Barriers and facilitators to employment as reported by people with physical disabilities: An across disability type analysis

Carolyn W. Graham[a], Katherine J. Inge[a,*], Paul Wehman[a], Hannah E. Seward[a]
and Matthew D. Bogenschutz[b]

[a] *VCU-RRTC on Employment of People with Physical Disabilities, Virginia Commonwealth University, Richmond, VA, USA*
[b] *Virginia Commonwealth University, School of Social Work, Richmond, VA, USA*

Abstract.

BACKGROUND: Extant research has reported on the factors associated with seeking and maintaining employment for individuals with different types of physical disabilities, such as cerebral palsy (CP), multiple sclerosis (MS), and spinal cord injuries (SCI). Some of these factors are barriers and others are facilitators. However, research has not determined whether the inhibiting and facilitating employment experiences of people with physical disabilities are similar across type of physical disability.

OBJECTIVE: The goal of this study was to compare the employment experiences of people with physical disabilities with three different disabilities including CP, MS, and SCI to determine whether these employment experiences are similar.

METHODS: Homogenous focus groups were conducted with individuals with CP, MS, and SCI concerning their employment experiences. These 18 focus groups were conducted telephonically, audio recorded, and lasted approximately 60 minutes each. Data from each disability type was analyzed separately and across disability type.

RESULTS: Two themes were common among participants in the three disability types: 1) Health and 2) Barriers to Overcome. However, there were differences among the disability types within these themes. Some of these differences were unique to MS.

CONCLUSIONS: This study provides a perspective on working with CP, MS, or SCI informed directly by individuals living with these disabilities, whether they were employed or unemployed, and gives a voice to the employment experiences of the individuals. The findings present information on the similarities and differences that individuals with various physical disabilities face when working.

Keywords: Physical disabilities, cerebral palsy, multiple sclerosis, spinal cord injury, SCI, employment, employment barriers, vocational rehabilitation

1. Introduction

Work is a fundamental part of life and promotes financial stability, a sense of purpose, and an opportunity to interact with other people. For people with disabilities, it may increase mental stimulation, personal growth, and help individuals adjust to the changes and challenges that may come with having a disability (Ottomanelli & Lind, 2009). Work also provides social integration, which promotes a higher quality of life (Ottomanelli & Lind, 2009; Trenaman et al., 2014).

*Address for correspondence: Katherine J. Inge, Ph.D., O.T.R., VCU-RRTC on Employment of People with Physical Disabilities, Virginia Commonwealth University, 1314 W. Main St., Richmond, VA 23284, USA. E-mail: kinge@vcu.edu.

Despite decades of legislation and research, employment rates for individuals with disabilities remain much lower than for those without disabilities. The most recent statistics from the Bureau of Labor Statistics for 2016 show that 17.9% of people with disabilities had employment, while 65.3% of individuals without a disability were employed. The unemployment rate ins 2016 for individuals with disabilities was 10.5%, compared to 4.6% for those without a disability (Bureau of Labor Statistics, 2017). When comparing the data to the previous year, minimal changes are noted. In 2015, the unemployment rate for individuals with disabilities was 10.7%, compared to 5.1% for those without a disability. Unemployed individuals are those who did not have a job, were available for work, and were actively looking for a job in the four weeks preceding the survey conducted by the Bureau of Labor Statistics. In addition, individuals with disabilities are more likely to be underemployed, with 34% employed part-time in 2016 compared to just 18% for those without a disability (Bureau of Labor Statistics, 2016).

Individuals with physical disabilities, such as cerebral palsy (CP), multiple sclerosis (MS), and spinal cord injury (SCI), face major challenges with obtaining and maintaining employment (Achterberg, Wind, De Boer, & Frings-Dresen, 2009; Bal et al., 2016; Lindsay, 2011; Van Mechelen, Verhoef, Van Asbeck, & Post, 2008; Lindsay, 2011). Vocational Rehabilitation (VR) through the federal and state vocational rehabilitation programs is one option for obtaining the needed services that lead to successful competitive employment outcomes for individuals with physical disabilities. VR services work to reduce barriers and assist individuals in achieving employment outcomes (Huang et al., 2013).

Annually, each VR Agency funded by the Rehabilitation Act of 1973, as amended, submits to the Federal Rehabilitation Services Administration (RSA) the RSA 911 Closure Report (Achterberg et al., 2009). Data was analyzed from this report for FYs 2011, 2012, and 2013 on individuals with the primary disability of CP, MS, or SCI who exited the exited VR system. To be included in the analysis, individuals had to be between the ages of 24–64; signed an Individual Plan for Employment (IPE); and received VR services. For all three years, approximately one third of these individuals with CP, MS, or SCI exited the VR system with an employment outcome consistent with their IPE. Conversely, the other two thirds exited the VR system without an employment outcome after receiving VR services (Inge, Cimera, Revell, Ward,

& Seward, 2015; Inge, Cimera, Revell, Wehman, & Seward, 2015; Inge, Rumrill, Cimera, & Revell, 2016). This data does not reveal why individuals with these disabilities are not achieving their employment outcomes consistent with their IPEs. However, a review of the literature provides some information on the barriers that these individuals with physical disabilities may encounter when attempting to achieve competitive employment outcomes.

