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EMPOWER: An Online Staff Training Focused on Person-Centered Supports for Direct Support Professionals

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Abstract

Background: Direct support professionals (DSPs) for individuals with intellectual and developmental disabilities (IDD) is one of the most rapidly growing professions in the United States. However, there is a gap in recruiting, training, and retraining DSPs to provide appropriate and effective person-centered supports.

Method: The aim of this pilot study was to measure the effectiveness of a staff training program conducted by an occupational therapy doctoral candidate, focused on improving DSPs' confidence and competence when providing services to adults with IDD. A pretest/posttest quantitative design was used to test changes in the DSPs' confidence from the beginning to end of the training and competence from the beginning to end of each weekly module.

Results: As a result of the training, the DSPs improved both their confidence and competence in providing person-centered supports with statistically significant (with Bonferroni correction applied) and positive clinical outcomes (reported Cohen's d large effect).

Conclusions: While preliminary, this study shows that training programs for DSPs implemented through an occupational therapy lens have the potential to improve the confidence and competence of DSPs for providing person-centered supports for individuals with intellectual and developmental disabilities.

Comments

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Keywords

direct support professionals, intellectual and developmental disabilities, online staff training, person-centered supports

Cover Page Footnote

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Credentials Display

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Direct support professional (DSP) for individuals with intellectual and developmental disabilities (IDD) is one of the most rapidly growing professions in the US, and it is projected to increase in demand by 41% from 2016 to 2026 (Bureau of Labor Statistics, U.S. Department of Labor, 2018). The growing demand for this profession is a direct result of population growth, increased life expectancy among people with disabilities, aging family and caregivers, and the expansion of home and community services for individuals with IDD (Laws & Hewitt, 2020). In Pennsylvania, the Olmstead Act of 1999 and the Workforce Innovation and Opportunity Act (WIOA) of 2014 influenced an Executive Order (2016) focused on the reduction of sheltered workshops and an increased emphasis on community-based long-term services and supports, as well as increased vocational rehabilitation services for individuals with IDD (Arc of Pennsylvania, 2016; Commonwealth of Pennsylvania, 2016). Therefore, services would be more integrated and in less restrictive community settings (National Council on Disability, 2015).

IDD is "a disability characterized by significant limitations in both intellectual functioning and in adaptive behavior, which covers many everyday social and practical skills" (American Association of Intellectual and Developmental Disabilities, 2019, para. 1) and is diagnosed before the age of 18. The prevalence of IDD worldwide is roughly 1%, and the global incidence falls between .62%–1.58% (McKenzie et al., 2016). An estimated 7.37 million Americans have a diagnosis of IDD (Larson et al., 2018).

Individuals with IDD face many disparities in society, such as low community engagement and inclusion and unequal employment hours and pay (Blick et al., 2016; Terras et al., 2019). Accordingly, DSPs educate these individuals on self-advocacy and practical day-to-day living skills to limit the impact of these disparities.

Work Demands and Barriers for DSPs

In 2019, Espinoza (2017) reported an estimated 4.5 million DSP jobs in the US. Between 2018 and 2028, the growing demand for DSPs will add an additional 1.3 million new jobs to the workforce (PHI, 2019). DSPs work in a variety of settings, including homes, day habilitation, community-based settings, and vocational sites (Houseworth et al., 2020). DSPs are responsible for developing and implementing interventions, including teaching new skills, such as dispensing medications; communicating with health professionals; assessing needs; connecting people to community resources; providing personal care and hygiene; supporting employment; identifying and providing person-centered supports; supporting self-determination; and assisting in transportation, recreation, housekeeping, and home management. These day-to-day services are provided so that the individual with IDD can live and work in their community and lead self-directed community and social lives (Laws & Hewitt, 2020). Furthermore, DSPs play a crucial role in fostering independence, establishing purpose and meaning in one's life, engaging and integrating individuals with IDD into their communities, and deterring institutionalization.

The US currently has a 45% DSP turnover rate, twice that of Canada and about five times that of Australia (Crane & Havercamp, 2020). The National Core Indicators (2019) reported that 5% of DSPs leave their job within a year, and 35% leave within 6 months. In addition, 56% of individuals with IDD have experienced DSP turnover in the last 2 years (Friedman, 2018). According to Crane and Havercamp (2020), decreasing the staff turnover rate is essential to maintaining the integrity and quality of care for individuals with IDD as these high rates of turnover negatively impact the agency, DSPs, and, most importantly, individuals with IDD and their families.

Turnover impacts agencies financially as additional time and money is spent on training and overtime pay for the shift coverages (Houseworth et al., 2020). For example, costs associated with DSP staff turnover totaled $2.3 billion dollars nationally in 2019 (President's Committee for People with Intellectual Disabilities, 2017). Over time, these costs negatively impact the financial state of each agency. Individuals with IDD are adversely impacted by the high turnover rates, which tend to foster distrust in the dependability and quality of care of the DSPs and feelings of helplessness (Houseworth et al., 2020). Turnover rates can also limit individuals with IDD's employment opportunities, social inclusion, and quality of life as consistent and thorough support services are lost. Family members are also impacted. Anderson et al. (2002) found that 53% of family members reported not taking a job or promotion, working fewer hours, and/or leaving the workforce to provide care for their loved one with IDD.

DSPs hold great accountability in their jobs as they are responsible for multiple levels of support for the individuals they serve (e.g., medical care, vocational supports, community access, teaching everyday life skills). However, there is minimal funding and training to properly support DSPs, resulting in poor staff stability and a lack of preparedness to provide services (Friedman, 2021; Johnson, 2019; Weiner et al., 2009). Although this work can be fulfilling, it can also be emotionally and physically taxing for DSPs, especially when proper training and financial resources are not provided.

Poor staff stability can also be attributed to low wages for DSPs. In 2016, the average hourly DSP wage was $11.76 an hour, which is below the federal poverty line for a family of four in that same year (Houseworth et al., 2020; U.S. Department of Health and Human Services, 2019). DSPs' wages have remained stagnant regardless of increased experience and/or skill set, drawing DSPs to leave their positions for similar professions (e.g., certified nursing assistant) (Wiener et al., 2009). Therefore, it is important to analyze the limitations in current DSP training and fill the gap in providing in-depth person-centered supports education to enhance quality DSP support for individuals with IDD.

DSPs do not always feel that they have the proper training and support to fill these roles day-to-day. In a 2019 survey, DSPs identified a need for enhanced access to more relevant training opportunities on topics such as navigating families and conflict, enhancing person-centered supports, managing challenging behaviors, and communicating effectively, rather than CPR, first aid, and so on (Johnson, 2019). According to Brennan et al. (2019), staff training is a core component of implementing and maintaining effective and quality practice.

