

Supported Employment for Young Adults With Autism Spectrum Disorder: Preliminary Data

Paul Wehman, Stephanie Lau, Alissa Molinelli, Valerie Brooke,
Katie Thompson, Chandler Moore, and Michael West
Virginia Commonwealth University
Rehabilitation Research and Training Center

The purpose of this study was to examine the effects of supported employment in securing and maintaining competitive employment for people with autism spectrum disorder, a group that has typically been found to be underemployed or unemployed. This prospective study followed and collected data on 33 individuals with autism spectrum disorder as they progressed through a supported employment model, working one-on-one with an employment specialist. Of the 33 individuals included in the study, 27 successfully obtained competitive employment, with a total of 29 positions secured. The successful results were achieved through the use of a supported employment model and skilled employment specialists who were able to provide a high level of social supports and compensatory training strategies for skill acquisition. Specifically, employment specialists supported individuals through four steps of an individualized supported employment model: (a) the development of a jobseeker profile and assessment, (b) guiding the job development and career search, (c) conducting job site training, and (d) designing long-term supports to promote job retention. The multitude and variance of specific methods and strategies used in each case to execute these key steps of the supported employment model accurately reflect an emphasis on a highly individualized approach. Although the outcomes of this preliminary study were positive in terms of employment outcomes, further research remains to be conducted.

DESCRIPTORS: autism spectrum disorder, employment of individuals with ASD, competitive employment

Autism spectrum disorder (ASD) is a complex, lifelong developmental disability distinguished by such defining features as difficulties in understanding social

cues and facial expressions, issues expressing emotions in conventionally recognizable ways, inflexibility and discomfort with change, and difficulty adapting to new tasks and routines (Attwood, 2006). For many individuals with ASD, these features often coexist with other associated behaviors that make forming relationships, using language, and interpreting and responding to the world around them difficult (Wagner, Newman, Cameto, Levine, & Garza, 2006). These difficulties associated with understanding and responding appropriately to social demands in daily life are likely to spill over to the work place (Wehman, Datlow Smith, & Schall, 2009). Consequently, it should not come as a surprise that many individuals with ASD experience ongoing problems with finding and maintaining work and therefore experience high rates of unemployment and underemployment (Bolman, 2008; Howlin, Goode, Hutton, & Rutter, 2004).

For those individuals with ASD who achieve employment, follow-up studies suggest that long-term employment outcomes are poor for the majority of this group (Wagner et al., 2005; Wagner et al., 2006). An estimated 50%–75% of adults with ASD are unemployed (Howlin et al., 2004; Hurlbutt & Chalmers, 2004; Mawhood, Howlin, & Rutter, 2000). Yet, it should be noted that many individuals with ASD have the ability and desire to work (e.g., Garcia-Villamizar, Ross, & Wehman, 2000; Garcia-Villamizar, Wehman, & Navarro, 2002; Smith, Belcher, & Juhrs, 1995; Wehman et al., 2009).

Specific research related to Asperger's syndrome, a form of autism along the spectrum, reveals that these individuals are less likely to be employed than individuals with language disorders or learning disabilities (Cameto, Levine, & Wagner, 2004). Howlin et al. (2004) in follow-up studies found that, even among high functioning individuals with Asperger's syndrome, the proportion working rarely exceeded 30%. Of those individuals who were working, many were underemployed in unskilled positions and were poorly paid. Individuals with Asperger's syndrome have also reported frequently switching jobs and experiencing difficulties adjusting to new settings. Such difficulties are common even among those individuals with advanced education degrees (Howlin, 2000).

This report was developed with support from the Virginia Department of Education Grant 881-62135-H027A100107, the Disability Rehabilitation Research Project Grant 133A080027 from the National Institute on Disability and Rehabilitation Research, and the Virginia Department of Rehabilitation Services through Contract 10-225.

Address all correspondence and reprint requests to Valerie Brooke, Virginia Commonwealth University, Rehabilitation Research and Training Center, 1314 West Main Street, P.O. Box 842011, Richmond, VA 23284-2011. E-mail: vbroke@vcu.edu

Supported Employment and Autism

Complicating this matter further is the fact that vocational rehabilitation programs are not fully prepared to serve individuals with ASD (Cimera & Cowan, 2009; Lawer, Brusilovskiy, Salzer, & Mandell, 2009). Research shows that the typical supports available in vocational rehabilitation programs are usually less than optimal and at best limited (Smith, 1994). This is true despite the fact that some studies have shown how individuals with ASD can be successful at work when the right types, levels, and intensity of supports are available (Keel, Mesibov, & Woods, 1997; Mawhood & Howlin, 1999; Smith et al., 1995). What remains to determine is the right mix of supports to meet each person's unique work-related challenges as well as staff trained in working with persons with ASD. Supported employment is one approach that has utility in helping to place and retain individuals with ASD in competitive employment (Targett & Wehman, 2009).