Employment rates for people with CP tend to be significantly lower than for people with other disabilities (Flippo & Gardner, 2011). They also continue to experience significantly lower rates in getting and keeping employment in comparison to individuals without disabilities (Huang et al., 2013; Magill-Evans, Galambos, Darrah, & Nickerson, 2008; Rutkowski & Riehle, 2009). Because CP may be associated with significant physical challenges, individuals with CP often need accommodations or personal care assistance in order to perform simple tasks (Rutkowski & Riehle, 2009). Another challenge is navigating employment without losing disability benefits. In a Minnesota study, Murphy and colleagues (2000) found that 53% of adults with CP were competitively employed, but 22% of those individuals risked losing disability benefits if they advanced in their careers. Disability benefits may be needed to pay for assistive technology and/or on-going personal care assistance.

People with MS face unique barriers to employment, since MS is associated with a wide range of physical, cognitive, and emotional symptoms that appear episodically and unpredictably (Raggi et al., 2016; Roessler & Rumrill, 2003; Rumrill et al., 2013). These symptoms have been reported by individuals with MS as the largest barrier to employment, particularly the relapsing and progressive characteristics of the illness (Roessler & Rumrill, 2003). Those who experience symptoms from MS most or all of the time, especially if those symptoms are more severe, are more likely to be unemployed (Raggi et al., 2016; Roessler, Rumrill, & Fitzgerald, 2004; Rumrill et al., 2013). The fatigue and weakness associated with MS affect employment skills and capacities. Workplace factors such as poor support towards accommodations, inflexible employment structures, and lack of employers /colleagues' support have been found to present major barriers for individuals with MS (Sweetland et al., 2012).

Physical or structural barriers are the highest perceived barriers among people with SCI when it comes to employment and social participation (Tsai

et al., 2017). A study by Cotner and colleagues (2017) found that barriers for veterans with SCI could be broken down into six categories. This included veteran-specific (personal characteristics, lack of transportation, fear of losing benefits), high caseload of employment specialists, lack of integrating the employment specialist into the SCI clinical team, employment specialist hiring and turnover issues, SCI clinical team unfamiliar with vocational rehabilitation, and difficulty obtaining resources (Cotner, Ottomanelli, O'Connor, & Trainor, 2017). However, having a good clinical team and employment specialists that specializes in SCI were major facilitators in employing individuals with SCI. Individuals with SCI who receive specialized VR services that include job development or placement, employment supports, and workplace follow-ups fare much better in employment outcomes (Ottomanelli et al., 2015.)

While the studies included in this literature review provide information on the barriers and facilitators to employment for individuals with CP, MS, and SCI, they present the information from the viewpoint of each specific disability group. What is not available is a comparison of the barriers and facilitators to employment as reported by people with disabilities themselves across different types of physical disabilities. In this paper, findings from a series of focus groups conducted with individuals with CP, MS, and SCI are compared, and their unique and similar barriers and facilitators to work are discussed. The research questions that guided this study include the following.

Research Question 1: What are the most commonly reported barriers and facilitators to employment identified by people with CP, MS, and SCI?

Research Question 2: What are the similarities and differences in employment experiences among the people with the three different types of physical disabilities?

Research Question 3: What employment experiences are unique to a specific physical disability?

2. Method

2.1. Participants

A targeted recruitment approach was used for this study to identify participants. Five national organizations representing people with disabilities assisted in the recruitment including the World Institute on Disability (WID), National Multiple Sclerosis Society, United Spinal Cord Injury Association, United Cerebral Palsy (UCP), and the National Council for Independent Living (NCIL). A standardized email was disseminated by these organizations explaining the purpose of the study. Participants also were recruited through their organizational websites and other internet methods such as social media. The recruitment materials specified that potential participants must have a physical disability (e.g., CP, MS, SCI, or other physical disability) and reside in the United States. In addition, participants had to be (a) in the age range of 18–65; (b) employed or unemployed; and (c) willing to participate in an hour-long telephone focus group. These electronic notices contained a link to an online database that provided specific information on the study, the study questions, and a place for the potential participant to consent or decline participation.

After potential participants read the study information online, they clicked on an electronic button to decline or consent to participate. Individuals that declined to participate were re-directed to a screen where they were thanked for their time. Individuals that consented to participate were re-directed to a screen where they selected their physical disability and their employment status: employed or unemployed. In addition, they entered their e-mail address, telephone number, and mailing address for contact purposes during the study and for mailing a gift card at the completion of the focus groups. This personal information was stored in a database housed on a password-protected server that required a unique username and password to access. Only the lead researchers had access to this information. Data collected during the focus groups was stored in separate files and not linked to participant information, which further protected the participants' confidentiality.

As individuals consented to participate, the database sorted them into groups of 10 by disability type as well as by employment status. This created groups of potential participants: employed people with CP, unemployed people with CP, employed people with MS, unemployed people with MS, employed people with SCI, and unemployed people with SCI. A total of 152 individuals consented to participate in this focus group study and study criteria to be in one of the focus groups.

