

Intellectual and Developmental Disabilities

Employment Interventions for Individuals with Intellectual and Developmental Disabilities: A Delphi Study of Stakeholder Perspectives

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Abstract

The purpose of this study was to examine the social validity of five different evidenced-based and emerging pathways to employment (i.e., supported employment, customized employment, internships, apprenticeships, and postsecondary education) from the perspective of multiple stakeholders. A Delphi method was used to determine whether stakeholders are in consensus the accessibility, affordability, acceptability, efficacy, and the cost-benefit ratio of these interventions. Findings indicated that all pathways were deemed socially valid via stakeholder consensus except for apprenticeships, which could not be determined as a result of limited stakeholder knowledge and experience with the pathway. Future efforts to improve employment outcomes for individuals with intellectual and developmental disabilities should focus on better training for service providers and increased access to services.

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Competitive integrated employment (CIE) for individuals with intellectual and developmental disabilities (IDD) is best achieved through the collaborative efforts of multiple stakeholders who provide support through the entire employment continuum, from job seeking to job maintenance (Connor et al., 2021; Horn et al., 2020; Petner-Arrey et al., 2016). Federal mandates over the last several decades have increasingly promoted CIE as the primary employment outcome over non-work alternatives and emphasized greater cooperation among multiple invested parties to achieve this (Connor et al., 2021; Winsor et al., 2021). Targeted efforts to facilitate stakeholder cooperation include increased involvement from individuals with IDD and their families, improved interagency collaboration between transition educators and adult vocational service provider agencies, and expanded initiatives by Institutes of Higher Education, researchers and policy makers to provide advanced training to students with IDD at colleges and universities (HEOA, 2008; IDEA 2004; WIOA, 2014). Despite the improved collaborative efforts among prominent stakeholders to enhance CIE outcomes, individuals with IDD maintain low competitive workforce participation relative to those without disabilities (Winsor et al., 2021).

Employment disparities experienced by individuals with IDD are particularly concerning given the recognized benefits associated with being part of the competitive workforce, including an increased quality of life, financial independence, autonomy, empowerment, and socialization (Taylor et al., 2022). In addition, participation in CIE is linked to a decreased display of maladaptive behaviors (e.g., aggression, self-injury) in individuals with IDD and a reduced need for support in daily major life domains (Schall et al., 2020; Taylor, et al., 2022). Yet only 21% of

working age adults receiving services from state IDD agencies were in CIE in FY 2018 (Winsor et al., 2021). In 2019, only 27% of all individuals with IDD exited the Vocational Rehabilitation (VR) system into CIE within one year of application for services, which marked a decrease from 33% in years 2016 and 2017 (Winsor et al., 2021).

Low rates of community employment persist despite clear evidence that stakeholders prefer CIE over segregated alternatives. Migliore et al., 2007 found that 74% of adults with IDD indicated a desire to work outside a segregated facility. In addition, parents rate competitive employment as the preferred experience for their child with IDD for both part and full-time work over segregated settings (Blustein et al., 2016; Gilson et al., 2018). Not only do individuals with IDD prefer to work in CIE settings, but research has demonstrated that a goal of CIE is attainable for individuals with the most significant disabilities when proper supports and services are provided (Wehman et al., 2017). Several evidenced-based pathways have been identified to lead to CIE for individuals with IDD. Recognized pathways to competitive employment include supported employment (SE), customized employment (CE), employment internship programs (EIPs), apprenticeships, and postsecondary education [PSE] (Wehman et al., 2018).

Supported Employment

SE focuses on rapid job acquisition followed by the installation of proper supports and services to promote job stability (Wehman et al., 2018). The process involves assessment of the job seeker's skills and interests, job development, on-the-job support, and on-going support to ensure job retention (Schall et al., 2020; Wehman et al., 2018). SE has a well-established history of success promoting CIE outcomes for individuals with a wide range of disabilities, including IDD (Ahnole et al., 2020; Frederick & VanderWeele, 2019; ; Ottomaneli et al., 2018; Wehman, et al., 2014; Wehman et al., 2020). More recent research has focused on the use of SE services

provided through State VR agencies using Rehabilitation Services Administration data.

Wehman, Chan et al., 2014 found consistently better CIE outcomes for those receiving SE services through VR, compared to those who did not, in a nationwide sample of 23,298 youth and young adults with IDD. While VR agencies offer a range of services, Nord and Hepperlen (2016) found that odds of CIE for individuals with IDD is 16 times greater when at least 3 SE related services are received (i.e., job search, job placement, and on-the-job support). Not only does SE lead to better employment outcomes, it is also more cost-effective to both individuals with IDD and taxpayers when compared to segregated alternatives (Taylor et al., 2021).

Customized Employment

CE is considered a variation of SE according to WIOA (WIOA, 2014). Like SE, the CE process involves identifying supports and services to enable immediate immersion within the community workforce, but also emphasizes the importance of qualitatively identifying the personalized strengths, interests, and needs of the individual with IDD, and establishing a mutually beneficial relationship that meets the needs of the business as well as the individual with IDD (Riesen et al., 2015). Rather than pursue standard job postings, an employment specialist will determine a job seeker's abilities and preferences then meet with a business to customize a position based on tasks that are needed within that specific workplace (Inge et al., 2018). This may include piecing together tasks from several existing job descriptions, creating a new position that fills an unmet need within the business, or developing a position that contains several, but not all components of an original job description (Inge et al., 2018; Riesen et al., 2015). While CE is still an emerging practice, research indicates strong initial support for its use as a viable pathway to CIE. Wehman et al. (2016) reported that 98.4% of individuals with autism spectrum disorder were able to become successfully employed within the community using a CE

approach. In addition, a 2015 review of the literature identified 10 descriptive, non-experimental studies reporting incidents of individuals with disabilities using CE to successfully achieve CIE outcomes (Riesen et al., 2015). In light of CE gaining increased recognition, recent research has begun to narrow down the essential components of CE and produce implementation fidelity guidelines (Inge et al., 2018; Riesen et al., 2021).

