

AHEAD Association on
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Congratulations!

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From the Editor

Vincent Tinto, Distinguished University Professor Emeritus from Syracuse University, identified a theory of individual departure from institutions of higher education in his book entitled *Leaving College* (1987). He explained why students drop out of college, and what institutions of higher education can do to help students persist to graduation. The theory focuses on the pre-entry attributes, goals and commitments, institutional experiences, and academic and social integration of college students. Much of my writing has focused on Tinto's theory, using it as a theoretical foundation for helping college students academically and socially integrate into the collegiate fabric in order to successfully graduate and transition to life after college.

The transition from high school to college can be difficult for students, including students with disabilities (SWDs). During this transition support systems change, contact with educators lessens, academics become more demanding, and many emotional and physical changes occur (Enright, Conyers, & Szymanski, 1996). Later, during the middle and late collegiate years, students must sustain academic momentum and gain work-related experience, followed by a transition out of college and into employment.

Contents of this Issue

This issue, 28(3) of the *Journal of Postsecondary Education and Disability* (JPED), demonstrates the importance of academic and social integration. It begins with **Jessica Sniatecki** and her colleagues' article on faculty attitudes and knowledge about SWDs. They found that faculty members have generally positive attitudes toward SWDs. However, they are more likely to hold negative attitudes toward students with mental health and learning disabilities than toward students with physical disabilities. The second article, written by **Michael Condra** and his colleagues, provides a literature review that examines the challenges and complexities of meeting the unique needs of students at Ontario's postsecondary institutions. There is specific focus on the integration and academic success of this population of students, related to academic accommodations.

Nequel Burwell and her colleagues reported on transitional attendant care issues and experiences of college students with physical disabilities using wheelchairs. Multiple themes emerged in their study, including time management, preparing for and training attendants, accepting responsibility, parental involvement, and relationships with attendants. **Martha Hinman** and her colleagues examined the accommodation

needs of students with physical disabilities in physical therapy education programs. They found that the physical disabilities encountered were mostly sensory and many students receive accommodations with little impact on other students or faculty members.

Katherine Terras and her colleagues studied disability accommodations of online courses for graduate students. They reported that participants indicated that disabilities presented concentration and scheduling challenges. However, the flexibility of online learning, as well as participants' skills at self-accommodation and self-advocacy, were instrumental in students' academic success. **Susan Miller Smedema** and her colleagues studied core self-evaluations (CSE) and tested a mediational model of the relationship between CSE and life satisfaction in SWDs.

We also present two articles related to employment services for SWDs. **Stefania Petcu** and her colleagues demonstrated how students with intellectual and developmental disabilities attending postsecondary education programs are prepared for competitive employment. And, **Gina Oswald** and her colleagues presented the approach implemented by one university to mitigate typical barriers encountered by SWDs when seeking employment post-graduation. The issue concludes with a single participant case study, by **Lisa Meeks** and her colleagues, on how a Disability Services office collaborated with other campus offices to accommodate a fourth year deaf medical student with almost complete hearing loss in operating room environments.

Special Thanks to the JPED Editorial Team

Over the past five years **David Parker** (Postsecondary Disability Specialist/ADD & Life Coach at Children's Resource Group) served as Executive Editor for JPED, and has done an exemplary job advancing AHEAD's journal. David, you are a thoughtful leader, helpful coach, and careful writer. Although we are thankful that you are joining the editorial review board, you will be missed in the editor's role. **Richard Allegra** (AHEAD), Managing Editor, and **Valerie Spears** (AHEAD), Editorial Assistant, are vital members of the editorial team. Thank you for your professionalism and attention to detail. And **members of the editorial review boards**, representing more than 70 colleges, universities, and organizations, listed on the inside front cover, are educational professionals with content and research method specialties committed to publishing the best literature related to disability

studies. Together the JPED editorial team strives to advance the literature of disabilities studies while supporting the mission of the Association on Higher Education and Disability.

Roger D. Wessel

Professor of Higher Education, Ball State University

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Faculty Attitudes and Knowledge Regarding College Students with Disabilities

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Abstract

The presence of students with disabilities (SWD) at colleges and universities in the United States has increased significantly in recent years, yet many of these students continue to encounter significant barriers that can have a profound impact on their college experience. Salient factors that contribute to the challenging climate for SWD include lack of faculty knowledge and awareness of the issues that face these students, as well as negative attitudes toward disability and the provision of accommodations. The current study examined faculty attitudes and knowledge regarding SWD via an online, anonymous survey ($n=123$). Results suggest that although faculty have generally positive attitudes toward SWD, they are more likely to hold negative attitudes toward students with mental health disabilities and learning disabilities than toward students with physical disabilities. This study also identified several misconceptions and gaps in knowledge about offices of disability services and provision of accommodations that could negatively impact students. Faculty respondents also expressed strong interest in professional development opportunities related to SWD. Implications of these findings and future directions are also addressed.

Keywords: Attitudes toward disabilities, faculty attitudes, knowledge about disabilities, students with disabilities, higher education

The presence of students with disabilities (SWD) at colleges and universities in the United States has increased significantly in recent years (Hall & Belch, 2000; Hitchings, Retish, & Horvath, 2005; Stodden, Whelley, Chang, & Harding, 2001). Despite rising enrollment, many of these students continue to encounter significant barriers that can have a profound impact on their college experience (Dowrick, Anderson, Heyer, & Acosta, 2005; Eckes & Ochoa, 2005; Madaus & Shaw, 2004; Stodden et al., 2001). One of the important factors that may contribute to the challenging climate for SWD is a lack of faculty knowledge and awareness of the issues that face these students. In addition, faculty and staff attitudes toward disability and the provision of accommodations may be particularly salient in student success (Rao, 2004). The existing literature suggests that at least some faculty members may believe that the provision of accommodations for these students may compromise the academic integrity and/or rigor of their courses/programs (Beilke, 1999).

According to data from the National Center for Education Statistics, 11.3% of undergraduate students identified as having a disability during the 2003-2004 academic year (Horn & Nevill, 2006). This included individuals with orthopedic disabilities (25.4%), mental illness/depression (21.9%), health impairments/problems (17.3%), attention deficit disorder (11.0%), specific learning disabilities (7.5%), hearing impairments (5.0%), visual impairments (3.8%), speech impairments (0.4%), and other disabilities that did not fit any of the aforementioned categories (7.8%). In 2007-2008, 10.9% of undergraduates and 7.3% of postbaccalaureate students reported having a disability (Raue & Lewis, 2011). Among undergraduate SWD, this included individuals with specific learning disabilities (31%), attention deficit disorder/attention deficit hyperactivity disorder (18%), mental illness/psychological or psychiatric conditions (15%), health impairments/conditions (11%), mobility/orthopedic impairments (7%), hearing impairments (4%), visual

impairments (3%), cognitive/intellectual disabilities (3%), autism spectrum disorders (2%), traumatic brain injuries (2%), speech/language impairments (2%), and other disabilities that did not fall into these categories (3%). This is a significant increase from data collected during the 1995-1996 academic year; at that time, six percent of undergraduate students were identified as having a disability (Horn & Berkold, 1999).

Despite the increases in enrollment, the existing literature suggests that SWD do not engage in postsecondary education at the same rate as their non-disabled peers (Horn & Nevill, 2006). The college attendance rate for SWD is less than half that of student without disabilities (Wagner, Newman, Cameto, Garza, & Levine, 2005). SWD are also less likely to enroll in four-year institutions, with the majority enrolled at two-year or community colleges (Hall & Belch, 2000, Wagner et al., 2005). Some studies have found that only one-half of SWD earn their degrees as compared to approximately two-thirds of students without disabilities who successfully complete their degrees (Hall & Belch, 2000; National Center for Education Statistics, 1999). In contrast, a longitudinal study involving 11,317 students found that students with disabilities graduated at rates similar to those without disabilities, but some participants took longer to complete their degrees as compared to their non-disabled peers (Wessel, Jones, Markle, & Westfall, 2009).

Faculty knowledge regarding accommodations is a significant barrier for SWD (Dowrick et al., 2005; Eckes & Ochoa, 2005). Without appropriate knowledge, faculty are ill-prepared to make decisions about how to effectively implement accommodations in their classrooms. The situation may be compounded for students with invisible disabilities, "as these students do not initially appear disabled and do not fit faculty members' schemata of disability" (Barnard, Stevens, Siwatu, & Lan, 2008, p. 169). This may be particularly true for students with learning disabilities (Wolanin & Steele, 2004) or other less visible impairments (Dowrick, et al., 2005), including mental health disabilities. Faculty may also question the legitimacy of requested accommodations (Beilke, 1999; Dowrick, et al., 2005; Jensen, McCrary, Krampe, & Cooper, 2004) and send messages, either explicit or implicit, about their belief in students' abilities.

Additionally, faculty may be concerned that the provision of accommodations compromises the academic rigor and integrity of their institution, program, or class. As faculty in one study indicated, "the issue of fairness to all students was a constant concern" (Jensen et al., 2004, p. 85). Research has supported the idea that some faculty view accommodations as providing

an unfair advantage to students with disabilities (Cook, Rumrill, & Tankersley, 2009).

In her examination of how faculty members make decisions related to accommodating students with disabilities, Bento (1996) identified that informational, ethical, and attitudinal barriers may significantly impact decision-making. Informational barriers relate to gaps in knowledge and/or lack of understanding about relevant factors for students with disabilities and/or accommodations. Ethical barriers occur when instructors make decisions about reasonable accommodations for SWD. In particular, Bento found that "ethical dilemmas emerged when the requested accommodation benefited the disabled student, but implied negative consequences for other members of the class" (p. 497). The main attitudinal barrier for faculty working with SWD was ambivalence.

On the one hand, faculty perceived disabled students as people who had to confront and overcome special challenges, which engendered feelings of respect and helpfulness towards the students. On the other hand, those feelings were also often accompanied by the perception that disabled students were somehow 'less able' and that their 'disability' could jeopardize not only their individual performance, but also limit the other students and the instructor. (Bento, 1996, p. 498)

These ethical and attitudinal barriers may be difficult for faculty to navigate, particularly if they have not had much experience working with SWD.

Additional research has reinforced that positive faculty attitudes regarding the provision of accommodations are critical to the academic success of SWD. Dowrick et al. (2005) found that negative faculty attitudes and lack of awareness were the major barriers to success for SWD. In addition, many students have reported experiences with faculty who were unwilling to provide appropriate accommodations, despite the legal requirement to do so (Kurth & Mellard, 2007).

Faculty attitudes and the academic culture are the major barriers to the successful implementation of accommodations for students with disabilities. Faculty are often ignorant about their responsibilities and about how to relate to students with disabilities. Faculty resent being told what to do by low-level administrators in the disability services offices and not being able to review or question the legitimacy of a student's disability or the accommodation that is prescribed. (Wolanin & Steele, 2004, p. ix)

Indeed, communication between faculty and the office of disability services may be a critical factor in student success. Disability services (DS) staff are in a unique position to address misconceptions held by faculty (Jensen et al., 2004) as well as reinforce the legal obligations that instructors have with regard to the provision of accommodations for SWD. DS staff can also play a critical role in the process of student disclosure to faculty (Dowrick et al., 2005) and successful implementation of accommodations. However, caution should be exercised in this endeavor as some faculty may not be receptive to such information if they do not recognize the expertise and legitimacy of the DS staff.

Some faculty may also believe that provision of accommodations for SWD compromises academic freedom in their courses (Jensen et al., 2004; Wolanin & Steele, 2004). Though the accommodation letter presented to faculty typically outlines the accommodations requested based on a student's needs, faculty may be unaware that they are able to have input in determining how the accommodation will be implemented in their courses and therefore believe that academic freedom is disregarded in this process (Cook et al., 2009).

Faculty who receive training related to disability and/or accommodations are more likely to demonstrate positive attitudes toward SWD (Murray, Lombardi, Wren, & Keys, 2009). In particular, coursework and/or workshops focused on disability-related issues have a significant positive impact on faculty attitudes and perceptions related to SWD (Lombardi, Murray, & Gerdes, 2011; Lombardi & Murray, 2011). These findings suggest that faculty attitudes toward SWD can be improved through education, potentially lessening the barriers encountered by these students in college.

Faculty have also expressed interest in learning more about SWD and how to effectively work with these individuals. Regarding students with mental health disabilities, faculty reported that their current levels of knowledge and training were not adequate, and expressed a desire for more resources for working with these students (Brockelman et al., 2006). Another study found that faculty believed that having more information about students with learning disabilities would assist them in providing appropriate accommodations (Murray, Wren, & Keys, 2008).

However, it should be noted that attitudinal change does not necessarily lead to action, even for faculty who endorse inclusive practices for SWD (Cook et al., 2009; Lombardi, Murray, & Gerdes, 2011). In addition, these professional development opportunities are often offered on a voluntary basis. Faculty who choose to attend may already be more informed about

working with SWD and sensitive to the needs to these students. One of the biggest challenges is increasing attendance for those faculty who could most benefit from additional training.

The purpose of the current study was to examine faculty attitudes and knowledge regarding college students with various types of disabilities at a mid-sized, public liberal arts university in upstate New York. This study was exploratory in nature and data were collected at only one institution. Three main research questions guided this study: (1) What are faculty members' current attitudes toward SWD? (2) What level of knowledge do faculty have regarding SWD and service provision? and (3) Are faculty interested in professional development opportunities related to SWD? This study also sought to address a gap in the literature as, to the researchers' knowledge, no study to date has examined the differences in faculty attitudes toward SWD based on type of disability.

Methodology

Participants

The survey was distributed via a faculty listserv to all full-time and part-time faculty at a mid-sized, public liberal arts university in upstate New York. The university has a total enrollment of approximately 8,000 students, the majority of whom (approximately 7,000) are undergraduates. Of the 604 full- and part-time faculty members, 123 (20.4%) completed the study. Of these, 78 were female (63.4%), 44 (35.8%) were male, and one (0.8%) did not report gender. The majority of respondents were full-time faculty members (68.3%; $n=84$), and 30.9% ($n=38$) were part-time. The response rate for full-time faculty was 25.7% (84 out of 327 reporting). For part-time faculty, the response rate was 13.7% (38 out of 277).

Procedures

Data were collected via an online, anonymous survey administered via the course management system (Angel). Faculty were recruited through an email distributed by the director of the teaching and learning center via listserv. An initial reminder email was sent two weeks after initial contact to encourage participation. A second and final reminder email was sent via the listserv two weeks after the first reminder. No incentives were offered for participation.

Instrument

The survey instrument was adapted from a faculty survey created at the University of Oregon (2009) to collect internal data regarding faculty attitudes towards

disability and knowledge about disability services. The instrument was identified by the DS director at the institution where data were collected through a professional connection. To the researchers' knowledge, neither the original instrument nor the data were shared externally. No information on the psychometric properties of the original survey was made available.

A subset of questions from the original instrument was used to explore pertinent factors identified in the literature (e.g., professional development) and factors that would assist the DS office (e.g., faculty knowledge of fire evacuation procedures for SWD). Items were also modified to reflect the characteristics of the institution where data were collected (institution name was changed and items were modified to accurately reflect institutional characteristics, such as available services). Some items were eliminated as they were not applicable to the areas of focus in this study and to minimize participant response fatigue. The original survey was also modified to explore the differences in faculty attitudes based on three disability types (physical, learning, or mental health), rather than inquiring about disability in general. These categories were selected because they represent three of the most prevalent types of disabilities that faculty may encounter.

The final instrument consisted of four demographic items as well as 30 items to assess faculty attitudes and knowledge regarding students with disabilities (a copy of the instrument is provided in Appendix A). The items explored a variety of areas including: faculty beliefs about the potential for students with three types of disabilities (physical, learning, mental health) to be successful and/or compete at the college level, faculty knowledge regarding postsecondary participation for SWD, faculty knowledge about available resources for such students, and faculty attitudes toward the provision of accommodations in higher education. In addition, the survey asked participants about their knowledge of services provided by the DS office and their interest in on-campus trainings related to working with SWD.

Results

Attitudes Toward SWD

Results suggest that, in general, faculty have positive attitudes toward college SWD and believe that these students can be both successful and competitive in higher education. The vast majority of respondents (96.7%; $n=119$) reported that they "agree" or "strongly agree" that students with physical disabilities can be successful at the college level. For students with learning disabilities and mental health disabilities, en-

dorsement of these two response categories was 90.2% ($n=112$) and 82.9% ($n=102$), respectively.

One-way Analysis of Variance (ANOVA) was used to analyze faculty responses to survey items pertaining to their attitudes toward SWD. Respondents were asked about their belief in students' ability to be successful and to compete academically based on disability type (learning disabilities, physical disabilities, and mental health disabilities). These items utilized a five-point Likert scale, with response options ranging from "strongly agree" to "strongly disagree." Two cases were excluded from this analysis due to missing data ($n=121$ for this analysis). The internal reliability of these items (Cronbach's Alpha) was 0.859. Results revealed statistically significant differences in faculty attitudes using disability type as the grouping variable. Significant differences were found in faculty beliefs about students' ability to be successful in college based on disability type, $F(2, 359) = 19.067$, $p < .001$ (see Table 1), as well as beliefs about students' ability to compete academically in college, $F(2, 359) = 22.665$, $p < .001$ (see Table 2). The effect size for both ANOVA analyses was relatively small ($d = 0.164$).

Post-Hoc Analysis (Tukey's HSD) delineated the differences in faculty responses based on disability type. When examining faculty beliefs about SWD's ability to be successful, all three disability categories were significantly different from one another, with the most positive attitudes demonstrated toward students with physical disabilities, the second most positive toward students with learning disabilities, and the least positive toward students with mental health disabilities. It should be noted that although the difference in attitudes towards students with learning disabilities was significantly higher than those reported for mental health disabilities, the difference was much smaller ($p = .039$) between these two groups than when comparing each to physical disabilities ($p = .001$ for learning and $p < .001$ for mental health). When examining faculty beliefs about students' ability to compete academically in college, ratings for those with physical disabilities were significantly higher than both learning disabilities ($p < .001$) and mental health disabilities ($p < .001$); however, the latter two groups were not significantly different from each other ($p = .488$). For detailed results, see Table 3.

Faculty were also asked about their attitudes toward the provision of accommodations for SWD. Results suggest that some faculty hold negative attitudes toward the provision of accommodations, with 4.9% ($n=6$) of respondents reporting that they agreed or strongly agreed with the ideas that provision of accommodations compromises academic integrity and gives an unfair

Table 1

Analysis of Variance for Ability to be Successful in College by Disability Type

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.
Between Groups	15.855	2	7.927	19.067	.000
Within Groups	149.261	359	.416		
Total	165.116	361			

Table 2

Analysis of Variance for Ability to Compete Academically in College by Disability Type

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.
Between Groups	21.682	2	10.841	22.665	.000
Within Groups	171.713	359	.478		
Total	193.395	361			

advantage over other students. Though this is a small proportion of respondents, it is important to recognize that these beliefs still exist among faculty and need to be addressed to improve the experience for SWD.

Attitudinal differences based on faculty employment status (full-time vs. part-time) were not examined in this exploratory study as this was not a main focus of the research. Though this information was collected to examine the demographic characteristics of respondents, the analysis plan did not include examination of how employment status relates to faculty attitudes regarding SWD. In addition, due to the limited number of participants (84 full-time faculty members and 38 part-time faculty members), there was not sufficient power to explore this difference.

Knowledge Regarding SWD

Respondents demonstrated a lack of knowledge regarding policies and procedures for SWD. When presented with the statement, "I am aware of evacuation procedures for students with disabilities in the event of a fire or fire drill," 43.1% ($n=43$) disagreed and 9.8% ($n=12$) strongly disagreed. Participants also reported some uncertainty regarding the Americans with Disabilities Act as it applies to SWD (11.4%

not familiar; 27.6% unsure). In addition, faculty in this study expressed a lack of knowledge/uncertainty regarding the college attendance rates for SWD disabilities compared to non-disabled peers. Only 35% ($n=43$) of participants correctly identified that students with disabilities do not attend postsecondary institutions at the same rate as their non-disabled peers. The majority, 60.2% (74), were unsure and 4.1% ($n=5$) reported that the rates were equal.

Despite this reported lack of knowledge regarding policies and procedures related to SWD, faculty reported strong beliefs that they are sensitive to the needs to SWD and know where to find support on campus when working with SWD. This area was assessed with the item, "I am sensitive to the needs of students with _____ disabilities," presented three times to distinguish beliefs based on disability type. An overwhelming 97.6% selected "strongly agree" or "agree" in reference to students with physical disabilities. Similar results were found for learning disabilities and mental health disabilities, with 94.3% and 88.6% respectively who indicated agreement or strong agreement. In addition, participants expressed confidence in their ability to find additional on-campus support related to working with SWD, with 52.8% ($n=65$)

Table 3

Tukey HSD Post Hoc Analysis of ANOVA Results

Dependent Variable	Disability Type (A)	Disability Type (B)	Mean Difference (A-B)	Standard Error	Significance	95% Confidence Interval	
						Lower Bound	Upper Bound
Ability to be Successful in College	Learning	Physical	.306**	.083	.001	.11	.50
		Mental Health	-.204*	.083	.039	-.40	-.01
	Physical	Learning	-.306**	.083	.001	-.50	-.11
		Mental Health	-.509**	.083	.000	-.70	-.31
	Mental Health	Learning	.204*	.083	.039	.01	.40
		Physical	.509**	.083	.000	.31	.70
Ability to Compete Academically in College	Learning	Physical	.460**	.089	.000	.25	.67
		Mental Health	-.102	.089	.488	-.31	.11
	Physical	Learning	-.460**	.089	.000	-.67	-.25
		Mental Health	-.562**	.089	.000	-.77	-.35
	Mental Health	Learning	.102	.089	.488	-.11	.31
		Physical	.562**	.089	.000	.35	.77

Note. * $p < .05$; ** $p < .01$

disagreeing and 19.5% strongly disagreeing with the statement, "When students with disabilities are having difficulties, I am uncertain about where I can find additional support on campus."

Findings from this study also revealed that there are some gaps in faculty knowledge regarding the services that the DS office on campus provides. Faculty expressed uncertainty regarding qualification for accommodations. One survey item stated that students would not receive support services unless they disclosed their disability status. Almost half (49.6%; $n=61$) correctly identified that this was true; however, a large proportion indicated uncertainty (38.2%; $n=47$), and 12.2% ($n=15$) erroneously indicated that the statement was false.

Several misconceptions were noted related to knowledge of services provided for SWD by the DS office. Over half of respondents (54.5% ; $n=67$)

endorsed a belief that the office provides psychological and educational testing, which is not the case on the campus where data were collected. Similarly, 46.3% ($n=57$) reported an erroneous belief that the office provides transportation services for students with mobility impairments. A summary of the results from this portion of the survey is provided in Table 4. These findings suggest that faculty could benefit from additional information and training regarding accommodations for students with disabilities and the role of DS offices.

Respondents were also asked if they had ever advised a student to change his/her major due to limitations associated with disability. Fifteen (12.2%) participants reported that they had engaged in this behavior. Those who responded affirmatively were asked to provide additional detail describing this process.

Table 4

Faculty Knowledge of Services Offered by the Disability Services (DS) Office

Service	Yes	No
Transportation Services for Students with Mobility Impairments	46.3%	53.7%
Books in Alternate Format	68.3%	31.7%
Note Takers	88.6%	11.4%
Psychological / Educational Testing	54.5%	45.5%
Wheelchair Services	38.2%	61.2%
Assistance for Students with Temporary Disabilities	64.2%	35.8%
Escorts to and from Class	35.8%	64.2%
Dictation Software	62.6%	37.4%
Testing Accommodations	97.6%	2.4%

Note. Bold text indicates correct responses.

Responses included:

I once had a blind and deaf student who was unable to grasp the material sufficiently to perform in the workplace.

I've had students with mental health issues who would not be successful in schools with multiple demands and students who challenge them.

A student in a wheelchair wanted to be in production in the TV studio. They were physically unable of operating [sic] the studio camera.

Students with disabilities are treated the same as students without disabilities. If they demonstrate by performance that they are not suited academically or physically for a certain field of study for whatever reason, I try to advise them into a more appropriate field.

While some of these responses seem reasonable, it is important to note that directly informing a student that s/he cannot complete a particular major based on disability status is discriminatory and illegal (Wolanin & Steele, 2004). However, the student must be able to perform the essential duties of the major/career with or without accommodations. "Accommodations which are a 'fundamental alteration' of a program or which would impose an 'undue' financial or administrative burden are not required" (p. viii).

Respondents also expressed strong interest in professional development opportunities related to working with SWD. Participants indicated that they would be interested in attending workshops on the following topics: Universal Design (UD) in course development (27.6%); Access issues related to technology in the classroom (30.9%); Accommodations 101 (38.2%); Disability Dos and Don'ts (48%); Best practices in working with students who are blind/visually impaired (27.6%); Best practices in working with students who are deaf/hard of hearing (30.9%); Best practices in working with students with autism spectrum disorders

(40.7%); Best practices in working with students with learning disabilities (48%), Best practices in working with students with physical disabilities (33.3%); and Best practices in working with students with mental health disabilities (56.1%).

Discussion

In this study, faculty reported the most positive attitudes for students with physical disabilities and the most negative attitudes for students with mental health disabilities. When examining beliefs about SWD's ability to be successful in college, respondents reported significantly more favorable attitudes toward students with physical disabilities, followed by learning disabilities, and then mental health disabilities. For SWD's ability to be academically competitive in college, respondents again reported the most positive attitudes toward students with physical disabilities, followed by learning disabilities and mental health disabilities, which were not significantly different from each other. The results of this study suggest that students with learning or mental health disabilities may encounter significantly more attitudinal barriers than those with physical disabilities. Though the effect size for these analyses was relatively small ($d = 0.164$), the findings are worth noting as they suggest that attitudes toward SWD and resulting interpersonal interactions may differ based on disability type. Thus, these students may need additional support from the DS office in coping with negative attitudes that they may encounter when interacting with faculty.

Further, results suggest that at least a small proportion of faculty continue to demonstrate negative attitudes towards SWD and the provision of accommodations. This finding is consistent with existing research (Cook et al. 2009; Dowrick et al., 2005; Kurth & Mellard, 2007; Wolanin & Steele, 2004), and also represents an opportunity for improvement for institutions of higher education. Addressing faculty misconceptions about SWD and/or accommodations has the potential to significantly improve their college experience.

These results suggest that faculty hold the most negative attitudes toward students with mental health disabilities. This finding is particularly interesting due to the wide variety of mental health symptomology and individual functioning. What comes to mind when faculty hear the term "mental health disability"? Do their thoughts lean toward more severe diagnoses such as schizophrenia? Or, do they instead think of substance abuse, personality disorders, depression, and anxiety disorders, the four most commonly diagnosed mental health disorders in college students (Blanco et al., 2008)?

Further exploration of this bias is certainly warranted.

Results also demonstrate that some faculty are under-aware of policies and procedures relevant for SWD as well as on-campus support services available. Faculty expressed uncertainty regarding the Americans with Disabilities Act as it applies to college students and also demonstrated some misconceptions regarding the specific services offered by the DS office on campus. Previous studies have found similar results (Dowrick et al., 2005). Results from this study suggest that faculty could benefit from additional education focused on legal requirements when working with SWD as well as on-campus support services available to assist in this endeavor.

A disconcerting finding in the present study is that so few faculty reported awareness of procedures for SWD in the event of a fire or fire drill (43.1% disagreed and 9.8% strongly disagreed that they were informed of such procedures). Since faculty are typically expected to take a leadership role in this type of emergency situation, it is concerning that over half in this study reported a lack of knowledge of how to proceed. Further, it raises the possibility of the institution being held liable if faculty act in a manner that causes a student harm and does not align with established policy.

The findings from this study further suggest that faculty could benefit from workshops and other training opportunities for enhancing their work with SWD, particularly those with mental health disabilities. Almost half (47.2%) expressed interest in professional development sessions and 63.4% reported interest in attending a panel presentation where students with disabilities would share personal information about their experiences in college. These results suggest that participation in such offerings would be robust. In particular, respondents expressed strong interest in attending workshops focused on best practices in working with students with mental health disabilities, best practices in working with students with learning disabilities, and Disability Dos and Don'ts. Previous research (Lombardi, Murray, & Gerdes, 2011; Lombardi & Murray, 2011) has also provided evidence that faculty training has a significant impact on attitudes toward and perceptions of SWD and that faculty have interest in learning how to work more effectively with SWD (Brockelman et al., 2006; Murray et al., 2008). With administrative support, DS offices could assist in planning and implementing such training opportunities for interested faculty. This would also allow an opportunity to address misconceptions that faculty have about working with SWD and providing accommodations in the classroom. Postsecondary institutions might also consider implementing more

comprehensive training for new faculty, perhaps as part of their orientation program. This proactive approach would better equip faculty for working with SWD and may have significant implications for improving the college experience for SWD. While DS professionals could play a significant role in advocating for and planning such opportunities, it is imperative to note that without administrative support, implementation will be challenging, particularly in getting faculty to take advantage of these offerings. Often the faculty who participate are those who already have an interest in improving their work with SWD; however, it cannot be assumed that all faculty see this as a priority.

One item to consider is who should facilitate such workshops. The literature suggest that faculty may not be as open to information that originates from the DS office (Wolanin & Steele, 2004). Perhaps peer-led training would be a better option. Collaboration between the DS office and faculty with interest in disability-related issues may be beneficial in facilitating this process. Another approach is to include disability as an aspect of diversity training and related activities. Faculty members could be made aware that “they are not simply fulfilling some legislative mandate but embracing and fostering diversity on their campuses” (Barnard et al., 2008, p. 174). In this way, becoming more informed about disability-related issues may be viewed by faculty as a means of making the institution more inclusive for all students, not just those with disabilities. Postsecondary institutions might also consider developing a library of resources to assist faculty in their work with SWD and/or to develop a peer mentorship program where faculty who have significant experience with SWD can assist those with less experience (Lynch & Gussel, 1996).

Limitations

Caution should be used in generalizing these results. Additional research is needed to ascertain whether these findings are consistent across faculty at a variety of institutions, as they may only be representative of the beliefs and attitudes found at this particular institution. This study was also limited by the size of the sample; additional data are needed to ascertain whether these results are consistent across faculty with diverse characteristics.

In addition, this study is limited by the fact that participants may have felt pressure to respond to items in socially desirable ways. It is highly likely that faculty may have at least some notion that providing accommodations to SWD is a legal requirement, and consequently may have been hesitant to express beliefs in contrast to that mandate.

Future Directions

Future studies in this area should seek to draw a larger pool of diverse participants. Since the results presented here reflect only the attitudes and knowledge of faculty at one institution, it would be helpful to see if there are different responses patterns at different types of institutions (e.g., public vs. private, two-year vs. four-year) and whether faculty knowledge and attitudes related to SWD vary by geographic location. It is also possible that certain majors/fields of study pose particular challenges for SWD and the faculty who work with these students. Attitudinal differences based on faculty employment status (full-time vs. part-time) and departmental/college affiliation were not examined in this exploratory study, and analysis of how these demographic characteristics relate to faculty attitudes and knowledge regarding SWD would be an interesting avenue for future research.

In addition, future research should continue to examine attitudinal differences based on disability type. The present study employed three general disability categories: physical, learning, and mental health. However, there may be important distinctions in faculty attitudes and/or knowledge related to working with students with specific types of disabilities; for example, for students with mobility impairments as compared to those with sensory disabilities. Further delineation of disability categories may yield valuable insights regarding how faculty perceive and interact with students with a variety of disabilities.