Telephone focus groups were scheduled using the online database to contact the individuals who consented to participate as having CP, MS, and SCI. Groups of 10 participants (by type of disability and

Table 1
Recruitment by disability

Recruitment	CP	MS	SCI	Total
Consented				
Employed	28	23	23	
Unemployed	25	32	21	
Total	53	55	44	152
Participated				
Employed	14	12	16	
Unemployed	13	15	15	
Total	27	27	31	85

employment status) were contacted by email asking them to select from a list of possible times to call-in to the focus group. If at least six individuals did not respond to an invitation to participate within one week, another notice was emailed with a new list of possible times. Once a minimum of six individuals by disability type and employment status responded that they were available, a follow-up confirmation e-mail provided information to the participants on how to call-in using a toll-free number at the scheduled time. All of these emails were managed through the password-protected database, and the lead facilitator could login and review who had responded regarding their availability. This process was repeated until 18 focus groups were conducted: three with employed individuals with CP, three with unemployed individuals with CP, three with employed individuals with MS, three with unemployed people with MS, three with employed individuals with SCI, and three with unemployed individuals with SCI. Of the 152 individuals who consented to participate, 85 individuals participated by calling into the focus groups using a toll-free number at the scheduled times and engaged in the telephonic focus groups. See Table 1 for recruitment and participation by disability and employment status.

Immediately after a focus group, participants were emailed thanking them for their time and requesting that they provide demographic information. Table 2 provides the demographic information on the participants who voluntarily provided their information by employment status and disability type. The lead researcher collected this data, added it to a spreadsheet without individual identifiers, and then deleted the email messages. Participants resided in all regions of the United States and ranged in age from 20 to 65. Of the participants who provided demographic information, 52% identified themselves as female and 48% as male.

2.2. Focus group interview protocol

The research team collaboratively developed a focus group interview protocol for this study. See Bogenshutz, Inge, Rumrill, Hinterlong, and Seward (2016) for more detailed information on the development of the interview protocol. The final interview protocol had 13 core questions for the employed group and 12 core questions for the unemployed group. The interview protocol included probing questions that were used at the focus group facilitator's discretion. The interview protocol included questions concerning participant process of finding or looking for employment with a disability, the barriers or facilitators for finding work, how career choices have been affected by their specific disability, workplace accommodations, and recommendations for other job seekers or professionals. The focus group interview questions are found in Table 3.

2.3. Procedures

All study procedures used in this study were approved by the university Institutional Review Board (IRB) at the authors' university. The importance of confidentiality was emphasized in the online consent information. In addition, the facilitator discussed confidentiality with the participants at the beginning of each telephone call and asked that they not share their name or other identifying information. Using a telephonic method of conducting focus groups allows people from across the country to be included in the study. The use of telephones also allows participants to feel more comfortable and open about sharing thoughts and feelings since there is a sense of anonymity (McCoyd & Kerson, 2006; Novick, 2008; Sturges & Hanrahan, 2004).

The lead researcher or a research associate facilitated the focus groups using a toll-free telephone conference system. Permission to audio record a focus group was obtained at the beginning of each call by the facilitator. In obtaining permission, the facilitator told the group that the audio recording would be transcribed and all names or personal identifiers would be deleted from the transcripts. Participants also were told that they could skip any question that made them uncomfortable or that they did not want to answer. Finally, the facilitator told participants that their involvement in the study was appreciated.

The facilitator then began the recording and proceeded through each of the core questions, as well as related follow-up probes as needed. To ensure that all

Table 2
Participant demographics

Demographics	CP		MS		SCI	
	Employed $n = 14$	Unemployed $n = 13$	Employed $n = 12$	Unemployed $n = 15$	Employed $n = 16$	Unemployed $n = 15$
Age Range	f (%)	f (%)	f (%)	f (%)	f (%)	f (%)
20–29	2 (14.29)	4 (30.77)	2 (16.67)	0 (0.00)	1 (6.25)	3 (20.00)
30–39	5 (35.71)	1 (7.69)	3 (25.00)	2 (13.33)	6 (37.50)	3 (20.00)
40–49	0 (0.00)	1 (7.69)	3 (25.00)	4 (26.67)	3 (18.75)	3 (20.00)
50–59	3 (21.42)	1 (7.69)	3 (25.00)	7 (46.67)	3 (18.75)	2 (13.33)
60–69	2 (14.29)	1 (7.69)	0 (0.00)	1 (6.67)	1 (6.25)	1 (6.67)
Did Not Respond	2 (14.29)	5 (38.47)	1 (8.33)	1 (6.67)	2 (12.50)	3 (20.00)
Sex						
Female	6 (42.86)	6 (46.15)	10 (83.33)	9 (60.00)	5 (31.25)	8 (53.33)
Male	8 (57.14)	7 (53.85)	1 (8.33)	5 (33.33)	9 (60.00)	4 (26.67)
Did Not Respond	0 (0.00)	0 (0.00)	1 (8.33)	1 (6.67)	2 (12.50)	3 (20.00)
Race						
African American	1 (7.14)	0 (0.00)	1 (9.10)	5 (33.33)	2 (12.50)	0 (0.00)
Asian American	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	1 (6.25)	0 (0.00)
Bi-racial	1 (7.14)	0 (0.00)	1 (8.33)	0 (0.00)	0 (0.00)	1 (6.67)
Caucasian	9 (64.29)	5 (38.46)	9 (75.00)	9 (60.00)	10 (66.67)	9 (60.00)
Hispanic	1 (7.14)	2 (15.39)	0 (0.00)	0 (0.00)	1 (6.25)	1 (6.67)
Native American	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	1 (6.67)
Did Not Respond	2 (14.29)	6 (46.15)	1 (8.33)	1 (6.67)	2 (12.50)	3 (20.00)
Highest Level of Education						
Occupational Certificate	0 (0.00)	1 (7.69)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
GED	1 (7.14)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
High School Diploma	1 (7.14)	1 (7.69)	0 (0.00)	3 (20.00)	1 (6.25)	3 (20.00)
Some College	0 (0.00)	0 (0.00)	3 (25.00)	3 (20.00)	2 (12.50)	1 (6.67)
Bachelor's Degree	4 (28.58)	4 (30.78)	6 (54.54)	5 (33.33)	3 (18.75)	5 (33.33)
Master's Degree	4 (28.58)	2 (15.38)	2 (16.67)	3 (20.00)	7 (43.75)	2 (13.33)
Doctorate/Professional	2 (14.28)	0 (0.00)	0 (0.00)	0 (0.00)	1 (6.25)	1 (6.67)
Did Not Respond	2 (14.28)	5 (38.46)	1 (8.33)	1 (6.67)	2 (12.50)	3 (20.00)