Employment Internship Programs

Those who receive work experience prior to leaving high school are more likely to later be competitively employed (Carter et al., 2012; Siperstein, 2014). EIPs are a type of work-based learning opportunity with demonstrated efficacy in leading to postsecondary competitive employment outcomes. An “internship” is defined by the U.S. Department of Labor (2018) as a temporary paid or unpaid position that is educational in nature, includes on-the-job training, does not displace employees and does not guarantee employment following internship completion. Several specific internships have been recognized as promoting CIE outcomes including Project SEARCH (PS), Project SEARCH + autism specific supports (PS+ASD) and Bridges (Christensen et al., 2015; Gold, 2013; Wehman, Schall et al., 2014; 2017; 2020; Whittenburg et al., 2020). While these programs vary substantially in terms of length and format, all share core common elements including training in an applied setting by a host business, SE services and vocational coursework requirements (Avellone et al., in press). Rates of employment for participants in Project SEARCH are reported as high as 83% (Christensen et al., 2015). The PS +ASD produces a high range of CIE outcomes, with 73 to 90% of participants in community employment after internship exit (Wehman, Schall et al., 2014; 2017; 2020; Whittenburg et al., 2020). In addition, up to 77% of participants in the Bridges internship program have achieved CIE following internship completion (Gold, 2013).

Apprenticeships

Apprenticeships are also work-based learning experiences delivered in a business setting with on-the-job training and required classroom instruction (U.S. Department of Labor, 2020). An apprenticeship differs from an internship in that they are always paid positions, train the apprentice to work in a specific trade, and result in an industry specific credential upon completion (U.S. Department of Labor, 2020). While apprenticeship programs are widely successful for individuals without disabilities, culminating in approximately 94% employment (U.S. Department of Labor, 2020), research on apprenticeship opportunities for individuals with IDD is emerging.

Postsecondary Education

Advanced training through community college, university or technical school is a strong predictor of competitive employment for individuals with IDD (Southward & Kyzar, 2017). Participation in PSE for a person with IDD can occur through traditional enrollment with modifications and accommodations, attendance with assistance through state VR agencies, and participation in PSE programs designed specifically for students with IDD (Think College, 2022; Sannicandro, et al., 2018). PSE programs for students with IDD encompass a wide range of formats (degree, certificate, and non-degree) and level of integration with students without disabilities (integrated, separate, mixed) but all include a focus on employment training by way of applied work experience and vocational coursework (Avellone et al., 2021). To date, over 312 colleges and universities offer PSE programs for students with IDD across the United States (Think College, 2022). Preliminary data indicates a positive impact of participating in a PSE program for students with IDD on employment outcomes with rates ranging from 50.8 to 96% (Cranston-Gingras et al., 2015; Francis et al., 2018; Moore & Schelling, 2014; Neubert et al.,

2004; Ryan et al., 2019; Zhang et al., 2018). Individuals with IDD who attend PSE with assistance through VR services are more likely to be employed, receive higher earnings, and less likely to receive supplemental security income than those who do not attend PSE (Sannicandro et al., 2018).

Purpose of the study

While policy efforts have emphasized increased collaboration among stakeholders and prioritized allocation of funding toward use of evidence-based and emerging practices to assist individuals with IDD gain competitive employment, there has been little attention paid to stakeholders' perspectives on the social validity of these interventions. Social validity is defined as evaluating the acceptability or usefulness of programed interventions (Test, 1994). In this study, we sought to understand the perspectives of service consumers (individuals with IDD, and their family members), service providers, (employment support professionals and transition teachers), and service evaluators and developers (employment intervention researchers) (Test, 1994). We specifically explored stakeholder perceptions of the acceptability of these five employment interventions on the accessibility, affordability, efficacy, acceptability, and cost of the interventions. (Huntington, et al., 2022; Snodgrass, et al., 2022; Smith, et al., 2021). The purpose of this study was to gain consensus among various stakeholders regarding their opinions of the social validity of five employment interventions for individuals with IDD. Social validity serves as a measure of stakeholder perceptions of intervention acceptability regarding the procedures and outcomes of a particular intervention and therefore influences the likelihood an intervention will be used (Callahan et al., 2017). The goal was to obtain feedback from multiple stakeholders who are knowledgeable about employment interventions to determine factors that influence use and hinder or promote success of these interventions. The research question driving

this study was, to what extent do different stakeholders (e.g., adults with IDD, family members, employment support service providers, researchers, and educators) find five evidence-based and promising employment interventions (i.e., SE, CE, EIPs, apprenticeships, and PSE) socially valid interventions for securing CIE outcomes?

Method

An adapted Delphi method was used to address the research question posed by this study. We selected this method to ensure community engagement from all stakeholders because the Delphi technique is recognized as a means for including populations traditionally left out of research (Brady, 2015; Rios et al., 2016). The Delphi method is a practicable qualitative method for engaging a diverse audience of stakeholders to develop consensus for the purposes of informing direct practices (Brady, 2015; Fish & Busby, 2005). Delphi studies usually employ two to three rounds of surveys to selected experts with the first round being open-ended and subsequent rounds becoming increasingly targeted until consensus is reached (Brady, 2015). In lieu of conducting a first-round open-ended survey, the research team used an adapted approach by completing six scoping reviews that included a thorough exploration of evidence on several practices that support CIE for people with IDD (Avellone et al., 2021; Avellone et al., In Press; Chan et al., 2020; Schall, et al., 2020; Taylor, et al., 2021; Taylor et al., 2022). Information obtained from the scoping reviews was used to develop survey questions for the first round of data collection. Then the findings from the first round was used to develop the questions for subsequent rounds of data collection (Brady, 2015).

