reviews of pilot programs that show significant results focus on students with ASD currently enrolled in a university. While data from these studies are valuable for students who are already enrolled, more research is needed for students in the application process to understand what methods are most effective in improving their odds of acceptance to university.

Among pilot programs that support students who have been accepted to university, those which focus on improving student's confidence and self-advocacy report the most success and satisfaction among students, parents, and mentors involved in the program.

## Discussion

Johnson's article has been one of the many critical sources in providing evidence-based data to advocacy and research organizations that seek to improve the lives of those with ASD. The article's discussion of its limitations provided an opportunity to better understand how to enhance the pilot program developed under TCC.

Given the public funding required to improve and create an ongoing program at TCC, the continuous support of evidence-based data such as that of Feeney and Burke justifies the need for increased funding to allow for an effective program to support those with ASD. In addition to implementing peer or adult mentorships for young adults with ASD, research supporting the call for longer semesters and increased class time for transitioning students may allow for optimal outcomes. Should TCC choose to implement a mentorship program, this would provide a valuable opportunity to examine how mentees may experience improved outcomes as they transition into postsecondary education or the workforce.

One of the major barriers to understanding the success of the TCC pilot program was that a measure of the program's success was determined by participating students' acceptance into university, as opposed to students who have already been accepted. While Chiang et al indicated a successful pilot program is a predictive factor for participating in university, a dearth of data exists for what makes a successful pilot program for students who have yet to be accepted to university. Preliminary results from the TOPS program suggest that pilot programs which develop partnerships with local universities may achieve success in this area and allow for further development in the transition process as students begin academic studies.

While a full data analysis of pilot programs is needed to aptly compare the success rates to that of TCC, preliminary statistics from the Autism Society's College Internship Program (CIP) program provide a promising model that future pilot programs may follow to optimize outcomes. As of 2020, 75% of CIP's Alumni are currently employed, which compares to 37% of young adults with ASD in the national average.<sup>11</sup> CIP's program calls for IEPs catered to each student and provides student advising to ensure guidance and support through navigating the career and college space. In addition to Social Skills Development, the curriculum cover Academic Support, Employment Support, Independent Living, and Creative Expression. While the success of established programs is promising and may provide an example for pilot programs to follow, more data are needed to successfully understand what it is that ensures the highest rates of success for participating students. Other factors that may influence the success of programs like CIP outside of the curriculum include the strong network of the Autism Society in finding employers that embrace neurodiversity in the workplace. With the Autism Society being the largest grassroots organization in the United State's autism community, their expansive network allows for CIP's alumni to be in touch with organizations that support the hiring of individuals

with ASD by educating employers on not only the accommodations that can be made to help job-seeking individuals with ASD but also the strengths and weaknesses of a potential employee with ASD. Thus, the success of emerging pilot programs should consider not only ways to adjust curriculum to each student but also the importance of establishing partnerships with local colleges and employers. Ongoing communication and dissemination of the strengths and weaknesses of young adults with ASD is vital to the success of transitioning programs. Employers that have participated in neurodiversity hiring initiatives have reported a range of benefits, including increased employee retention rate, improved communication throughout the company, and higher rates of employee satisfaction with company culture.<sup>12</sup>

The increased dissemination of strengths and weaknesses of those with ASD, along with partnerships with major employers, has proven to encourage employers to partake in hiring initiatives of employees with autism which reduces the unemployment gap of young adults with ASD. Companies such as Google, UPS, Wells Fargo, and Boeing continue to partake in neurodiversity hiring initiatives.<sup>12</sup> Google's hiring initiative provides a prime example of how programs catering to young adults with ASD reap the benefits of partnerships and ongoing education with employers. Partnering with Stanford University's Neurodiversity Project, Google has launched the Google Cloud Autism Career Program. This partnership not only allows for interview coaching to students in the program but also works to educate employers, so they may provide alternative interview processes to candidates, such as allowing candidates to answer interview questions in writing.<sup>13</sup>

Partnerships between training programs that seek to provide college and workforce skills to those with ASD and employers who seek to utilize a more autism-friendly interview process and work environment to encourage a more neurodiverse workforce are on the rise in both the US and internationally. Companies such as Specialisterne continue to offer training to employers while recruiting talent of young adults with ASD who may thrive in the technical positions required.<sup>12</sup>

Continued research regarding the efficacy of applied methods in transition programs for young adults with ASD will allow for continuous improvement of pilot programs.<sup>6</sup> However, the commitment of major employers to educate themselves to learn not only the benefits of a neurodiverse workforce but also cater to the needs to create a more ASD-friendly interview process and work environment is a promising hope for the increased success of programs such as that piloted by TCC.

## Conclusion

Continued dissemination of effective practices and techniques that pilot programs can utilize to accommodate the many barriers young adults with autism face in their transition to universities and careers. A dearth of research examining the best methods for increasing college acceptance rates severely limits Johnson's analysis of TCC's program, which measured the pilot program efficacy by acceptance rates into universities. Studies examining the effectiveness of other pilot programs have measured success based on social engagement and personal interviews by students with ASD who are currently enrolled in universities or vocations.

Among students that are accepted into university, improving self advocacy and empowerment are key indicators of success and satisfaction for participating students in pilot programs. Also important is the willingness of coaches and mentors to engage in continuous learning as they develop personal relationships with the individual student and keeping an ongoing communication with parents and family members of the participating students.

Understanding not only what makes a pilot program successful but also what areas of research are lacking in developing these pilot programs will improve outcomes for students in their transition to university life and the workforce. Partnering with local universities and employers as these pilot programs develop allows for the dissemination of research and ongoing education for employers and university staff to understand how to meet the needs of young adults with ASD.

## Abbreviations

TCC, Tarrant County College; ASD, Autism Spectrum Disorder; IALP, International Association of Communication Sciences and Disorders ; CIP, College Internship Program.



## Disclosure

The authors report no conflicts of interest in this work.

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