Table 3
Core questions from the telephone focus group protocol

Employed Participant Version
    1. What do you do, and what is a typical day at work like?
    2. Tell me about the steps you took to find your job.
    3. What were the key factors in getting a job?
    4. Give me an example of how you disability affected your finding a job.
    5. Give me examples of how you overcame your challenges to find a job.
    6. Tell me about any accommodations you have requested for your job.
    7. Tell me about things that help you do your job.
    8. What would make your job easier to do well?
    9. How have your career choices been affected by your disability?
    10. What do you need to find and obtain your ideal job?
    11. What advice would you give to someone with physical disabilities who is looking for a job?
    12. What advice would you give to a professional who is helping people with physical disabilities find jobs?
    13. What would you like to tell me that I have not asked?
Unemployed Participant Version
    1. Tell me about your ideal job. What would you like to do?
    2. What supports and services (such as people, agencies, and information) have you used to look for a job?
    3. Tell me an example of a service or support that has been helpful in your job search.
    4. Tell me an example of a service or support that wasn't helpful.
    5. What information do you need to find a job?
    6. Give me an example of how your disability has affected your finding a job?
    7. How have your career choices been affected by your disability?
    8. What supports and services will you need to find a job and stay employed?
    9. Where will you go to find these supports and services?
    10. What advice would you give someone with a physical disability who is looking for a job?
    11. What advice would you give to a professional who is helping people with physical disabilities find jobs?
    12. What would you like to tell me that I have not asked?

participants were able to respond to the question, the facilitator asked participants whether they had any more information to add once a conversation ended. Most of the focus groups ran for approximately one hour with a few calls extended to 90 minutes upon request of the participants. Identifying data such as names, addresses, and employers were removed from the transcripts during the transcription process so that only de-identified data were used in the analysis. All participants were compensated in the form of a $50 gift card that could be used at a retailer of their choice after a focus group was conducted.

2.4. Analysis

Audio recordings of the telephone focus groups were transcribed verbatim by a professional transcription service. The transcripts of the CP, MS, and SCI focus groups were first analyzed by disability type. As soon as a transcription of the audio recordings of a focus group was completed, transcriptions were checked for errors and then analysis began until all transcripts of the focus groups were complete.

Data analysts used content analysis approach and NVivo10 software for the data analysis (NVivo, 2012). The narrative of focus group participants directed the analysis while the researchers remained open to interpretation, thus, preventing bias and assumptions employed during data analysis procedure. The researchers discussed the analysis between themselves, encouraged each other to be reflexive, and checked the interpretation each was making to reduce bias (Brantlinger, Jimenez, Klingner, Pugach, & Richardson, 2005). This process of openness and abeyance of bias is central to the conventional content analysis approach (Hseih & Shannon, 2005; Kondracki & Wellman, 2002). No a priori coding schemes coding book was used as might be expected, instead the analysts applied codes to any unit of text that was salient in understanding participant experiences of employment. Data collection ceased when the data no longer yielded salient new themes, and the researchers had reached data saturation for each disability type (i.e., CP, MS, and SCI).

The initial codes for each disability type were discussed within research team member meetings before subsequent rounds of coding began. During these meetings, the research team discussed which codes could be merged into themes. The next rounds of coding consisted of developing links between these preliminary codes, identifying salient themes, and determining the sub-themes under each of the salient themes. This process allowed for similar codes to grouped into more abstract themes and determine the codes that were less common and salient. For each disability type, researcher team members discussed each final set of themes and sub-themes and developed a common interpretation and shared meaning. Data for each disability type proceeded in this manner and was reported before the present analysis was performed.

The current analysis is across group analysis of the data analysis. A matrix was constructed by entering the themes from all of the disability types. Themes were examined across disability types and employment status. Then themes were compared across disability types and employment status for similarities and differences.

3. Findings and discussion

Two themes were common among participants in the three disability types: 1) Health and 2) Barriers to Overcome. However, there were differences among the disability types within these themes. Some of these differences were unique to one disability type. Each theme is presented with similarities and differences among the groups. The unique differences will be emphasized.

3.1. Common themes among participants

3.1.1. Health
Participants from the three disability types reported that their health affected their ability to work. However, the participants with MS were unique in how they experienced work and health. They considered employment situations and decisions based on their expectations of future declining function. These individuals adjusted their employment plans based on their current and future decline in energy and health and the demands of the positions that they currently held or were considering.