Definition of Consensus and Development of Additional Rounds of Surveys

To provide a clear rationale to guide the development of each subsequent survey round, we established the following *a priori* definitions (Diamond, et al., 2014). Consensus between

stakeholder groups was defined as a non-significant chi-square comparing stakeholder group responses to Likert scale questions. We also elected a stricter definition of agreement by treating each level of Likert scale responses as distinct even when the differences might be shades of agreement. The reason for this stricter interpretation of consensus was to ensure that slight differences between stakeholders were recognized and examined sufficiently. We elected this over collapsing the categorical data to “agree” and “disagree” to ensure that subtle differences between stakeholder groups would be acknowledged and explored in subsequent surveys. Qualitative feedback provided through the open-ended questions was analyzed to add context to Likert-scale responses. Questions where a chi-square probability was less than or equal to 0.05 of the expected frequency of answers between groups were identified as *not* having met consensus. Surveys were planned to continue until there was consensus on 95% or more of the questions on a survey round. Subsequent rounds of surveys were developed by probing the nature of disagreement between stakeholder groups on questions where disagreement was noted through an analysis of the question responses and the qualitative feedback, if any was provided. This methodology resulted in two rounds of surveys sent to stakeholders to establish consensus on the social acceptability of CIE interventions for individuals with IDD.

Participants

In addressing the research questions, we identified stakeholders as members of five groups; persons with IDD, parents or caretakers of a working-age adult with IDD, employment services providers, researchers in the field of employment and IDD, and high school educators who work with individuals with IDD. In addition, participants were required to be over the age of 18 and able to provide consent. We recruited 15 experts in each of the stakeholder categories described above. Our recruitment strategy varied for each stakeholder group. We sought a

nationally representative group of stakeholders. We identified a group of individuals with IDD and parents or caretakers by reaching out to providers of employment supports to share information about the study with their clients and parents/caretakers of their clients. We also reached out to parent support groups across different states. We found employment service providers by contacting state and local employment service organizations and vocational rehabilitation offices. We found transition educators by contacting vocational rehabilitation providers who had ongoing relationships with high school educators. Finally, in the process of completing the scoping reviews on the identified practices, we recruited researchers who were first or second authors on at least three peer-reviewed published papers on a topic related to one of the practices.

This intentional recruitment method resulted in the pool of 67 participants for round one of this Delphi survey. We sent the round two survey to the same group of stakeholders who were recruited in round one. This resulted in an *n* of 31 (46.27% of the original 67) participants responding to the second round of the survey. The participant's role, race, gender, years of experience, age, and state are described in Table 1. Participants were surveyed from the following states: California, Illinois, Indiana, Maryland, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, Washington and Wisconsin.

Materials: Round One Survey

The first-round survey established basic descriptive information from each participant (Table 1). The survey provided all stakeholders definitions of key demographic and employment intervention terms, which are presented in Table 2. The survey then asked participants to respond to 11 questions for each of the five employment interventions. The 11 questions are presented in Table 3. Round one survey ended with four additional questions.

1. Please rank order the interventions below from most (1) to least (5) effective.
2. Please select all interventions you would NOT recommend based on your knowledge or experience. (Check all that apply.)
3. Are there any other interventions you are aware of that help individuals with IDD gain CIE?
4. Is there anything else you would like us to know about interventions to help individuals with IDD gain CIE?

This resulted in a total of 59 questions.

Procedures: Round One Survey

Surveys were distributed by email. Participants were provided with a link to an online survey that was developed in REDCap, a secure web platform designed to build and manage surveys. Participants had 30 days to respond to the survey. During that period, they were sent three emails with the survey link instructing them how to respond. Finally, participants were offered the opportunity to provide their email address in a separate database, not associated with their responses, to receive a \$10.00 gift card as a thank you for their participation. The round one survey was distributed between March and June of 2021. Following these procedures, consensus was reached on 52 of the 59 questions (88.14% consensus). Consensus was not reached for the following questions related to the associated pathway:

- *SE*: The reasonableness of the steps to implement and the acceptability of the amount of time required.
- *CE*: The availability of trained community providers.
- *Apprenticeships*: The acceptability of the amount of time, the availability of trained community providers, and whether its advantages outweigh the disadvantages.

- *PSE*: The availability of trained providers.

The analysis of open-ended comments yielded a few additional issues to probe in a second-round survey. They included a question posed by stakeholders regarding the fairness of having individuals with IDD work in unpaid internships, the lack of training of employment support staff on supports for individuals with IDD, and the lack of availability of specific services in the stakeholders' individual locations. Finally, one of the stakeholders who identified as a person with IDD reported difficulty understanding some of the questions posed due to wording. This concern was addressed in the second-round survey.

Materials: Round Two Survey

The second-round survey was developed to address the questions where consensus was not reached and where open-ended responses resulted in the identification of additional issues. To address the concern about wording of questions, the researchers consulted with an advisory group of individuals with IDD to get input on question wording. This resulted in the development of an alternative survey that asked the same questions with simpler wording. In the second survey, respondents were asked if they wanted to answer an 'easy to read' version of the survey. The standard round two survey asked respondents their agreement with the following statement: "In order to help persons with IDD gain employment in the community, employment services organizations and job coaches *should* work with the person to find a job that matches their strengths, interests, and preferences." The round two survey with simpler wording presented that statement as follows: "I think job coaches *should* help people with IDD find a job they like, they are interested in, and they are good at doing." Two of the 31 respondents (6.45%) selected the simpler worded survey. Because the questions were matched, these two

stakeholders' responses were analyzed with the other 29 responses. The round-two survey included seven demographic questions and 41 opinion questions.

