
Do sheltered workshops enhance employment outcomes for adults with autism spectrum disorder?

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Abstract

This study investigated whether sheltered workshops help prepare individuals with autism spectrum disorder (ASD) for competitive employment within the community. Two groups of individuals were compared: (a) 215 supported employees who were in sheltered workshops prior to entering supported employment and (b) 215 supported employees who were not in sheltered workshops. Individuals from both groups were matched based on their primary diagnosis, secondary diagnosis (if present), and gender. Results showed that there were no differences in rates of employment between these two groups. However, individuals who participated in sheltered workshops earned significantly less (US\$129.36 versus US\$191.42 per week), and cost significantly more to serve (US\$6,065.08 versus US\$2,440.60), than their non-sheltered workshop peers. Results presented here suggest that individuals with ASD achieve better vocational outcomes if they do not participate in sheltered workshops prior to enrolling in supported employment.

Keywords

autism spectrum disorder, sheltered workshops, supported employment

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In the United States, approximately 7000 facility-based programs (e.g. sheltered workshops) serve 542,127 adults with mental, physical, and emotional disabilities (Braddock et al., 2008). These programs offer skill training, special certificate subminimum wage work, prevocational services, group work placements, and recreation and leisure activities. Each year, many young people with autism, intellectual disabilities, and psychiatric conditions are referred to sheltered workshops as the first step in their vocational rehabilitation process.

The underlying premise of sheltered workshops is that jobseekers with disabilities need certain skills *prior* to becoming competitively employed within the community. Further, sheltered workshops and other facility-based programs are thought to teach jobseekers these skills and 'prepare' them for working in the community. Although much has been written about sheltered workshops over the years, most of this discussion has been either on the merits of the philosophies guiding sheltered workshops or their costs compared with those generated by supported employment (cf. Bellamy et al., 1986; Mallas, 1976; Parent et al., 1989; Rosen et al., 1993; Schuster, 1990; West et al., 1998; Whitehead, 1979, 1986). To date, very little attention has focused upon whether sheltered workshops actually provide beneficial skills to jobseekers with disabilities. In other words, it is unclear as to whether sheltered workshops are *value-added* programs.

In economics, 'value-added' is the difference between the sale price of an item and the cost of all of the materials and services utilized to create it (Levin and McEwan, 2000). Value-added, therefore, is a term for the measurement of the enhancement that the company gives to its raw materials when creating its products. Such a concept is often used when people are contemplating selling their homes. For instance, sellers may evaluate the needs of updating their home (e.g. remodeling a kitchen or adding another bathroom) in the hopes of improving the property's marketability and sale price. In these evaluations, sellers may try to determine whether the costs of completing the updates will be less than the eventual sale price of the home (i.e. the updates will produce more benefits than costs or will be value-added).

The concept of value-added may appear foreign when put in the context of vocational services for adults with disabilities; however, it lies at the heart of what all human service programs strive to obtain. That is to say, we hope that our students, clients, or customers leave our programs better off than when they first enter them. The specific outcomes depend on the program's unique mission, but regardless of the program analyzed, it is hope that what is added to participants will benefit them well into their future. Within this discussion, the question arises: 'Do individuals who participate in sheltered workshops benefit from the experience?'

To investigate this issue, a recent study (Cimera, in press) examined two groups of supported employees – 4904 individuals with cognitive disabilities who were in sheltered workshops at the time they enrolled in supported employment and 4904 individuals with cognitive disabilities who were not in sheltered workshops prior to enrolling in supported employment. Individuals in both cohorts were matched by their disability, the presence of a secondary disability, and their gender. Cimera found that although both groups were equally likely to be employed (59.6% versus 60.4%, respectively), individuals from sheltered workshops worked significantly fewer hours, earned substantially less wages, and cost 74.8% more to serve than individuals who were not transitioning from sheltered workshops. The author's conclusion was that, for adults with cognitive disabilities, sheltered workshops were 'negative value-added'. That is, participating in sheltered workshops *diminished* the future outcomes achieved once individuals became competitively employed, perhaps because the skills and behaviors individuals learned in sheltered workshops had to be 'unlearned' in order for the workers to be successful in the community. It may be, however, that

sheltered workshops are more beneficial for certain populations than others, such as adults with autism spectrum disorders (ASD).

