

Spotlight Summary

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What Strategies Are Used to Support Employment Outcomes of Young Adults on the Autism Spectrum?

Many young adults on the autism spectrum face challenges entering the labor market or engaging in education or training programs that will prepare them for employment. For example, many experience a sudden drop in services when they exit high school,¹ have one or more co-occurring health or mental health conditions, or face financial barriers.² After leaving high school, autistic young adults are less likely to participate in vocational or technical education and employment than young adults with other disabilities.^{3,4} This spotlight summary highlights the range of programs, models, and strategies implemented to support the transition to competitive integrated employment

for young adults with intellectual or developmental disabilities, including autism. It also summarizes the existing evidence on the effectiveness of such approaches.

A wide range of programs deliver employment services to young adults with developmental disabilities.

In a recent Mathematica report, we found 140 studies of programs, models, and strategies used to support employment outcomes for this population.⁵ We considered published evidence since 2011 describing employment strategies for young adults who have intellectual or developmental disabilities, including autism. We documented the common features, funding sources, and barriers to employment described by the literature. Here are the key findings from this analysis:

- A wide range of 141 programs aimed to support the employment outcomes of young adults with developmental disabilities. More than half of these programs exclusively served autistic young adults.
- Many of the programs combined multiple components such as soft skills training; job search assistance, job development, or job training; coaching or mentoring; and work experiences. Some programs supported high school students in transition planning.

Challenges for autistic young adults



4 in 5 have one or more co-occurring mental health conditions







3 in 10 live in a household with income below the federal poverty line



1 in 4 receives no services to help them become employed, continue their education, or live more independently during their first few years after leaving high school

- Few programs focused on mental health supports, occupational training, or services to improve employers' ability to hire and support young adults with intellectual or developmental disabilities.
- About 40 percent of programs included work experience, which is an evidence-based transition practice.^{6,7,8} Many combined work experience with other supports such as soft skills training.
- A smaller share of programs that *only* served young adults on the autism spectrum provided work experiences compared with those that served young adults with intellectual or developmental disabilities more broadly.
- Many of the programs were resource-intensive or underdeveloped, which makes it challenging to replicate them more broadly or scale them. Other programs faced challenges recruiting youth while in high school or establishing partnerships with schools or employers.

Common services offered by more than one-third of programs

Service	Description of service	Examples of programs offering this service
<p>Soft skills training</p> 	<p>Training on social cognitive and social communication skills including problem solving and self-regulation</p>	<ul style="list-style-type: none"> • Aspirations social and vocational skills program • Assistive Soft Skills and Employment Training program • Project Teens making Environment and Activity Modifications • Project Triumph • Social Thinking curriculum
<p>Coaching or mentoring</p> 	<p>Individualized support from job coaches, life coaches, and peer or community mentors to encourage or prepare for work</p>	<ul style="list-style-type: none"> • Life Management Assistance Program • NEXT Gen Connect • Self-Determined Learning Model of Instruction and “Whose Future Is It?” • Vid-Coach • Virtual Reality Social Cognition Training intervention
<p>Job search assistance, job development, or job training</p> 	<p>Support identifying and applying to jobs, including developing resumes and practicing interviews</p> <p>Creation or identification of job opportunities with employers</p> <p>Training on workplace skills that are not occupation-specific</p>	<ul style="list-style-type: none"> • Autism Career Connections • JobTIPS • Portland Prep • Video modeling • Vocational Rehabilitation (VR) services
<p>Work experience</p> 	<p>Exposure to integrated or non-integrated work settings through paid and unpaid internships, volunteer work, and short-term job placements</p>	<ul style="list-style-type: none"> • Discover Learn Work Career Training Services • Project Transitional Education Adjustment Model • Project SEARCH • Spectrum Works • TECH-Prep

There is limited evidence on the effectiveness of the approaches used to support employment of young adults with developmental disabilities.

In the past decade, few rigorous studies have examined the effectiveness of programs that target the employment outcomes of young adults with developmental disabilities.⁹ Only 6 of the 140 studies examined were rigorous effectiveness studies.¹⁰ They indicate that three programs with some

evidence of effectiveness were Project SEARCH adapted for young adults on the autism spectrum (PS-ASD), a pair of virtual interview training programs, and supported employment services offered through Vocational Rehabilitation (VR).

- Additionally, 42 rigorous studies examined programs' impacts on the development of job-related behaviors and work performance. Although these studies did not examine employment outcomes, they detailed interventions that improve a range of behaviors that could lead to future employment.

Evaluations with rigorous impact designs on employment outcomes

Project SEARCH adapted for young adults on the autism spectrum (PS-ASD)

PS-ASD offers a series of internships during students' final year of high school. Students on the autism spectrum worked over a nine-month period and received systematic instruction and on-site support. Researchers modified the traditional Project SEARCH model to incorporate applied behavior analysis and customized employment supports.

Summary of evidence: Three randomized studies of PS-ASD showed promising results when implemented in hospitals in Virginia and demonstrated successful job attainment and retention among participants.¹¹ However, many participants dropped out of the study before their employment outcomes were measured, which limits the certainty of these findings.