Procedures: Round Two Survey

Surveys were distributed using the same procedures to the same stakeholders identified in round-one. Round-two participants were again offered the opportunity to provide their email address in a separate database, not associated with their responses, to receive a \$10.00 gift card as a thank you for their participation in the survey. The round-two survey was distributed between October and December of 2021. Following these procedures, the standard for consensus was reached on 39 of the 41 questions (95.12% consensus). After the *a priori* 95% consensus standard was met, the Delphi survey procedure was halted.

Results

All results are reported as means across all stakeholder groups where consensus was determined to be present. For the questions where there was not consensus, the Pearson's chi square statistic is presented along with the means across stakeholder groups. The Likert scale used in this survey as presented in Table 3, questions 2 - 10 were designed and coded so that means between 1 – 3 indicate agreement. Means between 4 – 6 indicate disagreement. As presented in Table 3, stakeholders were first asked to identify their knowledge of each employment intervention. If they reported *I am not aware of (employment intervention)*, the survey omitted the following Likert scale questions and skipped to the next intervention. To increase the inclusion of all stakeholders across all interventions, we included stakeholders who reported awareness of interventions. This increased the inclusion of persons with IDD and their parents/caretakers' opinions on interventions where they may not have had direct personal experience. Additionally, participants were able to skip any questions they did not feel qualified

to answer. This strategy allowed for greater inclusion of users of the services. Table 4 presents the number and percentage of participants who qualified to answer the Likert scale questions for each intervention. To increase the ease of reading findings, means and their meanings are reported as $\bar{x} = 1 - 1.99$ means *Strongly Agree*, $\bar{x} = 2 - 2.99$ means *Agree*, $\bar{x} = 3 - 3.99$ means *Slightly Agree*, $\bar{x} = 4 - 4.99$ means *Slightly Disagree*, $\bar{x} = 5 - 5.99$ means *Disagree*, and $\bar{x} = 6$ means *Strongly Disagree*. Findings are organized by each pathway to employment below.

Stakeholder Perceptions of Supported Employment

Stakeholders *strongly agreed* that SE as defined in the survey had more advantages than disadvantages ($\bar{x} = 1.83$), *agreed* it was affordable ($\bar{x} = 2.37$), helps individuals with IDD gain CIE ($\bar{x} = 2.28$), and was commonly used in the field ($\bar{x} = 2.83$). They *slightly agreed* that community providers are trained to provide SE ($\bar{x} = 3.21$). SE was ranked by 56.9% of stakeholders as the most effective employment intervention of those included in the survey with only 4.5% not recommending it.

Consensus was not reached among stakeholders regarding the reasonableness of the steps to carry out SE ($\chi^2 = 28.883$, $df = 16$, $p = 0.025$). For this question, persons with IDD and family members *agreed* with the statement ($\bar{x} = 2.44$ and 2.33 respectively), while employment services providers ($\bar{x} = 1.64$), researchers ($\bar{x} = 1.60$), and high school teachers ($\bar{x} = 1.79$) *strongly agreed*. Additionally, consensus was not reached among stakeholders regarding the acceptableness of the amount of time SE takes. Specifically, family members *slightly agreed* that SE takes an acceptable amount of time ($\bar{x} = 3.25$), while employment support providers *strongly agreed* with the statement ($\bar{x} = 1.86$). All other stakeholders expressed agreement with the statement with means between 2.33 to 2.89.

The question regarding the reasonableness of the steps of SE was presented in the round two survey and was modified in two ways. First, stakeholders were provided with the stem question “Employment support providers and/or job coaches should complete (step of SE).” The matrix asked stakeholders to respond to the stem question across each of the steps of SE as the end-statement. These steps included 1) vocational assessment, 2) job search and match, 3) job site training, and 4) long-term supports. Second, stakeholders were presented with a second matrix of questions where the stem question was “Employment support providers and/or job coaches the stakeholder knows currently do each of the four steps” followed by each step. This represented eight of the 41 questions in the round two survey. There was stakeholder consensus across all eight questions with means indicating *strong agreement* with the first set (employment support providers and job coaches should... vocational assessment $\bar{x} = 1.80$, job match $\bar{x} = 1.23$, job site training $\bar{x} = 1.27$, long term supports $\bar{x} = 1.50$) and *strong agreement to agreement* with the second set (employment support providers and job coaches do...vocational assessment $\bar{x} = 2.54$, job match $\bar{x} = 2.18$, job site training $\bar{x} = 1.86$, long term supports $\bar{x} = 2.04$). Because the time it takes an individual to find a job varies by region and economic impacts beyond the control of services, we elected to eliminate the question about the reasonableness of time in the second round.

Stakeholder Perceptions of Customized Employment

There was stakeholder consensus on 7 of the 9 Likert scale statements presented in Table 3 regarding CE. Stakeholders *strongly agreed* that CE had more advantages than disadvantages ($\bar{x} = 1.93$), *agreed* they had a clear understanding of CE ($\bar{x} = 2.17$), CE helps individuals with IDD get jobs ($\bar{x} = 2.21$), the steps of CE are reasonable to carry out ($\bar{x} = 2.50$), CE is affordable

($\bar{x} = 2.67$), and CE takes an acceptable amount of time ($\bar{x} = 2.78$). Stakeholders expressed *slight agreement* that CE was commonly used in the field ($\bar{x} = 3.72$) and is easy to obtain ($\bar{x} = 3.81$).