A third promising area for future inquiry centers on the most effective ways to address faculty attitudes toward SWD. Previous research has suggested that workshops and other training opportunities can be effective methods of change (Murray, et al., 2009; Lombardi, et al., 2011); yet, getting faculty to take advantage of these offerings can be quite challenging. Moreover, future research can examine whether faculty training has an impact on actions toward SWD or whether the change is limited to attitude.

With a broader and deeper understanding of faculty attitudes and knowledge regarding SWD, DS staff can better address gaps in knowledge and/or problematic attitudes that faculty hold. One way that this may be accomplished is through the design and delivery of workshops and trainings to address issues that will lead to an improved academic experience for SWD. With sufficient knowledge, faculty can make comprehensive, informed efforts to implement appropriate accommodations and remove barriers to success. SWD deserve no less.

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Appendix

Faculty Attitudes and Knowledge Regarding College Students with Disabilities (SWD) Survey

1. Gender:
 - a. Female
 - b. Male
2. Department:
3. Total number of years in academia: _____
4. My position at _____ is (check one):
 - a. Full-time
 - b. Part-time
5. I believe that...
 - a. Students with learning disabilities can be successful at the college level
 - i. Strongly agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
 - b. Students with physical disabilities can be successful at the college level
 - i. Strongly agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
 - c. Students with mental health disabilities can be successful at the college level
 - i. Strongly agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
6. I believe that...
 - a. Students with learning disabilities are able to compete academically at the college level
 - i. Strongly agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
 - b. Students with physical disabilities are able to compete academically at the college level
 - i. Strongly agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
 - c. Students with mental health disabilities are able to compete academically at the college level
 - i. Strongly agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree

7. Student with disabilities are reluctant to disclose their disability to me.
 - a. Strongly agree
 - b. Agree
 - c. Neither agree nor disagree
 - d. Disagree
 - e. Strongly disagree
8. I would like more information about the needs of...
 - a. Students with learning disabilities at
 - i. Strongly agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
 - b. Students with physical disabilities at
 - i. Strongly agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
 - c. Students with mental health disabilities at
 - i. Strongly agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
9. I am sensitive to the needs of...
 - a. Students with learning disabilities
 - i. Strongly agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
 - b. Students with physical disabilities
 - i. Strongly agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
 - c. Students with mental health disabilities
 - i. Strongly agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
10. Students with disabilities attend postsecondary schools at rates proportionate to the rates of postsecondary attendance among students who do not have disabilities.
 - a. Yes
 - b. No
 - c. Unsure
11. I am familiar with the Office for Students with Disabilities (OSD) at
 - a. Yes
 - b. No
 - c. Unsure

12. To your knowledge, which of the following resources are available for registered OSD students? Check all that apply.
- Transportation for students with mobility impairments
 - Books in alternate formats
 - Note takers
 - Psychological/educational testing
 - Wheelchair services
 - Assistance for students with temporary impairments
 - Escorts to and from classes
 - Dictation software
 - Testing accommodations (e.g., extended time, distraction-free testing location)
13. I think it would be appropriate to allow a student with a documented disability to substitute an alternative course for a required course if the substitution did not dramatically alter the program requirements.
- Strongly agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Strongly disagree
14. I am willing to spend extra time meeting with students with documented disabilities to provide them with additional assistance as needed.
- Strongly agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Strongly disagree
15. I make appropriate individual accommodations for students who have presented a letter of accommodation from OSD.
- Strongly agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Strongly disagree
16. I make appropriate individual accommodations for students who have disclosed their disability to me but have not presented a letter of accommodation from OSD.
- Strongly agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Strongly disagree
17. Students with disabilities will not receive support services at _____ unless they disclose their disability.
- True
 - False
 - Unsure
18. Have you ever had to advise a student to change his/her major due to limitations associated with his/her disability? – Yes/No
- If yes, please describe this process: _____
19. When students with disabilities are having difficulties, I am uncertain about where I can find additional support on this campus.
- Strongly agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Strongly disagree

20. Given time constraints and other job demands, it is unrealistic for me to make reasonable accommodations for students with...
 - a. Learning disabilities
 - i. Strongly agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
 - b. Physical disabilities
 - i. Strongly agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
 - c. Mental health disabilities
 - i. Strongly agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
21. Currently, in my role, I do not have sufficient knowledge to make adequate accommodations for students with disabilities.
 - a. Strongly agree
 - b. Agree
 - c. Neither agree nor disagree
 - d. Disagree
 - e. Strongly disagree
22. I receive adequate support from my department/program/unit in working with students who have documented disabilities.
 - a. Strongly agree
 - b. Agree
 - c. Neither agree nor disagree
 - d. Disagree
 - e. Strongly disagree
23. _____ has an easily accessible collection of reference materials about students with disabilities.
 - a. Strongly agree
 - b. Agree
 - c. Neither agree nor disagree
 - d. Disagree
 - e. Strongly disagree
24. I am willing to help a student with a disability to navigate the various college processes and procedures.
 - a. Strongly agree
 - b. Agree
 - c. Neither agree nor disagree
 - d. Disagree
 - e. Strongly disagree
25. I am willing to be an advocate for a student with a disability and help him or her secure needed accommodations.
 - a. Strongly agree
 - b. Agree
 - c. Neither agree nor disagree
 - d. Disagree
 - e. Strongly disagree

26. The _____ campus is accessible for students with disabilities.
- Strongly agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Strongly disagree
27. In my discipline, providing accommodations to students with disabilities:
- Compromises academic integrity
 - Strongly agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Strongly disagree
 - Gives an unfair advantage over other students
 - Strongly agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Strongly disagree
28. I am aware of evacuation procedures for students with physical disabilities in the event of a fire or fire drill.
- Strongly agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Strongly disagree
29. How many professional full-time staff are employed in the Office for Students with Disabilities?
- Write in a number: _____
30. I would be interested in attending professional development sessions related to the needs of students with disabilities.
- Strongly agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Strongly disagree
31. I would be interested in attending a panel presentation where students with disabilities share personal information about their disabilities and their experiences in college.
- Strongly agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Strongly disagree
32. Of the following professional development opportunities, which would you be likely to attend? Check all that apply.
- Universal Design (UD) in course development
 - Access issues related to technology in the classroom
 - OSD Accommodations 101
 - Disability Dos and Don'ts
 - Best practices in working with students who are blind/visually impaired
 - Best practices in working with students who are deaf/hard of hearing
 - Best practices in working with students with autistic spectrum disorders
 - Best practices in working with students with learning disabilities
 - Best practices in working with students with physical disabilities
 - Best practices in working with students with mental health disabilities
 - Other (please explain): _____

33. I am familiar with the Americans with Disabilities Act (ADA) as it applies to students with disabilities in college.
- a. Yes
 - b. No
 - c. Unsure
34. As a faculty member, what do you want or need to know about students with disabilities that is not already provided/offered?
- a. Fill in: _____

Academic Accommodations for Postsecondary Students with Mental Health Disabilities in Ontario, Canada: A Review of the Literature and Reflections on Emerging Issues

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Abstract

An increasing number of students with mental health disabilities (MHDs) are enrolling at Canadian colleges and universities. This review examines the challenges and complexities of meeting the unique needs of these students at Ontario's postsecondary institutions, with a specific focus on the issue of academic accommodations. These complexities include: delays in receiving a diagnosis, the episodic nature of MHD-related symptoms, and challenges in determining functional impairments. The present review highlights the current factors influencing the integration and academic success of this population of students, the importance of faculty education, stigma-reduction programs and the development of a "welcoming culture" on campus. Accommodation issues are also discussed such as the need for retroactive accommodations, which are more likely to be required by this population because of the intermittent and episodic nature of many MHDs. Retroactive accommodations are not currently included in the typical formal academic accommodation procedures used in Ontario. The authors conclude by pointing to the need for the development of documentation practices and effective policies to assist postsecondary institutions in designing the most appropriate academic accommodations for in-class and fieldwork essential requirements.

Keywords: Mental health, postsecondary education, academic accommodations, stigma, equity in education, retroactive accommodations

There has been a well-documented increase in the number of students with mental health disabilities (MHD) who are involved in postsecondary education. For example, the number of students with MHD registered with Offices for Students with Disabilities (OSD) at colleges and universities in Ontario, Canada, increased by 67% in the five years between 2006 and 2011. Over the same period, the overall number of students with disabilities in the postsecondary system in Ontario increased by 31.5%¹ (J. Pyett, personal com-

munication, June, 2013). This pattern is not limited to Canada; it has been noted also in the United States (e.g., Castillo & Schwartz, 2013), the United Kingdom (e.g., Quinn, Wilson, MacIntyre, & Tinklin, 2009; Tinklin, Riddell, & Wilson, 2005), and Australia (e.g., Manalo, Ede, & Wong-Toi, 2010). A similar trend has been reported in campus health and counselling services in

Colleges and Universities of Ontario. In this report OSDs summarize the number of students registered with their offices and who are receiving accommodations or services during that year. This does not reflect the total number of disability categories receiving services or accommodation because students with more than one disability may be accessing several services from OSDs.

1 These data are not audited and are based on information provided by college and university OSDs in their annual report under the Accessibility Fund for Students with Disabilities (AFSD), to the Ministry of Training,

the United States where the phrase a “rising tide” was used in 2002 to describe the increase in the number of students with mental illnesses who were seeking services (Eudaly, 2002, p. 1).

A number of factors may account for this development. Student enrollment in postsecondary education has steadily increased from decade to decade. As well, access to education for persons with disabilities is now protected by human rights law; the relevant legislation in Ontario is the provincial *Human Rights Code*. Finally, Castillo and Schwartz (2013) suggest that the availability of increasingly effective psychopharmacological and psychotherapeutic treatments has facilitated access to postsecondary education for students with MHD.

The substantial increase in the number of students with MHD has resulted in significant systemic and administrative challenges for postsecondary institutions. For example, it has underscored the need for postsecondary institutions to develop a more sophisticated and comprehensive awareness of mental health and an understanding of how problems in this area may affect academic performance. As this review will demonstrate, faculty and staff express a strong interest in increasing their understanding of mental health and how to best support students with MHD (Brockelman, 2011; Collins & Mowbray, 2005). There are apparent benefits to providing such education; students report that a lack of awareness on the part of faculty and staff can pose a significant barrier to their success and can deter help-seeking behaviour.

Postsecondary institutions are also challenged in the provision of academic accommodations for students with MHD. The Ontario *Human Rights Code* requires that universities and colleges accommodate students with disabilities, including those with MHD. While there is substantial accumulated research, clinical expertise and experience in accommodating students with other disability types, those with MHD comprise a relatively new and under-served group. As a result, for the postsecondary sector there is still a great deal to learn in this area. The upsurge in students with MHD has put pressure on institutions to develop effective strategies, policies, and guidelines to accommodate this population.

This review will outline the specific challenges involved in responding to these needs. We begin with a description of the legal context for academic accommodations. Following this, we outline the complexities involved in the academic accommodations process from the perspective of students, faculty, and administrators. We conclude by providing some direction for further investigation and development in order to

bring consistency and fairness to the accommodations process for students with MHD.

The Legal Context for Academic Accommodations

The Canadian Charter of Rights and Freedom guarantees persons with disabilities the right of freedom from discrimination at the federal level (Department of Justice, 1982). At the provincial level, the Ontario *Human Rights Code* (1990) outlines an accommodation provider’s responsibility to ensure that persons with disabilities receive appropriate accommodations. The *Code* focuses on the need to accommodate on the basis of functional impairments (disturbances in performance as a result of a disability), whether these are permanent or temporary. As well, to provide guidance in the area of mental health, the Ontario Human Rights Commission recently introduced *A Policy on Preventing Discrimination Based on Mental Health Disabilities and Addictions* (OHRC, 2014).

Although the *Code* does not distinguish between permanent and temporary disabilities with regard to the duty to accommodate, this distinction does play an important role in the scope of activities undertaken by OSDs and postsecondary institutions. For this reason, a clarification of these terms is merited. An MHD is considered to be permanent if it involves ongoing symptoms (which may be chronic/continuing or episodic). The designation of a disability as permanent follows a thorough assessment of the person by a health care professional (physician, psychiatrist or psychologist), with findings that show that the condition is ongoing and that the functional limitations are likely to be continue indefinitely. An MHD is considered temporary if (1) the symptoms and the impairments are likely to be time-limited, or (2) the disability is currently being investigated and there is not yet sufficient information to determine conclusively if the symptoms are likely to be permanent.

Students are entitled to receive accommodations if their disability results in a functional impairment that impacts their ability to participate in academics, regardless of whether the disability is permanent or temporary. The distinction being made here relates to the likely duration of the difficulty and points to the fact that “not all forms of mental illness represent lifelong conditions” (Liebert, 2003, pg. 1).

While the Ontario *Human Rights Code* does not make a distinction between temporary and permanent disabilities and instead focuses on functional impairment(s) as the basis for determining appropriate accommodations, most OSDs in Ontario require documentation substantiating a formal diagnosis of a

permanent disability. Students who experience symptoms of MHDs for the first time and who have not received a formal diagnosis may request accommodations directly from their professors or from on-campus health or counselling services. This process may result in inconsistencies in the provision of accommodations across the institution. Irrespective of whether the impairments are considered permanent or temporary, there are concerns about determining how to identify and provide the most appropriate academic accommodations in relation to the functional impairment(s) that directly affect academic functioning. Added to this dilemma is the fact that “the term impairment is used differently by medical, mental health and educational professionals” (Goldstein & Naglieri, 2009, p. 2), which may make the evaluation of impairment in the context of academic functioning difficult.

Mental Health and the Postsecondary Student

In *A Report on Mental Illness in Canada*, Health Canada (2002) reports that youth (ages 15-24) are the most likely demographic to experience certain MHD or substance abuse/dependency problems (e.g., Belch, 2011; Health Canada, 2002; Rae, 2009; Reavley, Ross, Killackey, & Jorm, 2013; Shaddock, 2004; Storrie, Ahern, & Tuckett, 2010). This is the stage of life when many young people participate in postsecondary education. The most common MHDs in this group are depression, anxiety disorders, and eating disorders (Eisenberg, Golberstein, & Hunt, 2009). The joint incidence of these three disorders greatly exceeds that of all other MHDs combined (Kessler et al., 2005). This age of onset pattern is also documented in a study by Megivern, Pellerito, and Mowbray (2003), who found that 49% of students with an MHD experienced onset while participating in postsecondary education. Although symptoms of MHD often emerge during this time, there is sometimes a delay in obtaining a formal diagnosis or access to treatment and supports (Shaddock, 2004). Students may be unaware that the changes in their health are due to a mental health condition. As well, some mental health conditions develop slowly, and it may take a year or more to reach a conclusive diagnosis.

While these statistics illustrate that the numbers of students with MHD registered with OSDs in Ontario are increasing, this is not an accurate measure of the total number of students with MHD attending postsecondary education because some choose not to disclose their MHD to the institution (Gallagher, 2012). One possible reason that students make this decision may be that they see the transition to postsecondary education as a new beginning, one free of their disability identity

(Getzel & Briel, 2006). Among those who develop a MHD while attending college or university, there may be a reluctance to acknowledge mental health concerns because of fear of the implications of doing so, thus leading to a delay in diagnosis.

The Ontario Postsecondary Accommodations Process

The established accommodation practice at all Ontario postsecondary institutions is that the OSD processes requests for academic accommodations from students with documented disabilities. Colleges and universities have established protocols and documentation requirements that guide the process. Some postsecondary institutions have separate procedures for accommodating students with temporary disabilities. Students requesting academic accommodations for an MHD must first register with the OSD and provide documentation from a qualified mental health professional (such as a physician, psychiatrist, or psychologist). The documentation must include a diagnostic statement and a description of the functional impairment(s) resulting from the disorder that interfere with academic functioning. By itself, the documented diagnosis of an MHD does not necessarily establish the need for accommodation or identify the most appropriate accommodations in an academic environment (Rae, 2009). Accommodation planning involves an appraisal of the extent of the functional impairment associated with the diagnosed disorder and how it impacts academic functioning.

Determining the degree of functional impairment caused by an MHD is challenging since often there are no objective measures of impairment. The current accommodation model works most effectively for students who need consistent and continual accommodations, such as those with sensory or learning disabilities. The present process also facilitates accommodation planning for all parties involved; students are aware of their accommodations entitlements and professors are usually informed of these needs early in the term. In addition, sufficient notice is provided to arrange and administer accommodated examinations. However, this process may not be as effective for students with MHDs, where fluctuation in symptoms and functional impairment is likely to occur.

There is no uniform process for granting academic accommodations for temporary disabilities in Ontario; each institution typically follows its own guidelines or processes. Symptoms of MHDs may emerge acutely as the result of an incapacitating crisis. Consequently, there may not be sufficient time to access mental

health services prior to needing academic accommodations. The requirement to obtain a diagnosis before academic accommodations are implemented may present difficulties due to long waiting lists for service in some regions and the lack of available psychiatric or psychological services in others. As a result, students may need accommodations for temporary disabilities that may or may not meet the criteria for a permanent disability at a later date.

Rae (2009) reports that there are currently no standardized guidelines for providing academic accommodations to students with MHD, nor is there a framework for determining which accommodations are the most appropriate and effective. The focus of any accommodation should not be on trying to ensure that the student is successful but instead on “[determining] which accommodation would correct or circumvent functional impairments that might otherwise preclude a fair opportunity to access a course or a test” (Lovett, Gordon & Lewandowski, 2009, p. 99). This approach is taken in arranging accommodations for permanent MHDs and should also be considered a key ingredient in accommodating students with temporary MHDs.

Challenges for Postsecondary Students with MHD

The transition from high school and life at home to postsecondary education presents adjustment stresses for all students. These stresses are magnified for students with MHD who may experience a unique set of challenges in accomplishing their academic goals in a new academic environment. Effective functioning in a postsecondary environment requires a high level of cognitive, behavioural, and affective self-regulation (Medalia and Revheim, 2002). Disruption in these functions (e.g., problems in attention and concentration, emotional regulation, and motivation) may cause significant difficulties in learning. These disruptions may result in difficulties fulfilling academic requirements such as reliably attending classes/labs/tutorials, adhering to deadlines, and working effectively with peers.

The complexities of effective treatment for MHD may also raise barriers for these students. The need for some experimentation with medications in order to find the most effective treatment may mean that students are temporarily unable to function at their best academically. As well, many psychotropic medications have unpleasant and disruptive side effects (Megivern et al., 2003) that affect skills such as concentration and motivation which underlie successful academic functioning. The varying level of support (practical and academic) that students with MHD may receive from postsecondary institutions is also a potential barrier to

equal access. This is in part a reflection of the challenge that institutions face in dealing with a relatively new phenomenon (the increase in the number of students with MHDs) for which many academic institutions are often ill prepared.

Students who experience symptoms of a mental health problem for the first time while attending postsecondary education initially fall into the temporary accommodation category because it may not be possible to determine the permanence of their symptoms. At this stage, there may be no clear evidence of the prognosis or the potential resulting functional impairment(s). Current accommodation practices do not take into account the episodic nature of some MHDs, the sudden onset of symptoms, and the barriers preventing certain students from following established academic accommodations policies and procedures. One such policy is that institutions expect students to inform their professors before an examination or an assignment due date if they are unable to write a test or hand in an assignment. Due to the episodic nature of many MHDs, a student may be incapable of predicting when and if they require an extension or alternative arrangements.

The discrepancy between the accommodation needs of students with MHD and current academic accommodations policies and procedures administered by the majority of Ontario postsecondary institutions suggests that alternatives for this group of students need to be considered. Collins and Mowbray (2005) argue that accommodations for students with MHD are low-cost and straightforward and could include flexible course loads and timing, alternative ways to meet degree requirements, or additional time to complete assignments. In a study examining the perspectives of faculty members (n=107) regarding the effectiveness of accommodations for students with MHD, Brockelman (2011) reported that extended deadlines, extra time to write exams, approved class absences, and a private testing room were the most frequently used strategies.

According to Getzel (2008), underuse of academic accommodations seriously impacts the persistence of students with MHD in their studies. Studies have shown that students with MHD were less likely to graduate than those in other disability classification (e.g., Cavallaro, Foley, Saunders, & Bowman, 2005; McEwan & Downie, 2013; Moisey, 2004). Overcoming both the challenges that inhibit institutions from providing appropriate academic accommodations for this population of students, and the barriers to receiving such accommodations, will be important to ensure that these students have opportunities to participate equitably in academic activities.

Many students with MHDs are not aware of the on-campus resources that are available to them. This lack of information and awareness of available services is a barrier that prevents the use of available accessibility resources (e.g., Megivern, 2002; Milligan, 2010; Mowbray et al., 2006; Quinn et al., 2009; Salzer, Wick, & Rogers, 2008). Students report that they do not know how to access these services (Quinn et al., 2009). Importantly, students may not understand that they are legally entitled to accommodations under the Ontario *Human Rights Code* and the Canadian Charter of Rights and Freedoms (Milligan, 2010). Students also report that a lack of mental health resources prevents them from receiving the services they need (Mowbray et al., 2006).

Stigma - "The Hidden Burden"

An examination of the barriers that prevent students from seeking existing support points to access issues beyond the actual accommodation process or underlying formal policies. Broader societal values regarding mental health, and how people internalize these values, play a significant role in determining the academic success of these students. The literature indicates that stigma is a significant factor affecting whether a student will seek support (Belch, 2011; Quinn et al., 2009; Stevenson, 2010; Storrie et al., 2010).

Two forms of stigma have been identified: *social stigma* and *self-stigma*. "Social stigma is characterized by prejudicial attitudes and discriminating behaviour directed towards individuals with MHD as a result of the psychiatric label they have been given" (Davey, 2013, p. 1). Social stigma originates from sources outside the individual, such as friends, family, institutions and the media. Self-stigma "is a belief in or personal acceptance of negative stereotypes about a group to which one belongs and then applying this belief to oneself" (Patterson, Barnes, & Duncan, 2008, p. 132). Self-stigma can have far more destructive consequences for people with MHD than the experience of social stigma alone (Ritsher & Phelan, 2004). The internalization of stigma results in feelings of fear, shame, and fatigue, all of which can exacerbate the MHD (Stevenson, 2010). Many of those with MHD also report that self-stigmatization and shame can be worse than the most extreme symptoms of the disability (Stevenson, 2010; Stuart & Arboleda-Flórez, 2012).

Students may self-stigmatize and feel that they do not belong in advanced degree programs (Getzel, 2008). These students fear experiencing a lack of understanding along with stigma from staff, faculty, friends, and family (Quinn et al., 2009; Storrie et

al., 2010). Salzer et al. (2008) found that 30% of the students in their study did not request accommodations due to the fear of disclosing their disability to instructors and 20% feared stigmatization by their peers. Stigma remains a major factor that prevents this population from disclosing their disability, even if doing so will provide access to support and academic accommodations (e.g., Belch & Marshak, 2006; Brockelman, Chadsey, & Loeb, 2006; Brockelman, 2011; Collins & Mowbray, 2005; Megivern, 2002; Mowbray et al., 2006; Quinn et al., 2009; Rae, 2009; Shaddock, 2004; Stevenson, 2010; Storrie et al., 2010).

While some students have had positive outcomes after disclosing their MHD, negative responses are not uncommon, including the trivialization of their illness, accusations of faking or "scamming," feelings of unworthiness, and discrimination (Collins & Mowbray, 2005). Mowbray et al. (2006) explain that the "stigma associated with mental health produces shame, fear, and guilt on the part of individuals who have these diagnoses" (p. 233). In a study by Quinn et al. (2009), participants expressed concerns about stigma as a barrier to accessing accommodations due to the fear that disclosing a MHD could negatively affect future career prospects.

Stigma Reduction on Campus

On-campus stigma reduction and awareness campaigns can help demystify and normalize MHD while also educating the campus population about mental health (Belch, 2011; Mowbray et al., 2006; Quinn et al., 2009; Rae, 2009). Rae (2009) argued that "awareness campaigns can assist in promoting a culture of acknowledgement and trust on campus, and encourage more students, faculty, and staff to seek treatment if they are experiencing symptoms of mental illness" (p. 99). Likewise, Stuart and Arboleda-Flórez (2012) cited the success of "contact-based education" as a stigma reduction initiative in schools. This approach involves the delivery of training/workshop sessions by speakers who have recovered from a MHD. These types of stigma reduction strategies can provide personal models of effective recovery for students and help normalize help-seeking behaviour. Direct contact, in the form of an interaction or a relationship with a person who has a MHD, is an effective method of combatting stigma because individuals are confronted with the incongruence between their own beliefs and fears on the one hand, and the experience that occurs via direct contact on the other.

General mental health awareness on campus is another component in reducing the stigmatization of

students with MHD. In a qualitative study conducted in the United Kingdom, Quinn et al. (2009) interviewed students with MHD (n=12) to understand their perspectives and experiences related to university student health services. Participants identified the importance of increased mental health awareness initiatives to provide students with the opportunity to share their experiences more easily with the university community. In addition, some respondents expressed a belief that creating a “culture of openness” will acknowledge the experiences of students with MHD. Such a culture is characterized by widely disseminated information about mental health, encouragement of help-seeking behaviour and support for the provision of services. This culture would help to achieve other highly desirable goals including normalizing help-seeking, as well as guiding students towards mental health services in a supportive and inclusive environment.

Academic Accommodation Challenges for Institutions

Many MHDs emerge gradually; this pattern can add to the complexity of determining appropriate accommodations. Specific changes in levels of functioning associated with the onset of a MHD may be subtle, or difficult for the individual to discern, until the cumulative effect results in a significant, marked disruption. This is particularly the case for the first episodes of an MHD. The pervasive stigma surrounding mental health makes it more difficult to attribute these changes to the presence of a MHD. Consistent with this pattern, students in a study by Quinn et al. (2009) reported that they often did not recognize their symptoms as MHDs and some did not identify with having a disability. This speaks to the importance of education and outreach to enable all members of the campus community to recognize the signs of poor mental health in themselves and in others.

As the number of postsecondary students with MHD has increased, a number of institutional challenges have arisen regarding how to determine and provide appropriate academic accommodations for this population (see Milligan, 2010; Mowbray et al., 2006; Quinn et al., 2009; Reavley et al., 2013; Salzer et al., 2008; Stevenson, 2010; Storrie et al., 2010). Currently, Ontario’s postsecondary sector requires that students provide documentation to the OSD prior to receiving an academic accommodation. This approach is effective when the functional impairment is relatively stable. However, it presents challenges for some MHDs where symptoms and the resulting functional impairments may fluctuate over time. The gradual onset of symptoms may mean that a student will seek an accom-

modation prior to having a formal diagnosis; in effect, an accommodation without documentation. As well, many MHDs are episodic in nature; symptoms, and the associated disruption, may vary over time. When symptoms worsen students may be unable to conform to the expected institutional practices as a result of disruption in their functional ability.

Since a diagnosis and a statement of functional limitations are typically required for students to gain access to continuing academic accommodations, those in the early stages of developing an MHD may be unable to access these supports. Students without a diagnosis, or those who have been recently diagnosed, may have limited awareness and understanding of their MHD and how this will impact their academic performance (Belch & Marshak, 2006). Consequently, these students may be unable to self-advocate for appropriate accommodations (Shaddock, 2004). Undiagnosed disorders present challenges to campus staff, students, and families when symptoms become evident in the form of behavioural crises such as acute suicidality or acting-out behaviour.

Students with an MHD without a formal diagnosis or appropriate treatments and supports are at a greater risk for episodes of acute illness and worsening behavioural problems (Rae, 2009). As a result, such students may be unable to access accommodations at the time when they most need help. For instance, individuals with first-episode psychosis may often go undiagnosed for a year or more (Shaddock, 2004). In the interim, symptoms may interfere with a student’s ability to concentrate and process information, attend class, meet assignment deadlines, and generally fulfill the academic and social demands of student life.

Some students seek academic accommodations directly from their professors without contacting the OSD. In these situations, many professors struggle with deciding if they should provide the academic accommodation based on the student’s self-report or seek assistance from the OSD. Documentation of an approved accommodation plan from the OSD provides professors with reassurance that such requests have legitimacy. Most often, professors have the discretion to grant temporary academic accommodations based on their own best judgment. Faculty need specific support and education about managing accommodations for MHDs, especially when they fall outside the institution’s formal accommodations process.

Retroactive Accommodations

There are circumstances in which students seek accommodations outside the typical framework of the OSD. Perhaps the most challenging example of these is requests for *retroactive accommodations*. This term refers to accommodations sought “after the fact,” such as after an examination has taken place or the deadline for an assignment has passed. This type of accommodation may be requested where the unexpected, sudden emergence or re-emergence of symptoms disrupts the student’s functioning. For instance, students may develop an MHD for which they have never sought professional help; they may not attribute changes in functioning to changes in their mental health. As a result, they may delay seeking help until their symptoms are quite disruptive to their academic and personal functioning; they may be quite incapacitated by the time they seek help and request academic accommodation (Quinn et al., 2009).

Very little information is available on the concept of “retroactive accommodation” in the literature. In fact most institutions in the province and in other jurisdictions indicate that they do not grant accommodations of this type. However, for this group of students, it may be important to reconsider this position. Retroactive accommodations, while they might not be labelled as such, are provided in cases of other disability types in instances where a disruption of functioning has occurred. For example, a student whose work is disrupted by an unexpected “flare up” of their Irritable Bowel Syndrome symptoms or a student who is injured in a car accident and is unable to meet academic deadlines both have a basis for requesting retroactive accommodations and are likely to receive these. In the case of mental health disabilities, an acute emergence of disruptive symptoms may result in the same need for retroactive accommodations. In this case, the difficulty is compounded by the fact that students may not be in a position to think clearly and plan ahead making it difficult to provide advance notice of their accommodation needs.

A major concern regarding the provision of retroactive accommodations is the amount of time that has elapsed between a missed deadline and the request for accommodation. This is an issue that merits discussion at both the administration level, since any change would impact current policies, and within OSDs, as any change would impact current practices. Whether retroactive accommodations become part of accepted policy or are provided on a case-by-case basis will likely hinge on issues such as the amount of time that has elapsed and the extent to which the student’s func-

tioning was disrupted in the interim and in what way, if any, this can be documented or verified.

Based on interviews with mental health service providers at Ontario universities ($n=26$), Rae (2009) found that students with MHD often seek assistance late in the semester after a long period of feeling overwhelmed or after a crisis. The participants, who were disability service providers, reported that if a student does not have an accommodation plan in place in the event of a crisis, accommodation may be needed retroactively after an episode of acute illness (Rae, 2009). In a U.S. study, Collins and Mowbray (2005) examined the practices among staff at OSDs at universities in 10 states ($n=275$). Respondents felt these institutions should be more flexible in accommodating students with MHD and called for “academic forgiveness” and transcript adjustments when academic performance could be shown to have been disrupted by a MHD (Collins & Mowbray, 2005).

In all jurisdictions in North America qualified postsecondary students with MHDs have access and participation rights to educational opportunities that are protected by human rights legislation. In Ontario, the Human Rights Commission does not identify retroactive accommodations as a separate category; it regards all requests for accommodation as requiring due consideration irrespective of when the request is made (C. Robertson, personal communication, July 2014). Where the request is made only on the basis of the student’s self-report after the fact, the Commission recommends the exercise of “good faith” in determining whether or not to accommodate.