Training to Provide Person-Centered Supports

Person-centered supports is a multi-dimensional, individualized approach aimed at enhancing the quality of life for individuals with IDD by focusing on their strengths, priorities, and desired outcomes rather than their deficits (Claes et al., 2010). This approach places the individual at the center of the support team while their family, friends, caregivers, and therapists assist them in identifying and monitoring their personal goals (Claes et al., 2010). The sustainable benefits of person-centered supports include increased active choice making, improved self-determination, and more personalized life choices (Espiner & Harnett, 2012; Menchetti & Garcia, 2003; Robertson et al., 2006). According to Taylor and Taylor (2013), the use of person-centered supports by DSPs improved staff's awareness of each individual's respect, choice, and independence. Evidence supports the effective use of person-centered supports in improving quality of life for individuals with IDD. However, Gormley et al. (2019) stated that there is a gap in training for DSPs in regard to providing person-centered supports, resulting

in poor DSP confidence and competence in service delivery. As the demand for DSPs increases, the demand for improved training in person-centered supports follows suit.

Worldwide, a systemic change toward the use of person-centered supports approaches in community-based services for individuals with IDD has occurred (Taylor & Taylor, 2013). Many countries, like the United Kingdom and Australia, have successfully implemented policy changes that mandate DSPs use person-centered supports in their services with individuals with IDD (Curryer et al., 2015). The US does not have a similar mandate, but the US Centers for Medicare and Medicaid Services (CMS) implemented regulations that recommend the use of person-centered supports in 2014 (CMS, 2014).

There is a lack of guidance for DSPs in how to implement person-centered supports, leading to staff experiencing unclear expectations and purpose for their services. Federal requirements pertinent to quality do not exist; therefore, each state is able to develop, implement, and monitor their programs in different ways (AAIDD & AUCD, 2016). Bigby et al. (2017) found that suboptimal person-centered supports staff training resulted in poor integration and sustainability of community-based services for individuals with IDD. The researchers contributed this challenge to the lack of "conceptual clarity . . . that impedes effective service design and delivery" (Bigby et al., 2017, p. 167). Clifford et al. (2018) reported that staff identified their resources and legislation as unsupportive of quality practice because of a common misconception that DSPs are not interested in or capable of benefiting from additional education. However, 63% of DSPs were identified as having more than a high school education and desired additional training (Hewitt et al., 2019). Therefore, DSPs have the potential to benefit from education regarding current, effective, and best practice with the individuals that they serve.

Benefits of Enhancing DSP Trainings in Person-Centered Supports

In the literature, DSP training programs have proven effective in improving the quality of services for individuals with IDD. In a systematic review by Bredewold et al. (2020), DSP community-based services following a person-centered supports approach improved the quality of life for individuals with IDD through increased engagement and active choice, improved creation and following of personalized daily routines, and provided more individualized accommodations. Challenging behaviors, such as self-abusive behavior, were replaced with improved responsibility, self-direction, and enhanced social skills (Bredewold et al., 2020). This review demonstrated that optimal training in person-centered supports can have a positive impact on the quality of direct support services by DSPs. Gormley et al. (2019) implemented an online behavioral skills training where 104 DSPs were educated on a diverse range of skills to support their services. Results showed that DSPs' competence improved as they maintained and applied the information to their interventions.

However, a common challenge for agencies' implementation of training is scheduling availability of DSPs. According to Brennan et al. (2019), a solution to this challenge is providing online training, as they are an economical and effective training module for large numbers of service providers. Online training is also private, self-paced, convenient, and transportable. A computer-based training module for DSPs working with individuals with IDD indicated that all DSPs acquired and maintained at least one new skill during role-play simulations (Nosik & Williams, 2011). Damen et al. (2011) evaluated the effectiveness of a video-feedback interaction training for 72 DSPs for individuals with visual and intellectual disabilities. Results revealed improved staff competence from baseline to post training.

Beadle-Brown et al. (2012) implemented an in-person training with 31 DSPs that showed improvements in DSP support in community integration and improved choice-making and engagement in meaningful activities for individuals with IDD. Sandjojo et al. (2018) and Totsika et al. (2008) created similar in-person trainings with 28–58 DSPs and found that DSPs enhanced their skills in supporting independence, self-reliance, and improved engagement of individuals in community settings. Zakrajsek et al. (2014) implemented an in-person training with 41 DSPs focused specifically on incorporating person-centered activities. DSPs reported that their confidence in providing person-centered supports improved.

Role of Occupational Therapy in DSP Training

There is a lack of literature describing occupational therapists' role in providing DSP training and education. However, occupational therapists are particularly trained in using person-centered supports and self-advocacy to enhance services for their clients; therefore, they can serve a valuable role in training DSPs in these areas (Thompson et al., 2015). According to the profession's accreditation standards and framework, occupational therapists are trained to enhance individuals' participation in meaningful everyday activities in the home, workplace, community, and other settings for those with and without disabilities (AOTA, 2018; AOTA, 2020). In community-based settings, occupational therapists assist individuals with increasing their independence with basic activities of daily living (ADLs) (e.g., self-care) as well as instrumental ADLs, such as vocational training and employment supports, financial literacy, community mobility, and health management (Bathje et al., 2017; Friedman & VanPuymbrouck, 2018). Occupational therapists are also trained in providing education to family, caregivers, and staff (including DSPs) to enhance the services they provide (Umeda et al., 2017).

According to Johnson et al. (2019), occupational therapists have a role in directing care and facilitating the independence of individuals with IDD through consultative and advocacy-based interventions including staff and caregiver training. While occupational therapists are likely involved in DSP training and education in clinical settings on a regular basis, their role in providing staff and caregiver training is rarely discussed in the literature. Of the few studies that describe occupational therapy (OT)-led training programs, most studied the effectiveness of in-person training programs for family caregivers (not DSPs) in support of other populations, such as older adults with dementia or children with disabilities, but they do not address staff/caregiver training in support of adults with IDD (DiZazzo-Miller et al., 2017; Moghimi, 2007). Since DSPs play such a vital role in providing daily support to individuals with IDD, this study focused on DSP training with a focus on provision of person-centered supports to improve effective supports and services for this population. In light of the recent COVID-19 pandemic, this study aimed to assess the effectiveness of an OT-developed and led DSP training provided in an online, synchronous format.

The purpose of this study was to determine if an online staff training could improve the confidence and competence of DSPs so that they could provide appropriate and effective person-centered supports to individuals 21 years and older with IDD in a community-based setting.

Method

Research Design and Purpose

This study used a single group pretest/posttest design to evaluate the effectiveness of a staff training for increasing confidence and increasing knowledge and the ability to effectively deliver evidence-based practices and support clients with IDD. The training program aimed at filling a gap in staff training by educating DSPs on ways to make the provider agency's services more person-centered.

Ethics approval for this study was obtained from the OT student researcher's university institutional review board (protocol #2020/05/24). Informed consent was obtained from all participants.