Stakeholders did not reach consensus regarding the availability of trained community providers of CE ($\chi^2 = 33.604$, $df = 20$, $p = 0.029$). For this question, persons with IDD *agreed* with the statement ($\bar{x} = 2.17$), while researchers *slightly disagreed* with the statement ($\bar{x} = 4.55$). This question regarding training of community providers was repeated across all five interventions in the second-round survey and will be addressed later in the paper. Regarding the effectiveness of CE, 14.3% of stakeholders ranked CE as most effective, with 41.1% ranking it as second most effective. Only 1.5% of stakeholders would not recommend CE.

Stakeholder Perceptions of Employment Internship Programs

Stakeholders expressed consensus across all statements regarding EIPs. Stakeholders *strongly agreed* that they had a clear understanding of EIP ($\bar{x} = 1.82$), and EIP has more advantages than disadvantages ($\bar{x} = 1.89$). They *agreed* that EIP helps individuals with IDD get jobs ($\bar{x} = 2.05$), the steps are reasonable to carry out ($\bar{x} = 2.09$), it is affordable ($\bar{x} = 2.29$), and it takes an acceptable amount of time ($\bar{x} = 2.48$). They *slightly agreed* that EIP was commonly used in the field ($\bar{x} = 3.18$), there are trained community providers ($\bar{x} = 3.33$) and it is easy to obtain ($\bar{x} = 3.44$). EIP was ranked as the most effective by 17.9%, second most effective by 16.1%, and third most effective by 37.5% of stakeholders. Finally, 4.5% of stakeholders would not recommend EIP.

Despite the consensus on all questions regarding EIP, there were stakeholder comments in the open-ended responses that prompted further follow-up. Specifically, one stakeholder compared EIP to “sheltered workshops” that take advantage of individuals with IDD. They noted that EIPs do not offer a living wage and take advantage of free labor. Another stakeholder

expressed concern that EIP was a way for businesses to feel good without hiring people with IDD. Finally, a third stakeholder noted that the cost of EIP may be financially prohibitive to many persons with IDD.

These statements prompted an additional four questions regarding EIP in the second-round survey. Specifically, we asked if unpaid EIPs were an acceptable way for high school students, college students, and adults who were not in school to gain work experience. There was consensus among stakeholders across all three age group questions. Stakeholders *agreed* that unpaid internships were acceptable for high school students ($\bar{x} = 2.38$) college students ($\bar{x} = 2.83$), and *slightly agreed* for adults with IDD who are out of school ($\bar{x} = 3.32$). Finally, we asked stakeholders to rate their agreement with this statement: “People with IDD should be paid for their work, even if they are in an educational program to learn work skills.” This was one of the two second-round survey questions upon which consensus was not reached ($\chi^2 = 47.470$, $df = 24$, $p = 0.005$). Transition educators *slightly disagreed* ($\bar{x} = 4.00$) while persons with IDD *strongly agreed* ($\bar{x} = 1.25$), and parents/caretakers ($\bar{x} = 2.44$), employment service providers ($\bar{x} = 2.25$), and researchers ($\bar{x} = 2.00$) all *agreed* with the statement.

Stakeholder Perceptions of Apprenticeships

In the round-one survey, as noted in Table 4, only 43 (64.18%) stakeholders qualified to answer questions regarding apprenticeships. Further, 30 of those stakeholders reported only an awareness level (as opposed to strong knowledge or personal experience) of apprenticeships for individuals with IDD. Apprenticeships were also the intervention where the least consensus was noted with consensus reached on six of the nine Likert scale opinion questions. The three questions where consensus was not reached were the acceptability of the amount of time apprenticeships took, the availability of trained providers, and the advantages outweigh the

disadvantages. Given the lack of knowledge reported by stakeholders, however, the researchers elected to not report specific statistics.

In Round Two because we instead probed personal knowledge of apprenticeships. First, we asked stakeholders to describe their personal knowledge of or experience with apprenticeships. Five stakeholders reported no personal knowledge, 16 reported having heard of apprenticeships, but did not know of any personally, and only eight respondents reported personal knowledge of apprenticeships for people with IDD. Second, we asked stakeholders to report their knowledge of people with IDD who had gained employment because they participated in an apprenticeship. In response, 70.37% reported no knowledge. Given a lack of knowledge of apprenticeships, it is difficult to identify stakeholder perspectives on apprenticeships.

Stakeholder Perceptions of Postsecondary Education

Despite having 76.1% of stakeholders qualified to answer questions about PSE, there was a significant difference among stakeholders reported knowledge ($\chi^2 = 78.728$, $df = 24$, $p = <0.001$). Specifically, researchers were much more likely than any other stakeholder group to report expertise with 64.29% reporting national or local expertise. Meanwhile, all other stakeholder groups were much more likely to report awareness of PSE. Nevertheless, there was consensus across all nine of the Likert questions regarding PSE. Specifically, stakeholders *strongly agreed* that they had a clear understanding of PSE ($\bar{x} = 1.76$), *agreed* that there are more advantages than disadvantages ($\bar{x} = 2.06$), the steps were reasonable ($\bar{x} = 2.25$), PSE helps individuals with IDD get jobs ($\bar{x} = 2.33$), and PSE takes an acceptable amount of time ($\bar{x} = 2.50$). There was *slight agreement* that PSE is affordable ($\bar{x} = 3.26$), community providers are trained ($\bar{x} = 3.57$), PSE is commonly used in the field ($\bar{x} = 3.75$), and PSE is easy to obtain ($\bar{x} = 3.88$).