When considering retroactive accommodations, it is worth reviewing the parameters within which accommodations must be provided. As outlined in the Ontario *Human Rights Code* and in similar human rights legislation across Canada, postsecondary educational institutions have a duty to accommodate to the point of undue hardship. According to the *Code*, “undue hardship” is evaluated based on three factors: cost, external funding, and health and safety (Ontario Human Rights Commission, 2014). Based on a comprehensive website search in 2013, no Ontario postsecondary institution has a formal policy for granting retroactive accommodations; in fact, most state that they do not grant such accommodations. Among those institutions surveyed, only McMaster University identifies the need for retroactive accommodations and acknowledges that determining the appropriateness of these “is challenging and highly fact-specific” (McMaster University, 2012, p. 1). A number of postsecondary institutions have policies permitting make-up examinations and deadline extensions that apply to all students. These

requests are often related to sudden crises (e.g., death of a family member). The grounds for granting these accommodations fall outside the human rights requirement of “duty to accommodate” and are largely based on institutional willingness to make these adjustments.

The provision of retroactive accommodations is challenging for educational institutions. Concerns centre on issues such as determining the credibility of student self-reports, procedural fairness, academic integrity, and the administrative and workload challenges of providing these accommodations. In these situations, institutions endeavour to balance the rights of students where circumstances have made pre-arrangement of academic accommodations not possible, with the need to satisfy academic integrity requirements. This is an area where a “case by case” approach to granting retroactive accommodations is likely to be required.

Faculty Understanding of Mental Health

Faculty attitudes have been shown to be a key determinant of the sense of inclusion experienced by students with disabilities (Milligan, 2010). Students often receive a significant amount of informal support from professors without contacting the OSD (Salzer et al., 2008). Research examining the attitudes of faculty to MHD shows mixed findings. In a study of faculty members ($n=107$) at a university in the United States, Brockelman et al. (2006) found that faculty perceptions of students with MHD are generally positive. However, many faculty reported that they felt uncomfortable interacting with these students. Faculty and staff sometimes hold negative attitudes towards postsecondary students with MHDs (Hindes & Mather, 2007; Milligan, 2010; Quinn et al., 2009; Rae, 2009; Shaddock, 2004). In some cases, these negative attitudes are based on a lack of awareness about how to provide appropriate accommodations for students with MHD (Milligan, 2010). Some faculty may believe “mental illnesses necessarily produce cognitive deficits and/or disruptive behaviours” (Mowbray et al., 2006, p. 232). Students report that some postsecondary staff members hold more negative attitudes about students with MHD than about those with learning or physical disabilities (Quinn et al., 2009).

In a study of professors ($n=83$) at a Canadian university conducted by Hindes and Mather (2007), many participants expressed the belief that postsecondary education is not an appropriate environment for individuals with MHD and indicated that they are less willing to provide accommodations to these students. Faculty also expressed a number of concerns

about teaching these students including maintaining academic standards, the extra workload involved in accommodating this group, students’ capacity to succeed academically, and the negative consequences of perceived differential treatment (Shaddock, 2004).

The literature suggests that faculty and staff report a strong desire for increased awareness and understanding of mental health and the accommodations process (Collins & Mowbray, 2008; Milligan, 2010; Mowbray et al., 2006; Reavley et al., 2013; Stevenson, 2010; Storrie et al., 2010). They also report that they are ill-equipped to respond effectively to students with MHD (Collins & Mowbray, 2005). Faculty and staff are also challenged by the need to provide equal educational access while ensuring that academic integrity is maintained (Storrie et al., 2010). Like many in the broader society, faculty and staff members may experience fears of students with MHD. Many authors link these fears to misunderstandings and misperceptions about MHD and accompanying behaviours (Angermeyer, 2000; Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999).

The fears experienced by faculty members are often compounded by their lack of knowledge about the rights of students with MHD, the services available to them, and appropriate accommodations (Mowbray et al., 2006). Faculty are unsure about their roles in supporting students with MHD; they feel they are not qualified to counsel students and are not comfortable assuming such a responsibility. They express concerns that by intervening they may worsen the student’s problem. Many faculty are unfamiliar with how to respond to at-risk students and feel unable to assist them in seeking additional support. It is important for institutions to support faculty and staff in broadening and deepening their understanding of mental health because of their role in the academic development of students with MHD (Stevenson, 2010).

There is evidence to suggest that mental health education and training for postsecondary faculty and staff contributes to the success of students with MHD (see Brockelman et al., 2006; Brockelman, 2011; Collins & Mowbray, 2008; Hindes & Mather, 2007; Milligan, 2010; Mowbray et al., 2006; Rae, 2009; Reavley et al., 2013; Shaddock, 2004; Stevenson, 2010; Storrie et al., 2010). Providing general information about students with MHD can help faculty and staff develop adequate knowledge and resources for providing academic accommodations. Individuals with knowledge about the academic accommodations process are more likely to provide students with the accommodations that they need (Milligan, 2010).

Training is an important aspect of accommodating students, since a lack of knowledge about and fear of MHDs can be significant barriers to student success (Stevenson, 2010). To make training successful and sustainable, mental health education for faculty and staff should be designed to address their particular interests and concerns. Since students have contact with professors on a weekly basis, any training for professors should include: (a) concrete examples of the types of behaviours students with MHD may exhibit, (b) specific information on how best to support students in distress and in crisis, (c) confidentiality policies, (d) contact information if they have a question or a concern about a student, (e) contact information for emergency situations, (f) the process for granting temporary accommodations, and (g) which campus resources are available to them for guidance and assistance (Mowbray et al., 2006; Rae, 2009).

Storrie et al. (2010) suggest that “staff with mental health skills and interest could provide one-to-one support to students, rather than leaving academic staff with little interest or expertise to cope on their own with students’ behavioural manifestations of emotional distress” (p. 6). To improve communication and foster closer relationships with student services, a number of postsecondary institutions have delegated a “departmental liaison” to campus mental health services. In this approach, a member of the academic department facilitates referrals, collects information and is responsible for relaying this to others in the department (Mowbray et al., 2006). Mental health training provides faculty and staff with knowledge and resource information and increases their confidence in working with students with MHD. As well, it demonstrates an institutional commitment to supporting students (Collins & Mowbray, 2008).

Emerging Themes

Safeguarding privacy and confidentiality and the need for policies to support students with MHD have emerged as areas of concern in the literature (Belch, 2011; Belch & Marshak, 2006; Collins & Mowbray, 2005; Quinn et al., 2009; Rae, 2009). Due to the stigma experienced by persons with MHD, an assurance of privacy and confidentiality is critical to students who are seeking professional help and/or requesting academic accommodations (Rae, 2009). Aside from emergency situations, OSDs are prohibited from sharing personal or health-related information about a student without the student’s expressed consent. In communicating with faculty members, OSDs relay only information about the approved accommoda-

tions. Other personal or health-related information, including the diagnosis, is not disclosed.

The concept of the *circle of care* is applicable to providing services to, and sharing personal/health information about, students with disabilities. This term is used to describe the capacity of certain health information custodians to assume an individual’s implied consent to collect, use or disclose personal health information for the purpose of providing care. The circle involves those individuals who are providing services to the student. Faculty and most general staff members are not a part of a student’s circle of care and therefore do not know, or need to know, information about the specifics of a student’s mental health status. However, as described above, they do need information about accommodations and support (e.g., guidelines) on how to handle specific mental health-related issues/situations that may arise in the classroom, laboratory or fieldwork setting.

With respect to policy development and implementation, institutions need a formal process for establishing and reviewing policies and procedures related to supporting students with MHD (Belch, 2011). Policies and procedures should be established for all students, including those with MHD, regarding appropriate accommodations, medical leave, voluntary and involuntary withdrawal, return-to-class, training for staff and faculty, and circumstances in which parental notification of mental health concerns is permitted (Belch, 2011; Quinn et al., 2009).

Another emerging area of concern relates to fieldwork accommodations. Fieldwork encompasses clinical experience, internships, and work placements and is a component of many professional programs. It requires different behaviours and skills than those needed for success in the classroom; as a result, a student’s functional impairments may be location- and task- dependent. The student completes fieldwork with either direct supervision from agency staff or with oversight from the educational institution. In either circumstance, the student is vulnerable if effective communication and supports are not in place between the institution and the placement site.

Managing accommodations in fieldwork requires a thorough understanding of the program’s “bona fide” essential requirements by disability advisors and by the on-site fieldwork personnel. It also may be an iterative process, calling for effective communication between the institution’s OSDs, supervising faculty and the placement site, an understanding of the need for accommodations and flexibility in their implementation. On-site professional staff may be uncomfortable with the perception that students are receiving “special treatment” and may

need information about the site's duty to accommodate under the Ontario *Human Rights Code* and other relevant legislation without disclosure of the student's confidential information. Certain programs of study, such as Medicine, Nursing, Education, Occupational Therapy and Early Childhood Education, all require that students complete fieldwork in "safety sensitive" settings (hospitals, long-term care facilities, prisons, forensic units, schools, daycare centres). In these circumstances, the level of scrutiny is increased and the careful design of appropriate accommodations is essential.

In circumstances where fieldwork involves contact with vulnerable populations such as children, persons with disabilities, and older adults, students are required to provide a clear vulnerable sector police record check. For students with MHD, in some jurisdictions in Ontario, this may pose a problem since these police checks may include mental health-related information such as contact with emergency services. Such incidents typically do not involve criminal charges. This requirement represents another barrier for some students with MHD who in the past have accessed support from emergency services through a 911 call or during a crisis situation where ambulance and police support were needed.

Conclusion

The increasing number of students with MHD in postsecondary education has exposed some challenges for institutions in the provision of equitable educational opportunities. These students encounter a number of barriers in accessing their education that are not faced by their peers or those in other disability groups. Academic institutions may not be fully prepared to meet this group's academic and support needs. This review focused primarily on concerns related to academic accommodations; however, it is clear that there are other areas that underpin the equitable treatment of this population and require attention. For example, there is a need for faculty and staff training aimed at raising awareness of mental health and the needs of this population of students. This training should also cover appropriate academic accommodation for students with MHD in the classroom and in fieldwork. Both of these are components of an "accessible and welcoming campus" where all members of staff are aware of and responsive to the circumstances of students with MHD.

This review highlights a number of specific challenges that arise in accommodating this group of students. Table 1 provides an overview of the issues, implications and considerations.

An overarching theme relates to the mapping of this population's needs onto models previously developed

for students with other types of disabilities, where the functional impairments are more stable and where alterations to academic accommodations may not be required for the duration of the study period. By contrast, MHD, both permanent and temporary, may emerge acutely and result in sudden and significant functional disruption. MHD-related symptoms and functional impairment may be intermittent and fluctuate over time. For instance, the need for medication adjustment(s) may temporarily and negatively affect a student's functional level. In these circumstances, accommodation planning is more challenging and requires both flexibility and a sound awareness of the complexities of mental health. Our review also indicates that, in some instances, students may be unaware of the availability of accommodation services on campuses. They may also be reluctant to disclose the presence of a MHD and to obtain support as a result of self-stigma.

David Turpin, President of the University of Victoria, has predicted that by 2020, "mental health issues are going to be the leading cause of disability at Canadian universities" (cited in Hanlon, 2012, p. 1). The increase in the number of students with MHD in postsecondary settings over the last five years suggests that we may reach this situation much sooner than Turpin suggests. Additionally, changes to the diagnostic system outlined in the revised Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013) may also contribute to the pace of change. A number of new diagnoses appear for the first time in DSM-5; as a result, more postsecondary students may become eligible to apply for academic accommodations. It is clear that the "rising tide" referred to by Eudaly (2002) is well on its way to becoming a "tidal wave."

Since the introduction of accessibility funding in Ontario in the late 1980's, the postsecondary sector has adjusted to be inclusive to each new group of students with disabilities as they gained access to postsecondary education. How the sector shifts to a new paradigm to provide support to students with temporary and permanent MHD will influence and determine this group's integration into the campus community and ultimately their opportunities for success. All stakeholders, faculty, staff, students and administrators have a role to play in this process. To transform the current system from one focused on compliance with human rights regulations to one of full access and integration requires a significant cultural shift. The ultimate goal is that each institution is welcoming to all students and access for students with MHD is part of each institution's mission, strategic plan, and core values.

Table 1

Challenges in Accommodating Students with MHD

Issues	Implications	Considerations
Increasing number of students with mental health disabilities attending postsecondary education	<p>Increased need for effective faculty and staff education on mental health, academic accommodations, and how to respond to students in distress</p> <p>Need for effective stigma-reduction programs</p> <p>Challenges to the existing academic accommodations model because of the fluctuating nature of some mental health disabilities</p>	<p>Effective education and stigma-reduction programs ensure increased student support and retention</p> <p>Availability of services and reluctance of students to seek help may delay the process of receiving a diagnosis for a mental health disability.</p> <p>Students may experience mental health symptoms for the first time while at college or university. Their symptoms may preclude them from following established accommodation procedures (i.e. making arrangements in advance of not meeting an academic requirement)</p>
Temporary versus permanent mental health disabilities	<p>The requirement for documentation of a permanent disability based on a diagnosis in order to obtain accommodations does not reflect the reality of mental health conditions. In some instances, there are good reasons to believe that the impairment is temporary; in others, it may take months to arrive at a conclusive diagnosis.</p>	<p>What types of documentation should be considered suitable for students with temporary mental health disabilities?</p> <p>How should professors respond when students seek accommodation relating to a mental health disability directly from the professor? Often professors struggle with the decision to grant accommodations in these situations because of concerns about fairness to other students.</p>
Determining the nature of the functional impairment resulting from a mental health disability	<p>Identifying specific impairments can be a challenge since this is mostly done on the basis of self-report.</p> <p>The term “impairment” is used differently by mental health and education professionals.</p> <p>Medications used to treat mental health symptoms may impact concentration and motivation which in turn compound the functional impairment.</p>	<p>Determining the boundary between “predictable and normal” anxiety/mental health problems that are commonly experienced by the general population and a mental health disability resulting in a functional impairment requiring accommodation can be difficult.</p> <p>What impairments need to be accommodated and how?</p>
Social and Self-Stigma	<p>Both Social Stigma and Self-Stigma are relevant to students’ experiences and can delay help-seeking, diagnosis, increase fatigue and decrease motivation.</p>	<p>Reduce social stigma within the academic environment by offering on-going and effective stigma-reduction campaigns.</p>

(Table 1, continued)

First Episode Psychosis	Psychotic symptoms may severely disrupt a student's academic performance/progress and require their withdrawal from studies for a period of time	It may take months for a student to receive a formal diagnosis. In the meantime, there is significant functional impairment and often a severe disruption in academic functioning A need for increased flexibility regarding requirements needed for progress in a specific program of study, withdrawal and return-to-class policies in order to fairly accommodate this group of students.
Retroactive Accommodations	How to accommodate students when they are not able to provide documentation, or notification, in advance of missing tests or assignments. Issues such as the credibility of a student's self-report, procedural fairness, academic integrity.	Administrative challenges in providing such accommodations.
Faculty understanding of Mental Health	Faculty play a key role in supporting a student's sense of inclusion and creating a welcoming environment. Fear and ignorance can be a significant barrier to student success	Determining the type of education and training that would be beneficial to faculty
Policy Development and Implementation	Policies and procedures need to be in place to manage the needs of students with mental health disabilities and to ensure that they receive equitable accommodations.	Policies and procedures should be established that cover areas such as: medical leave, voluntary and involuntary withdrawal, return-to class, training for staff and faculty and parental notification in emergency situations
Fieldwork	Accommodation requirements in fieldwork are often different than those required for classroom or laboratory participation. Determining "bona fide" essential requirements of fieldwork is an important component.	In "safety sensitive" environments, the careful design of appropriate accommodation is essential. This may have to be an iterative process, requiring effective communication between the institution and placement site.

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Attendant Care for College Students with Physical Disabilities Using Wheelchairs: Transition Issues and Experiences

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Abstract

From preschool through high school, accommodation and success, rather than self-advocacy and student development, are the predominant frameworks for students with physical disabilities. Many students with physical disabilities who use wheelchairs are assisted by their family members with daily life activities such as getting out of bed, showering, eating, dressing, and toileting. Once in college, many of the students are responsible for finding their own personal care, thus it may be the first time they will have to self-advocate. Multiple factors affect the transition and experiences from high school to college and for students with physical disabilities, that transition may involve attendant care. This study explored the transitional attendant care issues and experiences of college students with physical disabilities who use wheelchairs. During a phenomenological study of 12 undergraduates, seven themes emerged regarding transitional issues for students with attendant care: time management, preparing for attendant care, training attendants, first feelings, accepting responsibility, parental involvement, and financial considerations. Four themes emerged regarding their collegiate experiences with attendant care: preferences, relationships with attendants, supportive friends, and characteristics of attendants. Recommendations for future studies, future researchers, academic and student affairs educators, and future college students are provided.

Keywords: Students with disabilities, physical disabilities, attendant care, self-advocacy

Imagine, as a college student, waking up at 7:30 am with someone you barely know standing in your room. This person informs you that they are here to help you prepare for your day, by helping you shower, get dressed, and attending to any other personal hygiene or health-related issues before departing to class. This brief imagery gives insight into the everyday routine of many college students with physical disabilities (SWPD) who use wheelchairs and have attendant care. As these students begin college, they are engaged with many of the typical first-year college student challenges, such as taking steps to becoming independent, becoming socialized into a new environment, and learning to live with new and different

people. However they are also faced with some more unique challenges, such as becoming responsible for the process of hiring an attendant for themselves.

During elementary and secondary education, accommodation and success, rather than self-advocacy and student development, tend to be the central underpinnings for understanding how educational institutions construct learning outcomes for SWPD (McCarthy, 2007). Often pre-college students with disabilities who use wheelchairs are not expected to focus on self-advocacy skills as few have personal care responsibilities at that age because a parent or guardian handles all school-related issues and most of the personal care needs.

When most of these students arrive at college it is the first time they have had to find—and use—his or her own voice. . . . almost overnight, students move from a system in which someone else such as a parent or teacher managed the “disability thing” to a completely self-directed system. (pp. 11-12)

Students have to assume personal responsibility when they come to college. “Colleges are not required to provide personal care assistance, and their responses will run the gamut from being completely hands-off the process, to providing assistants, to providing help in hiring an attendant” (Tiedemann, 2012, p. 69). This experience can be unsettling, from one day being a person with a physical disability whose personal care needs are met by family members, to being a first-year college student with the responsibility for personal care needs through the process of hiring an attendant (someone they do not know) to assist them. Studying the transitional issues and experiences of college SWPD who have attendant care and use wheelchairs helps others to better understand how these experiences affect these college students as individuals and shape their development.

Literature Review

In the absence of a set of student development theories focusing exclusively on SWPD, the authors selected a broad-based, often cited, theoretical framework for this study, namely Chickering and Reisser’s developmental vectors for college students. Chickering and Reisser (1993) identified multiple vectors as a conceptual map to help determine identity-related issues during the collegiate experience. These vectors, or major developmental stages, build upon each other and provide a comprehensive overview of psychosocial development during the undergraduate years. Several of the vectors may be experienced differently by SWPD than by other sub-populations of college students (i.e., developing competence, moving through autonomy toward interdependence, developing mature interpersonal relationships, establishing identity). Physical and interpersonal competence may differ for SWPD. For a SWPD using a wheelchair, achieving higher levels of autonomy may look different than for students without physical disabilities.

The challenges of autonomy arise for this population of students when they realize that with the advent of their collegiate careers their personal care is now primarily their responsibility, where earlier in their educational journey family members typically handled that aspect of their lives. Building and establishing

relationships with others who have physical disabilities can also be a developmental experience, just as building relationships with nondisabled students. Being able to build and maintain personal relationships with attendants and peers is a step-by-step process. And, establishing an identity, defining one’s true self path, may be different for a SWPD using a wheelchair. Many factors can affect this vector, depending on how long they have had a disability, how long a person has been using a wheelchair, what the transition to college was like, and how they socially integrated. Discovering one’s identity is a learning process which occurs gradually over time, with moments of success and failure (McCarthy, 2007). A large part of establishing identity for SWPD is tied to building self-advocacy skills (Hadley, 2011; Lynch & Gussel, 1996; Skinner, 1998).

This study also has theoretical underpinnings in Tinto’s (1993) theory of institutional departure. Tinto’s theory explains the longitudinal process of college students not returning to institutions of higher education, while capturing the complexity of behaviors that underlie that phenomenon. College students should positively separate, transition, and incorporate collegiate values as they become integrated into the academic and social systems of a college. During the transitional period, students depart from their communities at home and transition to college. To be successful, they must adjust academically and socially to the new environment. Students must assume personal responsibility to self-advocate for reasonable accommodations. As students transition to college, they begin to incorporate the values and norms of the college they are attending. Without proper accommodations, the transitions will be difficult. Multiple researchers have studied the usefulness of Tinto’s model in predicting college student attrition (e.g., Cotton & Wilson, 2006; McKay & Estrella, 2008), and additional authors (e.g., Braxton et al., 2014; Braxton, Hirschy, & McClendon, 2004) have questioned the empirical backing of the theory and reworked issues associated with student departure.

College Students with Physical Disabilities Using Wheelchairs

Eleven percent of undergraduate students in the United States, over two million students, have a disability (Martin, 2012). Among all students with disabilities, the majority of the disabilities are not physically apparent; only 15% of students have orthopedic, or mobility, impairments. Among students with orthopedic impairments, 62% were found to have enrolled in college (Newman et al., 2011). College SWPD using wheelchairs have specific personal and academic needs while in college. People with dis-

abilities complete college at a significantly lower rate than those people without disabilities (Barber, 2012), suggesting that better academic and social integration supports may be needed for this population

The first year of college is an important time for students because it creates the foundation for subsequent educational experiences (Woosley & Miller, 2009). Students often express concerns over the transitional process, citing worries about interpersonal relationships, adjustment time, homesickness, and academic stress as potential obstacles when transitioning to an institution. The experiences found to be the most beneficial for SWPD in wheelchairs include enhanced academic and classroom experiences, a healthy and stable residential experience, and finding the right attendant care (Padgett, Johnson, & Pascarella, 2012).

Three-fourths of all United States college students leave at some point during their first year (Elkins, Braxton, & James, 2000). Therefore, it is important for colleges and universities to help students persist to the second year. Institutions have a variety of interventions aimed at the transitional phases, both during the summer before college begins and during the first few weeks of the semester (Woosley & Miller, 2009). There are many factors that help SWPD ease into the transition from high school to college: acknowledging strengths and areas of needs, learning about the disability services office, participating in precollege academics, taking responsibility for one's own education, and self-advocating are just a few (Connor, 2012).

The transition from high school to college can be overwhelming and confusing for many students. For SWPD, it is important to understand and articulate needs related to their disabilities (Hadley, 2011). Potential barriers to success can include "unawareness of the availability of academic support and reasonable accommodations, lack of skills in self-advocacy and self-determination, financial problems associated with paying for education in addition to disability-related expenses, inconsistencies in provision of educational supports" (Mamiseishvili & Koch, 2011, p. 93). These barriers can alter a student's transition to college in multiple ways. Students have to take initiative when it comes to attendant care. Trying to figure out finances related to attendant care, accepting responsibility for themselves for the first time, and being aware of campus resources are transitional issues which can affect students. Some students have Medicaid (United States social health care program) to cover the cost; others have Vocational Rehabilitation (enabling individuals with disabilities in the United States access to employment). "To improve chances for success in attaining independent living . . . the role of the attendant is neces-

sary" (Atkins, Meyer, & Smith, 1982, p. 20). Students need to learn to take responsibility for attendant care (Birdwell & Fonosch, 1980). Setting up and maintaining attendant care influences students' well-being, as well as their academic success (Simon, 1977).

A common major issue with attendant care is that often students do not know the steps to take to locate the services they need and how to negotiate hiring an individual to serve in this role. Students may start by placing ads in newspapers, asking a friend if they would be willing to provide (paid or unpaid) help when needed, or find professional care through local agencies. Tiedemann (2012) discussed the need for students to figure out when they will need an attendant because the job is tailored to their schedule; the students need to know where they can go to locate an attendant to assist them. The time management issues for college students in need of attendant care may be a bit different than for others needing attendant care. These types of issues related to the specifics of student development experiences of SWPD using wheelchairs were determined by the authors to need further examination from the perspective of the SWPD.

Method

The purpose of this study was to explore the transitional attendant care issues and experiences of college SWPD who use wheelchairs. This study addressed the following research question: How do college SWPD using wheelchairs describe the issues they encountered and the experiences they had with attendant care as they transitioned into higher education?

Design of Study

In order to ascertain and better understand the perceptions SWPD using wheelchairs have about their transitions into college, specifically around their experiences with attendant care, this study used a qualitative phenomenological methodology in order to place a thick-description (Geertz, 1973) around the phenomenon under examination. This methodology was chosen because the researchers believe the transitional experiences of students with disabilities using wheelchairs, and who use attendant care, have collegiate experiences that are currently absent from the literature. Phenomenology helps organize a study when researchers are searching for "common meaning [shared by] several individuals of their lived experiences of a concept or phenomenon" (Creswell, 2013, p. 76). The lived experiences of college students with physical disabilities who use wheelchairs and have attendant care represent the experiential phenomenon un-

der examination. In-depth interviews were conducted by the first author to gain richly described and detailed explanations about the participants' transitions and experiences. A semi-structured interview protocol was used to best enable this type of data gathering where the interview questions are aimed at cognitive clarification of the participants' experiences (Kvale & Brinkmann, 2009). "The researcher relies on the participants' views as an inside emic perspective and reports them in verbatim quotes" (Creswell, 2013, p. 92).

The institutional context where the participants resided was a mid-sized public doctoral-granting residential institution located in the Midwest, which primarily serves undergraduate students along with some graduates (Carnegie Foundation, n.d.). The institution provides a disability services office to meet the needs of all students who identify as having a disability. There are also modified rooms (e.g., bedroom doors controlled by clickers, proxy cards to enter the residential hallway, accessible showers, and motion censored sinks) provided in the residence halls rooms accessible to students with disabilities. Many physical features of the buildings make them easily accessible to students with mobility limitations. To protect the confidentiality of the participants and the institution, the names and locations mentioned in the interviews were exchanged with pseudonyms during the transcription process.

Students who participated in this study self-identified as being an undergraduate with a physical disability using a wheelchair and having attendant care. The population was comprised of participants ranging from age 18 to 26. The participants had a variety of academic statuses (i.e., freshman, sophomore, junior, senior). Many had a diagnosis that required the usage of a wheelchair for independent living. Participants were not required to live on campus. No other delimiters (e.g., gender, disability type) were used.

Data Collection

A semi-structured interview protocol was used to assist with the data collection process. The purpose of the study, the related literature review, and the resulting research question were used to help build a direction for the interview guide. The interview guide was organized into two major sections: transitional issues and experiences the student had with attendant care. The participants were asked to be candid and share as much about their personal experiences and transitions as they felt comfortable. The interview environments were held in locations mutually agreed upon by both the first author and the participants. Participants were notified at the beginning of the interview that they

would be asked some questions which were personal and sensitive in nature. The Institutional Review Board approved informed consent process was used. It is difficult for able-bodied persons to imagine instances where strangers would ask them to reveal normally private information about their health, bodies, or personal hygiene routines. On the contrary, a request of this nature would not be unusual for persons with physical disabilities (Braithwaite, 1991), yet it was still prudent to take extra care with the conversations prompted by the interview questions due to the sensitive nature of the topics under examination. Since some participants may have been hesitant to talk about such sensitive issues for inclusion within an academic study, thoughtful structuring of the interview experience was used to explain the purpose of the interview, and why the participants' responses would be beneficial to the study (Kvale, 1996). The researchers remained aware of the sensitivity level and took precautions to reassure the participants that the data collected would be handled with great care (Dickson-Swift, James, & Liamputtong, 2008). The participants were reassured that no one other than the researchers would have access to the recorded interview and transcriptions. The first author also explained that a pseudonym would be given to participants to ensure an increased level of confidentiality and in hopes to prepare them to open-up and fully engage in the interview.

A panel of experts experienced in the topic and/or qualitative research methodology reviewed the proposed interview guide (Davis, 1992) and provided feedback. The panel consisted of disability services educators and faculty members skilled in qualitative research. A pilot test, consisting of SWPD that were not a part of the study, was conducted by the researcher to refine and further develop the interview protocol, help frame questions, collect background information, and adapt research procedures (Creswell, 2013). Revisions were made to the interview protocol per the suggestions of the members the panel, and the results of the pilot test. At the beginning of the interview casual conversation was held to make the participant feel at ease and comfortable about the interview. The interview protocol consisted of questions that addressed background information (e.g., knowledge of attendant care prior to attending college), transitional issues (e.g., changes associated with attendant care while in college), and experiences with attendant care (e.g., having attendants other than family members, positive and negative experiences).

Data were collected during the fall semester of 2012 and spring semester of 2013. Purposive sampling and snowball sampling techniques were used to iden-

tify the sample. The director of the disability services office initially forwarded an email to the members of the target population. The email clearly stated that the participants were free to participate in this study, but their participation would have no influence on the services provided to them through the disability services office. Students receiving the email could then decide whether or not they wished to contact the first author and consent to an interview. Snowball sampling is asking a person who was interviewed if they could recommend anyone else who may meet the criteria to participate in the study (Bogdan & Biklen, 2007). These sampling techniques were used until the researchers determined, based on the ongoing data analysis processes, that phenomenological saturation was reached (Creswell, 2013).

At the beginning of each interview, the participants were notified that their participation was voluntary and that their identity would be confidential. Interviews did not have a set time limit, but were generally 30-60 minutes in length, and progressed until all questions from the interview protocol were asked. Participants were informed before the interview began that the researcher wanted to audio record the interview. Their permission was requested before recording took place. Participants were interviewed once.

The first 12 students who agreed to participate in this study comprised the sample, and all fit the inclusion/exclusion criteria of being an undergraduate with at least one physical disability, using a wheelchair, and utilizing attendant care. Participants had been diagnosed with various illnesses, including Muscular Dystrophy, Cerebral Palsy, spinal cord injuries, and bone diseases. Eight of the participants were male, and four were female; most students lived on campus. The majority of the participants were Caucasian, one student was African American, and another was of Pakistani descent. Participants' ages ranged from 18 to 26. Some of the students used wheelchairs from an early age; others began using them more recently because of illnesses. The first author was acquainted with some of the participants because of her role as a residence hall director. The second author has worked on other research related to students with physical disabilities, and the third author is a qualitative research methodologist who helped design the study and a former residence hall director who worked with students with physical disabilities using PCAs.

Data Analysis

Each interview was transcribed verbatim and verified by reviewing the transcripts against the audio recordings after the interview was conducted. The first

author did all transcriptions. Coding of the transcripts involved aggregating the text into small categories of information; clusters of meanings were developed from significant statements and placed into themes (Creswell, 2013). This analysis technique resulted in systematic procedures that moved from a narrow unit, to more detailed descriptions of the phenomenon under examination. The transcriptions were cleaned by removing non-essential stutters, pauses, and/or filler words (Cameron, 2001). The descriptions were gathered and themes were identified and summarized to answer the central research question, how SWPD using wheelchairs described their experiences with attendant care as they transitioned into higher education. Memos, written reflections created by researchers, serve as a preliminary site of data analysis (Bogdan & Biklen, 2007), and were written by the first author and discussed weekly with the third author as the analysis took shape. The use of structured reflexivity exercises and prompts designed to elevate the analytical possibilities (Mulvihill & Swaminathan, 2012) were employed at all stages of the study to best equip the researchers with the insights needed to conduct an informed analysis.

Findings

The findings are divided into two sections, transitional issues for students with attendant care, and collegiate experience with attendant care. The dominant themes that emerged from the data analysis process are presented. We included quotations from participants to help explain major themes that were found. We did not select the "most articulate" interviewees, instead the most illustrative and representative aspects of the transcript data were selected as evidence to back up the interpretive claims we made in relation to the purpose of the study and the research questions.