Setting

This study occurred as a partnership between a small, non-profit human service provider agency in Western Pennsylvania and the researcher's university. The agency offers a wide range of support and services to roughly 80 individuals with physical and cognitive disabilities. Services include day habilitation and community, vocational, and residential supports. The service model of the agency focused on provision of person-centered and community-based supports. The agency had recently created an agency-wide objective to infuse more person-centered approaches into the services they provided; however, agency DSPs lacked the staff training and resources to carry out these services effectively. Therefore, the OT researcher provided consultative staff training to DSPs who were working with individuals with IDD in community-based support.

Participant Selection

Using purposive sampling, twelve DSPs enrolled as participants in the study. Inclusion criteria were DSPs who were currently employed in community-based practice with at least one individual with IDD who was over the age of 21; had computer access; and access to online programs, such as PowerPoint, Zoom, and Qualtrics XM (2019). There were no exclusion criteria. To recruit potential DSPs, the OT researcher created a brochure describing the logistics and purpose of the staff training. This brochure was shared via email to all eligible DSPs at the agency. Those who were interested contacted the OT researcher directly via the email provided in the brochure. The OT researcher ensured the participants that the training would be completed during their workday hours and that they would be paid by the agency for their dedicated time.

Procedure

EMPOWER was implemented for 8 weeks. The 6 weeks prior to implementation were used to evaluate the agency and DSPs for their educational needs through a formal needs assessment, recruit DSPs, and prepare training materials for the EMPOWER program. During the needs assessment process, the OT researcher met virtually via Zoom with four department coordinators and five DSPs. The OT researcher asked open-ended questions to identify the views and perspectives of the DSPs and the agency's administrators regarding perceived barriers and facilitators to quality support services. The OT researcher also created and administered a 7-item online survey to understand training needs from the staff's perspective. All questions were modeled after an established and effective program, *Transforming Care*, designed to transition individuals with IDD from institutions to community living (Clifford et al., 2018). This survey was sent to all staff at the agency; 24 responses were collected. Most of the measures used in this study were self-report in nature. While the use of self-report tools did not equate to observed DSP confidence and competence, they allowed the OT researcher to gather subjective data from the DSP participants in a time- and cost-efficient manner (Fredericks & McColskey, 2012).

In response to needs assessment interviews and surveys, all staff stated that the agency would benefit from additional training focused on areas such as implementing more meaningful services, modifying activities to fit each individuals' needs, providing greater variety of services, and managing challenging behaviors. Many staff noted that they knew what person-centered supports were, but were unsure how to effectively implement them in direct support services with individuals with IDD.

Once the EMPOWER program began, the first week was dedicated to completing start-up paperwork and data collection through a demographics survey and pre training confidence survey. Weeks 2–7 were dedicated to implementing EMPOWER training modules with the DSPs, and Week 8 was dedicated to debriefing and collecting post training data through a satisfaction survey and post training confidence survey.

The EMPOWER training featured six asynchronous, recorded PowerPoint sessions and six one-on-one, synchronous Zoom meetings between the DSP and OT researcher. The EMPOWER program required approximately 1.5 to 2 hrs of DSP time each week over the course of 8 weeks. Each week, the DSPs were presented with a different topic and pre and post knowledge assessments were administered. The primary training focus areas were mindfulness to decrease staff burnout, planning activities, being more person-centered, supporting individuals' goals through purposeful activity, navigating professional boundaries, assertive communication, preventing and managing challenging behaviors, and de-escalation techniques. Secondary focus areas included educating DSPs on supporting self-advocacy, self-determination, leisure exploration, job exploration, interpersonal skills, community mobility, and community exploration with the individuals they serve. During weekly synchronous Zoom meetings, DSPs could ask additional questions, elaborate on topics of interest or concern, and apply their learning to specific individuals they served.

Instruments

Demographics Survey

DSP demographics were measured pre training through 12 multiple choice questions focused on factors such as age, gender, race, job, education, time at the agency, and experience with supporting individuals with IDD in the community. The demographic survey was administered online through Qualtrics XM (2019) and was created so that the OT researcher could identify personal, educational, and work factors that may have influenced the DSPs' confidence and competence.

Confidence

The DSPs' confidence was measured pre and post training through seven 4-point Likert-scale items focused on content areas such as community participation, supporting individuals with IDD, planning activity, identifying barriers and supports, addressing issues, and modifying an activity (e.g., 0 = not confident at all through 3 = very confident). This scale was created to evaluate the impact of the training modules on the DSPs' confidence in providing person-centered supports and was administered through an online Qualtrics XM (2019) platform. This was a researcher-created tool; therefore, no psychometric properties were reported. However, the tool was modeled after Zakrajsek et al.'s (2014) staff confidence measure for their DSP training module focused on improving staff's ability to implement effective services for individuals with IDD.

A total confidence score was computed at pretest and posttest by adding the DSP Likert-scale ratings together in response to the seven confidence items. Mean difference was then calculated between pre and post total confidence scores and assessed for normality using a Shapiro-Wilk test. Because the mean difference between pre and posttest confidence scores met normality assumptions, paired samples t-tests were used to analyze the difference in pre and posttest mean confidence scores.

Competence

The DSPs' competence was measured pre and post training implementation through a series of knowledge checks. These tools were created so that the OT researcher could evaluate the impact that the training modules had on the DSPs' competence to provide person-centered supports. Knowledge checks

were administered before and after each weekly PowerPoint presentation and were created to test the DSPs' retention of content and facts taught in each training module. The DSPs were given 10 multiple choice questions pre and post module through an online Qualtrics XM (2019) survey, which were scored based on the total number of items out of 10 the DSPs answered correctly. The DSPs could achieve a minimum possible score of 0 and a maximum possible score of 10. These quizzes were researcher-created; therefore, no psychometric properties were established. However, knowledge checks were modeled after Gormley et al.'s (2019) knowledge assessments in their competency-based online training for DSPs who worked with individuals with IDD. Sample knowledge check questions from the person-centered supports Training Module 3 is provided in Figure 1.

Figure 1

Example Questions from Knowledge Check 3 (*Person-Centered Supports)*

Q.1. Person-centeredness is: (Please select all that apply)
- a) Giving people greater choice and control (X)
- b) Helping the person develop skills (X)
- c) Suggesting what you think is the best for the person
- d) Placing the person in the circumstances they need to realize their vision and dreams (X)

Q.2. Person-centered thinking is guided by respectful listening.
- a) True (x)
- b) False

Q.3. Which option is not a part of the "One-Page Profile"?
- a) What people like and admire about me
- b) What people like and admire about what I do (X)
- c) What is important to me

Mean difference scores on Knowledge Checks 2 through 6 met normality assumptions according to Shapiro-Wilk tests; therefore, paired samples t-tests were conducted on those competency tests. Because Knowledge Check 1 did not meet normality assumptions, a non-parametric Wilcoxon signed-rank test was used to assess competency findings for that test.