> Well for me when I was looking for a different position ... I had to make sure the job that I was looking for had great benefits or was still within the same company, which restricted me from dream jobs or jobs at a different location. There were dream jobs within my company, but they required 25% travel and being out of town for extended periods of time, and I didn't think I would be able to handle something like that. So

knowing that I had MS just preventing me from pursuing my true passion (Employed Participant with MS).

One employed participant reported that she was demoted, because MS was affecting her work.

I am a social worker by trade; again I was demoted by the county about a month ago to more of an administrative role. At first, I was of course very upset and resistant to it, but I'm really trying to embrace the change and enjoy it. Because it's almost like a little mini-vacation because it was a stressful job and it was really impacting my health (Employed Participant with MS).

Participants with CP or SCI were similar to participants with MS in the consideration of physical demands of a job, but the focus was how to maintain stability in their health rather than focusing on the impending decline of health as reported by MS participants. People with CP and SCI were likely to mention the need to balance demands of work and the need to maintain health by using personal care assistants to assist them with getting ready in the morning and helping maintain health so that secondary infections did not occur. An unemployed participant with CP mentioned the importance of maintaining health.

I have to really manage my time as a student and . . . when I was a call center attendant and I worked the elections, I had to figure out like when I was able to do training, when I was able to work, and not overwhelm myself because working is really physically demanding and I'm one of those people that requires sleep. So it's kind of managing my time and what my body is physically capable of giving out in terms of energy (Unemployed Participant with CP).

One unemployed participant with SCI discussed her three-hour morning health routine that required a personal assistant to arrive at her house at 5:30 a.m. in order for her to be able to work. Another unemployed participant with SCI with a trach also talked about having to balance health requirements and working.

. . . the number one thing is you have to maintain you health and in maintaining your health, you're taking the time away obviously from your employer so it's kind of a very difficult balance between the two of can I work and can I still stay healthy (Unemployed Participant with SCI) ?

It was not just the unemployed participants that mentioned this. The employed participants with CP and SCI also mentioned the difficulty in maintaining health while working. An employed participant with SCI also discussed the difficulty of maintaining energy while working.

I get frequent bladder infections . . . Every six weeks I seem to get another one, and it really limits the amount of time that I have and the energy that I have . . . I've tried to get my stamina up as high as I can, but with the infections it's just hard (Employed Participant with SC).

In sum, the participants in the three disability groups were concerned about their health in relation to employment. However, participants with MS were unique, since they were more concerned with future decline and ability to function in their job; whereas participants with CP and SCI were more concerned with how to maintain their health while working.

3.1.2. Overcoming barriers

Overcoming barriers in the employment process and maintaining employment was another common theme for focus group participants representing the three different types of disabilities. Within this theme, there were three common concepts, accommodations, discrimination, and transportation. Regarding accommodations, not only were there differences among the disability types, but there were differences between the employed and unemployed participants with physical disabilities.

3.1.3. Accommodations

Participants in all disability type groups spoke of the need for accommodations such as assistive technology in order to work. These assistive technology (AT) needs included laptops, track balls, e-books, Dragon Naturally Speaking software, special keyboards, SIRI, note taking programs, etc. An employed participant with MS was surprised about the type of assistive technology that was available,

I had no idea all the [technology] *things you could do on it, and that you could record, that you could keep track of things, just the whole note taking and the Siri. It was very helpful for me, because I need to do that and to do that almost constantly if I'm in a meeting, because I really have noticed more cognitive issues popping up from memory* (Employed Participant with MS).

Not only did participants with SCI mention AT, but a number of participants mentioned the need for accessible office or work stations. Participants with SCI reported needing accommodations that included adjusting the width of cubicles for wheelchairs, accessible doorways and restrooms, electric doors, modified desks, and evacuation chairs. One participant with SCI mentioned that he brought a set of wheels for his desk.

> I thought they might be concerned about my ability to utilize furnishings like the desk and things like that because I use a wheelchair. So I actually have wheels for a desk that I took with me from job to job, that I took care of having somebody bring it in and put it together and made sure it worked for the environment that I was in, and that didn't raise any issues for the employers (Employed Participant with SCI).

The participant with SCI above brought their own modification for their desk so that they did not have to ask for this accommodation. Similarly, participants with CP and MS also mentioned that they felt uncomfortable asking for accommodations. Participants with CP felt that the accommodation they needed were often common types of technology used in the workplace. One employed participant with CP who is employed as an advocate for people with disabilities commented on her previous reluctance to ask for accommodations and her need for technology that is commonly used.

> I never requested any accommodations until I had been offered the position. Mostly just making sure I had the use of a laptop if I needed it or a headset, but sometimes with the advances in technology, I don't really need the accommodation because that's what everybody's using (Employed Participant with CP).

The participants with MS were also uncomfortable with asking for assistive technology. As an employed participant with MS mentioned, I felt a little strange asking [for] something they're going to think oh she wants special treatment, you know, not everybody gets those large monitors. The newness of having a disability, admitting you cannot do things you could in the past, and needing accommodations appeared to be salient concern for an employed participant with MS who was not yet willing to ask for accommodations.

> It's just something I'm not rushing to do until I feel that I absolutely have to, and that goes into

a little bit of ... the overcompensate syndrome when you have a disability, in particular MS, in particular invisible symptoms, you tend to overcompensate (Employed Participant with MS).