In the United States, only a small number of programs have reported using a supported employment approach to serve individuals with ASD. One of the earliest reports comes from the Treatment and Education and Related Communications Handicapped Children Program (TEACCH) that began providing supported employment services in 1989. Keel et al. (1997) reported the outcomes of 96 individuals with autism who gained and maintained work using supported employment. The vast majority of these individuals had a primary diagnosis of autism; 42% reported a dual diagnosis of autism and intellectual disability. In addition, 31% of the participants entered the program from sheltered work settings. Three models of supported employment were used: (a) individual placement ($n = 69$, 72%), (b) dispersed enclave ($n = 20$, 21%), and (c) mobile crew ($n = 7$, 7%) models. Each of the three approaches placed emphasis on using an individual's strengths and interests to identify appropriate jobs and provide extensive long-term support. The study reported individuals working an average of 28.6 hours per week and earning approximately \$5.29 per hour, which was minimum wage at that time. Participants also achieved a job retention rate of 89%.

Wehman, Revell, and Kregel (1998) reported on two case studies of individuals with autism and severe intellectual disabilities. An individualized approach to supported employment was used to assist the individuals with gaining and maintaining work in their communities. More recently, another case study (Wehman, Targett, & Young, 2007) illustrated how a young man with severe autism was able to gain work using the individualized approach to supported employment.

The use of a "supported employment scheme" has also been described in Great Britain. The program focuses on locating employment for individuals with "high-ability autism" and Asperger's syndrome and is primarily

funded by the government. In an initial 2-year pilot study, Mawhood and Howlin (1999) reported higher rates of employment for participants in a supported group than the control group who received generic disability services. A series of follow-up studies (Howlin, 2000; Howlin et al., 2004; Mawhood et al., 2000) revealed that "specialist employment support" was almost entirely lacking in the United Kingdom. Since the pilot, the project has expanded and was renamed "Prospects." The model includes work preparation, job finding (with focus on employment that is in alignment with the jobseeker's intellectual abilities and educational background), and support in the workplace.

In 2005, an 8-year follow-up study was conducted (Howlin, Alcock, & Burkin, 2005). Results revealed that 68% of the participants found employment primarily in administrative, professional, and technical jobs. In addition, workers, employers, and prospects staff reported high rates of satisfaction. The researchers concluded that "specialist supported employment schemes" (those that offer support from vocational rehabilitation professions, i.e., job coach or employment specialist) have a major and sustained impact on the lives of individuals with autism.

Although research in a supported employment approach for individuals with autism is limited, there has been extensive research on using the individualized approach to providing support to assist individuals with the most significant disabilities (i.e., intellectual disabilities [Wehman, West, & Kregel, 1999], traumatic brain injury [Wehman, West, Kregel, Sherron, & Kreutzer, 1995], severe physical disabilities [Inge, Wehman, Kregel, & Targett, 1996], and mental illness [Bond, Drake, Becker, & Mueser, 1999]) with gaining and maintaining employment. Therefore, it would seem a logical next step is to conduct research to determine whether or not the same or similar strategies may be beneficial to individuals with ASD.

As previously noted, there is some descriptive information outlining the specific services and supports required by individuals with ASD. These examples specifically highlight how a supported employment approach may be utilized but rarely offer specifics in terms of intervention (e.g., Alcock & Howlin, 2003; Hillier et al., 2007; Howlin et al., 2005; Keel et al., 1997; Lawer et al., 2009; Nesbitt, 2000; Schaller & Yang, 2005; Smith, 1994; Wehman et al., 2009). It should be noted that both the Alcock and Howlin (2003) and Howlin et al. (2005) studies were specific to serving individuals with Asperger's Syndrome.

The purpose of this study was to begin to address the dearth of available supported employment information for individuals with ASD. The study provides an in-depth look at the work histories of individuals with ASD that the researchers have supported in obtaining competitive employment over a 23-month period. It was the intent of this study to analyze and discuss how the results might expand and improve the employment rate and career advancement of individuals with ASD.

Method

Participants

Participants were 33 individuals with ASD who were consecutively referred for competitive employment services by vocational rehabilitation counselors. Individuals were not prescreened for behavioral or social skills, employment potential, or other factors. In all cases, the director for employment services reviewed all client referrals to include the authorization of services, personal histories, documentation of disability, and support needs constructed by the department of rehabilitation service's rehabilitation counselor. Table 1 presents demographic information, the employment histories, and social and support profiles of all participants.

Of the individuals served, 76% were men. The median age was 22 years, ranging from 19 to 59 years of age. The sample was predominantly Caucasian (76%). With regard to disability, 79% had a diagnosis of ASD, 18% had a specific diagnosis of Asperger's syndrome, and 70% of this group reported a secondary disability (e.g., learning disability, intellectual disability, psychiatric disability) in addition to a primary diagnosis of ASD.

All individuals had received a high school diploma or high school equivalency diploma, and 39% had some college participation. Regarding potential intensity of work support, 91% had either no or short intermittent histories of employment; 85% reported needing some or full support with training on traveling to their job. Eleven participants (33%) had intermittent histories of employment but were not working at the time of

referral and 19 individuals (58%) had no employment histories. The remaining three participants (9%) had long-term histories but due to significant changes in personal status additional supports were needed to obtain and maintain employment.