Satisfaction Survey

The DSPs' satisfaction was measured after the training program through 11 4-point Likert-scale items focused on how the DSPs felt the training met the objectives identified, provided appropriate education on in-depth skills, and whether staff implemented the skills taught while working with their clients with IDD (e.g., 0 = *not satisfied at all* through 3 = *very satisfied*). Seven open-ended questions allowed the DSPs to elaborate on what they learned throughout the training, if they found the training beneficial to their services, and if they had any other reflections. This tool was administered in survey format through an online Qualtrics XM (2019) platform.

Data Collection

Data collection followed a single-group pre/posttest study design. This method allowed confidence to be measured prior to and following the 8-week training, while competence was measured weekly after each module. This design allowed the OT researcher to determine whether the DSPs' confidence and competence changed as a result of the training program (Braveman et al., 2017).

Data Analysis

All statistics were analyzed using Statistical Product and Service Solutions Version 26.0 (SPSS 26.0) (IBM Corp, 2017). Descriptive statistics (frequencies and percentages) were used to describe basic

demographic, educational, and job-related characteristics of the DSPs who participated in the training program. Inferential statistical analyses using a combination of paired samples t-tests and Wilcoxon signed-rank tests were completed to measure differences in the DSPs' confidence and competence pre and post training. These statistical methods were applied depending on whether each data set met normality assumptions. A Shapiro-Wilk test was used to determine whether the mean difference between both pre and post confidence and competence scores met normality assumptions. The DSPs' total confidence scores were analyzed from pre to post training, while each training module was analyzed separately for changes in competence. A Shapiro-Wilk test suggested that all measures except Knowledge Check 1 met normality. Therefore, a paired samples t-test was completed on the DSPs' confidence measure and Knowledge Checks 2, 3, 4, 5 and 6. A Wilcoxon signed-rank test was used to analyze data from Knowledge Check 1. When testing statistical significance, a Bonferroni correction was applied to all paired samples t-tests in order to protect against Type 1 error, as both the confidence and competence measures were researcher-created and reported no established psychometric properties (Portney & Watkins, 2015).

Finally, two-way factorial ANOVAs were conducted with each demographic variable as the between-subjects factor and time as the within-subjects factor to assess for changes in the DSPs' confidence and competence from pre to post training. Post-hoc power analyses were conducted to determine whether the ANOVA tests were adequately powered (power > .80) given the relatively small sample size. Where significant interactions were noted, the researchers also completed post-hoc analyses (t-tests) to identify what factors were driving those interactions.

Results

Participants

Twelve DSPs enrolled in the EMPOWER training program; all of the participants completed the training in its entirety. Table 1 provides descriptive statistics of the individual, educational, and job characteristics of the study's sample. More than half of the sample was female (83%), White/Caucasian (83%), and 25–44 years of age (67%). Eighty-three percent of the sample had been working at the agency for 0–5 years. In addition, 50% had 3 or more years of experience working in the community. All of the study participants had a college degree beyond high school (100%), exposure to disability at a young age (100%), and experience with online training (100%).

Confidence

A paired samples t-test revealed a statistically significant difference in reported the DSPs' confidence from before the training to after the training (M = 3.25, *SD* = 3.33); t (11) = 3.34, $p = .006$, even with the Bonferroni correction applied ($p < .007$). Each demographic variable was then explored relative to the change in mean confidence scores through a series of two-way factorial ANOVA with each demographic variable as the between-subjects factors and time (pre/post) as the within-subjects factor. While most individual, educational, and work-related characteristics did not have a statistically significant effect on mean change in the DSPs' confidence scores, a statistically significant relationship was noted between confidence and the DSP's age ($F(1,10) = 22.28$; $p = .001$; power = .99). Specifically, the DSPs between 25–44 years of age demonstrated marked improvement in total confidence scores from pre training [mean(*SD*) = 12.25(1.16)] to post training [mean(*SD*) = 17.38(1.19); $p < .001$], while the DSPs between 45–64 years of age did not experience a statistically significant change in mean confidence scores from pre to post training [pre training mean(*SD*) = 18.25(1.65); post training mean(*SD*) = 17.75(1.68); $p = .619$].

Table 1
Participant Demographics (n = 12)

Individual Characteristics	Total Sample (n = 12)
Age: *n* (%)	
25-44 years	8 (66.7)
45-64 years	4 (33.3)
Gender: *n* (%)	
Female	10 (83.3)
Male	2 (16.7)
Race: *n* (%)	
White Caucasian	10 (83.3)
African American/Black	1 (8.3)
Latinx/Hispanic	1 (8.3)
Job: *n* (%)	
Direct Support Professional	7 (58.3)
Program Specialist	4 (33.3)
Rehabilitation Specialist	1 (8.3)
Education: *n* (%)	
Associate Degree	3 (25.0)
Bachelor's Degree	7 (58.3)
Master's Degree	2 (16.7)
Time at Agency: *n* (%)	
0–5 years	10 (83.3)
6–10 years	0 (0.0)
11–20 years	2 (16.7)
Years of Experience in the Community: *n* (%)	
1st year	4 (33.3)
2nd year	2 (16.7)
3rd year or longer	6 (50.0)

Competence

Paired samples t-tests indicated a statistically significant difference in competence scores for Knowledge Check 2 (M = 2.00, *SD* = 1.477); t(11) = 4.69, $p = 0.001$ and Knowledge Check 5 (M = 2.17, *SD* = 1.19); t(11) = 6.28, $p = <.001$ with a Bonferroni correction applied ($p < 0.005$) in both cases. Knowledge Check 3 (M = 0.83, *SD* = 1.12); t(11) = 2.59, $p = 0.025$ and Knowledge Check 6 (M = 0.75, *SD* = 1.05); t(11) = 2.46, $p = 0.03$ had statistically significant differences ($p < 0.05$) in scores from pre to posttest, but with a Bonferroni correction applied ($p < 0.005$), these scores fell to non-significance. The difference in Knowledge Check 4 scores (M = 0.67, *SD* =1.07); t(11) = 2.15, $p = 0.054$ from pre to posttest was marginally significant ($p < 0.10$). A Wilcoxon signed-rank test was conducted on Knowledge Check 1 and indicated that the posttest (mean rank = 9.67) had statistically significantly higher scores than the pretest (mean rank = 8.33), Z = 2.88, $p = 0.004$ with a Bonferroni correction applied ($p < 0.005$). See Table 2 for detailed findings from parametric and non-parametric tests conducted on pre and posttest knowledge scores.