Finally, PSE was viewed as less effective than the other interventions with 24.6% ranking it fourth, and 43.9% ranking it fifth effective among the interventions. Meanwhile, 7.5% of stakeholders would not recommend PSE as an employment intervention.

The round-two survey probed knowledge of four different types of PSE programs for individuals with IDD, those that offer college degrees, offer a certificate of completion, provide job experience, and result in employment. Stakeholders were asked to select all the types of PSE programs they knew of. In response, 47% reported knowledge of PSE college degree programs, 75% knew of certificate programs, 72% had knowledge of programs that offered job experience, and 69% knew of programs that resulted in employment.

Perceptions of All Five Interventions Across All Measures of Social Validity

As a final way of understanding stakeholders' perspectives regarding these five employment interventions, the researchers looked at means across all 9 Likert scale questions for all interventions. These results are presented in Table 5. (Note, we do not report means for questions where consensus was not reached.) There were three questions where stakeholders reported lower levels of agreement than the other 6 questions across all interventions. They were ease of obtaining the intervention ($\bar{x} = 3.31$ to 4.17), common use of the intervention ($\bar{x} = 2.83$ to 4.17) and the availability of trained providers ($\bar{x} = 3.21$ to 3.57). All other Likert scale questions across interventions were in the *strongly agree to agree range* of means ($\bar{x} = 1.51$ to 2.67). The only outlier in this group of questions was the stakeholders mean regarding the affordability of PSE ($\bar{x} = 3.26$). These ratings suggested that stakeholders viewed the use of, availability of trained providers, and the ease of obtaining all interventions was somewhat lower than the other aspects of the interventions measured.

These findings resulted in the addition of three stem questions that were asked in a matrix across all five interventions. The stem questions were 1) In my experience, community services providers are trained to deliver (intervention); 2) In my experience, vocational rehabilitation counselors are trained to help people with IDD get access to (intervention); and 3) (Intervention) is available in my geographic area. In the second-round survey, there was consensus among stakeholders across all three questions for all five interventions. Table 6 presents the means for each of the three questions across all interventions. Stakeholders report community provider training, ease of obtaining through VR, and geographic availability was highest for SE, followed by EIP, CE, PSE, and apprenticeships respectively. These data provide a new view into the social validity of these five employment interventions.

Discussion

Despite the development of evidenced-based pathways and policy efforts to increase stakeholder collaboration to improve employment outcomes, participation among individuals with IDD in CIE remains low (Winsor et al., 2021). In addition, the experiences of those who provide and receive those pathways remains under researched within the empirical literature. This study examined the degree to which different stakeholders agreed that five evidenced-based and emerging pathways to employment (i.e., SE, CE, EIPs, Apprenticeships, and PSE) are familiar, effective, accessible, affordable, and advantageous.

Overall, results suggested that four of the five pathways achieved social validity by virtue of mean scores and stakeholder consensus. The exception to that finding was apprenticeships due to respondent's self-reported lack of knowledge and experience with the pathway. The fact that stakeholders generally reported little exposure to apprenticeships due to a lack of availability for people with IDD prevented researchers from making useful conclusions regarding social

validation. Even so, the study highlights the overall need for future research to better explore apprenticeships as a pathway to employment for individuals with IDD. Concerning the remaining four pathways (i.e., SE, CE, EIPs, and PSE), all were perceived by respondents to offer more advantages than disadvantages, which is important given the complexity of these pathways which include time intensive intervention over multiple stages (Riesen et al., 2015; Schall et al., 2020; Think College, 2022; Whittenburg et al., 2020). In addition, stakeholders agreed that these pathways are effective methods for helping individuals with IDD find jobs within the community that match their preferences and interests. This finding reflects the utility of these five pathways to produce employment outcomes of a higher quality than simply obtaining work, by suggesting they serve as an avenue to personally meaningful employment. The summative consensus that these four pathways are socially valid employment interventions offer support of continued state and federal policies in favor of funding and prioritization of use to promote improved employment outcomes.

Although stakeholders reached consensus by agreeing that all four employment interventions were understandable, reasonable, affordable, required an acceptable amount of time, produced desirable jobs, and have more advantages than not, they *slightly agreed* concerning other aspects of the interventions. Of note, individuals with IDD, their family members, employment services providers, and researchers showed a definite preference for paid over unpaid internship experiences. Further, stakeholders noted that these pathways are not necessarily easy to obtain within their community, not used commonly by service providers as an intervention option, and that providers are not adequately trained to execute these interventions.

These findings illustrate several important areas for future research. Lack of availability may be due to funding, the type of provider agency from which services were sought, time of year or

eligibility criteria. These factors need to be further investigated for any definitive conclusions to be made. Alternatively, findings may reflect respondent lack of awareness of available options rather than actual availability and point to the need for better dissemination about available employment interventions or better processes to inform service recipients of the array of options available to them. Regarding training, future research should also examine differences in preparation for service providers implementing each employment intervention and differences in qualifications that may exist across agencies. Overall, it is important to note that stakeholders find these interventions socially acceptable yet may be unable to access them due to the lack of trained personnel, and availability.

Strengths and Limitations

Several strengths are associated with this study that bolster support for findings. This study had included stakeholders from 11 geographically different states across the United States. The multiple stakeholder group design also allowed for key people from differing perspectives, particularly those with disabilities, to jointly contribute to the knowledge base on socially valid employment interventions (Rios et al., 2016). The flexibility in survey format was also a strength, which included both Likert and open-ended questions in round-one of the surveys and yielded additional pertinent information. This included alternate wording to make the survey more accessible to respondents with IDD, and guided question content. Consequently, researchers were able to more comprehensively provide survey content that addressed relevant areas of social validation.