Two descriptive studies of Project SEARCH implemented in other settings also showed positive employment outcomes for participants but did not determine that the program caused these outcomes.

Virtual interview training programs

These training programs used software to simulate virtual job interviews with department store representatives. The training focused on developing 10 job interviewing skills by allowing participants to practice interviews and apply for jobs at a fictional company. Job interview skills included confidence, professionalism, ability to work well with others, and sharing strengths and weaknesses.

Summary of evidence: Two randomized studies focused on autistic young adults showed that participants secured competitive integrated employment at higher rates than nonparticipants.

More evidence could help determine whether researchers or practitioners could replicate the results in other settings.

VR offered supported employment services through state VR agencies

Supported employment is an umbrella term that covers a variety of practices that are typically unique to each recipient. It can include practices such as on-site job coaching, strategies to teach or reinforce appropriate behaviors, skill training beyond what employers offer, and more.

Summary of evidence: One study found a link between receiving supported employment services and attaining competitive integrated employment for young adults with intellectual or developmental disabilities, including those on the autism spectrum.

In addition, six descriptive studies of VR services found positive employment outcomes for transition-age VR clients on the autism spectrum but did not determine that the program caused these outcomes.

Gaps in the literature

The literature includes little information on:

- **Funding sources.** Fewer than half of the publications specified funding sources for the programs. The U.S. federal government funded more than half of the programs with identified sources, representing 14 different agencies.¹² Non-federal funding sources included foundations, state or local governments, private autism-focused organizations, and universities.
- **Core components that led to employment outcomes.** Many programs offered multiple services, and there is little evidence on the effectiveness of separate features.
- **Programs that primarily serve people from historically underserved and marginalized groups.** Only two programs that we identified had a specific aim of addressing racial inequalities. According to recent surveillance data, boys are about four times more likely than girls to be identified with autism, and most programs reviewed served young adults who were predominantly male.¹³ No programs reported serving clients who identified as LGBTQ (lesbian, gay, bisexual, transgender, queer, or questioning) or as a gender other than male or female.

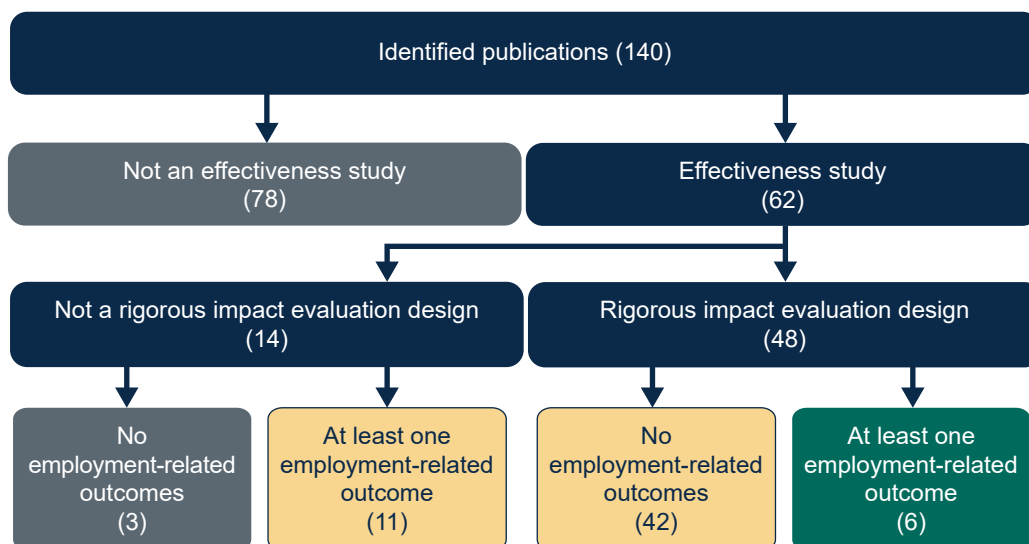
Methods

We reviewed publications identified through a database search and organizational website search and those recommended by staff at the Office of Disability Employment Policy (ODEP). We identified 140 publications that described current and recent programs, models, and strategies that support employment outcomes for young adults with developmental disabilities. We searched for literature meeting the following criteria:

- Written in English
- Published in 2011 or later
- Describes employment programs, models, or strategies
- Program serves people ages 16 to 24 who have intellectual or developmental disabilities
- Study implemented in the United States, Canada, the United Kingdom, New Zealand, or Australia

Sixty-two publications reported impacts (see figure). More details on publications included or flagged as effectiveness studies are available in [Wissel et al. \(2022\)](#) and [Shenk et al. \(2022\)](#).

Count of studies that met effectiveness study criteria



Research Support Services for Employment of Young Adults on the Autism Spectrum (REYAAS) Project.