Each demographic variable was then explored through the use of a series of two-way factorial ANOVAs. Of the variables explored, the DSP's age was the only factor significantly associated with change in knowledge scores, particularly in response to training Weeks 4 and 5. Although the interaction

between knowledge and age was not significant for Knowledge Check 4 (F(1,10) = 1.92; p = .196; power = .420), the DSPs in both age groups experienced change in knowledge related to professional interactions with individuals with IDD over time (p = .028), and those 45 years of age or older [pre training mean(*SD*) = 7.75(1.50); post training mean(*SD*) = 9.00(.82)] overall had a marginally higher level of knowledge during Week 4 than their younger (18–44 years of age) counterparts [pre training mean(*SD*) = 9.00(.76); post training mean(*SD*) = 9.38(.52); p = .080]. On Knowledge Check 5, a statistically significant relationship was noted between knowledge on how to support goals for adults with IDD and the DSP's age (F(1,10) = 22.28; p = .008; power = .84). Specifically, younger DSPs (18–44 years of age) demonstrated significantly greater knowledge scores from pre [mean(*SD*)=6.13(1.13)] to post training [mean(*SD*) = 8.88(.64); p < .001] in Week 5 than older DSPs (45+ years of age) [pre training mean(*SD*) = 7.50(.58); post training mean(*SD*) = 8.50(.58); p = .092].

Table 2

Knowledge (Competence) Results from EMPOWER Training Program

Knowledge Checks (Training Topics)	Significance Test	Pretest Mean *(SD)*	Posttest Mean *(SD)*	*p* value	Bonferroni Correction
Knowledge Check 1 (Mindfulness)	Wilcoxon Signed-Rank Test	8.33 (1.07)	9.67 (0.49)	0.004*	0.005
Knowledge Check 2 (Planning Activities)	Paired Samples T-test	5.42 (1.31)	7.42 (1.24)	0.001*	0.005
Knowledge Check 3 (Person-Centeredness)	Paired Samples T-test	8.33 (0.89)	9.17 (1.12)	0.025*	0.005
Knowledge Check 4 (Professionalism)	Paired Samples T-test	8.58 (1.17)	8.75 (0.62)	0.054^	0.005
Knowledge Check 5 (Supporting Goals)	Paired Samples T-test	6.58 (1.17)	8.75 (0.62)	< 0.001*	0.005
Knowledge Check 6 (Managing Challenging Behaviors)	Paired Samples T-test	8.25 (1.22)	9.00 (0.85)	0.032*	0.005

*p < 0.05 indicates statistically significant finding
^p < 0.10 indicates marginally significant finding
SD = Observed median score

Satisfaction Survey

All 12 DSPs (100%) reported that the training provided new and helpful information that bolstered their ability to provide person-centered supports to individuals with IDD. In addition, all DSPs (100%) reported that their one-on-one discussions with the OT researcher were beneficial in increasing implementation of knowledge learned. In fact, 11 DSPs (92%) reported that they had implemented at least one person-centered tool or approach since attending the training. The DSPs also reported that the EMPOWER program helped bridge the gap in staff training and allowed them to feel more confident

and competent in providing person-centered supports. All DSPs (100%) reported the need for more training like EMPOWER at the agency, with expansion to all staff employed at the agency. When asked if they would appreciate similar training in the future, all DSPs (100%) reported a desire to have "new eyes," such as an occupational therapist, creating DSP training for the agency in the future. Reflecting on the EMPOWER program, the DSPs identified that the OT researcher was "the missing link in the support team" as they were "able to help us see things that we can't see clearly ourselves."

Discussion

While preliminary, this study began to address the need for additional training on the DSPs' provision of person-centered supports as the DSPs desired more opportunities to learn and apply in-depth skills focused on topics that were more person-centered in nature (Johnson, 2019). Through this pilot study, the OT researcher learned about the effectiveness of an online training program on the DSPs' confidence and competence in their support roles with individuals with IDD in community-based settings.

Interpretations of the Data

Positive findings were noted in the areas of the DSPs' confidence and competence following the EMPOWER program. These findings were consistent with identified areas of need reported by the DSPs at the provider agency. This study showed that 8 weeks of 1.5–2 hr of online training activities (e.g., asynchronous lectures and one-on-one coaching and info sessions) can be effective for enhancing the DSPs' confidence and competency in providing person-centered services. It is significant to note that these training areas extend beyond what the literature identified as common focus areas for training DSPs (Bigby et al., 2017; Clifford et al., 2018; Johnson, 2019; Laws & Hewitt, 2020). However, these areas align with the support and education that an occupational therapist can provide to DSPs in a consult position or as a part of the support team to better enhance services.

Role-playing and verbal feedback were incorporated into EMPOWER with positive results, similar to the approaches of Totsika et al. (2008) and Zakrajsek et al. (2014). Through the EMPOWER program, the DSPs engaged in role-play situations with the OT researcher during weekly Zoom meetings. The OT researcher was able to provide immediate and personalized feedback on the DSPs' performance. Outside of role-play situations, verbal feedback was provided and discussions were held during which the DSPs reflected on past experiences and/or problem-solved potential scenarios that they may encounter when providing support to individuals with IDD.

Significant improvements in competence were also made in content areas that were outside of traditional DSP training and focused on more in-depth skills, including mindfulness to decrease staff burnout, managing challenging behaviors, planning activities, and supporting goals through occupation. These OT-related training topics can provide support to the DSPs to improve quality service delivery for individuals with IDD. The feedback approach used in EMPOWER was consistent with the approach posed by Johnson (2019) as the DSPs were provided contemporaneous one-on-one verbal feedback and performance evaluations during their weekly Zoom meetings. These findings regarding the DSPs' confidence and competence demonstrate that occupational therapists can provide valuable and meaningful support to the DSPs to improve their skills and attitudes on the job, and subsequently enhance the quality of services for individuals with IDD.

Through the use of a two-way factorial ANOVA and post-hoc analysis, this study found that younger DSPs (25–44 years of age) reported a leap in their confidence to provide person-centered supports as a result of the EMPOWER training program. Conversely, older DSPs did not report a

significant change in their confidence following training. While study findings should be interpreted conservatively because of the small sample size and use of self-report measures to assess confidence, it was observed that younger DSPs appeared more open to learning new ideas and, overall, more engaged in the learning process. Whereas older DSPs had longstanding, engrained routines and attitudes regarding the services they provided to individuals with IDD. Therefore, they did not see a reason to change their approach to services. This significant finding supports the importance of tailoring DSP training to the desires and needs of each DSP to support them to best do their job.

Using an online training approach allowed the OT researcher to tailor to each DSP's needs. Similar to Brennan et al.'s (2019) findings, the online platform enhanced feasibility as virtually the OT researcher was able to provide more flexibility and increase overall training opportunities versus an in-person approach. This was done through the individualized, one-on-one Zoom meetings where the DSPs could discuss with the OT researcher any personalized interests, questions, or concerns they had. This individualized space held in each Zoom meeting was important to the outcomes of this study as, in order to do their job successfully and effectively, the DSPs need to feel confident in the services they provide. Therefore, the EMPOWER program provided an individualized outlet for the DSPs to feel empowered and satisfied in the quality of the work they do, which in turn improved the quality of their services.