Still another employed participant with MS who had difficulty asking for accommodations mentioned, Just admitting that you can't do certain things and my supervisors thankfully were very accommodating.

One focus group with employed participants with MS discussed when to request accommodations. Participants in this focus group agreed within the first six months after employment when one became aware of the accommodations that would be needed. Other participants with MS mentioned that they needed to educate themselves on how to ask for accommodations. As one employed participant with MS said, "... you need to really educate yourself on what you can ask for" and "please be prepared if you're ready to disclose and you're ready to ask for accommodations, because it's not always a fun process and helpful as you think it would be."

Regarding accommodations, not only were there differences among the disability types, but there were differences between the employed and unemployed participants with physical disabilities. The employed participants commonly discussed the need and use of commonly used technology; whereas the unemployed participants discussed strategizing, employer reactions, and accommodation needs. Unemployed participants in all three groups strategized on several needed accommodations. However, unemployed participants from all three disability types did not mention a common accommodation when discussing their strategy for requesting accommodations. Unemployed participants with CP mentioned strategizing about whether to accept a job or not. As one participant with CP mentioned, if some accommodations aren't offered then it might make your job more difficult and then in turn might want to make you consider a different opportunity. Or another participant with CP, It's like a double-edged sword. They're not supposed to discriminate. But at the same time, if you tell them that you need special accommodations, chances are they're not going to hire you. Last, another participant with CP said,

> ... thinking about, you know, if accommodations can be offered. That might not be part of the conversation as you're looking for jobs, but it would certainly be part of the conversation if you're interviewing or if they're about to extend you an offer for a job.

Unemployed participants with MS strategizing intertwined ideas of accommodations and finding another job. This seemed to stem from the participants with MS decline in functioning and whether to consider looking for a position with a better fit for their level of functionality in the future. In fact, participants mentioned adjusting to the disability or decline in functionality. It was common to hear something about "adjusting to" or "make sure you are comfortable with your disability" before speaking about employment.

I think the first thing would probably be, make sure you're comfortable with your disability, know the things you can and cannot do, once you get that down, begin to look into industries within your own training, and industries that are aside of your training that you could possibly work at, and then once you get there, start looking at ways to be able to adapt your particular work place to your particular infirmary (Unemployed Participant with MS).

. . . even if you need accommodations, it doesn't mean that you can't do the job, or if you're really good at what you do, you know, to be able to find something compatible that you like to do, and do it in a different capacity. You know, like the man, he's a good hands on person, but he can't do it anymore, maybe there's a teaching capacity, another job related to something related to what he's done so that he can be happy about going to work and provide for his family (Unemployed Participant with MS).

An unemployed participant with SCI was similar to the unemployed participants with MS but had a practical strategy for selecting jobs to apply.

. . . number one, I always look at the job requirements and they say things . . . like if it says need ability to lift 25 pounds then that's reasonably within the job description like you're carrying around boxes of files then I know that's something I can't do, or if needs access to car if it's an on the road sales gig [and] need to be able to go to meetings, but know what the tasks of the job are (Unemployed Participant with SCI).

The unemployed participants with SCI that mentioned that accommodations are not one size fit all even when two people are exhibiting a similar symptom of the disability. They stressed that accommodations must be tailored to the person and not the symptom.

Well it ultimately falls to you to tell them what a reasonable accommodation is in your mind. The company can try and do things like putting grab bars in toilets and ramps at the door, but they aren't going to know a specific accommodation that you might need in order to do the job, and they really shouldn't have to. You should be able to tell them what you need, they should be open to listen to it (Unemployed Participant with SCI).

When asked about past employers or potential employers reaction to their disability and request for accommodations, unemployed participants with CP and SCI a mentioned negative reaction from past employers or potential employers. An unemployed participant with CP described a negative reaction that ended well.

I told him that I was using a job coach as part of my accommodations and that I needed special accommodations to do my job. They went ballistic, because when they saw me they assumed that I didn't need anything. Well I do. I can't use a mouse. There are assistive needs that I need and they cost money. 'We dropped the ball on.' Meaning what? If you would have known, you wouldn't have hired me? But anyway, I was able to maintain that job for seven years (Unemployed Participant with CP).

3.1.4. Discrimination

Discrimination was another barrier to overcome that participants with all physical disability types mentioned. One unemployed participant with MS said, *I had a great job offer, and when they found out I had MS, they didn't let me have the job*. Some were discouraged by the discrimination. In a focus group with employed participants with CP, one employed participant said, *After I got out of college, I had a really difficult time finding a job in the private sector so I went back to what I knew and that was disability issues*. Other participants with CP took more proactive stances and strategized on how to overcome this barrier. One common strategy stated by the employed participants with CP was persistence. Others mentioned educating employers. One such unemployed participant with CP mentioned that *often at times I explain what accommodations I use and how I use them to help me do my work in whatever office setting*. Participants with MS took a different strategy

by not disclosing their disability. One employed participant with MS who is searching for a less physical demanding job said, *going into a new job, I probably will not tell them I have MS.*

Most participants with SCI discussed their experience with discrimination. Only one of the participants with SCI mentioned persisting in the search until he was employed. In all groups there were participants that either were discriminated because he/she did not strategize or did not know the next step. An unemployed participant with CP said, … *if you tell them that you need special accommodations, chances are they're not going to hire you.* An unemployed participant with SCI mentioned, *when I was rejected by the principal for those accommodations, I didn't know where to go, and I knew it was a discrimination, but what do I do with it?* In sum, some participants persisted and had a strategy to request accommodations; whereas, other participants did not strategize and needed information on the timing and way to request accommodations.