Transitional Issues for Students with Attendant Care

The participants in the study had many specific experiences as it related to their transitions to college as a SWPD using a wheelchair and having attendant care. The mutual transitions that were discussed by the participants included time management, preparing for attendant care, training attendants, first feelings, accepting responsibility, parental involvement, and financial considerations.

Time management. Each participant discussed how time management played a factor in his or her transition from high school to college. Some of those issues included working with their attendants, getting

to class on time, and scheduling when they would do personal care tasks (e.g., restroom, shower).

For Jim-Bob, the transition to using attendant care was a major adjustment. He had never used attendant care, and previously had family members assist him.

At first it was a lot slower than being at home with someone that had done it repeatedly for twenty years . . . I would basically have to plan my day around it . . . I feel like I spend most of my day sitting in my room waiting for my attendants to come in. If they are there and I'm not there within 10 minutes, they can just leave and I'm screwed out of them not showing up until the next one which is usually hours later.

Jane had similar experiences. "I've had to train my bladder to go when my aides come so that I don't have any issues. . . . I have to shower whenever it works for them." Being on a routine schedule with their attendants was a new experience for many of the participants. It was hard to transition from an environment in which your family members were constantly available to help when needed. Participants had to start relying on their attendants' schedules: going to the bathroom when they wanted was not an option. Everything had to be scheduled.

Participants also had mixed feelings about the flexibility of the aides from the agency that supplied personal attendants. Skylar said, "I had to time out when I would eat and when I would drink so I would know when I would be able to go to the bathroom." Biz and Steve used both an agency and private care (someone outside of an agency who serves as an attendant), and they had a great deal to say about their experience with agencies. Steve said, "you have to do everything on their schedule, so I would get up even on my days that I didn't have class. I would get up at like seven in the morning and I was just ticked off all the time." Biz stated, "you have to live your life on a schedule . . . I have to go to bed by a certain time . . . I felt like I was missing out on stuff and even on weekends." Not only did these students have to learn to manage time with their classes and other outside extracurricular activities, they also had to learn to schedule personal parts of their lives. Time management played a large role in their lives as college students.

Preparing for attendant care. Very few of the participants were prepared for what to expect from attendant care. A couple of them had a person assigned to assist them during high school, and a few more had attendants during the summers. Biz had attendant care in K-12. "At school they followed me around; they

helped me take notes, go to the bathroom." Chad spoke of having someone help him put his books away during breaks, help him get food, and get things he could not reach. Jane said "My parents made me have attendant care just so we could get it set up my senior year of high school." Even though they had those experiences prior to college, they still felt like they were not prepared and had very little knowledge of what attendant care would be like in college. Chad said that when he first got started in college it was a "different world pretty much. . . . but it kind of helped me . . . it made me more specific on what I need help with, and it makes me understand myself as a person." Samantha, who had some attendant care during K-12, said, "I didn't know how it worked at all or how complicated it would be." Skylar said, "I didn't know anything about the hiring process, I didn't know how to pay for it. I didn't know a single thing."

However, there were two participants who were prepared for what they would encounter. Jim-Bob serves as a role model because he was ready.

I am older and I realize, you know, that this is going to be my life regardless, so I might as well get used to it. If I had been younger, it would have been a lot harder to get used to it, but I think the maturity factor set in . . . so I was ready for all of that.

Training attendants. Participants spoke of their experiences regarding training their attendants to meet their needs. The process varied, depending on if they were going through an attendant care agency or if they were using private help. The choice to work with an agency started with the assumption that the attendants had some formal training regarding working with people who have limited mobility; when choosing to work with someone who does not work for an agency one assumed attendants had little training.

Skylar explained that her mother was with her and she trained the first attendant, but from that point on it was up to Skylar to do it.

I had the stomach flu one time, and they sent someone new so I had to train them by myself with stomach flu. It is always really awkward saying like, "do this for me, do that for me," and sometimes I am a lot more independent than other people. So sometimes, they will do too much and sometimes they won't do enough, so it's kind of finding that balance.

Biz spoke of an agency that would often send different attendants. "I had to retrain everybody because they

have to lift me a certain way, and shower me a certain way.” Chad had a very detailed way of training his aides. Years of experience had helped him advocate for himself. He serves as a best-practice for SWPD gaining experience of advocating for himself.

Trying to explain what you need help with, like how specific you need to be or how discrete you need to be, I kind of feel it’s my job to make sure that the aide is really comfortable . . . I said you need to meet me in my room, here are the things I need help with . . . getting up in the morning, putting me in the bed, this is how you lift me up, this is how you put me in my chair, this is how you help me use the restroom . . . you just really have to physically go through everything so that . . . everything is out in the open.

First feelings. Meeting someone for the first time can be somewhat awkward; meeting someone for the first time that is coming to help you take a shower can be completely uncomfortable. Participants spoke about first interactions with their attendants and how those interactions typically went. Samantha said that it was awkward at first because she knew that she would need a lot of personal care, “the first 5-10 minutes are really awkward, like ‘Hi, I don’t know you, you’re going to help me shower,’ that’s awesome.” When Skylar reflected on her initial experience, she noted that “It’s definitely awkward at first because you’re like okay, this isn’t my family, but they’re going to have to help me in the bathroom, they are going to help me shower, and it’s, it’s definitely humbling.”

Charles, who did not have attendant care before coming to college, said that he thought he would be more apprehensive than he was. He shared that he was fortunate to get paired with an attendant whom he really liked. Most participants reported that the transition to attendant care was awkward, but something they had to accept as routine.

Accepting responsibility. Taking ownership of one’s actions, and becoming fully responsible for one’s self, is something most college students have to learn. Students realize family members are no longer there to get them up for to school, to make sure they go to class, and do homework. It becomes the student’s responsibility to get things done. SWPD who use wheelchairs experience the same thing; however, they have the added responsibility of being responsible to advocate for themselves regarding their disabilities.

Participants talked about how responsibility factored in to their experiences with attendant care. Their responses ranged from enjoying this newfound

responsibility, to being overwhelmed, nervous, and not feeling adequate. James said that it was unnerving at first because “I was afraid to make a mistake, to say the wrong things . . . It was kind of hard at first to do it on my own . . . I’m better at it now.” He took a big step in accepting responsibility when he decided to switch agencies without consulting his parents. He knew that the first agency was not working out for him, and he made his own decision to switch. Both Biz and Skylar discussed how they knew they needed to be assertive, skills that prior to college they had not used very often. Skylar said, “it was overwhelming at first because I’m a boss to them, so that was weird to me because I am not very assertive.” Chad thought about the responsibility as just being the first step to many he would have to take in life.

It was a good feeling and you know obviously when you get out of college, find your own job, live on your own, you are going to have to do that anyway. I felt good about it, I just needed to realize what I needed help with, and just to voice that. Don’t be scared to say what you need help with, always ask questions. . . . It helped me to be more mature and to be successful in college.

While everyone knew it was imperative that they accept responsibility, some struggled at first. Rebecca was the only participant to express that she had no major responsibility for her attendant care. Instead, her parents still continued to manage her care.

Parental involvement. Each participant mentioned that their family members, parents, and siblings helped them with their personal care before attending college. The level of parental involvement varied after the student started to attend college. Chad said,

My parents didn’t really know a lot about services I could use or anything like that so I think at the very beginning; I took it upon myself to find out information. . . . I need to have more focus on it than my parents . . . I had everything under control so they never really had any worries or anything. It was me looking for everything.

Skylar talked about her Mom’s involvement when it came to her attendant care the first night in college. “My Mom stayed with me the first night to make sure I was able to speak for myself. She kind of wanted to see . . . who was going to be there.” Skylar expressed that, as time went on, her Mom played a minor role in her attendant care. She knew who was helping Skylar, but she no longer helped with training the attendants.

Many of the participants said that their parents were the ones who picked the first agency to provide care. The participants stated that, over time, their parents had less of a role, and the majority of students eventually took the lead regarding their attendant care.

Financial considerations. Prior to coming to college participants had to figure out how attendant care was to be paid for. Options included Medicaid, Medicaid Waiver, Vocational Rehabilitation (Voc Rehab), or their parents paying the bill. These payment forms were combined or used singularly. These financial resources had differing requirements.

Charles spoke about how his Dad was very thorough and had prepared in advance for this transition.

He got me on the Medicaid wait list about 10 years before I would need it, specifically because . . . the list is so long. He is forward thinking and he knew that . . . the time I got to college I would need that.

Skylar used Voc Rehab which stipulated the number of hours available per week. “They’ll say you have this many hours to pay people. How do you want to pay them? You can go through an agency, you can have private, or you can do both.” Colton and Jane used a combination of both Medicaid and Medicaid waiver. Colton talked about not having enough hours for his attendant care through Medicaid, so he had to supplement it with Voc Rehab. “I have 24-hour attendant care, but I only got approved by Medicaid for 16 hours so it is kind of last minute thing to try and rush around to get Voc Rehab.” Rebecca mentioned that her parents paid for her attendant care.

Collegiate Experiences with Attendant Care

The participants also spoke of many of their collegiate experiences relating to attendant care. They were new to the college life and, for most of them, their experiences with attendant care started from their transitions from high school to college. The mutual collegiate experiences that were discussed by the participants included attendant care preferences, relationships with attendants, supportive friends, and characteristics of attendants.

Attendant care preferences. Students had multiple preferences regarding the source of attendant care; some chose to use an attendant care agency because it better suited their needs. However, others chose to use private care and hired their own assistants.

Steve followed up on a list of current students which the disability services director had given to him.

I thought for me that it would be more comfortable to have someone with a flexible schedule like me and we are all going to school here too, and can easily work with my schedule. . . . They are all around my age so you can kind of build a relationship with them easier than someone that is older.

Charles preferred an agency for his attendant care.

I don’t want students. . . . I don’t want to have an attendant take care of me in the bathroom, or shower me, or wipe me after toileting business and then go out and see them working the desk here, or see them in my core classes that I have tomorrow, where we might be doing a group project together or something. That would be extremely awkward for me and I’m guessing that would be extremely awkward for them, because it is a personal measure of care.

Some students, for example Skylar, used both.

As I got older, I became more involved on campus and I realized I couldn’t function on the schedule that Agency A wanted . . . the latest that they will send somebody out is 10:00 pm and I knew that wasn’t going to fly. . . . Sophomore year I hired my first full time out-of-agency person. . . . About junior year I started training my friends to help me.

Jane lamented that the difficulty with attendants was that you had to depend on them, and because of the way her daily life unfolded, it was not possible to always be so scheduled. With a rather realistic point of view, she said that “you are depending on people to help you do these things so you kind of have to work around them, so there is really no reliable attendant care.”

Participants shared stories about their attendants. Biz ended up being taken advantage of by his attendants as they constantly showed up late, and sometimes smelled like smoke or were drunk. There was a time when the attendants came so late that he was unable to use the bathroom for hours, which led to him having a urinary tract infection. Rebecca shared that her attendants were constantly late, and were incompetent; eventually it led to her getting sick, and having to temporarily leave school. She was very discouraged.

I started commuting from home. . . . I didn’t like commuting so I took the semester off to figure out if I really wanted to come back to campus to live. . . . Having such a bad experience the first time really scared me and my parents. We knew it couldn’t happen again.

Relationships with attendants. Students tended to build personal relationships with their attendants, considering some of them as friends. Although Rebecca described her attendants as “caring, professional, and reliable,” she viewed them as employees. “They are caring persons doing a job.” James made it clear he preferred a more business-like relationship.

I don't care about their personal lives. . . . I'm one of those people that like boom, boom, boom I have to get everything done so I can go. . . . I'm one of those people that tries to make sure people don't see I have aides that help me . . . for me an aide is there to work, not to play; they are there to help me.

Colton said “some of them are kind of friends, others . . . I just deal with them.” Samantha had similar thoughts about her relationships with her attendants.

Some of them I have actually become close with, we're friends kind of. . . . we don't hang out outside of them helping me, but we talk. We are friends on Facebook, it's not completely professional. I have a couple of like older nurses that come and help me at night. . . . They have to help me, but we're not like friends.

It seemed that the younger attendants were viewed more as friends compared to older attendants with whom the relationships were more businesslike. Biz considered his attendants as friends that he looked up to; he felt they truly cared about him.

I hold them to a higher respect. I considered them kind of my role models, when I need advice I talk to them, stuff like that, and especially people I have had for a long time because they know me.

Chad spoke about an experience where the actions of his attendant surprised him, and made him thankful for his attendant.

One time me and my friends wanted to get off campus and I couldn't, they couldn't lift me in their vehicle so I called my aide and he said, “well I will drive you there and back.” . . . He understood that I needed help, that I want to hang out with people and he's not like “I'm just here to help you, I'm not here to make your social life easier,” so that really sticks out to me.

Although there were positive experiences, there also were negative ones. Jim-Bob had a situation with an

aide who was not friendly and her actions actually led to his getting hurt.

She was getting me out of bed one morning and the pump to pump my Hoyer that lifts me up in the air, my foot got stuck under the pump, and she pumped it anyway and broke my toe. When my toe broke I started yelling . . . her response was “well why was your foot there?”

Steve had an experience where his attendant was over two hours late. Because of that, he missed a test, a class, and was stuck in bed for a few hours because he had no way to get out.

Supportive friends. A number of the participants spoke of having friends who helped them when their aides were not available, and friends who understood and were not bothered by their attendant care. The participants spoke about how thankful they were to have those people in their lives.

James told a story about when his chair started malfunctioning and he was not near his building. So, he called one of his fraternity brothers who pushed him back to his room. Skylar's friends wanted her to be able to hang out later in the night, so they starting offering to help her get ready for bed.

Billy came to me and said, “Why do you go to bed so early?” I was like, “I really don't.” . . . At the time I had the agency come at 10 and help me get ready for bed. “I really don't, I just kind of lay there,” and he's like “I can do that, that's not hard” . . . and he started helping me.

Biz's relationship with his friends went further than he expected. He had a less than desirable experience with agency care, and his friends started offering to help take care of him.

I just decided to ask my friends if they would like to get paid to be my aide. I told them you will get paid for five hours a day, you don't have to be there the whole time, but I just need you to be ready to come over whenever I call you.

Sparky had a unique conversation with a professor who had mistaken his friend for his attendant.

I had a professor . . . that came up to me and saw my friend helping me. He said “Well is this your friend/attendant or whatever” and he said, “Well do you get paid to do this?” The professor asked him that. He was like “Well, sir, to be honest with you I

am doing this because I met Sparky freshman year, and he is a cool kid. I've always stayed in contact with him, and there is nothing that I wouldn't be comfortable helping him with. I've helped him off the floor of his shower when his attendants hadn't shown up; I've helped him go to the bathroom in an inaccessible spot. I've helped him, but you know I do that out of the goodness of my heart and not the fact that I'm getting paid to be his attendant." He was not getting paid to be my attendant; he was just my friend.

Characteristics of attendants. Many of the participants spoke about various characteristics of their attendants. Many of the females preferred to have female attendants. They were not opposed to males helping them as long as it was not in the shower, or to use the bathroom. The male participants had mixed responses. Some of them only preferred males to help them with showering and toileting, and some preferred females. It depended on the person and exactly what the attendant would be doing. There were some male participants who didn't care who helped them as long as they were getting the services they needed.

Some of the stereotypes the participants had were based on other people's perceptions of the attendants, as well as their own. Colton shared that many of the aids were the kind of people with whom he would not normally get along or want to be seen. James said,

I know a lot of these aides come from backgrounds that are not as stable as mine, and they've got really good hearts. I know people that have the stereotypes, I have aides that have like weird tattoos and stuff like that, backgrounds where you can see their home environment is not the best, but their hearts are always in the right place. I just want people to know that even though they have a tough life and stuff like that, their only job is to help people in chairs and stuff like that. I just want to get that stereotype out because these people truly have big hearts, if they are willing to help me. . . . I mean there are some pretty private issues; they help me go to the bathroom, and help me go take a shower. A lot of people I don't know if they could do that.

Discussion

The theoretical frameworks that guided the data analysis centered on Chickering and Reisser's (1993) work related to identity development among college students, and on Tinto's (1993) work on academic/social integration as factors relating to persistence

to graduation. Several of Chickering and Reisser's vectors were pinpointed as those closely related to the phenomenon under examination. The college students in this study described their development of intellectual and manual competence skills. Students began to develop a level of autonomy moving toward interdependence, but because they need to incorporate personal care assistance from others, the version of autonomy is different from that of an able-bodied student. The autonomous SWPD demonstrates their level of autonomy based on their ability and comfort with independently arranging for the care they need instead of relying on family and other systems to automatically take care of their needs. The participants in this study clearly described their processes of building interpersonal relationships with their peers, faculty members, staff, and personal attendants. Some of those relationships were easier to maintain than others. These participants reported learning about themselves during their transition to college and their related experiences with attendant care, therefore, further providing evidence that they were in the process of establishing identity as characterized by Chickering and Reisser's theory (1993).

In a related way, Tinto's (1993) focus on social and academic transition was also demonstrated in the descriptions the participants provided about their collegiate experiences as SWPD using wheelchairs and having attendant care. Some students thrived socially despite having attendant care throughout various times of the day and night; other students had a harder time achieving social integration. The transition to college is difficult enough for many students, but when transitioning as a student with a physical disability using a wheelchair and having attendant care, the social aspect can be somewhat harder to grasp initially. The same applies to their transition to the academic setting. Since there are no longer Individualized Education Programs (IEP) that accompany the students, the needed accommodations have to be taken care of by individual students. These students are responsible to request reasonable accommodations. If they do not advocate for themselves, the academic transition may be difficult.

Transitional Issues for Students with Disabilities Who had Attendant Care

There are many issues that arise as students transition to college. Attempting to balance and manage time during the first year of college is an important task for most students because they are creating the foundation for their subsequent experiences (Woosley & Miller, 2009). For SWPD, balancing time between academics,

social life, and daily living conditions can be stressful and challenging. As they arrive at college, many SWPD have to learn how to arrange for significant alterations in their daily schedules. For many SWPD, the transition did not always flow as smoothly as desired. SWPD must plan their daily schedules based upon when their attendants will be able to assist them. For many of them it seems as if they live their lives on a schedule tied to their personal attendant. These students have to make sure that an attendant is available as needed throughout the day, get to class on time, and find time to spend with their friends. When something happens in a student's social life, it can also affect their academic life; every part is tied together in some way. "Colleges like other human communities are highly interdependent, interactive systems in which events in any one part may be felt in other parts of the system" (Tinto, 1993, p. 108). When something happens with an attendant, a student's academic and/or social life has the potential of fluctuating. The experiences most beneficial for SWPD in wheelchairs included enhanced academic and classroom experiences, a healthy and stable residential experience, and finding the right attendant care (Padgett et al., 2012).

The students in this study had to schedule in advance common daily tasks that many people take for granted, such as timing for going to bed, getting out of bed, using the restroom, and showering. Scheduling these tasks adds complexity to the lives of these students. Scheduling for disability-related items is also probably true for students with non-apparent disabilities. Many college students find the transitional semester/year challenging (Mamiseishvili & Koch, 2011). In addition to routine transitional issues that all students must face, SWPD have the additional complexity of devising a daily schedule that includes when they interact with their personal attendants (Tiedemann, 2012). Variations in established schedules are problematic for these students, and may lead to a confounding factor of reluctance to socialize.

Preparing for attendant care, by someone other than their family members, was something many of these students postponed and had not carefully considered as a part of their transition to college. This delay is intriguing since attendant care is such an important part of their daily lives. More information about attendant care should be offered to students and their families before they get to college so that they can be better prepared (Tiedemann, 2012). In addition to having disability services staff hold workshops throughout the first semester to help the students prepare for potential attendant care transitions, pre-arrival programs may be helpful during the transition to college, and such

programs should not be limited to a day or so before the beginning of the first semester (Elkins et al., 2000). Students need to be prepared for the challenges that attendant care will bring into their lives.

College students with disabilities must be able to self-advocate for their needs by discussing disability-related accommodations with their professors, faculty/staff members, and their attendants (Hadley, 2011; Lynch & Gussel, 1996; Skinner, 1998). Self-advocacy during training of an attendant is vital. Students with care provided through an agency do not have to worry as much about training because most often the agency provides attendants with some preparation. However the students who choose private care will need to spend time training their attendants. Self-advocacy regarding personal care is needed, meaning that a student understands his or her abilities and disabilities, is aware of the strengths and weaknesses resulting from the functional limitation imposed by the disability, and is able to articulate their need for physical assistance (Lynch & Gussel, 1996). The experience of training attendants can help students learn how to advocate for themselves in other ways.

College students must come to grips with accepting responsibility for a disability. Accepting responsibility means understanding the disability, speaking-up for yourself, and adequately explaining your disability and what it means for you as a college student (Connor, 2012). Once in college, the responsibility of self-advocating and explaining what is needed becomes the student's responsibility; parents' ability to speak for them is limited. Since the student is the primary person in control of decisions regarding personal attendant care, he/she should learn to effectively exhibit the qualities of a personal manager (Birdwell & Fonosch, 1980). After being in college for a while, most of the participants will attain some level of autonomy (Chickering & Reisser, 1993) through which they are able to handle their attendant care. Learning to be an effective consumer, by setting up and maintaining attendant care, will influence the students' well-being (Simon, 1977).

Prior to college, many parents of SWPD are an active advocate for their students (McCarthy, 2007). These parents are concerned about their students' safety along with the quality of attendant care being received. Most colleges do not get involved with employment issues of personal care attendants (Tiedemann, 2012); therefore, parents and students must find the appropriate care, often with little guidance from the college. Students should be made more aware of financial resources available to finance attendant care. It is important to request information about personal attendants from the college disability services office,

Vocational Rehabilitation, home health care agencies, and other students with disabilities (Mamiseishvili & Koch, 2011).

Collegiate Experiences of Students with Disabilities Who had Attendant Care

The source of attendants is an important decision for each student (Padgett, 2012). There are many factors that must be considered when decisions are made regarding how attendant care is managed (Atkins et al., 1982, para. 1). Deciding to use an agency that provides personal attendants is often a more practical path, because the student has less to do to make it happen. However, when private care is chosen, students have a larger role to play; the student must recruit potential attendants, interview, hire and train attendants, and develop a care schedule.

Forming strong relationships with others is in the best interest of students as they adjust to college (Chickering & Reisser, 1993). The way the students in this study viewed their relationships with attendants varied; some viewed attendants as friends with whom they wanted some kind of relationship, but others wanted a strictly business relationship. Some SWPD view their attendants as more than just an employee, desiring a friendship that requires additional time with their attendant, sharing common interests which lead to strong connections between the SWPD and the care giver. Students who prefer a business relationship with attendants will focus more on the attendant being there to help them, not necessarily on engaging in a relationship with them, keeping personal conversations to a minimum.

When transitioning to college, most new college students do not yet have an established network of friends (Chickering & Reisser, 1993; Tinto, 1993). It takes time for college students to find the people with whom they want to build relationships. Likewise, SWPD will need to work on developing friendships, with time building a solid group of friends who will be there for them throughout their collegiate experience. The relationships these students build are unique because, at times, their friends may also be in an attendant role.

Transitioning to college and building strong relationships with friends helps students engage in academic and social settings of college (Tinto, 1993), as well as becoming integrated into the cultural environment of the institution. Social integration with peers enables students, with and without disabilities, to better cope with the demands of the college environment. The support that SWPD receive from their friends will enrich their lives and help them succeed

in college. Sometimes SWPD will have friends who will help them with personal issues such as getting in bed, or even using the restroom, when their attendants are not available. Having friends to help in these ways will be greatly appreciated.

Some college SWPD are not prepared adequately to interact with attendants (Tiedemann, 2012). Transitional issues related to attendant care may relate to the student's ability to manage time, train and interact with attendants, accept responsibility, deal with parental involvement, and make financial decisions. They need to learn to self-advocate (Hadley, 2011; Lynch & Gussel, 1996); they are the captain of their own ships, with few crewmembers around to assist them. Some college SWPD using wheelchairs are prepared for this experience, others are not. Understanding details about attendant care, and taking initiative, will help students to self-advocate and take personal responsibility. The relationships that SWPD have with their attendants will shape their collegiate experience. When the students have positive relationships with attendants, it influences their academics and social experiences; the same is true for negative experiences.

The personal characteristics that students possess when entering college (Tinto, 1993), and students' individual levels of commitment to an institution (Elkins et al., 2000), influence the transition of all college students. Although SWPD using wheelchairs and attendant care have experiences similar to many other students, they also have a set of experiences that is completely different from other first-year students. It is important to understand the unique challenges this subpopulation of college students face, and what they can do, and not do, to meet those challenges. SWPD that use a wheelchair, and will use attendant care, need to consider the implications of attendant care and plan ahead prior to beginning to attend college (Mamiseishvili & Koch, 2011). Knowing that attendant care will influence their collegiate experience, they need to better understand how to work with attendants. Being able to manage academics expectations, engage in a social life, and use attendant care is a challenge for new college students. Colleges and universities should consider what could be done to assist these students with their transitions to college and provide resources to help them be successful.

Recommendations and Limitations

A future study could look at the provider side of attendant care, interviewing the attendants about their observations of SWPD. This vantage point would also provide the attendants' views on the relationship they have with students. If the attendants are also college

students, the focus of the study could explore how their personal, social, and academic lives are influenced by their attending work.

Future researchers should consider adding a second round of interviews in which participants could reflect on the content of the first interview and provide additional information. The inclusion of focus groups may be beneficial to help participants consider common themes like if they received support, or advice from other SWPD.

Academic and student support educators should understand that students in wheelchairs utilizing attendant care are, in many regards, similar to other students entering college. How SWPD transition to college compared with students without disabilities would be an interesting subsequent study.

SWPD need to have a clear understanding of the role of campus disability offices. It may be helpful for the Disability Resources and Services standard, associated with the Council for the Advancement of Standards in Higher Education (2013), to include a section on attendant care and best practices when working with students who utilize attendants. Educators should work to gain knowledge about this particular group of students in order to help with their transition to college. Specifically, residence life educators should focus on the development of best practices when working with SWPD using wheelchairs and their attendant care providers.

Better communication and relationships between staff in disability services offices and attendant care agencies should be established. This may be helpful as students consider the logistics of obtaining attendant care. By having an understanding of the services various agencies provide, the disability services office may be able to help students in preparing for the process when interviewing and choosing an agency.

Future college SWPD that use wheelchairs should begin early researching attendant care options, potentially available to them through college disability services offices. Understanding personal needs, and being able to articulate them, will be helpful when students speak with disability services, as well as when choosing the form of attendant care best suited for them. These students need to have an informed understanding of the role attendant care will play in their lives. Preparing a list of potential questions to use to interview attendants and agencies would be helpful. They should self-advocate regarding what will be needed for them to have a successful college experience.

The topic involved sensitive aspects of participants' daily life; encouraging participants to share their experiences was occasionally difficult. Future researchers should consider ways to establish trust with

the participants in order to increase student comfort and willingness to share personal information about their transitional issues and experiences with personal attendants. This was a single site study at a Midwestern doctoral institution. The information gathered from the 12 participants applies to their experiences only and is not necessarily the experiences of all SWPD.

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Prevalence of Physical Disability and Accommodation Needs Among Students In Physical Therapy Education Programs

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Abstract

Most research on graduate students with disabilities (SWDs) has focused on medical education. The purposes of this study were to: (1) estimate the prevalence of students with physical disabilities (SWPDs) in physical therapy programs, (2) identify common types of physical disabilities, (3) document the types of accommodations requested by SWPDs, (4) describe perceptions of faculty and students related to the impacts of accommodations, (5) describe the success rate of SWPDs, and (6) compare perceptions of faculty and students regarding potential employment opportunities and licensure restriction for SWPDs. Two surveys were created to gather quantitative and qualitative data from program directors, faculty, and students from the 210 PT and 280 PTA programs accredited by the Commission on Accreditation in Physical Therapy Education. Respondents included 190 faculty and 720 students and results indicated that there are fewer SWPDs in physical therapy programs than in all graduate programs nationwide (5%, 7% respectively) and a small number of them experience some form of discrimination. The physical disabilities encountered are mostly sensory and half receive accommodations with little impact on other students or faculty. While more programs are providing students with information on the essential functions for PTs/PTAs, more data are needed to inform the academy about factors influencing whether or not SWDs pursue careers in physical therapy, clinical instructors' and patients' perceptions, and resources used to foster success.

Keywords: Functional limitation, essential functions, physically demanding, human performance

According to the World Health Organization (2011) Report on Disabled Persons, over one billion people worldwide are affected by a disabling condition. In addition, the National Center for Education Statistics (Institute of Education Services, 2011) reports that 7.6% of post-baccalaureate students have some form of disability, and many physical therapy educators are observing an increase in the number of students with disabilities (SWDs) who are applying to physical therapy graduate programs (Francis, Salzman, Polomsky, & Huffman, 2007; Madriaga et al., 2010). Given the nature of the physical therapy profession and its core values, educators have a social responsibility to advocate for the rights of SWDs. However, there

is insufficient information on the prevalence of SWDs who are entering graduate level physical therapist (PT) and undergraduate level physical therapist assistant (PTA) education programs and whether their accommodation needs, if any, are being met.

While the term *disabilities* is broad by definition and encompasses physical and mental impairments, this study focuses on students with physical disabilities (United States Department of Justice, 2009). Specifically, the aim of this survey study was to explore the attitudes and perceptions of physical therapy educators and students in the United States related to the accommodation of students with physical disabilities (SWPDs) and determine what impact, if any, these

accommodations had on their educational experience. The objectives were to (1) estimate the prevalence of physical disabilities among students enrolled in PT and PTA education programs, (2) identify common types of physical disabilities among PT and PTA students, (3) document the types of accommodations requested by SWPDs, (4) describe perceptions of faculty and students related to the impact these accommodations have on the teaching-learning experience, (5) describe the academic success rate of SWPDs, and (6) compare perceptions of faculty and students regarding employment opportunities and potential licensure restrictions for PTs and PTAs with physical disabilities.

Review of Literature

The rights of persons with disabilities have been legally defined and refined by various legislative acts and court cases. The Rehabilitation Act of 1973 was intended to reduce discrimination in admission to federally funded education programs for persons with disabilities (United States Department of Justice, 2009). According to this legislation, clinical sites affiliated with education programs were expected to uphold the same standards for all students. Furthermore, this act stated that a person with a disability could not be denied access to education based on his or her disability alone; thus, it encouraged programs to develop eligibility standards that were applied equitably to all matriculating students (Francis et al., 2007; Van Matre, Nampiaparampil, Curry, & Kirschner, 2004). In the court case of *Southeastern Community College v. Frances B. Davis* (1979), the U.S. Supreme Court reinforced the education programs' authority to generate eligibility standards for admission. These technical requirements were designed to help faculty and staff make admission decisions based on applicants' abilities rather than their physical disabilities (Ingram, 1994; Ingram, 1997).

The Americans with Disabilities Act (ADA) of 1990 (United States Department of Justice, 2015a) extended the Rehabilitation Act to incorporate public and private education programs. The ADA encouraged education programs to select the most highly qualified students and required them to justify the basis for their selections (Francis et al., 2007; Grossman, 2001; Hollwitz, Goodman, & Bolte, 1995; Kornblau, 1995; Van Matre et al., 2004). Schools could arrange accommodations for selected SWDs provided those accommodations did not fundamentally alter the program or create an "undue burden" for the school (Van Matre et al., 2004). The ADA also addressed protection from discrimination for people with disabilities seeking employment opportunities, transportation,

and access to programs and services (Ingram, 1994). One of the most important aspects of the ADA was the requirement that employers develop and define job descriptions and essential job functions (Losh & Church, 1999). The ADA defined disability as "a physical or mental impairment that substantially limits a major life activity" (United States Department of Justice, 2015a, p.7.). Following several unsuccessful lawsuits filed by people with disabilities, Congress passed the ADA Amendments Act of 2008 (United States Department of Justice, 2015b) to clarify and broaden the definition of disability in an attempt to reduce discriminatory practices that persisted in many employment settings.