As the numbers of individuals diagnosed with ASD continues to increase, so too has the interest in the support services that they require to transition to adult life and succeed in the community (cf. Chappel and Somers, 2010; Wehman, 2011). Therefore, it is critical to gain more evidence on the vocational outcomes and benefits associated with participation in sheltered workshops since many young people with ASD will present highly challenging communication and social behaviors that could potentially route them into such programs. In other words, we need to know if sheltered work is a 'value-added' service for these individuals.

The purpose of the present study was to extend the research conducted by Cimera (in press), which involved only individuals with cognitive disabilities, by comparing the outcomes of 215 adults with ASD who participated in sheltered workshops prior to applying for vocational rehabilitation services with 215 adults with ASD who did not participate in sheltered workshops. Individuals in both groups were matched by their diagnosis of ASD, any other diagnoses they may have had, and their gender. Outcomes investigated included: (a) rates of employment, (b) wages earned, (c) hours worked, and (d) the cost of services received.

The tested hypothesis was that individuals who participated in sheltered workshops prior to enrolling in supported employment programs would achieve significantly better vocational outcomes than individuals who had not received pre-supported employment services. In other words, this study attempted to discern whether individuals with ASD benefited from being in sheltered workshops (i.e. are sheltered workshops value-added) or whether sheltered workshops actually impair the vocational outcomes achieved by these persons as was found by Cimera (in press) for individuals with cognitive impairments.

Methods

Source of data

The source of data was the Rehabilitation Services Administration's (RSA) 911-database. This national database contains detailed records on all persons who apply for services through vocational rehabilitation. Data are entered by certified rehabilitation counselors and then crosschecked by two computer programs for potential errors or duplicity (RSA, 2004).

Selection of participants

From 2002 to 2006, vocational rehabilitation counselors closed the cases (i.e. stopped receiving services) of 3,182,126 individuals. Of these people, 14,378 had diagnoses of 'autism' (i.e. ASD). Approximately 1.5% of these individuals ($n = 215$) were employed in sheltered workshops at the time of their application for vocational rehabilitative services.

From the 14,163 individuals with ASD who were not employed in sheltered workshops when they applied for services, a sample of 215 persons was randomly selected using SPSS's random select feature. Individuals selected were matched in pairs to participants from the sheltered workshop cohort based on their disability (i.e. 'autism'), their exact secondary disability (if present), and their gender. These variables were identified as selection criteria because previous research has identified these variables as significantly influencing employment outcomes and costs of services received (Cimera et al., unpublished data). The demographics of these two cohorts can be found in Table 1.

Table 1. Demographics of adults with autism from the sheltered workshop and non-sheltered workshop cohorts

	Sheltered employees	Non-sheltered employees
Sample	215	215
Average (SD) age	31.12 (9.07) years	37.75 (8.90) years
Percent female	20%	20%
Percent male	80%	80%
Percent with secondary conditions	74.8%	74.8%
<i>Ethnicity</i>		
White	78.5%	83.3%
African American	16.4%	12.1%
Native American	1.9%	0.9%
Asian	4.2%	3.7%
Pacific islander	0.9%	0.5%
Hispanic	5.6%	1.9%
<i>Source of referral to vocational rehabilitation</i>		
Educational institution (secondary)	8.4%	39.7%
Educational institution (post-secondary)	1.4%	1.4%
Medical personnel	5.1%	5.1%
Welfare agency	2.8%	0.9%
Community rehabilitation program	46.0%	9.3%
Social security administration	0.0%	1.4%
One-stop employment/training center	0.9%	0.9%
Self-referral	0.6%	17.3%
Other sources	29.3%	23.8%

Note: Participants were able to identify themselves as members of multiple ethnic groups.

Variables

Disabilities. When an individual applied for services through vocational rehabilitation, they were assessed by certified rehabilitation counselors. Based on these assessments, their disabling conditions were then classified into 19 different ‘impairment codes’ (e.g. intellectual, physical, sensory impairments) and 34 ‘cause codes’ (e.g. autism, cerebral palsy, traumatic brain injury). This coding was completed for both their ‘primary’ and ‘secondary disability’ (if present). Secondary disabilities were noted in 74.8% of the participants, ‘mental retardation’ (i.e., cognitive impairments) accounting for 46.1% of these. About a third of the sample (33.6%) had secondary disabilities involving mental health (e.g., depression, anxiety disorders, mental illness not otherwise specified).