Approximately 76% of participants were reported to have high social interaction support needs. High social support needs were defined as persons with one-on-one personal support aides and/or intermittent work histories where vocational rehabilitation counselors reported that loss of employment was the result of limited social interaction skills. Those with intermittent work history often lost previous employment due to communication errors and issues stemming from compulsive topics and behaviors. Sixteen (48%) reported receiving Social Security disability benefits at the time of referral. Thirteen participants completed an extended multiple-month school-based hospital internship program before being referred to supported employment services. The work-based approach known as Project Search has been demonstrated by the Cincinnati Children's Hospital, and research was underway using random clinical trials to assess cause and effect and overall efficacy of this approach (see Rutkowski, Daston, Van Kuiken, & Riehle, 2006).

Design

The design used was a prospective study of 33 consecutive individuals with ASD who were referred for supported employment services by the state department of vocational rehabilitation services. These individuals were served from October 1, 2009 to August 31, 2011. Due to the exploratory nature of the study, no comparison group was used.

Procedures

The data were collected by employment specialists at a Commission in Accreditation of Rehabilitation Facilities (CARF)-accredited supported employment program at a major university. All clients were referred from local rehabilitation counselors. Candidates were not screened for work skills or barriers prior to acceptance into the program for competitive employment. Referring rehabilitation counselors provided diagnosis and employment history. The service delivery model utilized was exclusively focused on supporting persons with significant disabilities in securing and maintaining competitive employment using a supported employment customized approach. Of the three employment specialists, two had experience with applied behavioral analysis, and all three had 1-3 years of experience working in the field of supported employment. Employment specialists engaged in situational assessment, job discovery and job development, customizing jobs, on-site training, positive behavioral supports, and job retention techniques.

The employment specialists were responsible for tracking the actual time spent either directly with or working for the jobseeker with a disability. The tracking of

Table 1
Employment History and Social and Support Profiles of
Participants With Autism

		<i>n</i>	Percentage (%)
Gender	Male	25	76
	Female	8	24
Mean age (years)		25	
Ethnicity	Caucasian	25	76
	African American	5	15
Education	High school	20	61
	College participation	13	39
Disability	Asperger's syndrome	6	18
	Autism	26	79
	Secondary disability	23	70
Social interaction support needs	High	25	76
	Low	8	24
Travel support needs	Independent	5	15
	Partial	12	36
	Full	16	48
Previous employment	None	19	58
	Short intermittent	11	33
	Long history	3	9
Benefits	Supplemental Security Income (SSI)	4	12
	Social Security Disability Insurance (SSDI)	16	48

intervention hours is an important tool for both programmatic and fiscal reasons. In addition to participating in a supported employment online competency-based certificate training program, new employment specialist also took part in a 2-week orientation training where they were assigned to an experienced lead employment specialist and gained expertise on how to properly record time in each intervention category. All time submitted by employment specialist was checked for reliability.

Supported employment interventions are presented using the following categories: (a) development of a jobseeker profile and assessment, (b) job development and career search, (c) job site training, and (d) long-term supports to aid in job retention. Job intervention hours are recorded for each category; a detailed description of each follows.

Jobseeker profile and assessment

An important first step in assisting an individual with ASD to find a job was getting to know that person through the development of a jobseeker employment profile. This involved a variety of interviews, observations, and informational gathering activities aimed at capturing a picture of who the individual really was and what his or her interests, skills, and desires were. This process was not meant to screen people out of services but rather to find out as much as possible about the individual seeking employment. The information gained during this process helped to establish a foundation that guided subsequent job development, job site training, long-term supports, and the career advancement activities. A key strategy in acquiring a clear picture of the jobseeker with ASD's work preference was situational assessment. A situational assessment provided a jobseeker with the opportunity to perform work tasks in real work environments in the community (Inge, 2007; Wehman, Inge, Revell, & Brooke, 2007). Generally, the situational assessment was conducted for a 4-hour period in two to three different types of business settings in the community, which were representative of the local labor market, as well as time, spent in general community exploration.

Job development and career search

During the career search phase, the employment specialist worked with each individual to identify employment options and fields based upon the jobseeker's interests, education, and abilities. It is in the interest of all parties involved to match jobseekers to jobs or companies that best suited their preferences and support requirements (Brooke, Revell, & Wehman, 2009). The same position at two different companies may not have been equally good matches. Depending on the individual, different factors took precedence.

Supporting individuals with ASD in their career search required an intensive level of intervention on the part of the employment specialist. While many individuals

from this group had post-secondary educational experience, few individuals demonstrated practical job-seeking skills. Basic steps of the job search process, such as obtaining references and responding efficiently to interview questions, can pose significant challenges to jobseekers with ASD. Scripts and role-playing scenarios were used by the employment specialist with six individuals and found to be an effective means of successfully managing the job interview process.

Job site training and support

Once the jobseeker secured employment, the new employee and employment specialist entered into the job site training and support phase. Here the employment specialist assisted the individual in learning and adjusting to a new work culture, routine, and responsibilities. This included strategies from systematic instruction, use of natural supports and cues, designing and setting up compensatory strategies, and self-management procedures (e.g., self-reinforcement, self-monitoring).

Compensatory strategies are memory aids or support strategies and are designed to facilitate learning or performance of a particular work task or routine. The objective was for the new employee to eventually use the strategy without prompting and/or be able to complete the task without assistance. All individuals served through this project had access to an iPod Touch to support employment independence. Depending on the supports required, applications were downloaded to assist with job acquisition such as work routine checklists, visual cues for social interaction or coping, timers for transitioning to a new task, and audio cues for production.