Furthermore, the use of individual Zoom meetings attributed to the high satisfaction rates from all DSPs regarding the implementation of EMPOWER. DSPs reported that having the ability to discuss the information one-on-one with the OT researcher each week attributed to their satisfaction with the program. Having a safe, private space to ask questions on unclear information or specific, individualized situations enhanced the DSPs' ability to problem-solve and apply the learned information to real-life scenarios. This level of trust and openness from the DSPs and the direct attention from the OT researcher may not be as apparent during an in-person training as learners may become reserved in a public session and/or the instructor may not have the time to address each learner's thought processes, questions, and experiences individually. The DSPs also felt that the flexibility of the training to be completed in their own time attributed to their satisfaction and dedication to the program. In fact, many DSPs recommended that future training at the agency be implemented virtually to enhance turnout and overall satisfaction; a realistic request as many agencies have welcomed the trending digital age of society.

While preliminary, this study began to address the challenge of closing a gap in effective and in-depth DSP training in person-centered approaches. Although it is important for community-based provider agencies to include more person-centered training to their new-hire and annual training protocols, it is also important to recognize the limited resources that the DSPs have to carry out new approaches learned. Throughout the training, it was brought to the researcher's attention that while many of the DSPs understood ways in which they could improve their services, they did not have the means to do so. This was a result of limited preparation time, poor scheduling and space, and limited petty cash for community activities. Therefore, although the DSPs learned new ways to improve service delivery, they were not always able to do so because of limited resources. Through the OT lens, there are many ways in which improved services could be provided even with these constraints.

Limitations

Although some preliminary outcomes of this study were noted, there are notable design weaknesses and limitations; therefore, findings from the study should be interpreted cautiously in light of the small sample size and use of self-report, researcher-created tools. Because of the COVID-19

pandemic, the agency where the study was conducted experienced a reduction in staffing. This limited the number of possible participants that could be recruited to the study and weakened the results and generalizations that could be made. The homogenous sample (mostly female and White/Caucasian) further limits generalizability of findings to more diverse DSP populations across the US. The lack of a control group presented a number of threats to internal validity and, subsequently, the researcher could not establish causality between this training program and improved DSPs' confidence and competence, or control for external confounding factors (e.g., other organizational training and/or supervision, or new experiences with individuals with IDD) that may have led to higher DSPs' confidence and competence. Future studies should aim to broaden recruitment efforts in order to replicate the EMPOWER program with a larger, more diverse DSP sample and the use of a control group.

It is also important to note that while the tools developed to measure confidence and competence were based on prior research, they were created by the OT researcher and lacked established psychometric properties. This may weaken the findings of the study as knowledge checks may have lacked reliability, internal consistency, been unclear in message, or interpreted by the DSPs in different ways. In addition, the DSPs in this sample had a notably high educational background. This may have posed a weakness as questions were written at a high-school level rather than a post-secondary level. Therefore, questions may have been overly simplistic for the DSPs, resulting in higher scores on pre and posttests. Finally, each knowledge check had a maximum score of 10 points. Because participants scored close to 10 points on pretest Knowledge Checks 1, 3, 4, and 6, there was little room for score increases at posttest, thus leading to concern over ceiling effects.

While using self-report measures is convenient, this posed an additional limitation as self-report data represent self-perceived measures of the DSPs' confidence and competence but not an actual measure; these ratings may be affected by subjective biases, social desirability biases, or may not equate to observed changes in the DSPs' confidence and competence during implementation of person-centered approaches with individuals with IDD. Therefore, alternative assessment strategies should be used in future studies, such as the use of standardized measures, situational observation, or competency testing of DSPs as they support individuals with IDD in naturalistic settings. Finally, the use of the same knowledge checks at pre and post may have resulted in a practice effect and thus higher overall posttest scores.

Future Directions

Findings from this initial investigation should be interpreted cautiously but can be examined further using a quasi-experimental design or randomized controlled trial with a larger sample of DSPs and a comparison/control group. This study provides a preliminary model for evaluating the effectiveness of an OT-developed training program for DSPs. It also presents a structure for providing online DSPs, staff, and/or caregiver training, and suggests that online forums can still be successful in meeting DSPs' training goals related to improving confidence and competence in the application of person-centered supports. Although meaningful and productive discussions were held during online Zoom training, these conversations could have been enhanced in naturalistic, community-based settings rather than in role-play scenarios. Future studies would benefit from using a face-to-face approach or hybrid model (face-to-face and online) so that DSPs and occupational therapists can apply their learning in real-life contexts. In face-to-face or hybridized settings, an occupational therapist or researcher could work alongside DSP-individual pairs, rather than strictly with DSPs. This approach could enhance the implementation of person-centered supports.

Conclusion

The first step to improving quality person-centered supports and increasing DSPs' retention is establishing an effective staff training model for DSPs working with individuals with IDD (Friedman, 2021). DSPs need to feel confident and competent in their services to provide quality support. As a result of the EMPOWER training, the DSPs successfully improved their confidence and competence in implementing person-centered supports. The DSPs between 25–44 years of age demonstrated marked improvement in total confidence scores from pre training while all of the DSPs reported increased confidence related to areas such as supporting individuals' activities, planning activities, identifying barriers and supports, and modifying activities. For many DSPs, success was attributed to having a safe, private space to ask questions on unclear information that enhanced the DSPs' ability to problem-solve and apply the learned information to real-life scenarios. While preliminary, the results of this pilot study strengthen the argument that occupational therapists can provide valuable and meaningful support to DSPs to improve their perspectives and skills on the job and enhance the quality of services they provide to individuals with IDD.