Rate of employment. Rate of employment was calculated by dividing the number of individuals who had their cases officially closed due to obtaining ‘an employment outcome’ (i.e. competitive employment within an integrated setting earning at or above minimum wage) by the total number of jobseekers in that cohort.

Wages earned. If participants had their cases closed because they obtained an employment outcome, vocational rehabilitation counselors documented the participant’s average wages earned

in a week. Wages earned were gross wages, prior to the deduction of any taxes or other withholdings.

Hours worked. As with wages earned, vocational rehabilitation counselors also documented the average number of hours that successfully employed participants worked in a week.

Cost of services. In addition to wages earned and hours worked, vocational rehabilitation counselors indicated in the 911-database the services that each participant received. They also documented the cost of services that were contracted to outside providers, such as job development and training. In other words, the costs of services presented here represent the services funded by vocational rehabilitation, but furnished by someone other than the participant's vocational rehabilitation counselor.

Research questions

This study investigated four research questions. The first sought to determine whether individuals who received services in sheltered workshops were more likely to be employed than individuals who had the same demographic backgrounds, but did not receive services in sheltered workshops. This study also investigated whether previous participation in sheltered workshops increased the number of hours worked and wages earned in the community. Finally, this study explored whether there was a significant difference in the cost of services received by these two groups. Differences in the rates of employment were analyzed using a Pearson chi-square test. A two-tailed t-test for paired samples was utilized for all other analyses.

Results

Question 1: Do former sheltered workers have a higher rate of employment than individuals who were not from sheltered workshops?

As shown in Table 2, 98 (45.6%) of the 215 former sheltered workers were employed when their cases were officially closed by their vocational rehabilitation counselors, compared with 85 (39.5%) of the 215 non-sheltered workers ($p = .214$).

Table 2. Employment outcomes achieved by adults with autism from the sheltered and non-sheltered workshop cohorts

	Sheltered employees	Non-sheltered employees
Sample size	215	215
Employment rate	45.6%	39.5%
Hours worked per week	23.49 (11.40)	24.97 (12.33)
Wages earned per week ^a	US\$129.36 (\$89.66)	US\$191.42 (\$118.83)
Cost of services (entire cohort) ^b	US\$6,065.08 (\$9,879.33)	US\$2,440.60 (\$4,585.63)
Cost of services (employed) ^c	US\$8,364.39 (\$11,420.70)	US\$4,212.24 (\$5,088.11)

Note: Standard deviations presented in parentheses.

^a $t = 3.60$; $p = .001$.

^b $t = 4.93$; $p = .001$.

^c $t = 2.88$; $p = .001$.

Question 2: Do former sheltered employees work more hours than individuals who were not from sheltered workshops?

Former sheltered employees with ASD who became competitively employed in the community worked an average of 23.5 hours (SD = 11.4) per week; their matched peers from non-sheltered workshops worked an average of 25.0 (SD = 12.3). As with rates of employment, the differences between these groups were not statistically significant.

Question 3: Do former sheltered employees earn more than individuals who were not from sheltered workshops?

Former sheltered employees who became competitively employed in their community earned an average of US\$129.36 (SD = US\$89.66; median = US\$106.50) per week, 32.4% less than the US\$191.42 (SD = US\$118.83; median = US\$152.50) the wages earned by the non-sheltered workshop group ($p = .001$).

Question 4: Do former sheltered employees cost less to serve than non-former sheltered employees?

Formerly sheltered workers received services costing vocational rehabilitation an average of \$6065.08 (SD \$9879.33) per person. The non-sheltered workshop cohort, however, received services costing 59.8% less ($M = \$2440.60$; SD \$4585.63) ($p < .001$). This difference persisted when comparing only those in each cohort who achieved employment. Former sheltered employees who became employed as a result of their participation in vocational rehabilitation programs received services costing an average of \$8364.39 (SD \$11,420.70) compared with an average of \$4212.24 (SD \$5088.11) for the employed non-sheltered employees ($p = .001$).