Long-term supports to aid in job retention

Long-term support services are imperative for many persons with ASD to ensure their participation in today's work force and career advancement. The nature and amounts of support varied from person to person and business to business. Factors that influenced both the level and the type of supports that were required by an employee were related to employment satisfaction, expanding job duties, and career development in a variety of corporate cultures. Generally, supports fell into one of two categories: (a) employment-specific supports and (b) individual or community supports. Employment supports were those supports and/or services that were directly related to the employee's job. These supports included such services as job task training, service coordination, orientation and mobility, employer and/or coworker support, and job accommodations including assistive technology.

Individual and community supports were supports that were arranged and delivered away from the workplace. They included areas that, if left unresolved, directly or indirectly impact employment stability. Supports in this category included housing and/or personal living

situation, leisure, financial support, transportation, and relationships.

Data Analysis

All client data presented were stored on a secure server using a database built using ColdFusion MX. The database consists of interactive and dynamic Web pages that allow employment specialists to enter data from their laptops in remote locations. This system was password protected to ensure limited access. These data were continually updated and reviewed for accuracy. Intervention time and participant outcomes were aggregated across the group of participants and over time.

Results

Employment Outcomes

Of the 33 participants, 27 (82%) were assisted into competitive employment, with the vast majority of positions classified as an entry-level occupation. Actual employment outcomes are presented in Table 2. It should be noted that all entry level positions are not the same, and many individuals obtained positions where an obvious career ladder existed, including two recreational aides working at a YMCA, two medical record scanners working at a teaching hospital, and a laboratory technician and a research assistance working at a large university. In all cases, the jobseeker's interest and choice directed the job search and ultimately the job selection. In most cases, the employment position was a match to the individual's career path. Other factors that influenced a jobseeker's consideration at the time of job offer included business proximity to personal residence and positive reputation of the business within the community.

All individuals earned wages and benefits commensurate with coworkers performing the same or similar work tasks with pay ranging from \$7.25 to \$10.50 per hour, with a mean wage of \$8.86 per hour. A variety of industries hired participants in the study. Of the total 33 participants, 42% (14) secured employment in the health care field, 15% (5) in retail, 15% (5) in recreation and educational fields, and 6% (2) in food service and janitorial industry. On average, individuals worked 22.53 hours per week, ranging from as few as 8 hours per week to as many as 40 hours per week.

Employment Specialist Intervention

The average intervention time (i.e., hours and minutes) spent to complete the jobseeker profile, which included review of formal records, interviews, observations, and situational assessments, was 8:55, with a range of 1:30 to 50:15. It should be noted that individuals who participated in the hospital internship program required significantly fewer intervention hours for this phase. Not all participants received situational assessment services as part of their jobseeker profile; a weighted average was calculated to reflect that a disproportionate number

of total intervention hours could be attributed to 21% (7) of the participants who received multiple situational assessments.

In the career search phase, which included job development, employer contacts, and job interviews/match, the average intervention time spent was 28:43 with a range of 4:00 to 77:45. Again, individuals participating in the internship program required fewer intervention hours because following the three internship rotations, most individuals were hired by the host company.

For job site training and support, intervention hours ranged from 361:30 hours for one position to as few as 14:30 hours for another, with an average of 107:09 intervention hours recorded for job site training and support. This is the time that the employment specialist spent on the job site actively engaged in training and observing the new employee or during the fading process from the immediate work area during which there were periods of inactivity when no active intervention occurred. All individuals continued to receive job site training intervention hours until they reached a level of stabilization, defined as maintaining 20% or less of employment specialist intervention. It is at this point of stabilization that the federally funded department of vocational rehabilitation services closely monitor the employee's progress before stopping funding and initiating the process to close an individual's case as successfully employed, referred to as a 26 Case Closure by rehabilitation counselors. Reaching stabilization in employment accounted for, in some part, the wide range in job site training intervention hours, as length of time employed varied.

To date, the average intervention hours reported for long-term supports were 27:18, with a range of 4:45 to 70:00. It should be noted that many individuals did not have any data recorded in follow-along status because they have not yet reached stabilization in their employment position. As more new employees become stable in their jobs and as employment specialists fades intensive workplace supports, an increased number of individuals will begin to move over to the long term supports phase, where intervention hours will continue to be reported. The range of long-term support intervention hours will depend on an individual's job retention and not necessarily on the intensity of ongoing supports. At a minimum, all individuals served would continue to receive twice-monthly visits from the employment specialist to assess performance and satisfaction from both the employee and employer perspective.

Summaries of intervention time across the three stages of supported employment are presented in Table 3. Comparison between months of employment and job site training and long-term support intervention hours suggest a general downward trend in intensive supports and services as displayed in Figure 1. Additionally, Figure 1 displays that as intervention time decreased hours worked remained constant at 22:53 hours per week.