The majority of published studies on people with disabilities in health care professions have targeted medical programs. These studies provide data on the number of medical students who have disabilities, eligibility requirements to be accepted into medical school, and various obstacles faced by these students once they matriculate. Multiple studies suggest that acceptance of one SWD into an education program will cultivate further acceptance of other SWDs (Moore-West & Heath, 1982; Wu, Tsang, & Wainapel, 1996). Schools that accepted SWDs were more likely to be well-established programs with larger class sizes and the willingness of these programs to accept SWDs has been attributed to positive experiences with both students and staff who have disabilities (Moore-West & Heath, 1982).

Survey results demonstrate variability among the perceptions of which abilities and skills are most critical to students' successful completion of medical school. Observation and communication skills are consistently reported to be of the highest importance; however, the importance of motor skills is more controversial (Van Matre et al., 2004). Some medical SWDs reported that they faced animosity among their classmates; in one study, more than one-third of medical students expressed negativity regarding the use of medical assistants to perform sensory and motor tasks that the SWD was unable to perform independently (Van Matre et al., 2004).

Previous related studies in physical therapy consist primarily of subjective reports of experiences and attitudes toward SWDs in physical therapy education programs, and most revealed positive feedback from the colleagues and patients of physical therapy clinicians and SWDs (French, 1987; French, 1988; Satchidanand et al., 2012). One study reported that "scores on the Attitudes Toward Disabled People Scale" were significantly higher among PTs in practice than among classroom teachers (Satchidanand et al., 2012). Several studies determined that PTs with disabilities were bet-

ter able to empathize with patients and felt competent to meet their daily work obligations. However, these studies also noted that PTs with disabilities were limited in their ability to pursue specialization post-graduation (French, 1987; French, 1988; Ingram, 1997; O'Hare & Thomson, 1991). Collectively, these studies have reported on a variety of student disabilities. Some studies' definitions of disability include learning and mental disorders as well as less observable disabilities such as arthritis (French, 1987; French, 1988; O'Hare & Thomson, 1991). In one study that explored the attitudes of PTs toward colleagues with disabilities, the author observed that certain characteristics that defied the popular stereotype of a PT (e.g., obesity, short stature, a dislike of sports) were perceived more negatively than major physical disabilities such as a limb amputation or blindness (French, 1987).

The American Physical Therapy Association has not adopted a standardized list of technical standards required of PT and PTA students (American Physical Therapy Association, 2013; Ingram, 1997). Ingram (1994) reported that only a minority of physical therapy programs had a predetermined list of technical standards. Furthermore, she found that only a few of those programs addressed technical standards during their admissions process. In a follow-up study, Ingram (1997) used a Delphi technique to survey physical therapy program directors in an effort to establish some consensus regarding what they considered to be the technical standards that all physical therapy students must be able to perform, with or without accommodations. She reported a high level of agreement among these educators with the top two standards being (1) the ability to practice in a safe, legal, and ethical manner, and (2) utilization of appropriate communication skills with patients, families, and others. These findings are supported by findings from another study that identified effective communication skills as being a requisite for practicing in a safe, legal, and ethical manner (French, 1988).

Some investigators have addressed the attitudes and anxiety surrounding accommodations given to students who have learning disabilities (Houch, Asselin, Troutman, & Arrington, 1992; Velde, Chapin, Wittman, 2005). Peers of these students have reported unfair treatment in favor of students with learning disabilities because they perceived that these students received greater individual time and attention from faculty. Although the SWDs appreciated the extra assistance from their professors, they indicated that they would rather not have their academic needs isolate them from their peers. Interestingly, Francis et al. (2007) reported that a majority of schools found similar

levels of academic performance between SWDs and their non-disabled peers.

As is legally mandated, SWDs have the right to request reasonable accommodations that remove disability-related barriers so that they may have equal access to both the academic and clinical learning environments of a physical therapy education program. As clinician-employees, people with disabilities have the legal right to request reasonable accommodations that remove disability-related barriers, which would otherwise impede their job performance. There is inadequate information in the literature regarding the prevalence of SWDs in physical therapy education programs, the types of accommodations needed to ensure the success of these students, and the potential impact these accommodations have on the SWD, their non-disabled peers, and the faculty. The purpose of this study was to provide insight into part of this picture: that involving students with physical disabilities (SWPDs). Thus, this study informs the academy about the prevalence and issues surrounding the accommodation of SWPDs who have been admitted to PT/PTA education programs so that we may fulfill our obligation to advocate for the optimal performance of all members of society, including our own aspiring colleagues. Multiple research questions were posed for this study which primarily related to the prevalence and type of physical disabilities encountered by PT/PTA faculty and students; the type of accommodations provided to SWPDs and how these accommodations affected the classroom learning experience; the academic success rates for SWPDs; and perceptions of practice opportunities for SWPDs following graduation.

Methods

Study Design

This descriptive study used both quantitative and qualitative methods to collect and analyze the data needed to answer the multiple research questions. The investigators created the faculty and student survey instruments. As a means for establishing validity of the survey items, a panel of four experts in disability rights and education were consulted and were instrumental in finalizing the survey items. Each survey was developed using the Survey Monkey® web site (www.surveymonkey.com). The study design and survey instruments were approved by the University Research Review Committee at Hardin-Simmons University in Abilene, Texas.

The faculty survey (Appendix A) consisted of 10 demographic questions and up to 16 additional questions depending on each respondent's experience with

SWPDs. Subsequent items were designed to gather information about the faculty member's experience with SWPDs, types of accommodations provided, impact on teaching, and opinions about practice opportunities and licensure restrictions for SWPDs who graduated from his or her PT/PTA program.

The student survey (Appendix B) consisted of six demographic questions and up to 16 additional questions depending on the respondent's disclosure of a disability or interaction with one or more SWPDs. The subsequent items were designed to gather information about the perceived impact that a SWPD had on the learning experiences of classmates regardless of whether the SWPD required accommodations. Opinions on practice opportunities and licensure restrictions were also gathered from student respondents. In both surveys, most items either gave the respondent an option to provide clarification through additional text boxes for "other" (if they could not associate with any predetermined options) or asked respondents to provide more information to support their "yes-no" answers to a given item.

Subject Recruitment

A list of accredited PT and PTA programs in the U.S., including the contact information for program directors, was obtained from the Commission on Accreditation in Physical Therapy Education database. At the time of this study, the sampling frame included 210 PT and 280 PTA programs. The term "faculty" was operationally defined to include academic program directors, directors of clinical education, and all other full- or part-time instructors. The term "student" was operationally defined as those individuals currently enrolled in an accredited PT or PTA education program in the U.S. This group included both students with and without physical disabilities. "Physical disability" was defined as any condition resulting in a sensory or motor impairment such as, but not limited to, vision or hearing limitation, limb loss, excessive pain or fatigue, uncontrolled seizures, breathing difficulties, and abnormal or limited movement, for a continuous or indefinite period of time. This definition intentionally and overtly excluded mental impairments or learning disabilities such as dyslexia, attention deficit disorder, or memory loss.

Survey web links for both faculty and student surveys were emailed to program directors who were asked to complete the survey and distribute the links to the appropriate target group (i.e., full-time and part-time program faculty or students). A cover letter explaining the purpose of each survey was included. Consent of respondents was implied when they sub-

mitted the completed survey. Follow-up reminders were sent out to program directors five weeks after the initial email. As a means of protecting the identities of respondents and their respective programs, settings were adjusted in the Survey Monkey® website to prevent any personal identifiers, including respondents' IP addresses, from being downloaded into the database.

Data Analysis

Frequency analysis and other descriptive statistics were used to analyze most survey responses. Additionally, qualitative review of narrative responses to open-ended survey items (i.e., items describing the types of disabilities students and faculty had encountered) was performed. Narrative answers were reviewed with similar answers for each question grouped together so that answer categories or themes could be identified. For example, question 12 on the faculty survey asked, "Briefly describe the nature of the disability(ies) you've encountered" (Appendix A). Answers such as "impaired vision," "visual impairment," "vision problems," and "severe visual deficits" were categorized together as vision limitation. Similarly, question 18 of the student survey asked "Have you had any interactions with a PT/PTA student who has a physical disability? If YES, what was the nature of his/her disability?" (Appendix B). Answers such as "hearing loss," "decreased hearing," "hearing impairment," and "hearing impaired" were categorized together as hearing limitation.

Results

Faculty Survey Responses

A total of 190 faculty members completed the survey. The actual return rate could not be calculated due to the manner of distribution and protection of respondent identity. There was no way to determine which program directors forwarded the survey link to their faculty. Faculty respondents were split between accredited PT programs (50%, $n=95$) and PTA programs (40%, $n=75$). Some faculty (10%, $n=19$) came from institutions with multiple types of programs (PT, PTA, and post-professional) and one came from an institution that only offered a post-professional degree. As this was not the intended population, the sole respondent's data were excluded. Faculty respondents ranged from 25 to 68 years of age ($M=49.3$, $SD=9.6$) and the majority were female (77%). Nearly half (45.3%) were serving as program directors, approximately 18% were directors of clinical education, 30% were other core faculty, and the remaining were adjunct faculty. Their length of academic experience ranged from less

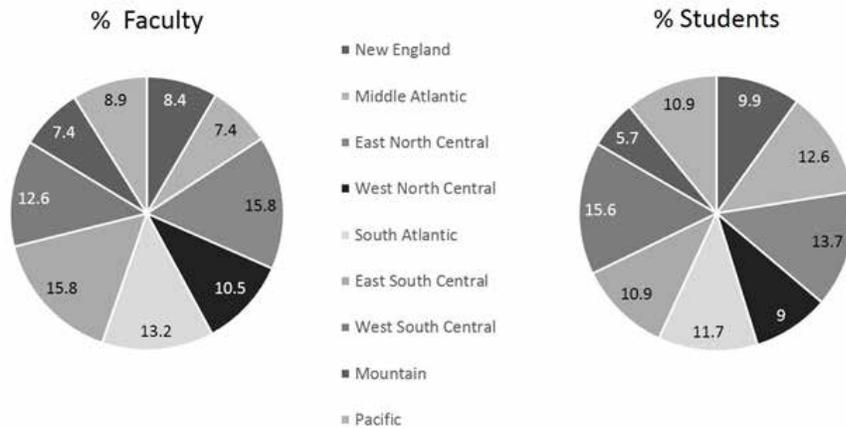


Figure 1. Geographical representation of faculty and student respondents.

than one year to 34 years ($M=11.2$, $SD=8.2$). Because one item asked specifically about the region of the respective program, the data indicated that the sample included a broad geographic representation (Figure 1).

Of the 56% ($n=105$) faculty respondents who reported their programs had admitted one or more SWPDs in the past 10 years, the majority (70%) indicated that they only had experience with one or two students ($n=32$ and $n=34$, respectively). There was no significant difference between PT (46%, $n=48$) and PTA (39%, $n=41$) programs' admissions of SWPDs. Of the programs that admitted SWPDs, 80% ($n=83$) granted the provision of accommodations for the didactic portion of the curriculum and 56% ($n=59$) granted the provision of accommodations during clinical education experiences.

Ninety-seven faculty respondents (51%) reported encounters with students having disabilities, which primarily included hearing ($n=38$) and vision ($n=28$) limitations (Table 1). Other students' disabling conditions cited by multiple respondents included traumatic brain injury ($n=19$), cervical/lumbar spine pain ($n=16$), upper and lower extremity amputation ($n=11$), and cerebral palsy ($n=9$).

Ninety-nine faculty respondents (52%) replied to the question regarding specific types of accommodations extended to SWPDs during the didactic phase of education (Table 2). The use of adaptive equipment was the most common type of accommodation ($n=25$) and included "special microphone" and speaker systems, "braille goniometers," "rolling computer carts," automatic blood pressure devices, "LiveScribe™ pen" and Dragon speech recognition software, magnifying glasses, and specialized stethoscopes for students with hearing limitations. Enlarged print on handouts,

quizzes, and exams was also a frequently cited accommodation ($n=20$) as well as extended time for exams ($n=19$). Modifications with "lab activities" such as range-of-motion measurements/exercise, transfers, gait training, soft tissue mobilization, manual muscle testing, and unspecified manual techniques were reported by 19 respondents. Expectations for some of these techniques were adjusted so that SWPDs were assessed on their ability to instruct others in the performance of tasks rather than the student completing the tasks independently. Additional classroom accommodations included designated seating within the classroom ($n=13$), assistance with note taking ($n=8$), sign language interpreters ($n=7$), and adjustments in faculty position within the classroom to facilitate lip reading ($n=6$). Seventeen faculty respondents reported that no accommodations were required and only one respondent reported that a student had been dismissed from their program due to an inability to "perform essential functions".

Ninety-eight faculty members responded to survey items regarding accommodations during the clinical phase of the education program (Table 3). Of these, 31% ($n=30$) reported that no accommodations were necessary and 10% ($n=10$) indicated that their SWPD had either not yet reached the clinical phase or had left the program prior to reaching the clinical phase. As with didactic education, utilization of adaptive equipment was the most common type of accommodation requested during clinical education experiences. Adaptive equipment included the use of "magnifying" glasses, specialized "stethoscopes" for students with hearing limitation, computer screen magnifiers, computer software to assist with documentation, and "vibrating alerts." Additional accommodations echoed

Table 1

Types of Physical Disabilities Encountered by PT/PTA Faculty

Type of Disability*	# Programs Reporting
Hearing limitation	38
Vision limitation	28
Traumatic brain injury	19
Cervical/lumbar spine pain	16
Amputation LE/UE	11
Unspecified decreased strength/mobility	11
Cerebral palsy	9
General neurological disorders	6
Temporary (pregnancy, fracture)	5
Brain tumor	5
General orthopedic/joint replacement	4
Stroke	3
Spinal cord injury	3
Cardiopulmonary issues	3
LE bracing/AFO	2
Vocal impairment	1
Other (chronic pain/fatigue, diabetes, dwarfism, eating disorder, fibromyalgia, multiple sclerosis, obesity, rheumatoid arthritis)	12

Note. *Each program could report more than one type of disability.

those cited during didactic learning experiences including assistance with transfers ($n=13$), lifting limitations ($n=7$), and gait training ($n=5$), as well as increased time to complete general tasks ($n=4$) and the instruction of others to help perform selected manual skills. One faculty respondent reported being able to place a student only in areas where “public transportation was safe/convenient/reasonable” due to the student’s inability to drive. Another reported selecting a slower paced clinical site with “minimal distractions” for a student who needed extended time to complete tasks. Only one SWPD was reported to have failed a clinical education course and this was due to problems encountered with “gait training.”

When asked about the impact these learning accommodations had on their teaching, 46.9% of faculty respondents indicated that more creativity was required to help the SWPD meet learning objectives and 32.7% cited the need for more one-on-one time with these students. One faculty respondent specifically reported video training on how to assist students with vision

limitation with gait assessment. Additionally, two other faculty members indicated accommodations required extra time outside of class in order to learn how to “set-up a computerized exam” and prepare additional “handouts in larger print” respectively. Interestingly, nearly one-third of respondents reported that providing accommodations had no impact on their teaching.

Forty-two percent of respondents reported that 100% of their SWPDs graduated. Another 31.6% reported that fewer than 25% of SWPDs graduated, and 11.6% reported that none of their SWPDs graduated. No single reason for attrition was reported by most respondents; however, 16% indicated that these students were either dismissed (9%) or voluntarily withdrew (7%) for academic reasons. Another 7% withdrew due to health reasons. Two faculty respondents indicated “professional behavior issues” as the reason for student dismissal, another reported a student withdrew from the program for “personal reasons” and three others stated they were “unsure” of why the SWDs withdrew.

Table 2

Faculty Reports of Accommodations Required During Didactic Phase of Curriculum

Type of Accommodation*	# Programs Reporting
Adaptive equipment	25
Enlarged print (handouts, quizzes, exams)	20
Extended time for exams (unspecified)	19
Modified hands-on skills/techniques	19
Seated in front of class	13
Lifting restrictions	12
Note-taker in the classroom	8
Sign language interpreter in the classroom	7
Instructor positioned to facilitate lip reading	6
General for vision limitation (reader, improved lighting, black/white handouts)	6
Handouts (online, early posting, instructor's copy posted, more detailed)	6
Increased rest breaks/change in position	6
Quiet environment for testing	4
Extra time for lab practice	4
Extra time for practical exams	3
Additional outside or private tutoring	3
Textbooks (audio, online, early order)	2
Canine assist	1
Oral testing	1
Lectures video recorded for review	1
Videos shown in class repeated online	1
Modified expectations on presentations	1
Clinical experiences reordered (temporary disability)	1

Note. *Each program could report more than one type of disability.

Most faculty respondents (96%) classified their programs as having a competitive admissions process, and 84% believed their programs provided information about essential functions to applicants. Only 45% ($n=85$) of respondents specifically described the method by which this information was shared with prospective students. Program websites were the most popular means of disseminating essential functions information ($n=55$); other methods included application materials ($n=21$), student handbooks ($n=18$), program acceptance packets ($n=15$), and preadmission advising ($n=13$). Over half of the respondents ($n=52$) utilized more than one of the reported methods to make this information available. Interestingly, two respondents

were unsure of how information on essential functions was distributed (Table 4). Regardless of how this information was shared, the majority of faculty (84%) felt that the ability to perform the essential functions of a PT/PTA, with physical accommodations if necessary, should be a requisite for program admission.

When asked if they thought SWPDs who completed the program would have the same job opportunities as non-disabled students, 29.4% of the faculty said "yes," 42.2% said "no," and 28.3% were uncertain. Overall, faculty concerns were focused on patient and clinician safety with the majority of respondents stating that placement would "depend" on the "type" and "extent" of the physical disability. Respondents

Table 3

Faculty Reports of Accommodations Required During Clinical Phase of Curriculum

Type of Accommodation*	# Programs Reporting
None	30
Adaptive equipment (magnifying glass, stethoscope for hearing limitations, ocular devices, braille goniometer, banded mask, computer screen magnifiers, unspecified computer software, Dragon software, vibrating alerts)	20
Assist with transfers	13
Lifting limitations	7
Uncertain of any accommodations	6
Assist with positioning and general intervention techniques	5
Assist with gait training	5
Supervised/instructed others in completing interventions	4
Always positioned in front of patient or clinical instructor	4
Increased time (general)	4
Increased time for documentation	3
Rest breaks	3
Sign language interpreters in clinic	3
Assist with general guarding of patients	2
Assist with goniometry	1
Continuous line of site supervision of student	1
Increased lighting	1
CI speaking at increased volume	1
Slower paced clinic with minimal distractions	1
Advanced review of patient charts	1
Only placed where public transport was available	1
Other, unspecified (modifications to documentation, additional instruction)	2

Note. *Each program could report more than one type of accommodation

indicated that graduates might have to make job selection based primarily on compatibility between work environment/practice setting and physical ability rather than on interest. One faculty member indicated that employers might not hire PTA graduates that required frequent or continuous assistance with certain tasks (e.g., gait training, transfers) as these clinicians were already supposed to be the “support” staff. Another reported that it might be easier on employers to hire a PT with physical disabilities and have a PTA provide assistance. One respondent was concerned that some employers would be unable to support hiring an “extra” person to assist a PT or PTA with a physical disability.

The final survey item asked if the PT/PTA licenses for these graduates should restrict their practice areas or skills based on their physical limitations or stipulate when accommodations were needed. Again, the responses were mixed with 43.5% of faculty believing that the PT/PTA license should not stipulate any restrictions or required accommodations, 40.1% agreeing that the license should stipulate when accommodations are required, and 2.8% indicating that the license should specify restrictions on clinical practice (e.g., certain settings, types of patients, or clinical skills). Several faculty believed that if SWPDs could successfully pass the licensing exam, then those clinicians should

Table 4

Method Used by Programs to Distribute Information on Essential Abilities/Functions

Method of Distribution	# Programs Reporting
Website	55
Application materials	21
Student handbook	18
Acceptance materials	15
Preadmission advising activities	13
Interviews	8
Orientation	4
University/college catalog	4
Upon request of the student	2
Other – unspecified	18

Note. *Each program could report more than one method of distribution

be allowed to practice without specific board-imposed restrictions with the expectation that they would self-monitor regarding the physical aspects of patient care with which they required assistance in order to practice safely – just as any licensed therapist does. Another faculty respondent reported that since physical therapy was a “visual, very kinesthetic, high touch” profession, students with limitations prohibiting this type of engagement would be unable to practice without significant changes in current practice expectations.

Student Responses

A total of 720 students completed the survey. As with faculty, the actual return rate for students could not be calculated due to the manner of distribution and protection of respondent identity and there was no way to determine which program directors actually forwarded the survey link to their students. Of the students who did respond, the majority were females (79%) enrolled in accredited PT programs (74%). Similar to the faculty sample, the student sample also demonstrated a broad geographic representation (Figure 1).

Thirty of the 720 student respondents (4.2%) indicated they had some type of chronic/permanent physical disability that was acquired before or during their enrollment in the PT/PTA education program; only 25 of these SWPDs responded to follow-up questions. Forty percent of responding SWPDs said they disclosed their disability during the admissions process

($n=10$), whereas 40% did not. Twenty-three of these students reported their specific physical disability, with rheumatic diseases ($n=7$), spinal disorders ($n=6$), and other musculoskeletal injuries or deficits ($n=5$) being cited most (Table 5). A variety of metabolic and cardiac conditions, sensory impairments, and memory loss were also reported by individual respondents.

Regarding the need for accommodations, 24% ($n=6$) indicated that they required assistance, 48% ($n=12$) said they did not require assistance, and 28% ($n=7$) were unsure. Of the six SWPDs who required accommodations, five received accommodations and indicated that these were adequate to enable them to successfully complete their learning experiences. Accommodations for these five students included “extended time” during clinical experiences and exams, specialized equipment such as a “magnifier,” utilization of a “note taker” in class, and recorded lectures (Table 6).

When SWPDs were asked about the academic standards to which they were held, 72% ($n=18$) indicated they were held to the same standards as their non-disabled peers, whereas 24% ($n=6$) believed the expectations were unclear. With respect to the level of mentoring received from faculty/staff, 87.5% ($n=21$) of SWPDs indicated they received a similar level and amount of mentoring as non-disabled students. Regarding perceptions of discrimination, 75% ($n=18$) of SWPDs reported never having been discriminated against by faculty/staff or peers, and 21% ($n=5$) in-

Table 5

Types of Physical Disabilities Cited by PT/PTA Students

Type of Disability*	# Students Reporting
Rheumatic diseases (lupus, rheumatoid arthritis, osteoarthritis, fibromyalgia)	7
Spinal disorders (herniated disc, cervical radiculopathy, lumbar fusion, cervical burst fractures, lumbar sacralization, scoliosis)	6
Other musculoskeletal injuries/deficits (fractures, knee replacement, congenital and acquired amputations)	5
Chronic pain disorders	2
Autoimmune thyroid disease	1
Cystic fibrosis	1
Diabetes with decreased balance	1
Hearing limitation	1
Hypothyroidism	1
Orthostatic postural tachycardia	1
Short term memory loss	1
Unspecified birth defect	1
Vision limitation	1

Note. *Each student could report more than one type of disability

Table 6

Student Reports of Specific Disabilities and Accommodations

Disability	Accommodation
Chronic pain disorder	Wheelchair for long distances, crutches for stairs
Cystic fibrosis	Extension of clinical experiences if student became ill during rotations
Combination of systemic lupus, fibromyalgia, and hypothyroidism	Extended time for exams and a note-taker in class
Short term memory loss	Recorder used during class, takes exams in disabilities office
Vision limitation	Magnifier or modified tools

Table 7

Types of Disabilities Encountered by PT/PTA Classmates

Type of Disability Classmate Had	# Students Reporting
Vision limitation	17
Hearing limitation	10
Amputations (lower extremity, partial/full hand)	10
Cerebral palsy	10
Traumatic brain injury	7
Generalized joint issues limiting motion	6
Chronic pain (cervical, shoulder, back)	5
Multiple sclerosis	5
Rheumatoid arthritis	4
Brain tumor	4
Spina bifida	4
Temporary conditions affecting weight bearing	4
Hypo/hyperthyroidism	3
Stroke	2
Foot drop	2
Scoliosis	1
Seizures	1
Carpal tunnel syndrome	1
Partial facial paralysis	1
Muscular dystrophy	1
TMJ dysfunction requiring surgery	1
Speech impediment with stuttering	1
Other nonspecific conditions	12

licated that they had experienced some form of discrimination.

Fifteen percent ($n=108$) of total student respondents reported having interacted with a classmate who had a physical disability (Table 7). The most common types of physical disabilities peers identified were vision ($n=17$) and hearing limitations ($n=10$), amputations ($n=10$), cerebral palsy ($n=10$), traumatic brain injury ($n=7$), and generalized joint issues that resulted in restricted motion ($n=6$). The majority of these students (84%, $n=92$) felt that SWPDs participated at the same level as students without disabilities.

A total of 112 students ($n=15.5\%$) responded to the question regarding awareness of SWPDs requiring accommodations during classroom or laboratory learning experiences. When asked about accommodations, 62%

($n=69$) were unaware of any accommodations required by SWPDs, whereas 38% ($n=43$) were aware. Extra time for exams ($n=13$), separate testing areas ($n=7$), enlarged print exams and handouts ($n=7$), and modified expectations for hands-on techniques during laboratory classes ($n=6$) were among the most commonly known accommodations (Table 8).

Of the 43 students that reported awareness of accommodations, 95% ($n=38$) felt the accommodations were adequate to enable the SWPD to succeed in the program and perceived these accommodations to have a negligible effect on their own learning experiences. The majority of students believed that the SWPDs were held to the same academic standards (92%, $n=97$) as themselves and received similar mentoring from faculty/staff (95%, $n=100$).

Table 8

Student Reports of Accommodations for Peers with Disabilities

Type of Accommodation	# Students Reporting
Extra time for exams	13
Separate testing area	7
Large print tests/notes	7
Modified hands-on techniques in lab	6
Postponement of practical exams	3
Alternate assignments	2
Specific seating in classroom	2
Assistance with transfers	2
Extra practice time	2
Reader to read lab activities and exams	1
Extra office hours	1
Visual device	1
Extra time in anatomy lab	1
Altered schedule extending program length	1
Note-taker provided	1
Tutor provided	1
Large print texts	1
Lectures online to allow for changes in color/size	1
Instruments with larger displays	1
Instructor writing on board to facilitate visualization	1

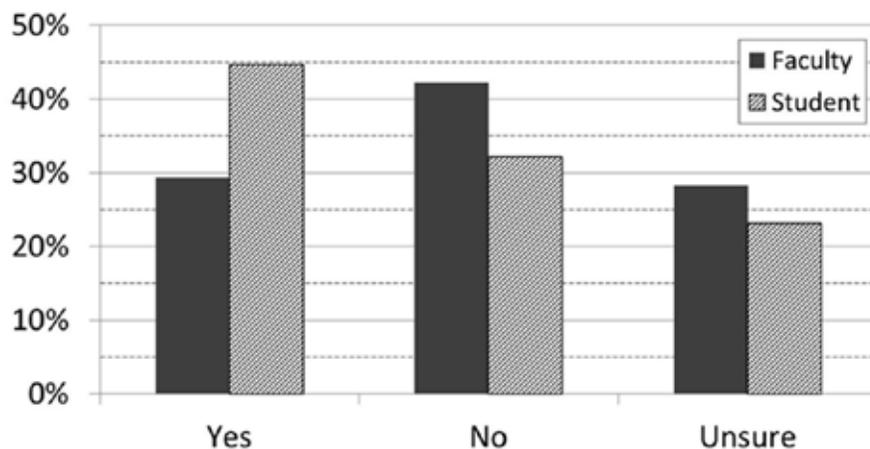


Figure 2. *Perceptions of faculty and students on equal employment opportunities for students with and without disabilities after graduation.*

Ninety-five percent ($n=686$) of students responded to survey items addressing admissions, employment opportunities, and licensure restrictions. Of these, 66% ($n=452$) believed SWPDs should be admitted into PT/PTA programs if they met all other admissions criteria, 29% ($n=200$) were unsure. Twice as many, 37% ($n=252$) versus 18% ($n=124$), felt that a PT/PTA with a physical disability could treat patients as safely and effectively as a PT/PTA without a disability, but 45% ($n=311$) were unsure. With regard to employment opportunities, 45% ($n=307$) expected SWPDs to have similar employment opportunities as their non-disabled peers after graduation, whereas 32% ($n=221$) expected inequitable employment opportunities, and 23% ($n=159$) were unsure. Students indicated increased physical demands of the job ($n=62$), safety issues ($n=38$), decreased effectiveness and efficiency ($n=28$), and discrimination ($n=29$) as possible employer concerns regarding hiring SWPDs. Lastly, when asked about PT/PTA licensure, 42% ($n=289$) believed that licenses should restrict practice areas or skills based on physical functioning or stipulate when accommodations are required for safe practice. Only 27% ($n=182$) believed licenses should not differ for PTs/PTAs with disabilities, and 31% ($n=211$) were unsure.

Student and Faculty Response Comparisons

Figure 2 compares the responses of faculty and students to the item regarding whether they believed that SWPDs would have similar employment opportunities as students without disabilities after graduation. A chi-square analysis indicated a significant difference in the proportion of students (45%) versus faculty (29%) who believed SWPDs would have similar employment opportunities ($\chi^2=13.77, p=0.001$). To limit the effect of a discrepancy between the wording of response options to this survey item in faculty and student surveys, the data for analysis were limited to those who responded “yes” (to some type of restriction) or “no” (no restrictions). Students who responded “not sure” were not included in this analysis. Of the responses provided, no significant difference was found in the proportion of faculty and students who felt that PT/PTA licenses should or should not carry restrictions ($\chi^2=1.07, p=0.301$). However, only 43.5% of faculty and 38.6% of students believed that PTs/PTAs with physical disabilities should have an unrestricted license to practice; more than half of respondents in each group favored some type of restricted practice, or a stipulation that required accommodation, to ensure safe practice.

Discussion

National statistics indicate that over 7% of graduate students have disabilities, with the number of physical disabilities being lower than the number of mental/emotional or learning disabilities (Institute of Education Services, 2011). This study found that the number of students with a physical disability was less than 5% and that the majority of these included sensory impairments (i.e., vision or hearing limitations). Regarding classroom accommodations, the report of faculty grading SWPDs on their ability to instruct “others” in the actual performance of certain hands-on skills was the only reported accommodation that was somewhat unclear. In these instances, the term “other” was not defined by the respondents. However, considering typical classroom practical examination procedures, it could be that faculty allowed either themselves or classmates to serve in the role of unlicensed staff in order to grade the disabled student’s ability to instruct someone other than another PT/PTA in carrying out these techniques. Determining whether this type of accommodation is reasonable or not is beyond the purview of this study.

The types of accommodations that were provided to SWPDs in this study during the clinical phase of the program differed somewhat from those reported in Beckel’s (2012) study, which reported accommodation requests such as reduced days in the clinic, rest periods, and schedule changes that would be beneficial to the student’s health, as opposed to accommodations related to patient care procedures. Faculty respondents in our study cited a need for physical accommodations such as adaptive equipment, and manual assistance with transfers, gait training or lifting; only a few reported requests for more time or rest breaks. However, the most common accommodation reported from the five SWPDs in our study that actually received accommodations during the clinical phase was a flexible work schedule in case of illness.