Several limitations were also associated with this study. A substantial number of participants who elected to complete the round-one survey did not complete the round-two survey. In addition, those that did not complete the round-two survey were not evenly distributed among

stakeholder groups. More participation in round-two was observed from parents/caretakers and researchers than from individuals with IDD, transition educators, and employment services providers. This should be considered when interpreting the findings reported in this study. Additionally, the advisory group did not review the first survey. This appeared to affect only one participant with IDD in the first round of the survey. The resulting easy-to-read version in the second survey was used by two participants. The researchers concluded this impact to be minor, nevertheless, readers should take this difference in surveys into account when considering the results. There are general limitations which include the potential for participants to answer in socially desirable ways despite the survey being anonymous or differences in understanding of questions across participants. Lastly, though recruitment was done through third party agencies in geographically different areas of the country, the final sample lacked significant participation from Black, Indigenous and People of Color. While this research made concrete efforts to include the voices of people with IDD, their voices were muted in the second round due to dropping from the study. Future research in this area should ensure a more diverse population, especially those with IDD whose voices are rarely included in research.

Conclusion

Research on evidenced-based and emerging practices has demonstrated that individuals with IDD can be successfully employed in competitive work settings (Riesen et al., 2015; Schall et al., 2020; Think College, 2022; Wehman et al., 2018; Whittenburg et al., 2020). This study indicates that nearly all the pathways identified within scientific literature (with the exception of apprenticeships) appear to also be socially validated by the individuals who have direct experience with these services. These findings can be used as an indication that these four employment interventions appear to generally serve the needs of the individuals they are

intended to benefit as evidenced by a high degree of consensus from multiple stakeholders' lenses, including those with IDD. These findings also point to areas for improvement, particularly by adding urgency to the need to ensure access to and services from trained personnel. Overall, results from this study establish four effective pathways to competitive employment (SE, CE, IEPs, PSE) as having practical and meaningful significance that can be used to improve employment outcomes for individuals with IDD.

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Table 1

Demographic Variables of Participants

	Round One Survey Frequency (Percentage)	Round Two Survey Frequency (Percentage)
Viewed Survey	78	41
Consented to Participate	77 (98.72%)	39 (95.21%)
Met Inclusion Criteria, Final <i>N</i>	67 (85.9%)	31 (75.61%)
Response rate in Round Two Survey		31/67 (46.27%)
Participants Stakeholder Role		
Individual with IDD	12 (17.91%)	4 (12.9%)
Parent/Caretaker of Individual with IDD	12 (17.91%)	11(35.48%)
Employment Services Provider	14 (20.9%)	4 (12.9%)
Researcher	15 (22.39%)	12 (38.71%)
Transition/High School Teacher	14 (20.9%)	3 (9.68%)
State		
California	1 (1.49%)	1 (3.23%)
Illinois	2 (2.99%)	1 (3.23%)
Indiana	7 (10.45%)	1 (3.23%)
Maryland	1 (1.49%)	3 (9.68%)
North Carolina	4 (5.97%)	2 (6.45%)
Ohio	10 (14.93%)	5 (16.13%)
Pennsylvania	1 (1.49%)	2 (6.45%)
Tennessee	1 (1.49%)	1 (3.23%)
Virginia	29 (43.28%)	15 (48.39%)
Washington	8 (11.94%)	1 (3.23%)
Wisconsin	2 (2.99%)	1 (3.23%)
Gender		
Female	41 (61.2%)	21 (67.74%)
Male	25 (37.31%)	12 (38.71%)
Other	0	0
Prefer not to Respond	1 (1.49%)	0
Race		

Black	5 (7.46%)	2 (6.45%)
White	54 (80.6%)	28 (90.32%)
Asian	1 (1.49%)	1 (3.23%)
Latinx	1 (1.49%)	1 (3.23%)
Multi-Racial	1 (1.49%)	0
Other	1 (1.49%)	1 (3.23%)
Prefer not to Respond	3 (4.48%)	0
Years of Experience regarding Employment and Individuals with IDD		
0 to 5	16 (23.88%)	8 (25.81%)
6 to 10	14 (20.9%)	4 (12.9%)
11 to 20	16 (23.88%)	8 (25.81%)
21 to 30	13 (19.4%)	7 (22.58%)
31 to 40	4 (5.97%)	3 (9.68%)
41 or more years	3 (4.48%)	3 (9.68%)
Age		
18 to 29	15 (22.39%)	6 (19.35%)
30 to 39	4 (5.97%)	3 (9.68%)
40 to 49	16 (23.88%)	3 (9.68%)
50 to 59	4 (5.97%)	4 (12.9%)
60 to 69	16 (23.88%)	11 (35.48%)
70 or older	1 (1.49%)	1 (3.23%)

Table 2

Definition of Terms as Provided to Stakeholders on Wave One of the Survey

Term	Definition
Intellectual and Developmental Disability	Throughout the survey we will refer to people who have a disability that was present before they turned 18 as a person with an Intellectual or Developmental Disability. We will use the abbreviation IDD for the rest of the survey.
Competitive Integrated Employment (CIE)	<p>This refers to employment in a job in the community where the person 1. Works with co-workers who do not have disabilities, 2. Is paid by the employer, 3. Is paid the same as other employees for similar work and earns at least minimum wage, 4. Gets the same benefits as other employees who work the same or similar jobs, 5. Does the same tasks as other employees with the same or similar jobs.</p> <p>For the purposes of this study, CIE DOES NOT MEAN: 1. Working in a sheltered workshop or workplace designed for employees with disabilities only, 2. Attending a day program where the person is not paid to work, 3. Volunteering, 4. Working as a part of a crew with other people with disabilities who are assigned to complete a particular job (work crew or enclave).</p>
Supported Employment	Supported employment is a service where people with IDD get individualized help from a professional in a real work setting
Customized Employment	Customized employment uses a person with IDD's strengths, preferences, interests, and needs to gain employment that may be a portion of a job or jobs and is personalized for the individual with IDD and the employer.
Employment Internship Programs	Employment Internship Programs provide individuals with IDD with paid or unpaid short term work experiences or "internships" in a community business in order to help them learn job skills.
Apprenticeships	An apprenticeship is a program that trains someone to become skilled in a specific type of job or trade.
Postsecondary Education for Students with IDD	Postsecondary education for students with IDD includes participation in either degree or non-degree work for any length of time at a community college, university, or other institute of higher education.