Table 2
Employment Outcomes

Name ^a	Industry	Job title and employer	Start date	End date	Job duties	Pay (hourly)	Hours/week (average)	Job benefits
George	Retail	Replenishment Associate; <u>Kmart</u>	10/17/09	2/21/10	<ul style="list-style-type: none"> maintain sales floor stock assist customers as needed bag groceries deliver groceries to customer cars 	\$7.50	22.5	None
George	Retail	Courtesy Clerk; <u>Kroger</u>	3/20/10			\$8.50	27.5	None
Robert	Academic	Lab Assistant; <u>Virginia State University</u>	4/15/10		<ul style="list-style-type: none"> helps germinate seeds performs other lab-based research activities 	\$7.25	27.5	None
RaQuan	Food Service	Busser; <u>Quaker Steak & Lube</u>	6/7/10	10/17/10	<ul style="list-style-type: none"> bus and clean tables maintain ice supply for bars 	\$7.25	15	None
RaQuan	Healthcare	Program Support Assistant; <u>VCU Health Systems</u>	11/1/10		<ul style="list-style-type: none"> scan selected patient records into database sort documents into appropriate folders remove trash and boxes from kitchen clean tables/chairs in cafeteria 	\$9.35	40	Health and life insurance; 401(a), retirement
Louis	Healthcare	Nutrition Team Member; <u>Bon Secours St. Mary's</u>	6/28/10		<ul style="list-style-type: none"> sweep cafeteria sanitize and stock isolation carts clean and replace hand sanitizers 	\$9.14	20	Free meal/shift
Jason	Healthcare	Infection Control Team Member; <u>Bon Secours - St. Mary's</u>	6/28/10		<ul style="list-style-type: none"> assist children with games and classroom activities prepare meals in the kitchen assist with art projects stock bedside carts remove soiled linen stock needles and syringes make deliveries to lab peel pack instruments for sterilization stock supply closets and work stations stock supply closets buff floors and event preparation and clean-up process and package doughnuts assist with retail/sanitation duties 	\$9.14	20	Employee Discount
Mary Ellen	Education	Teacher's Assistant; <u>Bon Secours - St. Mary's</u>	6/28/10			\$9.14	20	Employee discount
Zach	Healthcare	ICU Team Member; <u>Bon Secours - St. Mary's</u>	6/28/10			\$9.14	20	Employee discount
Mickey	Healthcare	Central Sterile Team Member; <u>Bon Secours St. Mary's</u>	6/28/10	12/3/10		\$9.14	20	Employee discount
Chauncey	Healthcare/Custodial	Environmental Services; <u>Bon Secours St. Mary's</u>	6/28/10			\$9.14	20	Employee discount
Winston	Retail	Crew Member; <u>Krispy Kreme</u>	8/6/10			\$7.65	35	None

Table 2
continued

Name ^a	Industry	Job title and employer	Start date	End date	Job duties	Pay (hourly)	Hours/week (average)	Job benefits
Nicholas	Recreation	Counselor II; <u>YMCA</u>	8/13/10		<ul style="list-style-type: none"> • supervise students at after school care program 	\$7.50	22.5	Membership
Frank	Recreation	Counselor II; <u>YMCA</u>	10/15/10		<ul style="list-style-type: none"> • supervise students at after school care program 	\$7.50	22.5	Membership
Wesley	Healthcare	Program Support Assistant; <u>VCU Health Systems</u>	11/1/10		<ul style="list-style-type: none"> • scan records into database • sort documents into appropriate folder 	\$9.35	30	Health and life insurance, 401(a), retirement
Carlton	Retail	Custodial Crew Member; <u>Conner Brothers Collision Center</u>	11/2/10		<ul style="list-style-type: none"> • sweep/mop shop, lobby, restrooms • wash cars • remove trash from shop and surrounding area 	\$7.75	8	None
Vinnie	Custodial	Custodial Crew Member; <u>Adept Cleaning Systems</u>	12/8/10	12/29/10	<ul style="list-style-type: none"> • clean bank branches • vacuum, mop, dust, collect trash 	\$9.00	15	None
James	Retail	Stocker/unloader; <u>Target</u>	7/20/10	9/3/10	<ul style="list-style-type: none"> • maintain sales floor stock • unload freight/pallets • sort pallets for stocking sales floor 	\$8.50	20	Employee discount
Hector	Retail	Collections Team; <u>Ashland Hometown Rentals</u>	4/1/10	6/30/10	<ul style="list-style-type: none"> • delivery driver 	\$7.25	35	None
Brian	Education	Research Assistant; <u>Virginia Center for Urban Development</u>	4/12/2011		<ul style="list-style-type: none"> • process rental collections • literature reviews • report writing and editing 	\$10.50	20	None
Linda	Government	Office Services Assistant; <u>Virginia Employment Commission</u>	6/6/2011		<ul style="list-style-type: none"> • process mail • office support as assigned 	\$9.65	15	None
Susan	Health Care	Maternal Health; <u>Bon Secours St. Mary's</u>	8/8/2011		<ul style="list-style-type: none"> • stock 	\$9.14	20	Employee discount
Jane	Health Care	Wellness/Diabetes; <u>Bon Secours St. Mary's</u>	07/11/2011		<ul style="list-style-type: none"> • sanitize • scan documents 	\$9.14	20	Employee discount
Jon	Health Care	Print Shop/Mail Room; <u>Bon Secours St. Mary's</u>	07/11/2011		<ul style="list-style-type: none"> • compile database • book binding 	\$9.14	20	Employee discount
Sam	Health Care	Durable Medical Equipment; <u>Bon Secours St. Mary's</u>	07/11/2011		<ul style="list-style-type: none"> • sort and merge mail • clean IV pumps 	\$9.14	20	Employee discount
Kate	Health Care	Main Operating Room; <u>Bon Secours St. Mary's</u>	06/20/2011		<ul style="list-style-type: none"> • clean isolettes • stock sterile rooms 	\$9.14	40	Full health benefits
Trip	Health Care	Environmental Services; <u>Bon Secours St. Mary's</u>	07/11/2011		<ul style="list-style-type: none"> • turn over patient rooms • remove linen 	\$9.14	20	Employee discount
Douglas	Health Care	Inpatient Pharmacy; <u>Bon Secours St. Mary's</u>	07/11/2011		<ul style="list-style-type: none"> • trash and trash compactor • pull expired drugs 	\$9.14	20	Employee discount
Mick	Health Care	Linen; <u>Bon Secours St. Mary's</u>	07/18/2011		<ul style="list-style-type: none"> • file chemotherapy orders • cleaning soiled linen • linen deliveries 	\$9.14	20	Employee Discount