Findings from our study also differ from earlier studies regarding the number of PT/PTA programs that provide a list of technical standards to applicants during the admission process. Previous studies conducted approximately twenty years ago showed a relatively small number of programs provided this information, (Ingram, 1994; Ingram, 1997) whereas we found that 83.5% of respondents provided information regarding technical standards to students prior to admission. Perhaps the greater emphasis in current accreditation criteria on the accessibility of program information to prospective students has prompted earlier disclosure of information on these standards.

With regard to academic performance, a previous study found that students with physical disabilities were capable of performing at the same academic level as their non-disabled peers (Francis et al., 2007). The perceptions of respondents in our study generally support this claim with 42% of faculty reporting 100% graduation rates for SWPDs. Of those who reported attrition among this student population, less than 20% were cited as leaving for academic reasons; more students appear to leave voluntarily due to exacerbation of current, or development of new, health issues and other personal reasons.

In addition, previous investigators suggested that students without physical disabilities received less mentoring compared to SWPDs (Moore-West & Heath, 1982; Wu et al., 1996). Our data indicate that 95% of students without a disability and approximately 88% of SWPDs felt they received a similar amount of faculty mentoring. However, fewer SWPDs (72%) felt that they were held to the same academic standards as those without disabilities. By comparison, most students without disabilities (92%) generally felt that academic standards were equitable between the groups. This finding contrasts somewhat with results from previous studies that indicated students without disabilities felt SWD unfairly received more faculty time and attention (Houch, et al., 1992; Velde, et al., 2005). Finally, the finding that over 33% of SWPDs reported experiencing some form of discrimination from peers by Van Matre et al. (2004) was not supported with our findings, where 75% of the SWPDs who responded reported no discrimination from faculty or peers.

Perhaps due to greater familiarity with equal opportunity employment, it is not surprising that fewer faculty than students believed that SWPDs would experience limitations regarding future employment. However, the majority of both groups agreed that employment opportunities for SWPDs would likely hinge on compatibility of the work environment/setting and the type/extent of disability. Concerns regarding overall physical demands of the job, patient and clinician safety, and costs associated with providing additional assistance with routine tasks were the most popular reasons both faculty and students gave regarding possible issues with employment. Patient safety was the overwhelming concern regarding whether SWPDs should have disability-specific licensure restrictions for clinical practice. Nearly half of respondents in both groups indicated that board-imposed restrictions or stipulations were needed to ensure safe practice.

Limitations

This study has five known limitations. First, it was impossible to determine the return rate for either the student or faculty sample due to the manner in which the survey links were distributed via the program directors. Therefore, it is unknown how many faculty and students actually received the survey. Nevertheless, the data did allow for determining that there was good geographical and programmatic representation in the sample. Second, some types of impairments were likely to have been overestimated given that multiple faculty from the same program may have responded to the survey. Third, we had a limited number of SWPDs participating in the study (30/720) with only 25 of those responding to follow-up questions. Additionally, with only five students reporting the types of accommodations they received during the clinical phase, our ability to broadly determine common types of clinical accommodations is limited. Fourth, we must recognize that classmate perception of reasonable accommodation, performance expectation, and faculty mentoring of SWDs could have been distorted due to a lack of information and understanding of situation specific disabilities. Since the Family Educational Rights and Privacy Act (United States Department of Education, 2014) prohibits faculty from releasing student health information, it is possible that a lack of knowledge regarding specific health situations could contribute to misunderstandings by classmates and result in unfavorable perceptions of SWDs in the classroom setting. Nevertheless, learning about how accommodations impact the learning environment from the perspective of students without disabilities may be informative for educators and Disability Services providers. Lastly, the study would have been strengthened if we had included surveying staff from campus disability services offices.

Conclusion

In summary and in response to the initial purposes of the study, we found the prevalence of PT/PTA students with a physical disability in our sample to be 5%, and slightly lower than reported national averages of 11% for undergraduate and 7.6% for graduate student populations (Institute of Education Services, 2011). Decreased prevalence rates in PT/PTA programs could be due to the fact that the job is physically demanding, and physical limitations may deter SWPDs from pursuing this field of study. The most common types of physical disabilities among PT/PTA student respondents were rheumatic, spinal, and other musculoskeletal conditions, and the most common types of accommodations were extended time in

clinic or on exams and the use of specialized equipment. Our results suggest that approximately half of the SWPDs required accommodations and two-thirds reported those accommodations as being adequate. However, our data also suggest that many SWPDs are still not graduating, mostly due to non-academic reasons. The presence of SWPDs had little impact on the teaching-learning experience according to student and faculty respondents; however, faculty reported a need for more creativity and additional individual time when working with SWPDs.

Implications for Future Research

This study and the published findings of others reviewed in the preparation of this manuscript revealed significant potential for impactful research collaborations between scholars in physical therapy and disability services. For example, examining the factors that influence the decisions made by SWDs when considering careers in physical therapy can help us better recruit student bodies that reflect our society. Examining how faculty are utilizing campus Disability Services personnel in determining and developing appropriate accommodations will benefit programs and SWDs. With regard to the clinical setting, exploring clinical educators' perceptions about supervising SWDs, as well as patients' perceptions related to care provided by a PT/PTA with a physical disability, can help our profession create meaningful career opportunities for SWDs.

Implications for Practitioners

In this study we sought to explore perceptions of faculty and students who interact with SWPDs. In general, these perceptions reflect a positive, supportive, and largely successful approach to educating SWPDs, which speaks well for our profession. However, there remains a small percentage (25%) of SWPDs who perceive that they are held to a different academic standard and a similar number who claim that they encountered some type of discrimination while in school. Thus, we still have some issues to address related to how well we advise prospective SWPDs and whether we adequately accommodate and support those who are accepted into our education programs.

With regard to Disability Service providers, the academic physical therapy community would benefit from outreach in the form of continuing professional education sessions to share innovative ideas and educational resources that have been developed to support SWDs as well as to create potential collaborations for the development and publicizing of technical standards and/or essential functions. Lastly, a great deal can be

gained from partnering to create reasonable accommodations for students in clinical settings.

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Appendix A

Faculty Survey Items

(All faculty)

1. In which type of educational program do you teach?
2. In what region of the country is your program located?
3. What is your gender?
4. What is your age?
5. Identify your academic role.
6. How long (approximate years) have you been associated with this educational program?
7. Does your program have an open (i.e., all who apply are accepted) or a competitive admissions process?
8. Is information on essential abilities/functions made available to program applicants? If YES, how is this information shared?
9. Which of the following statements BEST represents your opinion regarding the admission of students who have physical disabilities (as defined in the opening comments)?
10. Has your program admitted one or more students with a physical disability within the past 10 years?

(Faculty who self-identified their program as having accepted students with physical disabilities)

11. State the number of students with physical disabilities who have been admitted to your program in the past 10 years.
12. Briefly describe the nature of the disability(ies) you've encountered.
13. Briefly describe the types of accommodations (if any) these students needed during the DIDACTIC phase of their educational program.
14. Briefly describe the types of accommodations (if any) these students needed during the CLINICAL phase of their educational program.
15. What was the average cost of these accommodations (per students), if known?
16. Who paid for these accommodations?
17. What impact, if any, did these accommodations have on your teaching?
18. If your program was unable to accommodate the needs of a student with a physical disability, what was/were the limiting factor(s)?
19. Identify the percentage of students with a physical disability who successfully completed your educational program (i.e., graduated at some point).
20. For students who did not graduate, what was their primary reason for leaving the program?
21. Has your educational program received a complaint, grievance, or lawsuit from an applicant or student claiming noncompliance with ADA regulations? If YES, what was the nature of the complaint/grievance/lawsuit?
22. Have you had any experience with students who acquired a long-term physical disability during their enrollment in your educational program? If YES, briefly describe the nature of this disability.
23. What accommodations, if any, were made to facilitate the student's ability to successfully complete your program?

(All faculty)

24. Would you expect students who have a physical disability to have similar employment opportunities post-graduation as students who have no physical disability?
25. In your opinion, should PT/PTA licenses either: (1) restrict practice areas or skills based on physical functioning, OR (2) stipulate when accommodations are required for safe practice?

Please provide any additional comments that you feel would help us better understand the issues related to accommodating students with physical disabilities in physical therapy educational programs. We appreciate your input.

Appendix B

Student Survey Items

(All students)

1. Indicate the type of educational program in which you are enrolled.
2. In what region of the country is your program located?
3. In what phase of your PT/PTA educational program are you enrolled?
4. What is your gender?
5. What is your age?
6. Do you have a chronic/permanent physical disability (as defined in the opening comments) that you acquired either before or during your enrollment in this educational program?

(Students with self-identified physical disabilities)

7. Please describe the nature of your physical disability.
8. Please describe the approximate date of onset for your physical disability.
9. If you had this physical disability prior to your enrollment, did you disclose it during the admissions process?
10. Have you required, or do you anticipate needing, any assistive devices or other physical accommodations to function in the classroom or clinical setting? If YES, please describe.
11. If you requested accommodations to perform the skills expected of you during your clinical rotations/experiences, did you receive those accommodations?
12. If you received accommodations for your disability in either the classroom or clinical setting, were those accommodations adequate to enable you to successfully complete the learning experiences? If NO, what has been lacking?
13. Have you been held to a different academic or clinical standard than your peers who do not have a physical disability?
14. Do you receive similar mentoring from faculty/staff as students who do not have a physical disability? If NO, in what way is their mentoring different for you?
15. During the admissions process, were you provided with a list of essential functions (i.e. listing of expected abilities needed to practice as a PT/PTA) required to complete the program and/or work as a PT/PTA?
16. Have you ever felt discriminated against by faculty/staff due to your physical disability? If YES, what type(s) of discrimination have you encountered?
17. Are there any other students with physical disabilities in your class/school who offer you support when needed or requested?

(Students without self-identified physical disabilities)

18. Have you had any interactions with a PT/PTA student who has a physical disability? If YES, what was the nature of his/her disability?
19. How would you rate the level of participation in your classes from students who have physical disabilities?
20. Are you aware of any students with physical disabilities who required accommodations to participate in classroom or laboratory learning lab experiences? If YES, please describe the type of accommodations needed.
21. Were the accommodations offered to that student adequate to enable him or her to succeed in your educational program?
22. What impact, if any, did these accommodations have on YOUR educational experience?
23. Are you held to a different academic or clinical standard than a student who has a physical disability?
24. Do you receive similar mentoring from faculty/staff as a student who has a physical disability? If NOT, how does their mentoring differ for students with disabilities?

(All students)

1. In your opinion, should individuals with a physical disability be admitted into a PT/PTA educational program if they meet all other admissions criteria? If NO, tell us why you feel this way.
2. In your opinion, can a PT or PTA with a physical disability treat patients as safely and effectively as a PT or PTA who has no physical disability? If NO, explain why.
3. Would you expect PT/PTA students who have a physical disability to receive similar employment opportunities post-graduation as students who have no disability? If NO, what types of limitations do you think they will face?
4. In your opinion, should PT/PTA licenses restrict practice areas or skills based on physical functioning, or should these licenses stipulate when accommodations are required for safe practice? Please share the rationale for your response.
5. Please provide any additional comments that you feel would help us better understand the issues related to accommodating students with physical disabilities in physical therapy educational programs. We appreciate your input.

Disability Accommodations in Online Courses: The Graduate Student Experience

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Abstract

Research is beginning to demonstrate that online learning may afford students with disabilities enhanced opportunities for academic success. In this study, the authors interviewed 11 graduate students to determine their experiences with disability accommodations in online courses and their perceptions of the relationship between those accommodations and their academic success. Although study participants indicated that disabilities presented concentration and scheduling challenges, the flexibility of online learning as well as participants' skills at self-accommodation and self-advocacy were instrumental in students' academic success. The article offers a set of recommendations for students, instructors, and institutions related to supporting the success of students with disabilities in online courses.

Keywords: Online accommodations, students with disabilities, disability accommodations

Research is beginning to demonstrate that online learning may afford students with disabilities enhanced opportunities for academic success (Burgstahler, Corrigan, & McCarter, 2004; Collopy & Arnold, 2009; Kinash, Crichton, & Kim-Rupnow, 2004; Roberts, Crittenden, & Crittenden, 2011). Since students with disabilities may have difficulty concentrating, staying on task, and adhering to a schedule (Roberts et al., 2011), online settings (particularly those that are asynchronous) allow students to access courses anywhere, anytime, and any place and provide "the personalized time they need to think, process, and respond" (Collopy & Arnold, 2009, p. 85). In addition, assistive technology such as text enlargement for students with visual impairments may negate the need to disclose a disability when no other accommodations are necessary (Roberts et al., 2011). Online instructors who follow Universal Design for Learning (UDL) principles and practices also enhance the learning experience for students with and without disabilities (Kinash et al., 2004; 2004; Roberts et al., 2011).

But even in online learning environments, students with disabilities may become outpaced without assistive technologies (Barnard-Brak, Sulak, Tate, & Lechtenberger, 2010) or other accommodations. Often the role of self-advocate is new to postsecondary students with disabilities who have had accommodations provided and their parents as advocates prior to enrolling in college (Barnard-Brak et al., 2010; Barnard-Brak, Davis, Tate, & Sulak, 2009). College students with disabilities must request accommodations from their university (Barnard-Brak & Sulak, 2010), and it is rare for students with disabilities in online courses to request accommodations from their instructors (Phillips, Terras, Swinney, & Schneeweis, 2012; Roberts et al., 2011). When students with disabilities do approach faculty for accommodations, they discover that not all faculty understand their disability nor know the appropriate accommodations to meet the needs presented by the disability (Denhart, 2008; Getzel & Thoma, 2008). Roberts et al. (2011) found that the majority of students with disabilities in online

courses do not request accommodations. Even when students perceive their disabilities to negatively impact their academic performance, they may not know what accommodations to request, or the technology available in online courses (e.g., text enlargement) negates the need to request accommodations (Roberts et al., 2011).

Students with disabilities in face-to-face and online courses who have more positive attitudes toward requesting accommodations are more likely to do so (Barnard-Brak et al., 2009). Fear of being stigmatized or having work devalued prevents some students with disabilities from requesting accommodations (Denhart, 2008). Self-awareness and self-advocacy are vital skills that enable students with disabilities to request appropriate accommodations and to persist in the pursuit of educational goals (Denhart, 2008; Getzel & Thoma, 2008). Some self-aware students with disabilities self-accommodate using visual strategies (e.g., multicolor highlighting, drawing outlines), and others self-advocate to request traditional accommodations that include extra time on exams/papers, audio books, and note-takers (Denhart, 2008).

Denhart (2008) found that, when college students with disabilities request accommodations, they are often granted. Despite these accommodations, students with disabilities oftentimes feel that they experience a heavier workload and put in longer hours than their peers who are non-disabled. Yet students with disabilities sometimes feel the extra effort yields a product that is still inferior to the output of their peers who are not disabled. Some students with disabilities fear that a mediocre product reflects laziness when in fact the product was the result of hard work.

Phillips et al. (2012) examined the online accommodation experiences of faculty at one public university who taught undergraduate and/or graduate students. Only 23.5% of faculty said they made accommodations for students with verified disabilities and only 15.4% reported experience with making online accommodations for students who stated they had disabilities but had not been verified through Disability Services for Students (DSS). These low numbers were mainly due to students not requesting accommodations in online courses; in fact, it was faculty's perception that students chose to either accommodate their own learning needs, waited until they failed an assignment to make an accommodation request, or did not access any form of accommodation. Due to their limited experience at making online accommodations, the majority (54%) of faculty was unsure whether they had the knowledge, technology, and support to handle online accommodations, yet making appropriate accommodations for students was important to them. For those who had

experience making accommodations, they felt the most comfortable making "common" types of accommodations, such as extended testing time, assignment extensions, and copies of notes. Faculty's perception was that accommodating students with sensory disabilities would be more challenging, and they would need assistance to do so. Faculty recommended ongoing support and training for new and experienced instructors and for helping students be aware of resources and their own responsibilities.

Most of the literature on accommodations in higher education references undergraduate students in face-to-face courses. As this review section indicates, however, there is a growing body of research on accommodations in online courses. The authors intend for the current study to contribute to this expanding scope of research.

Method

Research Purpose and Question

As discussed above, a previous study by two of the current authors investigated faculty experiences providing disability accommodations in online courses (Phillips et al., 2012). Since the 2012 study found that few online teaching faculty received accommodation requests from students with disabilities, the authors wanted to better understand the experiences of students with disabilities in online courses. Of specific interest was gathering student comments on their beliefs about and experiences of requesting and receiving accommodations. Given the authors' particular access to graduate students, the current study gathered data related to the question, "What have been the experiences of graduate students with disabilities in receiving accommodations in online courses?"

Setting

The setting for the research was a moderately sized public university of 15,000 students located less than two hours from the Canadian border in one of the most rural states in the country. Within the university's nine schools and colleges, 220 fields of study are offered at the undergraduate and graduate levels. The university has been offering online courses for thirteen years, and as of Fall 2013 offered 30 online degrees (20 graduate and 10 undergraduate) and 13 online, graduate certificate programs. Four percent of the total student population is registered with Disability Services for Students, with 1% being graduate students and 3% undergraduate students.

The study was situated in the College of Education and Human Development (EHD), which was comprised of five departments: Teaching and Learning,

Counseling Psychology and Community Services, Educational Foundations and Research, Educational Leadership, and Kinesiology and Public Health Education. Three of these departments offered online courses at the graduate level and were selected for the study: Teaching and Learning, Counseling Psychology and Community Services, and Educational Foundations and Research. Within Teaching and Learning, three fully online master's degrees are offered in special education, elementary education, and early childhood education. Counseling Psychology and Community Services offers an online master's in counseling with a K-12 school emphasis.

Study Participants

After the project's approval by the Institutional Review Board, a research announcement was sent electronically to all students enrolled in the four online master's degree programs via the program directors. The Educational Foundations and Research department offered one graduate course online and the instructor sent the advertisement electronically to all students enrolled. The advertisement was sent to 172 students. The advertisement solicited students with disabilities who had taken at least one online course. Students who were interested in participating emailed the principal investigator for more information. Twelve students made contact. Students were initially screened via email to identify a diagnosed disability and to provide a list of online courses taken at the University. Eleven students met the criteria. If they had a diagnosed disability and had taken at least one online course, they were electronically sent an information sheet delineating the study's purpose and benefits, participant role, confidentiality, and contact information. If they consented to participate, students were asked to email the principal investigator to set up a time to be interviewed. All 11 students participated in the study. Each participant was mailed a \$25 gift card following the interview. Each interview transcript was assigned a code number (e.g., S1) to protect participants' confidentiality.

Data Collection

Data were collected across one semester by conducting one semi-structured interview with each of the 11 participants. Each interview was approximately one hour and was conducted using phone or video conferencing (i.e., Skype) since most of the participants lived at a distance from the university. Interviews were randomly divided amongst researchers resulting in a one-on-one grouping. Researchers took copious notes during each interview, then emailed the interview transcript to the participant for member validation.

Because the interviews were conducted across the three authors, a semi-structured interview guide was developed for consistency. Findings from the authors' 2012 study on faculty experiences with disability accommodations in online courses were the framework for developing the interview guide. The guide consisted of 27 questions equally distributed across three sections: Section 1. Participant Information; Section 2. Disability and Accommodations; and Section 3. Attitudes toward Accommodations and Receiving Accommodations. The Appendix contains the questions for each section.

To assist with usefulness, clarity, and sensitivity of the interview questions, the guide was audited by one participant-consultant prior to conducting the interviews. All recommendations made by this individual were accepted.

Data Analysis

To describe this natural phenomenon, data were inductively analyzed using a combination of strategies from Hill, Thompson, and William's (1997) *A Guide to Conducting Consensual Qualitative Research (CQR)* and Creswell's (2007) *Qualitative Inquiry & Research Design*. CQR is based on establishing thematic consensus amongst the team of researchers, then having one or two auditors check the consensus judgments of the primary research team. Creswell's (2007) approach involved discovering the underlying meaning of the experience through analysis of specific statements resulting in clusters of meaning (i.e., themes), while setting aside all prejudgments as one searches for all possible meanings. For this study, a three step data analysis process was used:

1. *Bracketing* (Creswell, 2007) was used to help the researchers set aside any preconceived experiences about students and disability accommodations. Each researcher was asked to respond to the following statement in writing: In order to produce a valid body of research, please identify any values, biases, or experiences about this topic that could influence how you collect, analyze, or report the data. Responses were shared and discussed amongst researchers. In the consensual discussions that ensued, researchers held each other accountable for potential bias in their analyses.
2. The process of *horizontalization* (Creswell, 2007) was employed for each question, which was to list significant statements from each participant. Next, Hill's et al. (1997) patterning strategy, *representativeness to the sample*,

was utilized to determine frequency of participants' responses relative to the whole sample. For each question, if all 11 participants answered the question with the same response or experience, a *general pattern* was formed. If five to 10 participants had similar experiences, this was a *typical pattern*. A *variant pattern* was established with three or four similar experiences across participants. Two researchers collectively completed this step for eight of the 11 transcripts. Their findings were sent to the remaining researcher to analyze the last three transcripts to test the stability of the findings (Hill et al., 1997). The team met to discuss the findings. No new patterns emerged with the inclusion of the final three transcripts, so data were considered stable. There was consensual agreement on the representativeness of the sample: three general patterns, 15 typical patterns, and 16 variant patterns.

3. Next, researchers independently analyzed general and typical patterns for clusters of meaning. Variant patterns were "dropped" at this stage of analysis because they were "not considered to be descriptive of the sample" (Hill et al., 1997, p. 551). Data were grouped by "meaning units" (Creswell, 2007) to identify themes that captured the essence of the participants' experiences. The research team met a second time to present and discuss themes. There was a high degree of consensus among researchers on individual themes. Ample time was spent converging these similar themes into three essence-capturing statements. An analytic schema is presented in Table 1.

Results

Participant Information

As can be seen in Table 2, the 11 participants were women who ranged in age from 22 to 55 and mostly resided in the Upper Midwest region of the United States. Nine were working toward a Master's of Science and two toward a Doctor of Philosophy. At the time of the study, participants had been taking graduate coursework for one to six-and-a-half years and had collectively taken 67 asynchronous and 30 synchronous online courses. Six of the 11 participants were registered with DSS. Three participants had psychological disorders, four had learning disabilities, two experienced chronic health conditions (i.e., diabetes, migraines), and two had attention deficit hyperactivity disorder (ADHD). The disabilities were diagnosed by

physicians and psychologists. Prior to enrollment at the university, only two participants had received accommodations for their disability.

Presentation of Themes

Upon completion of data analysis, three themes emerged. Below, each theme is presented along with supporting evidence.

Theme 1. Prior experiences with special education motivated participants to pursue a graduate degree. Nine of the 11 participants were enrolled in the Master's of Science in Special Education degree program (an entirely online program). For eight of them, they either had: (a) personal experiences with receiving (or not receiving) special education services for their disability, (b) a child or sibling with a disability who needed special education services, or (c) work experience in the field of special education. Participants used phrases such as "paying it forward" and "enjoys helping students." One noted she wanted to "give back" to students like her who had disabilities so they could receive special education services, because she never did.

Theme 2. Pre-enrollment fears of academic failure were minimized once in the program due to: (a) the flexibility afforded by online classes; (b) the willingness of instructors to provide accommodations; and (c) the personal efforts of students via self-accommodation. The leading fear amongst participants was "keeping up" due to the characteristics of their disability. Increased time needed to read materials was specifically noted. One participant explained how it took her three times longer to read in order to get the "materials registered in my brain." The increased time needed for reading and writing was a common fear for those with learning disabilities. For participants who had psychological disorders, lack of time was also a fear, mainly due to the inability to concentrate. As one participant illustrated:

I did have some concerns because when I was an undergrad I had to take a semester off because of my disability, and I knew that the stress of being in school would impact my disability. Just with the increased stress it impacts my ability to concentrate for a period of time and my ability to slow down my thoughts enough to do the school work.

Intriguingly, none of the participants mentioned that these fears delayed or derailed their scholarly pursuits. One participant offered her explanation for this:

Table 1

*Analytic Schema***General Patterns** (11 participants)

- 11 participants accepted responsibility for knowing their needs and communicating them to Disability Services for Students and/or instructors for necessary accommodations.
- 11 participants self-accommodated.
- 11 participants felt they were successful in their online courses.

Typical Patterns (5 to 10 participants)

- 8 participants who enrolled in the special education master's program had experience with the special education population resulting from personal, parental, and/or work experience.
- 5 participants stated online program met personal needs or preference.
- 9 participants were concerned about "keeping up" due to disability prior to starting program.
- 5 participants felt their disability does not impact ability to succeed.
- 6 participants felt their disability does impact ability to succeed.
- The 6 participants who asked instructors for accommodations had their requests granted. All 6 participants requested extra time on assignments.
- 5 participants said when they requested accommodations didn't vary across courses.
- 6 participants stated course content does not affect their need for accommodations.
- 7 participants requested accommodations before or early in the semester.
- 7 participants were open about their disabilities and comfortable asking for accommodations.
- 8 participants felt it was the instructors' responsibility to meet their needs by providing accommodations.
- 6 participants wanted instructors to be sensitive to their disabilities.
- 6 participants felt it was the university's responsibility to have disability policies/services for documenting disability and ensuring instructors are making accommodations.
- 6 participants felt their success was not affected by lack of/quality of accommodations.
- 8 participants felt understood by instructors and/or disability services for students.

Themes

1. Prior experiences with special education motivated participants to pursue a graduate degree.
2. Pre-enrollment fears of academic failure were minimized once in the program due to: (a) the flexibility afforded by online classes; (b) the willingness of instructors to provide accommodations; (c) the personal efforts of students via self-accommodation.
3. Successful online accommodations are a result of specific efforts made by students, instructors, and the institution.

I was filled with fear when starting, but along with that fear, I had a strong determination to succeed. I wanted to prove to myself that I could do it. It was a fear of failure, not keeping up, not being able to do it.

None of the participants mentioned fearing the technology aspect of an online course.

All 11 participants concluded they had been successful in their online courses, as personally measured by having a high GPA, earning the degree, learning, or getting a job. Although still successful, six said their disability did impact them. One participant reflected:

I'm an audio and visual learner and I can feel alone in the online classes. I feel like I 'bug' my instructors although I do not mean to. I feel this is because I do not see the instructor or my peers. By not seeing my peers face-to-face and interacting with them inside a classroom it causes me to feel intimidated. I do not mean to talk negative about online classes. I'm thankful for online, but it's not the route I would choose but it's allowed me to learn.

Six participants declared their disability through DSS, yet 10 participants received accommodations from

Table 2

Participant Information (N=11)

Age	22–55
Gender	Women (<i>n</i> =11)
Region of United States	Upper Midwest (<i>n</i> =10) West (<i>n</i> =1)
Graduate Academic Program	M.S. in Special Education (<i>n</i> =9) Ph.D. in Educational Leadership (<i>n</i> =1) Ph.D. in Teaching and Learning (<i>n</i> =1)
Years of Graduate Coursework	1 to 6.5
Number of Online Courses Taken	4 to 25 (67 asynchronous and 30 synchronous)
Registered with Disability Services for Students	Yes (<i>n</i> =6) No (<i>n</i> =5)
Categories of Disabilities	Psychological Disorders (<i>n</i> = 3) Learning Disabilities (<i>n</i> = 4) Chronic Health (diabetes, migraines) (<i>n</i> = 2) Attention Deficit Hyperactivity Disorder (<i>n</i> = 2)
Professional Who Diagnosed	Physician (<i>n</i> =5) Psychologist (<i>n</i> =6)
Accommodations for Disability Prior to Enrolling	No (<i>n</i> =9) Yes (<i>n</i> =2)

their instructors. The main reason for declaring was that it guaranteed accommodations to prevent failure. One student wanted to ensure her instructors knew she was not trying to “put something over” on them. Seven requested these accommodations early in the semester, with participants noting the importance of ongoing communication with instructors regarding extensions and clarifications. One participant shared:

My professors have been wonderful. I tell them the truth. I say that I didn't understand it or I'm not filling out the form quite right. It's strange...I understand something's missing but can't figure out what. I let them know that I have trouble keeping up with the reading.

The primary accommodation made by instructors was extended time on assignments (received by nine participants). Additionally, one participant requested study guides while another requested work samples to serve as models for assignments. Some students stated they did not need the same accommodations as when they were undergraduates because of the nature of online learning. For example, copies of notes and lectures were not needed because they could print material posted in the course management system, as well as listen to lectures multiple times. Alternative settings were also not needed because of being able to complete assignments within their home setting. Participants found most instructors willing to work with them and to be supportive. One even complimented the sustained efforts of her advisor for helping her throughout the process and for being her “go-to-person.”

The flexibility of asynchronous, online courses was influential for some participants' success. They found online courses to be "easier" because they could review the content multiple times, unlike a face-to-face course. Others operationalized flexibility by being able to: (a) lie down while doing lessons due to migraines, (b) do lessons when mood was more elevated so "missing class" was not an issue, and (c) "attend class" after supper which was more convenient for managing blood sugar. A participant made the following comparison between online and face-to-face delivery: "I would do much worse in face-to-face classes. I would have to get up and get to class at a certain time. Online meets my needs better and that course has modules that are clearly organized." One participant liked the convenience of online, but found it easier to "procrastinate." She also felt:

Being face-to-face and seeing them [instructors], they get a sense of who you are. In an online course it is hard to do. The connecting can be difficult in the online course with my struggle in writing. Your character is part of who you are and affects learning and grading.

Another participant did not feel there were a lot of services for online students and shared she did not know about DSS until the time of the interview. However, she admitted she probably would not make a contact because she questioned how "anonymous" it was with it being on her record. She wanted "to make it on her own without being labeled and wanted to avoid instructors thinking, 'Oh great, we have one of these students.'"

All participants self-accommodated in their online courses. Some participants sought assistance from individuals whom they knew personally to read to them or to edit writing. Others asserted themselves by seeking additional assistance from the instructor for clarification of nebulous content. Organizational systems were constructed for due dates. Some preferred hard copies of course materials to employ a highlighting strategy. Online tutorial services made available by the university were accessed. Lastly, some self-accommodated by simply being "up front" with instructors about their disability.

Theme 3. Successful online accommodations are a result of specific efforts made by students, instructors, and the institution. Participants were queried about perceived responsibilities of students with disabilities, instructors, and the university. To capture the essence, they perceived it as a joint effort. A 34-year-old student with dyslexia explained it like this:

I just know where I need the extra help, or time, and so I think it's the fair thing for me to do...to seek out the help. I don't think it's fair for me to struggle and get upset and flustered and go to a professor and try to get help when I could have helped myself at the beginning of the year by letting the school and the professors know that I have a disability and that maybe I will need extra help or will struggle because maybe then they'll think of other things. I'm doing a disservice all around to myself and professors if I don't seek out accommodations. In college, before accommodations I got a 2.78, after accommodations it went up to 3.9. Huge difference! And it's not like I'm asking for someone to do my work, all my accommodation is doing is giving me an extended time on tests so I can process the information.