This spotlight summary is part of the Research Support Services for Employment of Young Adults on the Autism Spectrum (REYAAS) Project. REYAAS is identifying promising practices and policies to support employment of young adults (ages 16 to 28) on the autism spectrum. The project is funded by the Office of Disability Employment Policy (ODEP) within the U.S. Department of Labor (DOL). Mathematica leads the project in partnership with ODEP. More information is available on the [project's web page](#). ▲

Endnotes

¹ Laxman, D. J., J. L. Taylor, L. S. DaWalt, J. S. Greenberg, and M. R. Mailick. "Loss in Services Precedes High School Exit for Teens with Autism Spectrum Disorder: A Longitudinal Study." *Autism Research*, vol. 12, no. 6, 2019, pp. 911–921.

² Lugo-Marin, J., M. Magán-Maganto, A. Rivero-Santana, L. Cuellar-Pompa, M. Alviani, C. Jenaro-Rio, E. Diez, and R. Canal-Bedia. "Prevalence of Psychiatric Disorders in Adults with Autism Spectrum Disorder: A Systematic Review and Meta-Analysis." *Research in Autism Spectrum Disorders*, vol. 59, March 2019, pp. 22–33.

³ Roux, A. M., J. E. Rast, K. A. Anderson, T. Garfield, and P. T. Shattuck. "Vocational Rehabilitation Service Utilization and Employment Outcomes Among Secondary Students on the Autism Spectrum." *Journal of Autism and Developmental Disorders*, vol. 51, 2021, pp. 212–226.

⁴ Shattuck, P. T., S. C. Narendorf, B. Cooper, P. R. Sterzing, M. Wagner, and J. L. Taylor. "Postsecondary Education and Employment Among Youth with an Autism Spectrum Disorder." *Pediatrics*, vol. 129, no. 6, 2012, pp. 1042–1049.

⁵ Wissel, S., M. Shenk, and M. Rice. "Programs, Models, and Strategies to Support Employment Outcomes of Young Adults on the Autism Spectrum: A Review of the Literature." Princeton, NJ: Center for Studying Disability Policy, Mathematica, March 2022. Available at <https://www.mathematica.org/publications/programs-models-and-strategies-to-support-employment-outcomes-of-young-adults-on-the-autism-spectrum>.

⁶ Carter, E. W., D. Austin, and A. A. Trainor. "Predictors of Postschool Employment Outcomes for Young Adults with Severe Disabilities." *Journal of Disability Policy Studies*, vol. 23, no. 1, 2012, pp. 50–63.

⁷ Mazzotti, V. L., D. A. Rowe, J. Sinclair, M. Poppen, W. E. Woods, and M. L. Shearer. "Predictors of Post-School Success: A Systematic Review of NLTS2 Secondary Analyses." *Career Development and Transition for Exceptional Individuals*, vol. 39, no. 4, 2016, pp. 196–215.

⁸ Wehman, P., A. P. Sima, J. Ketchum, M. D. West, F. Chan, and R. Luecking. "Predictors of Successful Transition from School to Employment for Youth with Disabilities." *Journal of Occupational Rehabilitation*, vol. 25, no. 2, 2015, pp. 323–334.

⁹ Shenk, M., A. Krantz, and P. Shattuck. "Evidence on the Effectiveness of Programs, Models, and Strategies to Support Employment Outcomes of Young Adults on the Autism Spectrum: A Review of the Literature." Princeton, NJ: Center for Studying Disability Policy, Mathematica, November 2022. Available at <https://www.mathematica.org/publications/evidence-on-the-effectiveness-of-programs-models-and-strategies-to-support-employment-outcomes>.

¹⁰ We examined impact evaluation designs that could credibly estimate causal impacts. Our working definition of "rigorous" designs included quasi-experimental designs (QEDs), such as matched comparison group designs and other regression methods; randomized controlled trials (RCTs); interrupted time series analyses (ITS); and single-case design (SCDs).

¹¹ Full citations for and more details on the referenced studies are available in Shenk, Krantz, and Shattuck (see endnote 9).

¹² Federal agencies providing funding included the Administration on Intellectual and Developmental Disabilities, Center for Medicaid and Medicare Services, Center for Mental Health Services, Corporation for National and Community Service, Department of Education (unspecified office or grant program), Institute of Education Sciences, Maternal and Child Health Bureau, National Center for Medical Rehabilitation Research, National Institute of Child Health and Human Development, National Institute of Mental Health, National Institute of Neurological Disorders and Stroke, National Institutes of Health (unspecified office or center), National Institute on Disability, Independent Living, and Rehabilitation Research, and National Science Foundation.

¹³ Maenner M.J., Shaw K.A., Bakian A.V., Bilder, D.A., Durkin, M.S., Esler, A., Furnier, S.M., Hallas, L., Hall-Lande, J., Hudson, A., Hughes, M., Patrick, M., Pierce, K., Poynter, J.N., Salinas, A., Shenouda, J., Vehorn, A., Warren, Z., Constantino, J.N., ... & Cogswell, M.E. Prevalence and Characteristics of Autism Spectrum Disorder Among Children Aged 8 Years — Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2018. *Morbidity and Mortality Weekly Report: Surveillance Summaries*, vol. 70, no. 11, 2021, pp. 1–16.

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For more information about the REYAAS project, please contact reyaas@mathematica-mpr.com.