^aNames have been changed to protect confidentiality.

Table 3
Total Supported Employment Intervention Hours Across
All Participants

	Range		Total	Mean
	Low	High		
Job development	4:00	77:45	1005:00	28:43
Job site training	14:30	361:30	3107:30	107:09
Follow along	4:45	70:00	382:15	27:18
All intervention hours			4494:45	163:10

Intervention hours during the first and second week averaged 18:46 and 15:32, respectively. By the 15th week of employment, intervention hours stabilized and averaged 3:29. Length of employment for each participant in this study varied; therefore, averages for each week are calculated based on the number of individuals who reached that week of employment. It can be expected that, as participants reach stabilization and move into long-term supports, intervention hours will plateau to reflect ongoing services. Many of the participants were at an early stage in their employment tenure, with only eight participants in Figure 1 receiving long terms supports at Week 60.

Discussion

Individuals with ASD present a broad array of individual support needs to obtain and maintain competitive employment. Some of the specific areas where the employment specialists concentrated their interventions included the career search and job interviews, dislo-

sure, transportation, customizing a job, instructional support, designing compensatory strategies, coworker education, and supporting change of management. The preliminary data described in this article presents a positive commentary on the competitive employment prospects for individuals with ASD.

Using a supported employment approach, 27 of 33 vocational rehabilitation clients with ASD were successfully assisted into employment and have maintained their employment with ongoing support. The employment specialist intervention time required to achieve this outcome averaged just over 100 hours. This is not inconsistent with other groups of individuals with cognitive impairments, such as intellectual disability or traumatic brain injury (Wehman, Kregel, West, & Cifu, 1994; West et al., 1991). Nor is it inconsistent with other disability groups that there is large variance in intervention time required across participants.

An exciting finding from the study is that intervention time decreased on average over time, which is also consistent with findings of intervention studies of other disability groups. This supports the hypothesis that supported employees with ASD can and do become more independent in performing competitive employment and can maintain positions for extended periods of time. In turn, the costs of serving individuals with ASD in supported employment should decline over time, as staff intervention time typically constitutes the bulk of service costs. Although many, if not most, will not likely achieve complete independence, a small number of hours of