Student responsibility. All participants felt it was their responsibility to be knowledgeable about disability-specific needs and to initiate communication with instructors and/or DSS about how their needs could be met through accommodations. Even with all participants reporting they self-accommodated, not one explicitly mentioned it as every student's responsibility. One participant explained, "My responsibility is to talk with my instructors and discuss my needs with them. They're not mind readers. And I need to put forth an effort and take ownership for my learning..." Another concluded, "Most fall on me because I am an adult and in charge of my own destiny." Although all participants accepted this responsibility for initiating the accommodation process, only seven were open about their disabilities and felt comfortable requesting accommodations. One participant explained how disclosure was dependent on the relationship with the instructor:

It varied because for the one course I had had the same instructor I had had before and I had a relationship with her and the other instructor I didn't know her. I guess I was more willing to share information with what was going on with the first instructor than with the other instructor. I was really vague and said there was some tough stuff going on and was just vague. [Why were you more vague with the second instructor?] I didn't know her and didn't know if she would judge me for sharing the full reason. [Why were you concerned about being judged?] Because it had happened to me in my undergraduate school and it wasn't in a special ed program. I had requested more time for assignments because they were changing my

anxiety medication and the instructor didn't understand and said I needed to try harder or find another place to study and the instructor wasn't going to give me more time.

For those who were not comfortable, their reasons included: (a) became "anxious" about requesting accommodations because of a history of not getting work done and concerned a "disposition form will be completed" on her, and (b) did not want to be "set apart from the others," and

(c) I like to think I'm above my disability. I don't want it to stop me or don't want other people to know. Maybe it's an embarrassment thing. I don't want pity or special treatment because of this. I want to go to someone if I need the help. I feel like I'm judging [How?] I'm judging everyone else who uses it.... Yeah, I don't want people to know because I don't want special treatment. It sounds weird because I ask for it [accommodation] from time to time. I don't want special favors. I want to struggle with it on my own. When I read something and I get it, the reward is huge. It's a confidence boost.

Instructor responsibility. Most of the participants (eight) believed it was the instructors' responsibility to meet their needs by providing accommodations. Participant comments included: "fulfill needs within reason," "ensure they are fair to all students," "read and follow the plan developed with DSS," "allow self-accommodations," "provide clear expectations about what instructors are willing to do," "allow assignments to be redone," and "work with students in the area of disability." Slightly over half (six participants) felt it was also the instructors' responsibility to perceive them as hard working and fulfilling the same obligations as other students. Supporting remarks were as follows: (a) "Not asking someone to do my work. Don't think of us as lazy;" (b) "I don't want to be perceived as one of those people or that I'm using my disability as a crutch... fulfilling the same obligations;" (c) "I didn't ask for this [disability];" (d) "Instructors' responsibility is to ensure that they are fair to all students and that they do not give an unfair advantage to any student." She felt receiving extra time on assignments/tests was fair because the "student is producing the same work;" (e) "...should not assume that if a student is requesting help they're lazy. See the student for who they are before seeing their disability. See what the student *can* do before seeing what they can't do;" and (f) "I think as long as the teachers know that every once in a

while students come along who need something extra, and they don't just think of us as lazy."

University responsibility. As for the institution, it was their responsibility to establish policies and procedures for communication and accountability purposes. Providing a disability service was essential for documenting disability and upholding the rights of students. One student declared, "I am blessed to have DSS in my academic life, and I feel they'll go the extra mile for me. They have; it's been amazing!" Some participants mentioned the university needed to "look critically at how to improve" and to ensure instructors are providing accommodations.

Summary

All participants felt they successfully completed their online courses, in spite of their pre-enrollment fears and disability-related challenges. All participants self-accommodated and almost all requested accommodations from instructors. Nevertheless, a little over half the participants felt their level of success was *not* affected by the quality of accommodations they received but was a result of their individual efforts. Most participants felt understood by instructors, and almost all were satisfied with their online learning experience.

Discussion

In contrast to an earlier study by two of the authors (Phillips et al., 2012) in which few faculty reported being asked by students to provide accommodations in online courses, this study of online graduate students with disabilities found that almost all participants (10 of 11) requested accommodations from their instructors. No doubt the particular characteristics of the participants contributed to this outcome, with 82% of students (n=9) seeking a master's degree in special education and eight of them having prior personal or work experience with special education. It may be that degree choice and a personal history with receiving or providing accommodations in pre-college educational experiences determines a comfort level with requesting accommodations in online college classrooms.

Consistent with Roberts et al. (2011), students in this study indicated that their disabilities presented concentration and scheduling challenges, but similar to Collopy and Arnold (2009), students asserted that online courses offered them the flexibility and individualized pacing to be academically successful. Most of the classes taken by students in this study were asynchronous online courses, as opposed to live web-cam facilitated courses. The flexible, self-directed nature of these asynchronous courses may

make them a more comfortable learning environment for students with disabilities, compared to the synchronous online courses.

Self-accommodation and self-advocacy stand out as important to the academic success of students with disabilities. The students in this study were adept at self-accommodation, felt comfortable requesting accommodations from instructors, and knew what type of accommodations would be most beneficial to request. This finding supports that of Barnard-Brak et al. (2009) who found that students who had positive attitudes toward accommodations felt comfortable requesting them. (In this study, only one student expressed concern that an accommodation request might result in stigmatization.) In addition, because of the increasingly ubiquitous and commonplace nature of online education, faculty are increasingly seeing students (with or without disabilities) who are skillful users of online technology and who know how technology and/or the online learning environment can best accommodate their needs, with or without the assistance of faculty.

Ultimately, however, the academic success of students with disabilities is a joint responsibility of online instructors, university systems, and the students themselves. This collaborative effort requires intentionality and should result in an educational environment which ensures that each group has the opportunity to develop and exercise their individual responsibilities. The students in this study articulated a number of recommendations for each group which can enhance the online experience for students with disabilities. The authors support and have themselves implemented some of these recommendations, and offer them here for the readers' consideration.

Recommendations for Students

Although this may be difficult for some students based on personality, background, or educational history, developing and exercising the skills of self-advocacy can be critical to the outcome of the online learning experience. In fact, one participant with a learning disability felt that to be an online student, "you must advocate for yourself." To keep pace with the rhythm of a course, it is helpful if students converse with instructors at the beginning of an educational term about course and instructor expectations, student disabilities and their impact on learning, needed accommodations, and any other issues of concern to the student. A participant illuminated the importance of communication because she felt "that if you have that communication at the beginning, you're more willing to reach out to them and them to you because you've made that connection already." Another suggested that

"every instructor is different, so be straightforward." If the course is asynchronous, students could request that this, and additional communications with instructors, take place via phone or by Skype (or some other video-conferencing system). However, a participant opposed the use of email because it was not as effective when discussing disability accommodations.

Recommendations for Instructors

Although non-contact with instructors may mean that there are no students with disabilities in the class or that students with disabilities are self-accommodating, it is important that instructors make every effort to be approachable and to create a learning environment which avoids barriers to accommodation requests. A study participant with Bipolar Disorder shared how an occasional contact from instructors to see how she was doing would have made her feel more comfortable asking questions and for extensions.

Syllabi should list clear due dates and assignment expectations and course assignment directions should all be in one place (on the syllabus and/or the course's online management system). One participant with dyslexia explained why detailed syllabi are important: "I think having the syllabus clear, in black and white as, and as simple as possible as far as due dates and expectations on a weekly basis, because that's like everyone's Bible; that's what everyone lives by." All syllabi should contain a disability disclaimer which, at minimum, provides contact information for the university's disability services center and which encourages contact with the course instructor.

Instructors need to ensure that students have mastered one level of material before moving on to more difficult material. Smaller, more frequent assignments should be required (rather than one or two larger assignments) so as to minimize the chance of "falling behind." Additionally, all assignments submission procedures should be in the same format. These aforementioned recommendations mainly focus on "consistency" in course management, which was paramount for one participant with ADHD.

Although study participants did not explicitly mention Universal Design for Learning (UDL), their recommendations reflect the principles and guidelines of UDL. As articulated by the National Center on Universal Design for Learning, "UDL provides a blueprint for creating instructional goals, methods, materials, and assessments that work for everyone--not a single, one-size-fits-all solution but rather flexible approaches that can be customized and adjusted for individual needs" (NCUDL, n.d.). UDL offers research-based guidelines for providing multiple means of represent-

ing content, multiple means for students to express and manage their learning, and multiples means to encourage student engagement with course content and the classroom community. The authors of this article recommend that online instructors become familiar with UDL guidelines and, with support from their institution's disability services department and feedback from students, begin a process of shaping their instructional design to reflect the guidelines. Instructors will find assistance with implementing UDL guidelines at the National Center on Universal Design for Learning website (www.udlcenter.org/aboutudl/udlguidelines) and at www.ualr.edu/pace/tenstepsud/ (a resource of the Disability Resource Center at the University of Arkansas at Little Rock).

Recommendations for Institutions

It is important that the institution's disability services center or department ensure that disability services are advertised across campus in a variety of ways and venues and across all online academic programs (including undergraduate, graduate, and certificate). In addition, the disability services unit should advertise all services, tools, programs, and technologies it has available to students. One study participant noted that if DSS had "advertised a little differently" she would have heard about them and looked in to services. Without this advertising, students may not know the extent of supports available to them. Moreover, one participant specified how the graduate school needs to "get the word out" so students know accommodations are available in graduate, online courses.

In addition to participant comments and recommendations, this study's authors recommend that academic departments engage in annual reviews of their compliance with UDL principles and practices (in both online and face-to-face courses) and offer routine training to instructors in UDL and accommodation tools, expectations, and resources. The authors also recommend that universities routinely and critically assess their institutional responsiveness to students with disabilities in the online environment. Such an assessment could involve a collaborative process with staff, student, and instructor participants.

Limitations and Future Research

This study offers additional insights about student experiences of online accommodations. It is limited, however, in that it addresses student experiences and perspectives at only one institution and the participant sample is small (only 11 students). In addition, the study sample consisted entirely of female graduate

students. The fact that these students with disabilities had already acquired undergraduate degrees and were successfully engaged in graduate education (with nine of them working on a degree in special education) indicates a level of motivation, self-direction, and comfort level with accommodation requests that may or may not be present in the general population of students with disabilities in postsecondary, online courses. Finally, the data collected are in need of validation since they are based on self-reports that may reflect socially-desirable responses.

Additional studies are needed in order to validate the findings of this project and to better understand the perspectives and needs of online students with disabilities. It would be particularly important to gather data from graduate students in disciplines other than special education and to also ensure the inclusion of male graduate students to determine any differences these factors may make on the accommodation experiences of students with disabilities in online classes.

Additional research would also be useful related to university "best practices" for institutional advertising, development, and implementation of disability services for online learning. Disability services staff rarely have the time or resources to conduct in-depth and routine evaluations of their services to faculty and students. Researchers with an interest in online learning could provide an invaluable service to their institutions and the students they serve by advancing the literature relative to successful institutional practices that ensure the academic success of all online learners.

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Appendix

Interview Guide

Section 1. Participant Information

1. Age
2. Please tell me the academic program you're in, the degree you're pursuing, and your current student status.
3. Why did you choose this degree?
4. How many years have you been taking classes?
5. How many online courses have you taken (including current courses)?
6. Were these online courses asynchronous or synchronous? How many of each?
7. Since this is an interview about online course accommodations related to your disability, could you please tell me the disability you will be discussing?
8. Who diagnosed your disability (physician, psychologist, etc.)?
9. Did you receive accommodations for your disability prior to your enrollment?

Section 2. Disability and Accommodations

1. Prior to starting this degree program, did you have any concerns related to your disability, about being in the program – either concerns about your abilities or concerns about getting support from instructors or the university?
2. Does your disability impact your ability to succeed in the online learning environment?
3. Have you declared your disability with DSS?
 - a. If yes, what was your reason for contacting them?
 - i. At what point in your program did you contact them?
 - ii. How much interaction do you have with DSS?
 - iii. What specific accommodations did you receive from DSS and were/are they helpful?
 - b. If no, what was your reason for not declaring your disability?
4. Have you requested accommodations for you disability from your instructors (and not via DSS)?
 - a. If yes, were your requests granted?
 - b. What have been the specific accommodations you received and have they been helpful?
 - c. If no, why have you not requested accommodations from them?
5. At what point in your courses have you generally requested accommodations from DSS or instructors?
 - a. Did this vary across courses or change over time?
6. Do you self-accommodate? If so, what are the accommodations?
7. Does course content affect your need for accommodation?
8. Are there any other ways you advocate for yourself in online courses (besides requesting accommodations)?
9. Have you utilized other campus services that have assisted you with your disability in order to be successful in your online courses? (Tech Support, Counseling Center, etc.)

Section 3. Attitudes Toward Accommodations and Receiving Accommodations

1. What is your attitude or belief about requesting accommodations for disabilities?
2. What do you perceive to be your responsibilities for accommodating your disability and the responsibilities of your instructors? What do you believe are the responsibilities of the university?
3. Have you taken face-to-face graduate classes (here or elsewhere)? If so, are there any similarities and differences between f2f and online classes in relation to receiving accommodations?
4. Do you have any recommendations to improve the online experience for students with disabilities?
5. Overall, are you satisfied with your online learning experience?
6. Do you feel you've been successful? How did you determine this?
7. Do you feel that your level of success was affected by the lack of accommodations or the quality of accommodations you received?
8. If you've made formal requests for accommodations, do you feel you were understood by DSS or the instructor and/or university services?
9. Is there anything else you would like me to know?

The Relationship of Core Self-Evaluations and Life Satisfaction in College Students with Disabilities: Evaluation of a Mediator Model

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Abstract

This study examined the factorial structure of the construct core self-evaluations (CSE) and tested a mediational model of the relationship between CSE and life satisfaction in college students with disabilities. We conducted a quantitative descriptive design using exploratory and confirmatory factor analysis and multiple regression analysis. Participants included 97 college students with disabilities majoring in science and technology who received academic and career support services from an urban university on the east coast of the United States. The four CSE traits (self-esteem, self-efficacy, emotional stability, and locus of control) all loaded onto one higher-order CSE variable. Perceived stress, positive affect, and social support were found to completely mediate the relationship between CSE and life satisfaction. CSE was validated as a unidimensional construct in a sample of college students with disabilities. Higher levels of CSE were associated with better life satisfaction because students with high CSE were better at coping with stress, maintaining a positive mood, and building social support than students with low CSE, and this was associated with a higher satisfaction with life. Future research should explore the development of interventions to increase CSE in order to reduce stress, improve affect, and build social support to increase positive psychosocial outcomes such as life satisfaction in college students with disabilities.

Keywords: Core self-evaluations, life satisfaction, college students, people with disabilities

A major goal of psychosocial and quality of life research is to identify and examine factors that contribute to an individual's sense of well-being. In accordance with the positive psychology movement, which seeks to understand and augment positive and adaptive aspects of the human experience rather than focusing solely on symptoms, deficits, and limitations (Seligman & Csikszentmihalyi, 2000), researchers in healthcare and rehabilitation have begun to focus on subjective well-being, including constructs such as life satisfaction, as the preferred outcome in persons with disabilities (Chou, Chan, Chan, & Phillips, 2013). Within rehabilitation, positive psychology emphasizes the impact of positive characteristics of an individual's life (e.g., well-being) and de-emphasizes negative features (e.g., limitations in function) (Chou et al., 2013; Dunn & Dougherty, 2005). The identification of factors that may influence well-being and life satisfaction, and consequently may be targeted for intervention, is of primary importance in rehabilitation research (Chou et al., 2013; Hampton, 2004; Kobau, Sniezek, Lucas, & Burns, 2010; Vestling, Ramel, & Iwarsson, 2005; Vestling, Tufvesson, & Iwarsson, 2003; Wilson et al., 2013).

Despite the recent philosophical emphasis on positive personal characteristics by rehabilitation health researchers, the road to positive adjustment and well-being in people with chronic illness and disability can be long and uncertain. Postsecondary students with disabilities, in particular, often have significant difficulties adjusting to college life. The demands of college, both from an academic and independent living perspective, can be more challenging for students with disabilities than students without disabilities (Field, Sarver, & Shaw, 2003). Many students with disabilities have received significant assistance throughout primary and secondary school from their parents, K-12 educators, and counselors. Once students enroll in college, they must learn to make decisions and advocate for themselves, often for the first time. They must develop organizational and study skills and learn to set both short-term and long-term goals on their own as well as social skills to communicate effectively with instructors, roommates, friends, and dating partners. In addition, the environment of college provides much less structure than that of high school and there may be many more potential distractions than these students are accustomed to. Consequently, all students, and students with disabilities in particular, must acquire the self-determination, persistence, and motivation to successfully navigate the college experience. As a result of the challenges presented by their disabilities and the nature and demands of college life, many students with disabilities are at risk for poor college life adjustment.

Psychosocial and Academic Outcomes in College Students with Disabilities

Many students with disabilities have difficulty adjusting to the independent nature of college life (Frieden, 2003). Like all students, they must learn to deal effectively with all aspects of life, from mundane everyday concerns to financial worries and academic failures. They must cope with attitudinal and structural barriers both on campus and in society at large. Although they may still have the emotional and/or instrumental support of their families, they are forced to assume a much more independent role. In order to be successful, college students with disabilities must persevere in the high-pressure environment of college, despite whatever functional limitations their disabilities may create. Many students find this new life overwhelming, and as a result, they may have problems with psychosocial adjustment and overall well-being.

College students with disabilities often have poorer psychosocial outcomes than students without disabilities. College students with disabilities report higher levels of psychological distress (Blase et al., 2009; Richards, Rosen, & Ramirez, 1999; Shaw-Zirt, Popali-Lehane, Chaplin, & Bergman, 2005; Weyandt, Rice, Linterman, Mitzlaff, & Emert, 1998), higher rates of depressive symptoms (Rabiner, Anastopoulos, Costello, Hoyle, & Swartzwelder, 2008), and lower levels of self-esteem (Dooling-Litfin & Rosén, 1997; Shaw-Zirt et al., 2009) than their peers without disabilities. Students with disabilities have also been found to have poorer social skills (Shaw-Zirt et al., 2009), and to have more difficulty obtaining social support (Kern, Rasmussen, Byrd, & Wittschen, 1999). In addition, Grenwald-Mayes (2002) found that students with disabilities experience a lower level of quality of life than their peers without disabilities. Overwhelmingly, the research suggests that college students with disabilities experience greater distress than students without disabilities.

With respect to academic outcomes, students with disabilities are at risk for poorer academic achievement and increased failure, and are less likely than their peers without disabilities to graduate (Barkley, 1998; Barkley, Murphy, & Fischer, 2008; deFur, Getzel, & Trossi 1996; Frazier, Youngstrom, Glutting, & Watkins 2007; Murphy, Barkley, & Bush 2002; Murray, Goldstein, Nourse, & Edgar 2000; Wolf, 2001). Studies have also shown that college students with disabilities have lower GPAs (Blase et al., 2009; Heiligenstein, Guenther, Levy, Savino, & Fulwiler, 1999) and are more likely to have been on academic probation than students without disabilities (Heiligenstein et al., 1999). Students with disabilities also report poorer study habits, study skills, test-taking strategies, and academic adjustment than

students without disabilities (Lewandowski, Lovett, Coddington, & Gordon, 2008; Norwalk, Norvilitis, & MacLean, 2009; Reaser, Prevatt, Petscher, & Proctor, 2007). Hence, students with disabilities are not achieving the same educational outcomes as their peers (Frieden, 2003). It is, therefore, important for researchers to identify the contributors to well-being and adjustment in college students with disabilities, so that effective interventions can be developed to influence positive psychosocial and academic outcomes.

Core-Self Evaluations and College Students with Disabilities

Rehabilitation health researchers have historically focused on domain-level contributors to well-being in people with chronic illness and disability, such as social support, self-efficacy, and coping skills. An emerging concept in applied psychology and the organizational sciences, which may have potential as a more global positive contributor to subjective well-being in people with disabilities, is “core self-evaluations.” Core self-evaluations (CSE) are conceptualized as the overall, fundamental perception that individuals have about their own worth and capability as human beings (Judge, Locke, Durham, & Kluger, 1998). According to Judge and colleagues, CSE is comprised of four lower-order traits. The first trait included in the CSE construct is self-esteem, which is an overall appraisal of one’s self-worth (Rosenberg, 1965). The next is generalized self-efficacy, which is an evaluation of one’s ability to successfully perform a wide range of tasks (Bandura, 1977). Emotional stability, or low neuroticism, the third CSE trait, is defined as the tendency to feel calm and secure (Eysenck, 1990). The final trait is locus of control, which is the belief that events in one’s life come as a result of one’s own actions rather than by fate or powerful others (Rotter, 1966). According to the CSE theory, these four characteristics combine to explain an individual’s global judgment of the value that they have as a person (Judge, Locke, & Durham, 1997; Judge et al., 1998).

Researchers have begun to evaluate the relationship between CSE and well-being in the general population. For example, in their meta-analysis of 33 studies, Chang et al. (2012) found that CSE had a strong positive relationship with life satisfaction ($r = .54$). Research has also begun to demonstrate mediating effects related to CSE and both life and job satisfaction in the general population (Chang, Ferris, Johnson, Rosen, Tan, 2012). In their review of the literature, Chang and colleagues identified variables such as pursuing self-concordant goals and job satisfaction to mediate the relationship between CSE and overall life satisfaction. These findings suggest, for example, that persons with

high CSE pursue life goals and employment consistent with their interests and values and this, in turn, leads to greater life satisfaction. This type of research is important in order to determine the mechanisms through which CSE affects well-being. Research related to identifying mediators of the relationship between CSE and well-being in college students with disabilities can help identify potential targets for intervention in the university setting in order to ensure student success and well-being.

The purpose of this study, therefore, is to evaluate the factorial structure of the construct “core self-evaluations” in college students with disabilities and test a mediator model in order to begin investigating how CSE may affect well-being (i.e., life satisfaction) in college students with disabilities. Higher educational settings have received increased attention with respect to positive psychology in recent years. In fact, the *Journal of Positive Psychology* published a special issue on positive psychology in higher education settings in 2011 with the goals of initiating meaningful dialogues and providing information regarding the application of positive psychology principles in higher education teaching and administration. Therefore, the application of CSE to the well-being of students with disabilities in higher educational settings is very timely and important.

The mediators chosen for the current study include variables that have been found in previous research to be related to well-being in people with chronic illness and disability. These variables include social support, perceived stress, perceived disability stigma, and positive affect. For example, social support has been found to be related to well-being and adjustment in people with disabilities (Devereux, Bullock, Bargmann-Losche, & Kyriakou, 2005; Kobau et al., 2013). Smedema, Catalano, and Ebener (2010) found perceived stress to be significantly negatively associated with life satisfaction and quality of life in persons with spinal cord injuries. Perceived stigma has been found to be negatively related to quality of life in persons with severe mental illness (Chronister, Chou, & Liao, 2013) and HIV/AIDS (Herrmann et al., 2013). Finally, positive affect has been found to be positively associated with quality of life (van Leeuwen, Kraaijeveld, Lindeman, & Post, 2012) in persons with disabilities.

Although the research on CSE in general is in the relatively early stages, the majority of the mediators chosen for the present study with college students with disabilities have been found to be related to CSE in the general population. For example, a recent study by Yan and Su (2013) found CSE to be related to level of social support in Chinese nurses. With respect to perceived stress, individuals with high CSE have been found to

report fewer life stressors and lower levels of strain (Kammeyer-Mueller, Judge, & Scott, 2009). In addition, Rey, Extremera, and Durán (2012) found that individuals with higher levels of CSE, who also have good emotion regulation, experienced more positive affective states. Finally, as little research to date has addressed CSE and disability, no research has been conducted to study the relationship between CSE and disability stigma. However, as disability stigma is so strongly related to well-being in people with disabilities (Chronister et al., 2013; Herrmann et al., 2013) it is included in this study. Therefore, it is hypothesized that the association between CSE and life satisfaction in college students with disabilities is mediated by social support, perceived stress, perceived stigma, and positive affect.

Method

Participants

Participants were 97 college students with disabilities receiving educational and career development services from the Minority-Disability Alliance in Science, Technology, Engineering, and Mathematics (MIND Alliance) project at Hunter College, City University of New York. Students completed a battery of social-cognitive career theory instruments and college life adjustment measures at intake, and a follow-up survey in 2013. The 2013 survey required approximately 30 minutes to complete. Data for this study were extracted from the 2013 survey in the case files of students participating in the project. The students included 42 (43%) men and 55 (57%) women, ranging in age from 16 to 63 ($M = 26.48$, $SD = 9.75$). Participants included 5 (5%) freshmen, 11 (11%) sophomores, 29 (30%) juniors, 26 (27%) seniors, 14 (14%) graduate students, 11 (11%) individuals who graduated with a STEM degree, and 1 (1%) who was taking a break from school. In terms of race/ethnicity, 32 (33%) students were Black, 25 (26%) were Asian, 23 (24%) were White, 16 (17%) were Hispanic/Latino, and 1 (1%) was American Indian/Alaskan Native. The vast majority of students were single (86; 89%), with four (4%) being married, three (3%) being divorced, and four (4%) cohabitating/living with a significant other. Most students reported sensory disabilities, learning disabilities, and mental disabilities. See Table 1 for specific student demographic information.

Instruments

A variety of instruments were used to measure the variables in this study. In addition to demographic information extracted from the MIND Alliance database, instruments included scales for each of the CSE traits (general self-efficacy, self-esteem, locus of control, and emotional stability), scales for each of the proposed mediators (social support, perceived stress, perceived stigma, and positive affect), and a scale to measure life satisfaction. Technical information about the scales is presented in Table 2.

Generalized self-efficacy. The *General Self-Efficacy Scale* (GSES), which was developed by Schwarzer and Jerusalem (1995), was used to measure generalized self-efficacy. The GSES is a 10-item scale (e.g., “Thanks to my resourcefulness, I can handle unforeseen situations”), with items rated on a 4-point Likert-type scale (1 = *hardly true* to 4 = *exactly true*). It yields a total score between 10 and 40, with higher scores reflecting greater self-efficacy. The seven-week test-retest reliability was reported by Leganger, Kraft, and Rysamb (2000) to be .82. Internal consistency reliability coefficients (Cronbach’s alpha) have been found to range between .79 and .88 (Luszczynska, Scholz & Schwarzer, 2005). The Cronbach’s alpha for GSES in the present study was calculated to be .92.

Self-esteem. The *Rosenberg Self-Esteem Scale* (RSES), which was developed by Rosenberg (1965), was used to measure self-esteem. The RSES consists of 10-items assessing attitudes about oneself (e.g., “I take a positive attitude toward myself”), with items rated on a 4-point Likert-type scale (0 = *strongly disagree* to 3 = *strongly agree*). Total scores range from 0 to 30, with higher scores reflecting greater self-esteem. Studies using the RSES report test-retest reliabilities ranging from .72 to .90 (Robins, Hendin, & Trzesniewski, 2001) and internal consistency reliability coefficients (Cronbach’s alpha) ranging from .77 and .88 (Tomaka, Blascovich, Kelsey, & Leitten, 1993). The Cronbach’s alpha for RSES in the present study was calculated to be .89.

Locus of control. The *University of Washington Locus of Control Scale* (UWLCS), which was developed by the University of Washington’s Department of Sociology for the Beyond High School project (2000), was used to measure locus of control. The UWLCS is composed of 6-items (e.g., “When I make plans, I am almost certain I can make them work”) and items are rated on a 4-point Likert-type scale (1 = *strongly agree* to 4 = *strongly disagree*). Higher scores indicate greater internal locus of control. The Cronbach’s alpha for UWLCS in the present study was calculated to be .56.

Table 1

Demographics of Student Respondents (N=97)

Age	Gender	Year in School	Race/Ethnicity	Marital Status
Range = 16-63	42 (43%) Men	5 (5%) Freshmen	32 (33%) Black	86 (89%) Single
M = 26.48	55 (57%) Women	11 (11%) Sophomores	25 (26%) Asian	4 (4%) Married
SD = 9.75		29 (30%) Juniors	23 (24%) White	3 (3%) Divorced
		26 (27%) Seniors	16 (17%) Hispanic/ Latino	4 (4%) Cohabiting with a Significant Other
		14 (14%) Graduate Students	1 (1%) American Indian/Alaskan Native	
		11 (11%) STEM Graduates		
		1 (1%) Taking a Break from School		

Emotional stability. The emotional stability subscale of the *Ten-Item Personality Inventory* (TIPI), which was developed by Gosling, Rentfrow, and Swann (2003), was used to measure emotional stability. The TIPI is composed of ten items and five subscales encompassing the big-five personality types: (1) extraversion, (2) agreeableness, (3) conscientiousness, (4) emotional stability, and (5) openness to experience. Each subscale is comprised of two items. The two items that measure emotional stability are “I see myself as calm, emotionally stable” and “I see myself as anxious, easily upset.” Items are rated on a 7-point Likert-type scale (1 = *disagree strongly* to 7 = *agree strongly*). The TIPI demonstrates adequate levels of convergent and discriminant validity, and internal consistency reliability estimates (Cronbach’s alpha) for the subscales range from poor (.40) to acceptable (.73) (Gosling et al., 2003). The Cronbach’s alpha for emotional stability subscale of the TIPI in the present study was calculated to be .58.

Social support. The *Single Item Measure of Social Support* (SIMSS), which was developed by Blake and McKay (1986), was used to assess perceived social support. The item (“How many people do you have near that you can readily count on for real help in times of trouble or difficulty, such as watch over children or pets, give rides to hospital or store, or help if you are

sick?”) is rated on a 5-point rating scale. Response options are “0,” “1,” “2–5,” “6–9,” or “10 or more” representing low to high practical support. Blake and McKay (1986) reported a strong association between the SIMSS and a composite social support index. Corrigan, Sokol, and Rüscher (2013) also reported a strong correlation between the SIMSS and quality of life of people with serious mental illnesses ($r = .55, p < .001$).

Perceived stress. The *Perceived Stress Scale* (PSS-4), developed by Cohen, Kamarck, and Mermelstein (1983), was used to measure the degree to which participants find their lives unpredictable, uncontrollable, and overloading. The scale contains four items (e.g., “In the last month, how often have you felt that you were unable to control the important things in your life”) rated on a 5-point Likert-type scale (0 = *never* to 4 = *very often*). Scores range from 0 to 16, with higher scores reflecting higher perceived stress. The internal consistency reliability estimate Cronbach’s alpha of .72 was reported for a sample of smoking-cessation program participants (Cohen et al., 1983). The Cronbach’s alpha for PSS-4 in the present study was calculated to be .78.