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References

American Association of Intellectual and Developmental Disabilities. (2019). *Definition of intellectual disability*. http://aaidd.org/intellectual-disability/definition

American Association of Intellectual and Developmental Disabilities (AAIDD) & Association of University Centers on Disabilities (AUCD). (2016). *Community living and participation for people with intellectual and developmental disabilities*. https://www.aaidd.org/news-policy/policy/position-statements/community-living-and-participation

American Occupational Therapy Association. (2018). *2018 accreditation council for occupational therapy education (ACOTE) standards and interpretation guide* [PDF file]. https://acoteonline.org/accreditation-explained/standards/

American Occupational Therapy Association. (2020). Occupational therapy practice framework: Domain and process (4th ed.). *American Journal of Occupational Therapy*, *74*(Suppl. 2), 7412410010. https://doi.org/10.5014/ajot.2020.74S2001

Anderson, L., Larson, S. A., Lakin, K. C., & Kwak, N. (2002). Children with disabilities and social roles: An analysis of the 94/95 NHIS-D. *DD Data Brief*, *4*(1). https://rtc.umn.edu/docs/dddb4-1.pdf

Arc of Pennsylvania. (2016). *What is the WIOA? Pennsylvania message*. https://thearcpa.org/file_download/inline/651f342c-74b6-4d02-bcbf-dc6d41517098

Bathje, M., Lannoye, M., Mercier, A., & Panter, K. (2017). A review of occupation-based life skills interventions for adults with neurodevelopmental disorders. *Occupational Therapy in Mental Health*, *34*(2), 165–180. https://doi.org/10.1080/0164212X.2017.1360168

Beadle-Brown, J., Hutchinson, A., & Whelton, B. (2012). Person-centred active support: Increasing choice, promoting independence and reducing challenging behaviour. *Journal of Applied Research in Intellectual Disabilities*, *25*(4), 291–307. https://doi.org/10.1111/j.1468-3148.2011.00666.x

Bigby, C., Anderson, S., & Cameron, N. (2017). Identifying conceptualizations and theories of change embedded in interventions to facilitate community participation for people with intellectual disability: A scoping review. *Journal of Applied Research in Intellectual Disabilities*, *31*(2), 165–180. https://doi.org/10.1111/jar.12390

Blick, R. N., Litz, K. S., Thornhill, M. G., & Goreczny, A. J. (2016). Do inclusive work environments matter? Effects of community-integrated employment on quality of life for individuals with intellectual disabilities. *Research in Developmental Disabilities*, *53–54*, 358–366. https://doi.org/10.1016/j.ridd.2016.02.015

Braveman, B., Suarez-Balcazar, Y., Kielhofner, G., & Taylor, R. R. (2016). Program evaluation research. In R. R. Taylor (Ed.), *Kielhofner's*

research in occupational therapy: Methods of inquiry for enhancing practice (2nd ed., pp. 410–423). F. A. Davis.

Bredewold, F., Hermus, M., & Trappenburg, M. (2020). 'Living in the community' the pros and cons: A systematic literature review of the impact of deinstitutionalisation on people with intellectual and psychiatric disabilities. *Journal of Social Work*, *20*(1), 83–116. https://doi.org/10.1177/1468017318793620

Brennan, E. M., Sellimaier, C., Jivanjee, P., & Grover, L. (2019). Is online training an effective workforce development strategy for transition service providers? Results of a comparative study. *Journal of Emotional and Behavioral Disorders*, *27*(4), 235–245. https://doi.org/10.1177/1063426618819438

Bureau of Labor Statistics, U.S. Department of Labor. (2018). *Home health and personal care aides*. Occupational Outlook Handbook. https://www.bls.gov/ooh/healthcare/home-health-aides-and-personal-care-aides.htm

Centers for Medicare and Medicaid Services. (2014). *Federal Register*, *79*(11), 2947–3039. http://www.gpo.gov/fdsys/pkg/FR-2014-01-16/pdf/2014-00487.pdf

Claes, C., Van Hove, G., Vandevelde, S., van Loon, J., & Schalock, R. L. (2010). Person-centered planning: Analysis of research and effectiveness. *Intellectual and Developmental Disabilities*, *48*, 432–453. https://doi.org/10.1352/1934-9556-48.6.432

Clifford, A., Standen, P. J., & Jones, J. (2018). "I don't want to take any risks even if it's gonna mean this service-user is gonna be happier": A thematic analysis of community support staff perspectives on delivering transforming care. *Journal of Applied Research in Intellectual Disabilities*, *31*(6), 1209–1218. https://doi.org/10.1111/jar.12495

Commonwealth of Pennsylvania. (2016). *Establishing 'employment first' policy and increasing competitive-integrated employment for Pennsylvanians with a disability*. https://www.dli.pa.gov/Documents/EstEmpFirstPolicy-for-Pennsylvanians-with-a-Disability.pdf

Crane, J. M., & Havercamp, S. M. (2020). Who thrives as a direct support professional? Personal motivation and resilience in direct support. *Research in Developmental Disabilities*, *106*, 1–8. https://doi.org/10.1016/j.ridd.2020.103764

Curryer, B., Stancliffe, R. J., & Dew, A. (2015). Self-determination: Adults with intellectual disability and their family. *Journal of Intellectual and Developmental Disability*, *40*(4), 394–399. http://dx.doi.org/10.3109/13668250.2015.1029883

Damen, S., Kef, S., Worm, M., Janssen, M. J., & Schuengel, C. (2011). Effects of video-feedback interaction training for professional caregivers of children and adults with visual and intellectual disabilities. *Journal of Intellectual Disability Research*, *55*(6), 581–595. https://doi.org/10.1111/j.1365-2788.2011.01414.x

DiZazzo-Miller, R., Winston, K., Winkler, S., & Donovan, M. L. (2017). Family Caregiver Training Program (FCTP): A randomized controlled trial. *The American Journal of Occupational Therapy*, *71*(5), 7105190010p1–7105190010p10. https://doi.org/10.5014/ajot.2017.022459

Espiner, D., & Hartnett, F. M. (2012). 'I felt I was in control of the meeting': Facilitating planning with adults with an intellectual disability. *British Journal of Learning Disabilities*, *40*(1), 62–70. http://dx.doi.org/10.1111/j.1468-3156 2011.00684.x

Espinoza, R. (2017). *Federal policy priorities: Strengthening the direct care workforce*. https://phinational.org/resource/federal-policy-priorities-strengthening-the-direct-care-workforce/

Fredericks, J. A., & McColskey, W. (2012). The measurement of student engagement: A comparative analysis of various methods and student self-report instruments. In S. Christenson, A. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 763–782). https://doi.org/10.1007/978-1-4614-2018-7_37

Friedman, C. (2021). The impact of direct support professional turnover on the health and safety of people with intellectual and developmental disabilities. *Inclusion*, *9*(1), 63–73. https://doi.org/10.1352/2326-6988-9.1.63

Friedman, C. (2018). Direct support professionals and quality of life of people with intellectual and developmental disabilities. *Intellectual and Developmental Disabilities*, *56*(4), 234–250. https://doi.org/10.1352/1934-9556-56.5.234

Friedman, C., & VanPuymbrouck, L. (2018). Occupational therapy in Medicaid home and community-based services waivers. *American Journal of Occupational Therapy*, *72*(2), 7202205120p1–7202205120p9. https://doi.org/10.5014/ajot.2018.024273

Gormley, L., Healy, O., O'Sullivan, B., O'Regan, D., Grey, I., & Bracken, M. (2019). The impact of behavioural skills training on the knowledge, skills and well-being of front line staff in the intellectual disability sector: A clustered randomised control trial. *Journal of Intellectual Disability Research*, *63*(11), 1291–1304. https://doi.org/10.1111/jir.12630

Hewitt, A., Pettingell, S., & Kramme, J. (2019). *Minnesota direct support worker survey: Final report* [PDF]. https://ici.umn.edu/products/kfpN9PofQGWQNrV3FwsfeA

Houseworth, J., Pettingell, S. L., Kramme, J. E., Tichá, R., & Hewitt, A. S. (2020). Predictors of annual and early separations among direct support professionals: National core indicators staff stability survey. *Intellectual and Developmental Disabilities*, *58*(3), 192–207. https://doi.org/10.1352/1934-9556-58.3.192

IBM Corp. (Released 2017). IBM SPSS statistics, version 26.0. IBM Corp.