Ratio of Support Hours to Hours Worked per Week: 22:52:46

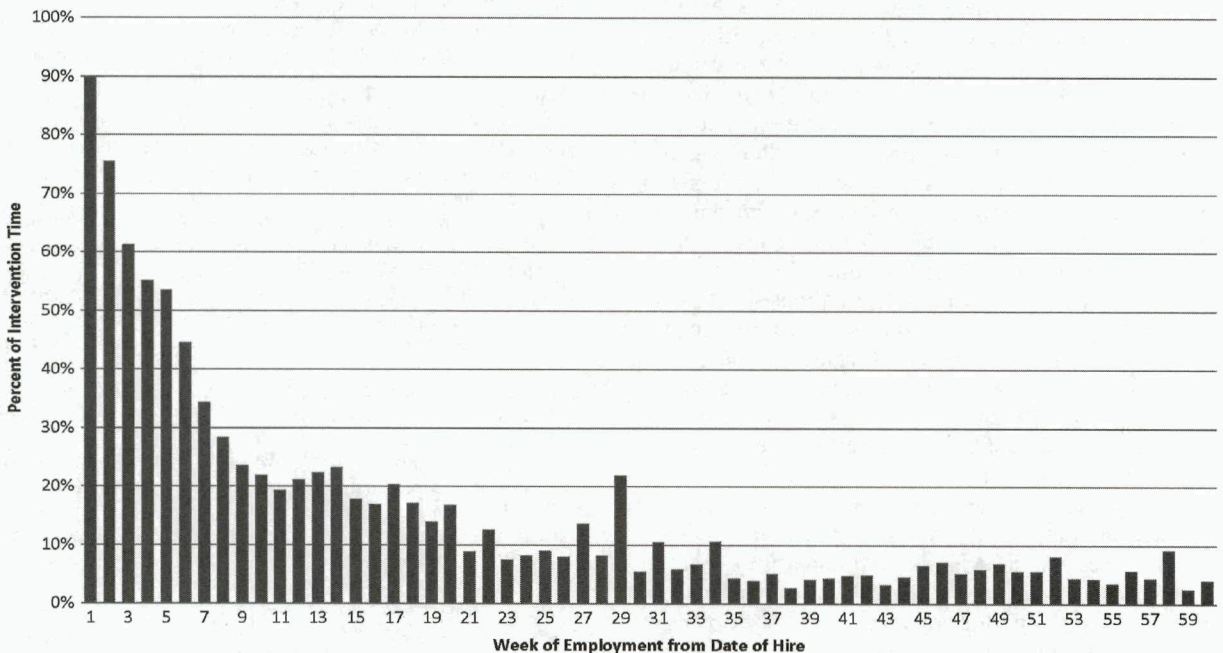


Figure 1. Intervention time as a percentage of employee hours worked.

preventative intervention is valuable in achieving long-term employment success.

Clearly, a supported employment approach for individuals with autism proved effective for the individuals in this study. However, the findings raise more questions for future research. For example, what are the factors that differentiate those participants that required minimal intervention time and those that required extensive employment specialist time? Why were six members of the group unable to locate employment over the course of the study?

More research documenting the specific services and supports required by individuals with ASD will help to ultimately increase the number of people with ASD obtaining employment and community independence. To date, the research has been limited to a few peer-reviewed studies, limited sample sizes, and restricted population ranges, which, admittedly, has resulted in few solid conclusions. Most participants in this study were employed in entry-level positions. Additional research is required to demonstrate the effectiveness of a supported employment model on jobseekers with ASD who possess higher levels of education and skills. These jobseekers may be interested in and capable of filling non-entry-level positions. Furthermore, research models spanning a multitude of jobseekers and employment specialists require consistent data collection methods to ensure validity of results. The employment specialists in this research project recommend additional longitudinal monitoring of jobseekers with ASD to gauge career development, advancement, and job retention. In addition, widening the ASD population cohort would increase the variety of participant demographics, skills, and level of education.

A number of methodological limitations exist in this study, including an absence of a comparative control group and use of a nonstandardized intervention/treatment package, which will limit the generalization of the results. Yet, despite these limitations and previous limited research, to some degree the evidence does endorse supported employment as a promising practice to assist individuals with ASD with employment and career advancement. To make this support option available to individuals with ASD, vocational support providers will need to learn about how to individualize specific supports. This will require comprehensive and tailored services, designed to meet each person's unique needs. As all individuals with ASD present unique abilities and skills, it is suggested that employment specialists invest the time to get to know the individual to include his or her personal and work preferences, interest, and abilities. Equal time must also be invested in analyzing the job site and position. Failure to fully assess the jobseeker and position may result in poor placement, increasing the risk of job termination. The success of supported employment for participants of this study encourages further research and underscores the validity of this approach for jobseekers with ASD.

References

- Alcock, J., & Howlin, P. (2003). *An evaluation of prospects supported employment service for individuals with Asperger's syndrome*. Report to the UK Department and Pensions. Retrieved from <http://archive.scottish.parliament.uk/business/committees/equal/inquiries/disability/evidence/DI015%20National%20Autistic%20Society.pdf>
- Attwood, T. (2006). *The complete guide to Asperger's syndrome*. London: Jessie Kingsley.
- Bolman, W. M. (2008). Brief report: 25-year follow-up of a high-functioning autistic child. *Journal of Autism and Developmental Disorders*, 38, 181–183.
- Bond, G. R., Drake, R. E., Becker, D. R., & Mueser, K. T. (1999). Effectiveness of psychiatric rehabilitation approaches for employment of people with severe mental illness. *Journal of Disability Policy Studies*, 10, 18–52.
- Brooke, V., Revell, G., & Wehman, P. (2009). Quality indicators for competitive employment outcomes: What special education teachers need to know in transition planning? *Teaching Exceptional Children*, 41, 58–66.
- Cameto, R., Levine, P., & Wagner, M. (2004). Transition planning for students with disabilities: A special topic report of findings from the National Longitudinal Transition Study-2 (NLTS2). *National Center for Special Education Research*. Retrieved from EBSCOhost.
- Cimera, R. E., & Cowan, R. J. (2009). The costs of services and employment outcomes achieved by adults with autism in the US. *Autism*, 13, 285–302.
- Garcia-Villamizar, D., Ross, D., & Wehman, P. (2000). Clinical differential analysis of persons with autism: A follow-up study. *Journal of Vocational Rehabilitation*, 14, 183–185.
- Garcia-Villamizar, D., Wehman, P., & Navarro, M. D. (2002). Changes in the quality of autistic people's life that work in supported and sheltered employment: A 5-year follow-up study. *Journal of Vocational Rehabilitation*, 17, 309–312.
- Hillier, A., Campbell, H., Mastriana, K., Izzo, M., Kool-Tucker, A., Cherry, L., et al. (2007). Two-year evaluation of a vocational support program for adults on the autism spectrum. *Career Development for Exceptional Individuals*, 30, 35–47.
- Howlin, P. (2000). Outcome in adult life for more able individuals with ASD or Asperger's syndrome. *ASD*, 4, 63–83.
- Howlin, P., Alcock, J., & Burkin, C. (2005). An 8-year follow-up of a specialist supported employment service for high-ability adults with autism or Asperger's syndrome. *Autism: The International Journal of Research & Practice*, 9, 533–549.
- Howlin, P., Goode, S., Hutton, J., & Rutter, M. (2004). Adult outcome for children with autism. *Journal of Child Psychology and Psychiatry*, 45, 212–229.
- Hurlbutt, K., & Chalmers, L. (2004). Employment and adults with Asperger's syndrome. *Focus on Autism and Other Developmental Disabilities*, 19, 215–222.
- Inge, K. (2007). *Q and A on customized employment: Workplace supports* (Technical Brief). Richmond, VA: Virginia Commonwealth University Rehabilitation Research and Training Center.
- Inge, K., Wehman, P., Kregel, J., & Targett, P. (1996, Winter). Vocational rehabilitation and spinal cord injury. *American Rehabilitation*, 22, 2–12.
- Keel, J. H., Mesibov, G. B., & Woods, A. (1997). TEACCH-supported employment program. *Journal of Autism and Developmental Disorders*, 27, 3–9.
- Lawer, L., Brusilovskiy, E., Salzer, M. S., & Mandell, D. S. (2009). Use of vocational rehabilitative services among adults with autism. *Journal of Autism and Developmental Disorders*, 39, 487–494.
- Mawhood, L., & Howlin, P. (1999). The outcome of a supported employment scheme for high functioning adults with autism or Asperger's syndrome. *Autism*, 3, 229–254.