3.1.5. Transportation

The last common barrier to overcome was transportation and travel, which limits job prospects and promotion in participants with CP, MS, and SCI. Participants with CP or SCI consider the location of the job or prospective job, because it needs to fit within the route used by public transportation (i.e. paratransit, bus, or subway train). As an employment participant with CP commented, *Mine had to be in an area that had paratransit available and wasn't too far from my house to make for a long ride.* An employed participant with SCI mentioned how travel impacts promotion,

> *I can day travel, but some of the jobs at my company that I would like to have require two and three days, which pretty much marks me out after 1–1.5 days. There's a ceiling there for sure, man, I've hit up on it for 7 years* (Employed Participant with SCI).

Participants with MS have a different concern. Their concern is the amount of time they must travel to a job or prospective job. Most of the participants with MS could drive themselves to work; however, for some the commute was long.

> *I'm still presently commuting now 180 miles a day, so it is a stressful job but you do interact with the pharmaceutical clientele, the client, the internal members and that's great, but the commute*

is taking a toll on me and my car (Employed Participant with MS).

For some participants with MS the disability had progressed to the point in which paratransit or taxi was used. *In terms of transportation to my job, I don't really do bus, I can't walk. Sometimes if I can walk, I'll walk, but [paratransit service] is a great service.* Last, the participants with MS were challenged by their commute. Some worked at home and others strategized about the timing of the commute.

> *I would say the length of driving and the time of day at the position, I know that there are certain positions that I haven't been as willing to take if they're super early in the morning because that is usually when I'm most tired, so I think times of day has affected me and commute time* (Employed Participant with MS).

The participants with CP commented on timeliness and reliability of public transportation on which they depended. *One of the issues that we're having in this area is for transportation to be able to get to and from a workplace and within the timeframe that the transportation would be available for transporting.* In contrast, another concern for participants with SCI was the accessibility of transportation. Some of the participants with SCI lived in metropolitan areas, others in the focus groups lived in rural areas. One unemployed participant with SCI stated,

> *I see a big problem here in* [rural state], … *we're very spread out and we don't have public transportation, like in a big city like New York … , so transportation is a number one issue with keeping jobs here that I see in* [rural state] (Employed Participant with SCI).

In sum, the participants with MS were different from the participants with CP or SCI in that the progression of MS determined whether transportation and travel were problematic or not. In most participants with MS, the level of energy or the ability to walk impacted the type and amount of commuting or traveling.

4. Conclusion

This study provides a perspective on working with CP, MS, or SCI informed directly by individuals living with these disabilities, whether they were employed or unemployed. Although the study is

limited by the constraints of qualitative research, the findings give "voice" to the experiences these individuals have related to finding or retaining employment. Specifically, the findings present information on the similarities and differences that individuals with various physical disabilities face when working.

One of the goals of this study was to provide information on the employment experiences of individuals with physical disabilities that can be used by rehabilitation professionals. Vocational rehabilitation (VR) counselors need to be aware specifically related to the impact that disability can have on the individual's employment outcomes. Knowledge of these concerns can assist them in providing supports and services to individuals facing unique challenges in maintaining employment or returning to the workplace based on the impact a disability may have on work. While each individual's experience will be different regardless of disability, there were some common themes as identified during this research. For instance, all groups expressed concerns regarding health. However, individuals with MS expressed different concerns related to declining nature of this disability. Knowledge of these similarities and differences can assist VR counselors in providing support to their clients based on disability related support needs.

Another goal of this research was to inform professionals who develop resources for individuals with physical disabilities allowing for better knowledge translation of information. Specifically, the results from this research provide critical data on what individuals with physical disabilities need as far as resources and information on barriers and facilitators to employment. Assuming that a "one size fits all" approach to disseminating knowledge that will facilitate employment does not take into account the unique needs of individuals based on the type of disability experienced. The information learned in this study will guide a national survey of individuals with physical disabilities to further define the impact of disability on employment.

Conflict of interest

None to report.

References

Achterberg, T. J., Wind, H., De Boer, A. G., & Frings-Dresen, M. H. (2009). Factors that promote or hinder young disabled people in work participation: A systematic review. *Journal of Occupational Rehabilitation*, *19*, 129-141.

Bal, M. I., Sattoe, J. N. T., van Schaardenburgh, N. R., Floothius, M. C. S. G., Roebroeck, M. E., & Miedema, H. S. (2016). A vocational rehabilitation intervention for young adults with physical disabilities: Participants' perception of beneficial attributes. *Child: Care, Health and Development*, *43*(1), 114-125.

Bogenshutz, M., Inge, K. J., Rumrill, P. D., Hinterlong, P. C., & Seward H. E. (2016). Barriers to and facilitators of employment among Americans with Multiple Sclerosis: Results of a qualitative focus group study. *Journal of Rehabilitation*, *82*, 59-69.

Brantlinger, E., Jimenez, R., Klingner, J., Pugach, M., & Richardson, V. (2005). Qualitative studies in special education. *Exceptional Children*, *72*(2), 195-201.