Table 3

Questions Asked about the Five Employment Interventions

Question	Rating Scale
1. When considering your knowledge of (employment intervention) for individuals with IDD, which best describes you?	I am a nationally known expert in (employment intervention) I am a locally known expert in (employment intervention) I implement (employment intervention) I have received (employment intervention) My child has received (employment intervention) I am aware of (employment intervention) I am not aware of (employment intervention *)
2. I have a clear understanding of (employment intervention).	6-point Likert scale: 1 = Strongly Agree, 2 = Agree, 3 = Slightly Agree, 4 = Slightly Disagree, 5 = Disagree, 6 = Strongly Disagree
3. The steps of (employment intervention) for person with IDD are reasonable to carry out.	6-point Likert scale: 1 = Strongly Agree, 2 = Agree, 3 = Slightly Agree, 4 = Slightly Disagree, 5 = Disagree, 6 = Strongly Disagree
4. (Employment intervention) for persons with IDD is affordable.	6-point Likert scale: 1 = Strongly Agree, 2 = Agree, 3 = Slightly Agree, 4 = Slightly Disagree, 5 = Disagree, 6 = Strongly Disagree
5. (Employment intervention) for persons with IDD is easy to obtain.	6-point Likert scale: 1 = Strongly Agree, 2 = Agree, 3 = Slightly Agree, 4 = Slightly Disagree, 5 = Disagree, 6 = Strongly Disagree
6. (Employment intervention) for persons with IDD is commonly used in the field.	6-point Likert scale: 1 = Strongly Agree, 2 = Agree, 3 = Slightly Agree, 4 = Slightly Disagree, 5 = Disagree, 6 = Strongly Disagree
7. (Employment intervention) for persons with IDD takes an acceptable amount of time.	6-point Likert scale: 1 = Strongly Agree, 2 = Agree, 3 = Slightly Agree, 4 = Slightly Disagree, 5 = Disagree, 6 = Strongly Disagree
8. People in the community are trained to provide (employment intervention) for persons with IDD.	6-point Likert scale: 1 = Strongly Agree, 2 = Agree, 3 = Slightly Agree, 4 = Slightly Disagree, 5 = Disagree, 6 = Strongly Disagree
9. (Employment intervention) for persons with IDD help individuals get jobs in competitive integrated employment they like.	6-point Likert scale: 1 = Strongly Agree, 2 = Agree, 3 = Slightly Agree, 4 = Slightly Disagree, 5 = Disagree, 6 = Strongly Disagree
10. (Employment intervention) for persons with IDD have more advantages than disadvantages.	6-point Likert scale: 1 = Strongly Agree, 2 = Agree, 3 = Slightly Agree, 4 = Slightly Disagree, 5 = Disagree, 6 = Strongly Disagree
11. Please tell us anything else you would like us to know about (employment intervention) for persons with IDD.	Open ended response
Note: * Respondents who reported they were not aware of the employment intervention automatically skipped questions 2 - 11 and advanced to the next section.	

Table 4: Number of Stakeholders who qualified to respond to the nine Likert scale questions for each intervention out of total N of 67

Intervention	N (%) Qualified to Respond
Supported Employment (SE)	66 (98.51%)
Customized Employment (CE)	59 (88.06%)
Employment Internship Programs (EIP)	55 (82.09%)
Apprenticeships	43 (64.18%)
Postsecondary Education (PSE)	51 (76.12%)

Table 5: Overall Means across 9 Likert Scale Questions for Each Intervention

Questions	Supported Employment	Customized Employment	Internships	Apprenticeships	Postsecondary Education
Clear Understanding	1.51	2.17	1.82	2.58	1.76
Steps Reasonable		2.50	2.09	2.67	2.25
Affordable	2.37	2.67	2.29	2.47	3.26
Easy to obtain	3.31	3.81	3.44	4.17	3.88
Commonly Used	2.83	3.72	3.18	4.17	3.75
Acceptable Time		2.78	2.48		2.50
Providers Trained	3.21		3.33		3.57
Get Jobs	2.28	2.21	2.05	2.27	2.33
More Advantages than Disadvantages	1.83	1.93	1.89		2.06

Table 6: Mean of Agreement with Each Statement Across All Five Interventions

Stem Question	SE	CE	EIP	Apprenticeship	PSE
In my experience community services providers are trained to deliver...	2.25	3.14	2.82	3.70	3.26
In my experience, state vocational rehabilitation counselors are trained to help people with IDD get access to...	2.11	3.00	2.82	3.33	3.44
This service is available in my geographic area	1.81	2.32	2.32	2.85	2.04
Scale: 1 = Strongly Agree, 2 = Agree, 3 = Slightly Agree, 4 = Slightly Disagree, 5 = Disagree, 6 = Strongly Disagree					



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Supplemental Material

Delphi FINAL Revision 2 Tracked Changes.docx