Johnson, K. E. (2019). *Direct support professionals' perspectives and role perceptions in the field of intellectual and developmental disabilities* [Doctoral dissertation, University of Delaware].

Johnson, K. R., Blaskowitz, M., & Mahoney, W. J. (2019). Occupational therapy practice with adults with intellectual disability: What more can we do?. *The Open Journal of Occupational*

Therapy, *7*(2). https://doi.org/10.15453/2168-6408.1573

Larson, S. A., Eschenbacher, H. J., Anderson, L. L., Taylor, B., Pettingell, S., Hewitt, A., Sowers, M., & Bourne, M. L. (2018). *In-home and residential long-term supports and services for persons with intellectual or developmental disabilities: Status and trends through 2016* [PDF file]. https://risp.umn.edu/archive

Laws, C. B., & Hewitt, A. S. (2020). Introduction to the special issue: Understanding the direct support workforce in the United States. *Intellectual and Developmental Disabilities*, *58*(3), 189–191. https://doi.org/10.1352/1934-9556-58.3.189

McKenzie, K., Milton, M., Smith, G., & Ouellette-Kuntz, H. (2016). Systematic review of the prevalence and incidence of intellectual disabilities: Current trends and issues. *Current Developmental Disorders Reports*, *3*(2), 104–115. https://doi.org/10.1007/s40474-016-0085-7

Menchetti, B. M., & Garcia, L. A. (2003). Personal and employment outcomes of person-centered career planning. *Education and Training in Developmental Disabilities*, *38*(2), 145–156. https://www.jstor.org/stable/23879592

Moghimi, C. (2007). Issues in caregiving: The role of occupational therapy in caregiver training. *Topics in Geriatric Rehabilitation*, *23*(3), 269–279. https://doi.org/10.1097/01.TGR.0000284770.39958.79

National Core Indicators. (2019). *National core indicators 2018 staff stability survey report*. https://www.nationalcoreindicators.org/upload/coreindicators/2018StaffStabilitySurveyReport.pdf

National Council on Disability. (2015, February 24). *Home and community-based services: Creating systems for success at home, at work and in the community*. https://www.ncd.gov/publications/2015/02242015/

Nosik, M. R., & Williams, W. L. (2011). Component evaluation of a computer based format for teaching discrete trial and backward chaining. *Research in Developmental Disabilities*, *32*(5), 1694–1702. https://doi.org/10.1016/j.ridd.2011.02.022

President's Committee for People with Intellectual Disabilities. (2017). *Report to the President 2017 America's direct support workforce crisis: Effects on people with intellectual disabilities, families, communities and the U.S economy*. Retrieved from https://acl.gov/sites/default/files/programs/2018-02/2017%20PCPID%20Short%20Report.pdf

PHI. (2019). *Workforce data center*. https://phinational.org/policy-research/workforce-data-center/

Portney, L. G., & Watkins, M. P. (2015). Multiple comparison tests. In L. G. Portney & M. P. Watkins (Eds.), *Foundations of clinical research applications to practice* (3rd ed., pp. 479–502). F. A. Davis.

Qualtrics. (2019). *Qualtrics online surveys*. https://www.qualtrics.com

Robertson, J., Emerson, E., Hatton, C., Elliott, J., McIntosh, B., Swift, P., Krinjen-Kemp, E., Towers, C., Romeo, R., Knapp, M., Sanderson, H., Routledge, M., Oakes, P., & Joyce, T. (2006). Longitudinal analysis of the impact and cost of person-centered planning for people with intellectual disabilities in England. *American Journal on Mental Retardation*, *111*(6), 400–416. https://doi.org/10.1352/0895-8017(2006)111[400:laotia]2.0.co;2

Sandjojo, J., Zedlitz, A. M., Gebhardt, W. A., Hoekman, J., Dusseldorp, E., den Haan, J. A., & Evers, A. W. (2018). Training staff to promote self-management in people with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, *31*(5), 840–850. https://doi.org/10.1111/jar.12440

Taylor, J. E., & Taylor, J. A. (2013). Person-centered planning: Evidence-based practice, challenges, and potential for the 21st century. *Journal of Social Work in Disability & Rehabilitation*, *12*(3), 213–235. https://doi.org/10.1080/1536710X.2013.810102

Terras, M. M., Hendry, G., & Jarret, D. (2019). The challenges of safety and community integration for vulnerable individuals. *Safety*, *5*(4), 1–18. https://doi.org/10.3390/safety5040085

Thompson, J. R., Bryant, B. R., Campbell, E. M., Craig, E. M., Hughes, C. M., Rotholz, D. A., Silverman, W. P., Tasse, M. J., & Wehmeyer, M. L. (2015). *Supports Intensity Scale-Adult Version: User's manual*. American Association on Intellectual and Developmental Disabilities.

Totsika, V., Toogood, S., Hastings, R. P., & Nash, S. (2008). Interactive training for active support: Perspectives from staff. *Journal of Intellectual and Developmental Disability*, *33*(3), 225–238. https://doi.org/10.1080/13668250802283348

Umeda, C. J., Fogelberg, D. J., Jirikowic, T., Pitonyak, J. S., Mroz, T. M., & Ideishi, R. I. (2017). Expanding the implementation of the Americans with Disabilities Act for populations with intellectual and developmental disabilities: The role of organization-level occupational therapy consultation. *American Journal of Occupational Therapy*, *71*, 7104090010p1–p6. https://doi.org/10.5014/ajot.2017.714001

U.S. Department of Health and Human Services. (2019). *U.S. federal poverty guidelines used to determine financial eligibility for certain federal programs*. https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines

Wiener, J. M., Squillace, M. R., Anderson, W. L., & Khatutski, G. (2009). Why do they stay? Job tenure among certified nursing assistants in nursing homes. *The Gerontologist*, *49*(2), 198–201. https://doi.org/10.1093/geront/gnp027

Zakrajsek, A. G., Hammel, J., & Scazzero, J. A. (2014). Supporting people with intellectual and developmental disabilities to participate in their communities through support staff pilot intervention. *Journal of Applied Research in Intellectual Disabilities*, *27*(2), 154–162. https://doi.org/10.1111/jar.12060