Bureau of Labor Statistics. (2017). Persons with a disability: Labor force characteristics summary. Washington, DC: United States Department of Labor. Retrieved August 22, 2017 from [https://www.bls.gov/news.release/disabl.nr0.htm].

Cotner, B. A., Ottomanelli, L., O'Connor, D. R., & Trainor, J. K. (2017). Provider-identified barriers and facilitators to implementing a supported employment program in spinal cord injury. *Disability and Rehabilitation*. Advance online publication. doi: 10.1080/09638288.2017.1294209

Hseih, H., & Shannon, S. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, *15*, 1277-1288.

Inge, K. J., Rumrill, P. D., Cimera, R. E., & Revell, W. G. (2016). Employment outcomes for individuals with multiple sclerosis: 2011-2013. *Journal of Rehabilitation*, *82*(4), 28-37.

Inge, K. J., Cimera, R. E., Revell, W. G., Ward, M., & Seward, E. H. (2015). *Employment outcomes for individuals with cerebral palsy: Vocational rehabilitation RSA 911 closure data FY 2011, 2012, and 2013*. Richmond, VA: Virginia Commonwealth University, Rehabilitation Research and Training Center on Employment of People with Physical Disabilities. Retrieved August 22, 2017 from [http://pd.vcurrtc.org/resources/content.cfm/1247].

Inge, K. J., Cimera, R. E., Revell, W. G., Wehman, P. H. & Seward, E. H. (2015). Employment outcomes for individuals with spinal cord injuries: 2011-2013. *Journal of Vocational Rehabilitation*, *42*, 85-96.

Kim, M. M., & Williams, B. C. (2012). Lived employment experiences of college students and graduates with physical disabilities in the United States. *Disability & Society*, *27*(6), 837-852.

Kondracki, N., & Wellman, N. (2002). Content analysis: Review of methods and their application in nutrition education. *Journal of Nutrition Education and Behavior*, *34*, 224-230.

Lindsay, S. (2011). Discrimination and other barriers to employment for teens and young adults with disabilities. *Disability and Rehabilitation*, *33*, 1340-1350.

Magill-Evans, J., Galambos, N., Darrah, J., & Nickerson, C. (2008). Predictors of employment for young adults with developmental motor disabilities. *Work*, *31*, 433-442.

McCoyd, J., Kerson, T. (2006). Conducting intensive interviews using email: A serendipitous comparative opportunity. *Qualitative Social Work*, *5*, 389-406.

McNaughton, D., Light, J., & Arnold, K. B. (2002). "Getting your wheel in the door": Successful full-time employment experiences of individuals with cerebral palsy who use augmentative and alternative communication. *Augmentative and Alternative Communication*, *18*, 59-76.

Novick, G. (2008). Is there a bias against telephone interviews in qualitative research? *Research in Nursing & Health*, *31*, 391-398.

NVivo qualitative data analysis Software; QSR International Pty Ltd. Version 10, 2012.

O'Day, B. (1998). Barriers for people with multiple sclerosis who want to work: A qualitative study. *Journal of Neurological Rehabilitation*, *12*, 139-146.

Ottomanelli, L., Barnett, S. D., Goetz, L. L., & Toscano, R. (2015). Vocational rehabilitation in spinal cord injury: What vocational service activities are associated with employment program outcome? *Topics in Spinal Cord Injury Rehabilitation*, *21*(1), 31-39.

Raggi, A., Covelli, V., Schiavolin, S., Scaratti, C., Leonardi, M., & Willems, M. (2016). Work-related problems in multiple sclerosis: A literature review on its associates and determinants. *Disability and Rehabilitation*, *38*(10), 936-944.

Roessler, R. T., & Rumrill, P. D. (2003). Multiple sclerosis and employment barriers: A systemic perspective on diagnosis and intervention. *Work*, *21*, 17-23.

Roessler, R., Neath, J., McMahon, B., & Rumrill, P. (2007). Workplace discrimination outcomes and their predictive factors for adults with multiple sclerosis. *Rehabilitation Counseling Bulletin*, *50*, 139-152.

Roessler, R., Rumrill, P., & Fitzgerald, S. (2004). Predictors of employment status for people with multiple sclerosis. *Rehabilitation Counseling Bulletin*, *47*(2), 97-103.

Shier, M., Graham, J., & Jones, M. (2009). Barriers to employment as experienced by disabled people: A qualitative analysis in Calgary and Regina, Canada. *Disability & Society*, *24*, 63-75.

Sturges, J., & Hanrahan, K. (2004). Comparing telephone and face-to-face qualitative interviewing: A research note. *Qualitative Research*, *4*, 107-118.

Sweetland, J., Howse, E., & Playford, E. D. (2012). A systematic review of research undertaken in vocational rehabilitation for people with multiple sclerosis. *Disability and Rehabilitation*, *34*(24), 2031-2038.

Van Mechelen, M. C., Verhoef, M., Van Asbeck, F. W., & Post, M. W. (2008). Work participation among young adults with spina bifida in the Netherlands. *Developmental Medicine and Child Neurology*, *50*, 772-777.

Verhoef, J. A. C., Bramsen, I., Miedema, H. S., Stam, H. J., Roebroeck, M. E., & The Transition and Lifespan Research Group South West Netherlands. (2014). Development of work participation in young adults with cerebral palsy: A longitudinal study. *Journal of Rehabilitation Medicine*, *46*, 648-655.