Discussion

In order for human service programs to be beneficial, they must give participants skills, aptitudes, or dispositions that will help them maximize functioning or increase their community participation. In other words, participants must leave programs better off than when they first entered them. In economics, this term is often referred to as 'value-added'. This study examined whether sheltered workshops are value-added for individuals with ASD.

The tested hypothesis was that individuals who received services in sheltered workshops would achieve better vocational outcomes than individuals with similar demographics who had not received such pre-vocational services. Specifically, it was assumed that if sheltered workshops were beneficial (i.e. value-added programs), individuals from sheltered workshops would be employed at higher rates, work more hours, earn more wages, and cost less to serve in the community than individuals who had not received services in sheltered workshops.

The findings here mirror those found by Cimera (in press) for vocational rehabilitation clients with cognitive disabilities. Specifically, individuals with ASD who transitioned to supported employment from sheltered workshops were employed in the community at comparable rates and worked nearly identical hours per week once employed in the community as individuals who had not transitioned to vocational rehabilitation from sheltered workshops.

When wages earned and cost of services received were examined, individuals from the non-sheltered workshop group fared much better than their peers who were from sheltered workshops. More precisely, individuals who did not receive pre-vocational services in sheltered workshops earned significantly more per week than their peers who did. Further, individuals with ASD who

were not in sheltered workshops also generated only 40% of the costs of those who were in sheltered workshops.

A limitation of this study is that measures of severity in the RSA dataset are very limited. There may be other characteristics of the sheltered and non-sheltered cohorts that contributed the disparities in employment outcomes from vocational rehabilitation services. For example, those with sheltered work histories could have had more significant barriers to employment (i.e. more behavioral issues than the non-sheltered group). Although individuals in both groups were matched by primary and secondary conditions, it may be that individuals in sheltered workshops had more severe impairments than individuals who were not in the sheltered workshop cohort.

Despite this limitation, there are important implications related to these findings. Debate regarding the value of sheltered work for individuals with disabilities in comparison with community-integrated employment has continued since the early 1970s. One of the often stated benefits of sheltered workshops is that they serve as a stepping-stone to community-integrated employment by providing essential employment training and work preparation (Inge et al., 2009). That assertion is called into question by: (a) research findings indicating that only a small percentage of workshop employees make the transition to integrated employment, even after many years of training and preparation (Blanck et al., 2003), and (b) findings from this study and from Cimera (in press) indicating that participation in sheltered workshops did not significantly improve chances for eventual competitive employment within the community.

Additionally, the findings presented here indicate that those who did not receive services in facility-based programs earned significantly more and had significantly lower service costs than those who did. Stated another way, this study found that sheltered workshops appeared not to be 'value-added'. In fact, data presented here suggest that they generated negative value for their participants in relation to vocational outcomes in the community (i.e. fewer dollars earned and higher costs of services to taxpayers).

There are a number of possible explanations for these findings. For instance, motivations of the non-sheltered clients and their family members to obtain and keep higher paying jobs may be greater than for the sheltered employees, or that the sheltered employees and their families had more concerns over loss of disability benefits, which were not included in cost calculations in this study. It is also possible that the sheltered employees were more difficult to place and train as a result of their workshop experiences, such as due to learned helplessness or developing work behaviors that might be acceptable in the sheltered setting but unacceptable in competitive positions.

For adults with ASD and other developmental disabilities, segregated facility-based programs, such as sheltered workshops, continue to be the primary model of service delivery. Across the United States, over 88% of participants with intellectual disabilities are being served in segregated services (Butterworth et al., 2010). Additionally, data collected from the National Longitudinal Transition Study (NLTS-2) show that secondary students with ASD are more likely to have a post-school goal of sheltered employment than any other group of students (Cameto et al., 2003). In order to make informed decisions, individuals with ASD, their families, teachers, and transition coordinators need to be aware that participation in sheltered workshops may be beneficial in transitioning jobseekers to competitive employment in the community.

Certainly, other arguments have been made regarding the value of sheltered employment, such as greater safety, maintaining longstanding social relationships, and lack of available competitive jobs or transportation in the community (Migliori et al., 2008). This study cannot address those arguments. It can only address the value of sheltered work experiences in promoting future competitive employment and improved vocational outcomes, such as higher wages earned. Certainly, the data presented here do not support an economic argument for the value of sheltered work experiences.

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