- Mawhood, L., Howlin, P., & Rutter, M. (2000). Autism and developmental receptive language disorder: A follow-up comparisons in early adult life. I: Cognitive and language outcomes. *Journal of Child Psychology and Psychiatry*, 41, 547–559.
- Nesbitt, S. (2000). Why and why not? Factors influencing employment for individuals with Asperger's syndrome. *Autism*, 4, 357–369.
- Rutkowski, S., Daston, M., Van Kuiken, D., & Riehle, E. (2006). Project SEARCH: A demand-side model of high school transition. *Journal of Vocational Rehabilitation*, 25, 85–96.
- Schaller, J., & Yang, N. K. (2005). Competitive employment for people with autism: Correlates of successful closure in competitive and supported employment. *Rehabilitation Counseling Bulletin*, 49, 4–16.
- Smith, M. (1994). Increasing work productivity of employees disabled by autism. *Journal of Vocational Rehabilitation*, 4, 60–65.
- Smith, M., Belcher, R. G., & Juhrs, P. D. (1995). *A guide to successful employment for individuals with autism*. Baltimore: Paul H. Brookes Publishing.
- Targett, P. S., & Wehman, P. (2009). Integrated employment. In P. Wehman, M. D. Smith, & C. Schall (Eds.), *Autism & the transition to adulthood: Success beyond the classroom*. Baltimore: Paul H. Brookes Publishing Co.
- Wagner, M., Newman, L., Cameto, R., Garza, N., & Levine, P. (2005). *After high school: A first look at the postschool experiences of youth with disabilities. A report from the National Longitudinal Transition Study-2 (NLTS-2)*. Menlo Park, CA: SRI International.
- Wagner, M., Newman, L., Cameto, R., Levine, P., & Garza, N. (2006). *An overview of findings from Wave 2 of the National Longitudinal Transition Study-2 (NLTS2)*. Menlo Park, CA: SRI International.
- Wehman, P., Targett, P., and Young, C. (2007). Off to work for individuals with autism: A supported employment approach. *Autism Advocate*, 46, 54–58.
- Wehman, P., Datlow Smith, M., & Schall, C. (2009). *Autism and the transition to adulthood: Success beyond the classroom*. Baltimore: Paul H. Brookes Publishing Co.
- Wehman, P., Inge, K., Revell, W. G., Jr., & Brooke, V. (2007). *Real work for real pay: Inclusive employment for people with disabilities*. Baltimore: Paul H. Brookes Publishing Co.
- Wehman, P., Kregel, J., West, M., & Cifu, D. (1994). Return to work for patients with traumatic brain injury: An analysis of costs. *American Journal of Physical Medicine and Rehabilitation*, 73, 280–282.
- Wehman, P., Revell, W. G., & Kregel, J. (1998). Supported employment: A decade of rapid growth and impact. *American Rehabilitation*, 24, 3143.
- Wehman, P., West, M., & Kregel, J. (1999). Supported employment program development and research needs: Looking ahead to the year 2000. *Education and Training in Mental Retardation and Developmental Disabilities*, 34, 3–19.
- Wehman, P., West, M., Kregel, J., Sherron, P., & Kreutzer, J. (1995). Return to work for persons with severe traumatic brain injury: A data-based approach to program development. *Journal of Head Trauma Rehabilitation*, 10, 27–39. Retrieved from EBSCOhost.
- West, M., Wehman, P., Kregel, J., Kreutzer, J., Sherron, P., & Zasler, N. (1991). Costs associated with a supported work program for traumatically brain-injured individuals. *Archives of Physical Medicine and Rehabilitation*, 72, 127–131.

Received: March 21, 2012

Final Acceptance: April 4, 2012

Editor in Charge: Craig Michaels

Copyright of Research & Practice for Persons with Severe Disabilities is the property of TASH and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.