Perceived stigma. Perceived stigma was measured using Green’s (2003) adapted version of the *Devaluation-Discrimination Scale* ([DDS]; Link, Cullen, Struening, Shrout, & Dohrenwend, 1989). This measure

Table 2

Technical Information about Scales

Variable	Scale	Number of Items (Example Item)	Likert Scale	Reliability and Validity	Cronbach's Alpha for Present Study
Generalized Self-Efficacy	General Self-Efficacy Scale ¹	10 ("Thanks to my resourcefulness, I can handle unforeseen situations")	1 = hardly true to 4 = exactly true	Test-retest reliability = .82 ² Cronbach's alphas = .79-.88 ³	.92
Self-Esteem	Rosenberg Self-Esteem Scale ⁴	10 ("I take a positive attitude toward myself")	0 = strongly disagree to 3 = strongly agree	Test-retest reliabilities = .72-.90 ⁵ Cronbach's alphas = .77-.88 ⁶	.89
Locus of Control	University of Washington Locus of Control Scale ⁷	6 ("When I make plans, I am almost certain I can make them work")	1 = strongly agree 4 = strongly disagree		.56
Emotional Stability	Ten-Item Personality Inventory (Emotional Stability Subscale) ⁸	2 ("I see myself as calm, emotionally stable")	1 = disagree strongly to 7 = agree strongly	Test-retest reliability = .70 ⁸ Cronbach's alpha = .73 ⁸	.58
Social Support	Single Item Measure of Social Support ⁹	1 ("How many people do you have near that you can readily count on for real help in times of trouble or difficulty, such as watch over children or pets, give rides to hospital or store, or help if you are sick?")	"0," "1," "2-5," "6-9," pr "10 or more"	Strong relationships with composite social support index ⁹ and quality of life ¹⁰	
Perceived Stress	Perceived Stress Scale -4 ¹¹	4 ("In the last month, how often have you felt that you were unable to control the important things in your life?")	0 = never to 4 = very often	Cronbach's alpha = .72 ¹¹	.78
Perceived Stigma	Green's ¹² adapted version of the Devaluation-Discrimination Scale ¹³	8 ("Most people in my community feel sad when they meet someone with a disability?")	1 = strongly disagree to 5 = strongly agree	Cronbach's alphas = .73 ¹⁴ -.78 ¹²	.75
Positive Affect	Positive Affect and Negative Affect Schedule ¹⁵	20 ("excited")	1 = very slight or not at all to 5 = extremely	Test-retest reliability = .68 ¹⁵ Cronbach's alpha = .88 ¹⁵	.96
Life satisfaction	Satisfaction with Life Scale ¹⁶	5 ("In most ways my life is close to my ideal?")	1 = strongly disagree to 7 = strongly agree	Test-retest reliability = .82 ¹⁶	.87

Note. ¹Schwarzer and Jerusalem (1995); ²Leganger, Kraft, & Rysamb (2000); ³Juszczyńska, Scholz & Schwarzer (2005); ⁴Rosenberg (1965); ⁵Robins, Hendin, & Trzesniewski (2001); ⁶Tomaka, Blascovich, Kelsey, & Letten (1993); ⁷University of Washington Beyond High School Project (2000); ⁸Gosling, Rentfrow, & Swann (2003); ⁹Blake & McKay (1986); ¹⁰Corrigan, Sokol, & Rusch (2013); ¹¹Cohen, Kamarck, & Mermelstein (1983); ¹²Green (2003); ¹³Jink, Cullen, Struening, Shrout, & Dohrenwend (1989); ¹⁴Green (2007); ¹⁵Watson, Clark, & Tellegen (1988); ¹⁶Diener, Emmons, Larsen, & Griffin (1985)

was used to assess perceived community-level stigma towards individuals with disabilities as a group rather than individual perceptions of personal acceptance. The scale contains eight items (e.g., “Most people in my community feel sad when they meet someone with a disability”) rated on a 5-point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). Scores range from 8 to 40, with higher scores reflecting higher levels of perceived disability stigma. Reliability estimates for the 8-item scale have been reported for a sample of university students with disabilities, with a Cronbach’s alpha of .73 (Green, 2007) and for mothers of children with disabilities, with a Cronbach’s alpha of .78 (Green, 2003), which are consistent with Link et al.’s (1989) original 13 item measure (Cronbach’s α = .76). The Cronbach’s alpha for the DSS in the present study was calculated to be .75.

Positive affect. The positive affect subscale of the *Positive Affect and Negative Affect Schedule* (PANAS), which was developed by Watson, Clark, & Tellegen (1988) was used to measure positive affect. It consists of 20 adjectives that describe mood, such as “excited,” “upset,” “enthusiastic,” and “irritated.” Respondents are asked to rate each item according to the extent that they feel that way, using a 5-point Likert-type scale (1 = *very slight or not at all* to 5 = *extremely*), within an identified time frame selected by the researcher. For purposes of this study, the time frame “General” (how respondents generally feel on the average) was used. Internal consistency estimates (Cronbach’s alpha) with the “General” time frame, have been reported as .88 for the positive affect scale. The test-retest reliability estimate over an eight-week interval was reported to be .68 for the positive affect scale. The Cronbach’s alpha for positive affect subscale in the present study was calculated to be .96.

Life satisfaction. The *Satisfaction with Life Scale* (SWLS), which was developed by Diener, Emmons, Larsen, and Griffin (1985), was used to measure life satisfaction. It is a unidimensional scale consisting of five items (e.g., “In most ways my life is close to my ideal”) rated on a 7-point Likert-type scale (1 = *strongly disagree* to 7 = *strongly agree*). Diener et al. reported a test–retest reliability coefficient of .82 over a 2-month period. In addition, the SWLS has been found to be associated with other measures of subjective well-being, such as the Rosenberg Self-Esteem Scale and the Affect Balance Scale (Diener et al., 1985). The Cronbach’s alpha for SWLS in the present study was calculated to be .87.

Data Analysis

First, in order to determine whether or not the four CSE traits load onto the higher order CSE construct, the dimensionality of the CSE construct was evaluated using exploratory and confirmatory factor analysis. Then, multiple regression analysis was used to test the proposed mediator model. The Statistical Package for the Social Sciences (SPSS) 18.0 was used to perform all analyses except for the model estimations in the factor analysis, which were conducted with AMOS version 18.0 (Arbuckle, 2009).

An *a priori* power analysis was conducted for the regression analysis with five predictor variables, power equal to .80, and an alpha level of .05. Results from this analysis using G*Power 3.1.4 (Faul, Erdfelder, Lang, & Buchner, 2007), a software tool for a general power analysis, suggested that a sample size of 92 would be needed to detect a medium effect size

($f^2 = .15$) (Cohen, 1988). In this study, a medium effect size was expected based on the medium effect sizes observed in CSE studies in the general population (e.g., Chang et al., 2012), as well as studies on the individual CSE traits and proposed mediators in individuals with disabilities (e.g., Smedema et al., 2010). The sample size obtained in the present study, 97, was deemed adequate for the analyses.

Results

Factor Analysis

The four CSE variables (self-esteem, general self-efficacy, emotional stability, and locus of control) were subjected to a principal components analysis. Two preliminary diagnostic analyses were conducted:

- Kaiser-Meyer-Olkin (KMO) analysis resulted in a sampling adequacy of .70, which is greater than the .50 cutoff.
- Bartlett’s Test of Sphericity ($\chi^2 = 87.579$, $df = 6$, $p < .001$) was significant, which also indicated that it was appropriate to proceed with the principal components analysis.

Both the Kaiser Guttman rule (eigenvalue greater than one) and Cattell’s *scree* test indicated a one-factor measurement structure. The one-factor solution accounted for 55% of the total variance. For a one-factor solution, no rotation of the factor structure is necessary, as it is already in its simplest form (Cattell, 1978). The results of the principal components analysis found the factor loadings for the CSE traits to be: self-esteem = .87, emotional stability = .77, general self-efficacy = .76, and locus of control = .54. These values indicate

the strength of the associations between the observed variables and the latent variable (i.e. CSE). The sum of these squared factor loadings, divided by the number of factors, is equal to the total variance accounted for by the model:

$$\frac{.872+.772+.762+.542}{4} = .55$$

A confirmatory factor analysis (CFA) was then conducted to examine the validity of the one-factor solution for the CSE construct. Following the guidelines of Weston, Gore, Chan and Catalano (2008), the goodness of fit of the measurement model was evaluated using the chi-square goodness-of-fit test, the goodness of fit index (GFI), and the comparative fit index (CFI). Models having a non-significant chi-square and GFI and CFI values greater than .95 are considered to have an acceptable fit. Additionally, a Root Mean Square Error of Approximation (RMSEA) value of less than .05 indicates close fit and a value of up to .08 indicates reasonable errors of approximation (Byrne, 2001). The CFA indicated that the one-factor model had an excellent fit with the data, with $\chi^2(2, N=97) = 1.10, p = .58$, n.s., GFI = .99, CFI = 1.00, RMSEA = .01. The CFA results strongly support the one-factor measurement structure of CSE.

Mediator Analysis

Baron and Kenny's (1986) procedure for mediation analysis was used in this study. The three steps involved in this procedure are: (1) regress the independent variable (IV) onto the dependent variable (DV) to show that it is possible that the two variables can be causally linked; (2) regress each mediator onto the IV to show they can also be linked; and (3) regress the IV and the mediators simultaneously onto the DV to determine if the IV is significantly associated with the DV when the mediators are statistically controlled. Step two can be done using bivariate correlations in the case of simple linear regression. In this study, a mediation model of the relationship between CSE (the IV) and life satisfaction (the DV) was tested. Based on research on people with disabilities, it was hypothesized that the association between CSE and life satisfaction in college students with disabilities would be mediated by social support, perceived stress, perceived stigma, and positive affect. The proposed model can be found in Figure 1.

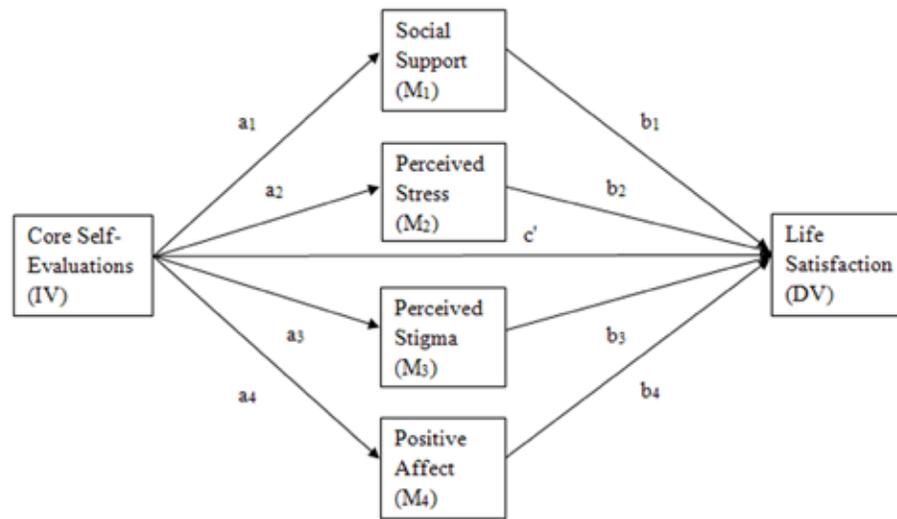
The results of the mediator analysis were as follows:

- Step 1. CSE was found to significantly predict life satisfaction ($\beta = .48, p < .001$), as shown in Table 3.
- Step 2. The associations between CSE and each of the mediators were assessed. As can be observed from the correlation matrix in Table 4, CSE is related to social support ($r = .19, p < .05$), perceived stress ($r = -.60, p < .001$), perceived disability stigma ($r = -.20, p < .05$), and positive affect ($r = .63, p < .001$).
- Step 3. A multiple regression with CSE and the four predicted mediator variables, shown in Table 5, indicated that after entering the four mediators in the regression model ($R^2 = .51, F(5, 91) = 18.71, p < .001$), the relationship between CSE and life satisfaction was reduced to almost zero (from $\beta = .48$ to $\beta = .01$).

These results indicate that the CSE-life satisfaction relationship is almost completely mediated by the mediator variables. Specifically, perceived stress ($\beta = -.44$), positive affect ($\beta = .28$), and social support ($\beta = .18$) are the three significant mediators in the regression model. The association between perceived stigma and life satisfaction was also reduced to almost zero after controlling for the effect of other variables in the model, indicating that perceived stigma does not mediate the relationship between CSE and life satisfaction. These findings suggest the relationship between CSE and life satisfaction can be explained by a lower level of stress and higher levels of positive affect and social support in a sample of college students with disabilities majoring in STEM fields. The revised model can be found in Figure 2.

Discussion

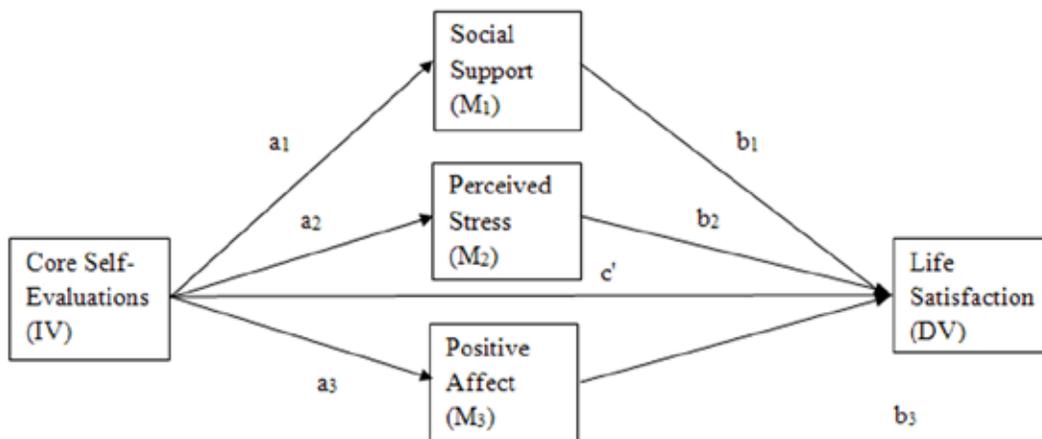
The results of this study support the use of the CSE construct in understanding subjective well-being/life satisfaction in college students with disabilities. Similar to research on CSE and the general population (e.g., Judge, Erez, Bono, & Thoresen, 2002), the four CSE traits loaded onto a higher order personality trait. This finding indicates that the global evaluations that college students with disabilities have about themselves may be more meaningful in understanding their life satisfaction than the four lower-order traits individually. Judge et al. (2002) argue that CSE is a broad, latent trait that is comprised of four traits and that an underlying psychological mechanism causes the traits to be related. Therefore, a high level of CSE is



Legend

IV = Independent Variable
 M_i = Mediator Variables
 DV = Dependent Variable
 a_i = Impact of IV on M_i
 b_i = Impact of M_i on DV
 c' = Direct Impact of IV on DV

Figure 1. The proposed mediation model of the effect of CSE on life satisfaction.



Legend

IV = Independent Variable
 M_i = Mediator Variables
 DV = Dependent Variable
 a_i = Impact of IV on M_i
 b_i = Impact of M_i on DV
 c' = Direct Impact of IV on DV

Figure 2. The final mediation model of the effect of CSE on life satisfaction.

Table 3

Mediator Analysis Step 1 - Simple Regression Analysis for Life Satisfaction (N = 97)

Variable	B	SE B	β
Core Self-Evaluations	2.25	.42	.48***

Note. $R^2=.23$, $F(1,95)=28.14$, $p<.001$

*** $p<.001$

Table 4

Mediator Analysis Step 2 - Correlation Matrix for all Variables (N=97)

	1	2	3	4	5	6
1. Life Satisfaction	.					
2. Core Self-Evaluations	.478***	.				
3. Social Support	.337**	.193*	.			
4. Perceived Stress	-.619***	-.600***	-.085	.		
5. Perceived Stigma	-.132	-.198*	-.126	.207*	.	
6. Positive Affect	.616***	.626***	.416***	-.585***	-.129	.

Note. * $p<.05$, ** $p<.01$, *** $p<.001$

Table 5

Mediator Analysis Step 3 - Multiple Regression Analysis (N = 97)

Variable	B	SE B	β
Core Self-Evaluation	.01	.67	.01
Social Support	1.22	.55	.18*
Perceived Stress	-.81	.19	-.44***
Perceived Stigma	.23	.90	.02
Positive Affect	.20	.08	.28**

Note. $R^2=.51$, $F(5,91)=18.71$, $p<.001$

* $p<.05$, ** $p<.01$, *** $p<.001$

manifested in persons with greater self-esteem, general self-efficacy, emotional stability, and an internal locus of control, and a high level of CSE is associated with higher levels of job performance, job satisfaction, and life satisfaction (Judge et al., 2002). Although CSE has not yet been directly studied related to academic outcomes in students with disabilities, the individual components of CSE (e.g. self-esteem, Blake & Rust, 2002; self-efficacy, Hen & Goroshit, 2014) have been found to be significantly related to academic outcomes such as GPA. Therefore, it is likely that improvements in CSE would also lead to improved academic performance in students with disabilities.

In addition, the mediator model tested in this study provides information about how CSE affects life satisfaction in college students with disabilities. According to the model, college students with disabilities with high CSE are more satisfied with their life because they are able to maintain a lower level of stress, experience a higher level of positive affect/mood, and sustain a higher level of social support. This finding is consistent with research on the relationship between CSE and stress, mood, and social support in the general population. For example, Kammeyer-Mueller et al. (2009), in their meta-analytic review, found that individuals in the general population with high CSE reported fewer perceived stressors and lower levels of strain than individuals with low CSE. This finding, in conjunction with the results of the present study, suggests that a high CSE may serve as a buffer against stress. The buffering effect of CSE may be particularly salient related to the population in the present study. College students with disabilities majoring in STEM fields may be at risk for experiencing significant levels of stress in their daily lives, as they must navigate life as an individual with a disability while simultaneously coping with the rigorous demands of a STEM curriculum. According to Judge and Kammeyer-Mueller (2011), individuals who see themselves as good and competent react more positively to academic and job responsibilities than those who evaluate themselves as less capable. Consequently, it may be important for people with disabilities, and those who experience additional stress due to their disabilities and life circumstances, to develop high levels of CSE in order to effectively manage all of the challenges that they may encounter in life.

In addition, positive affect was also found to mediate the relationship between CSE and life satisfaction in this study. This finding is consistent with research in the general population (Rey et al., 2012) that has found CSE to be related to mood. In addition, in their comprehensive review of studies on quality of life in persons with spinal cord injury, van Leeuwen et al. (2012) reported that 14

out of 17 associations between affect and quality of life were significant. As expected, in the present study, individuals with high CSE were found to experience a more positive mood state and, as a result, they exhibited greater levels of life satisfaction.

We also hypothesized that higher levels of CSE leads to higher levels of social support, and this is one of the reasons why people with higher levels of CSE are more satisfied with life. As expected, social support was found to mediate the relationship between CSE and life satisfaction after controlling for the effect of perceived stress, positive affect, and perceived stigma. This is consistent with previous research that shows that CSE is related to social support (Yan & Su, 2013) and that social support is related to well-being (Devereux et al., 2005; Kobau et al., 2013). Therefore, interventions that address the positive development of CSE in persons with disabilities may lead to increases in their social support networks, which in turn may result in increases to their subjective well-being.

Contrary to our expectations, although higher CSE was associated with lower perceived stigma, perceived stigma was not found to be a mediator of the relationship between CSE and life satisfaction. These results suggest that students with higher levels of CSE are more satisfied with their life because they are better equipped to cope with life stressors, are able to maintain a positive mood in dealing with the vicissitudes of life, and are able to build valuable social support networks. The ability to protect oneself from stigmatizing attitudes toward people with disabilities contributed to the other three mediators without being a significant mediator itself.

Implications for Future Research and Intervention Strategies

Research

Though considerable work has been done in the area of CSE, research on this topic involving persons with disabilities is in the very early stages. As the results of this study demonstrate, CSE holds a great deal of promise as a higher-order contributor to well-being in people with disabilities. Future research should further explore the relationship between CSE and well-being outcomes in persons with disabilities, including acceptance of disability, academic outcomes, job performance and job satisfaction, and quality of life. Moreover, the identification of additional variables that mediate and moderate the above relationship will help researchers determine the mechanisms through which CSE affects well-being. This will aid researchers and clinicians in identifying specific targets for intervention.

It will also be important for researchers to explore how CSE varies among people with and without disabilities, among persons with different types of disabilities, and among members of different cultural or ethnic groups in order to effectively develop and target interventions geared toward improving CSE. Additionally, research in the general population has demonstrated significant relationships between CSE and job satisfaction and other important employment-related variables such as commitment, motivation, productivity, and salary (Chang et al., 2012). Therefore, exploration of the relationship between CSE and long-term employment outcomes leading to the financial independence and community integration of people with disabilities will have important implications for rehabilitation and health services in the future.

Intervention Strategies

No intervention exists that directly addresses CSE in either people with disabilities or the general population. However, current psychosocial interventions related to the four CSE traits can be implemented to improve CSE in clinical rehabilitation practice. The four CSE traits are well studied in the rehabilitation literature and offer targets for intervention. For example, augmenting coping strategies can be helpful at addressing low self-esteem (Smedema et al., 2010). In addition, helping students pursue realistic and attainable goals and learn life skills such as self-advocacy (e.g., being able to arrange for one's own disability accommodations) may help to augment their sense of self-efficacy. Research indicates that the inclusion of all four CSE traits provides better predictive validity across a number of outcomes (Judge, 2009). Clinicians, including those who work in university counseling and disability centers, should therefore develop a multifaceted approach that integrates interventions and self-determination skills training related to all four traits in order to improve a student's overall CSE. In addition, university administrators should be sensitive to the increased stress that students majoring in STEM fields may experience and make additional counseling services or other academic support interventions available in order to minimize the impact of this stress. As mentioned above, further research should address the development of effective interventions geared toward improving the CSE of people with disabilities. Additionally, from a demand-side perspective, employers are looking for employees with disabilities who have positive personality characteristics such as CSE, as they may be more successful employees. Therefore, the importance of CSE in facilitating employment outcomes in students with disabilities once they graduate should be given due consideration.

A specific approach to the facilitation of adjustment in college students with disabilities, especially those in high-stress disciplines such as STEM, would be for instructors and university administrators to approach the educational environment from a universal design (UD) perspective. Historically, UD has been implemented primarily within physical environments. More recently, secondary and postsecondary institutions have expanded the concept as a means to develop more inclusive learning environments. UD in learning and instructional environments, formally, is a set of principles for curriculum development and educational practice that promotes equal access to learning for all students (Rose, Harbour, Johnston, Daley, & Abarbanell 2006). The idea behind UD is that learning is enhanced for all students when information is accessible in a variety of formats and perspectives. According to the Higher Education Opportunity Act of 2008, UD is

a scientifically valid framework for guiding pedagogical practice that: (a) provides flexibility in the ways information is presented, in the ways students respond or demonstrate knowledge and skills, and in the ways students are engaged; and (b) reduces barriers in instruction, provides appropriate accommodations, supports, and challenges, and maintains high achievement expectations for all students, including students with disabilities and students who are limited English proficient. (p. 12)

UD fosters a strengths-based, diversity-sensitive approach toward learning (Rose et al., 2006; Rose & Meyer, 2002; Rose, Meyer, & Hitchcock, 2005). While traditional forms of disability accommodations tend to focus on addressing the individual "problems" and weaknesses of students with disabilities, UD emphasizes the limitations of the learning environment in cultivating a barrier-free space for students with a wide range of abilities. UD approaches emphasize building flexibility and innovation into the curriculum related to student goals, teaching methods, educational materials, and student assessments. Should UD principles be implemented in classroom settings (e.g., materials presented in a variety of formats, group work that values different types of contributions), students with disabilities would be less reliant on disability accommodations, and therefore would feel more confident (i.e., self-efficacy) and in personal control (i.e., locus of control) of their educational experiences. This will, as a result, increase students' overall levels of CSE. These types of approaches will allow students with disabilities in challenging fields such as STEM to reach their maximum potential academically, improve

psychosocial variables such as stress, affect, and social support, such that they may be able to reach their ultimate levels of overall subjective well-being.

Another potential solution to the adjustment difficulties that students with disabilities may experience is for universities and stakeholders to take a more “positive” approach to the overall educational environment. Oades, Robinson, Green, and Spence (2011) discuss how universities strive to elicit excellence and peak performance within their settings. This approach may further disadvantage students with disabilities who may already require accommodations in order to achieve equal access in the classroom alongside their peers without disabilities. This subsequently may lead to the adjustment difficulties described above. In response to the high dropout rates and levels of psychological distress in college students in general, Oades and colleagues argue in favor of “Positive Education.” Positive education is defined as “the development of educational environments that enable the learner to engage in established curricula in addition to knowledge and skills to develop their own and others’ well-being” (p. 432). This “positive university” enables participants to emphasize their strengths in the achievement of their goals in order to increase well-being and decrease negative outcomes such as stress and depression. Campus life can be augmented in such a way that conditions that cultivate well-being are developed, including emphasizing the development of social relationships, fostering creativity, connecting curriculum with personal values, inducing positive mood in the classroom, and promoting flexibility and choice. Oades and colleagues (2011) present a multitude of well-being activities in five key contexts of the university (classroom, social, local community, faculty administration, and residential) with an emphasis on fostering positive emotions, engagement, relationships, meaning, and accomplishment. For example, within the classroom setting, positive emotions can be induced by using humorous anecdotes and music at the beginning of class. Within the social context, engagement can be developed by organizing mindfulness meditation groups. Please see Oades et al. (2011) for many more recommendations on how to implement a “positive” approach in university settings. Such an emphasis on well-being needs alongside of traditional teaching and research activities can enhance the college experience for students and staff, and lead to more positive outcomes. With respect to college students with disabilities, a greater emphasis on well-being and adjustment by universities may help students be able to navigate the challenges of adapting to life on a college campus in a more positive and less stressful way.

Limitations

There are several limitations to this study. First, this is one of the first studies to apply the concept of CSE to disability and, as a result, it is quite exploratory in nature. In addition, a convenience sampling method was used to collect data from college students from one urban university on the east coast of the United States. As the participants of the study were quite high functioning in that they were all majoring in STEM fields, the results of the study may not generalize to the greater population of students with disabilities. In addition, as mentioned above, the rigorous demands of the STEM coursework may have led participants to experience higher levels of stress than other disability groups. This may have affected the participants’ overall psychosocial adjustment and life satisfaction. Additionally, it was not possible to differentiate the impact of the demands of the student’s disability versus the demands of a STEM major. Further, self-report surveys were used to measure the variables in the study. As self-report measures are susceptible to response and social desirability bias, the ability to assess an individual’s true response to the measures may have been limited. Finally, Maxwell, Cole, and Mitchell (2011) demonstrated that cross-sectional approaches to mediation could lead to substantially biased estimates of longitudinal parameters in the case of both partial and complete mediation. Future CSE and disability research should consider the use of other possible mediation models (e.g., longitudinal design) beyond simple cross-sectional models.

Conclusion

Although research on CSE in people with disabilities is in the early stages, this study suggests that it has great potential as a global positive contributor to subjective well-being in people with disabilities. The results of this study showed that the four CSE traits all loaded onto the higher-order CSE variable and that the relationship between CSE and life satisfaction was completely mediated by perceived stress, affect, and social support. This suggests that CSE affects life satisfaction by decreasing stress, improving mood, and fostering social support. Further research on CSE and disability will help identify the most important targets for and methods of campus-based services, in order to help individuals with disabilities achieve the highest levels of CSE and, ultimately, subjective well-being possible.

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Employment Support Services for Students with Intellectual and Developmental Disabilities Attending Postsecondary Education Programs

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Abstract

Our purpose in this study is to offer a more comprehensive understanding of how students with intellectual and developmental disabilities attending postsecondary education programs are prepared for competitive employment. Data collected through a national survey indicate that the vocational-related support services offered frequently by postsecondary education programs are: career or vocational counseling, person-centered planning, career or vocational assessment, career exploration, volunteering, internships or co-ops, natural supports, instruction on transitioning to paid employment and between paid jobs, and self-advocacy. The number of students receiving work-based experiences was larger in programs affiliated with a four-year institution. No differences exist in the provision of work-based experiences, workplace supports, and connections with adult agencies based on location. We discuss implications for practice and future research.

Keywords: Transition, postsecondary education, intellectual and developmental disability, employment

Policy changes and parental advocacy over the last few decades have made postsecondary education (PSE) a more feasible option for students with intellectual and developmental disabilities ([IDD]; Grigal & Hart, 2010; Grigal, Hart, Smith, Domin, & Sulewski, 2013; Kleinert, Jones, Sheppard-Jones, Harp, & Harrison, 2012). Students with IDD who attend PSE are more likely to achieve academic success, to expand their social skills, and to become active and valued members of their community (Griffin, Summer, McMillan, Day, & Hodapp, 2012; Stodden & Mruzek, 2010). Two of the most significant outcomes for students with IDD attending PSE consist of enhanced vocational experiences and increased opportunities for integrated competitive employment leading to better wages, enhanced personal independence, economic self-sufficiency, and self-determination (Migliore, Butterworth, & Hart, 2009; Ross, Marcell, Williams,

& Carlson, 2014; Smith, Grigal, & Sulewski, 2013; Wehman & Scott, 2013).

Many students with IDD consider PSE a critical avenue to pursue in accessing competitive employment and increasing quality of life. Specifically, students with IDD attending PSE programs perceive their college experience as extremely helpful in earning a competitive job, gaining more independence, and improving social skills (Eisenman, Farley-Ripple, Cullane, & Freedman, 2014; Moore & Schelling, 2015). For example, vocational related-support services such as career specific courses, paid on-the-job training in a student's area of interest, vocational training, career preparation (e.g., job interviews, resume building, job applications, work culture and ethics), and assistance from instructors and transition specialists are several of students' self-reported supports needed to achieve a successful post-graduation transition to a competitive

job (Ankeny & Lehmann, 2010; Ross et al., 2014). In addition, the opportunities to participate in a supportive environment and collaborate with peers who have similar interests are two aspects of college experience highly valued by students with IDD attending PSE programs (Kubiak, 2015).

The existing literature on PSE programs for students with IDD has focused on various characteristics of such programs including the model of services (e.g., substantially separate model, mixed program model, and individualized support model; Hart, Grigal, Sax, Martinez, & Will, 2006; McEathron, Beuhring, Maynard, & Mavis, 2013), the affiliation with other academic institutions (e.g., vocational and technical schools, two-year community colleges, or four-year universities; Griffin et al., 2012; Hart & Grigal, 2009; Papay & Bambara, 2011), the program development process (Thoma, 2013), the admission requirements (e.g., certificate of attendance from high school, and level of safety skills; Grigal, Hart, & Weir, 2012), the type of funding (e.g., private payments, Vocational Rehabilitation (VR) offices, and scholarships; Grigal et al., 2012), the accommodations received by students (e.g., academic, enrollment, and assistive technology; Stodden, Whelley, Chang, & Harding, 2001), and the assessment of social networks of students with IDD (Eisenman et al., 2013).

The findings of these studies indicate that a large number of PSE programs for students with IDD focus more on independent living, vocational skill development, and employment and to a lesser extent on academics and social skills development (Grigal et al., 2012; Grigal, Hart, & Weir, 2013; Papay & Bambara, 2011). Regardless of their focus and mission, many PSE programs encounter similar challenges in providing support services to students with IDD. Examples of these challenges include university administration systems, collaborations with community partners, and ongoing program development (Thoma, 2013). The above-mentioned studies made a substantial contribution to our understanding of various characteristics, the organization, and the functioning of existing PSE programs across the nation. However, at least three features warrant further investigation.

One feature refers to the number of students with IDD receiving vocational-related support services when attending PSE programs. Although the findings in published studies provide some insight into vocational-related support services offered to students with disabilities enrolled in PSE programs, one could note the paucity of information related to students with IDD. For example, Stodden et al. (2001) examined several aspects related to the provision of vocational-related

support services offered to students with disabilities in PSE settings. Specifically, the authors examined the nature and range of educational supports available to students including technical and assistive devices. However, they did not report their findings by type of disability, and therefore no information is available on how many students with IDD were included in their sample and how many of them received vocational-related support services.

McEathron et al. (2013) conducted a study to identify key characteristics and supports offered by PSE programs to students with IDD. They examined 21 PSE programs sampling the range of currently existing programs (e.g., two-year community colleges, four-year institutions, dual enrollment programs, and Transition and Postsecondary Programs for Students with Intellectual Disability [TPSID] programs). The authors first conducted interviews with Disability Service providers and program directors, and then administered an online survey based on the taxonomy resulted from interviews to assess each program's domains including organizational, admissions, support, and pedagogical. Their findings indicate that all programs addressed the vocational domain by providing vocational coursework and internships, but the authors did not provide detailed information on the type of vocational-related support services offered to students to achieve their vocational goals. Their results also suggest that only a few programs collaborated with external agencies to provide career development and post-graduation job placement.

A second feature that warrants further investigation is the type of vocational-related support services received by students with IDD attending PSE programs. Researchers examined various vocational-related support services offered to students with IDD such as the type of employment supports, paid and unpaid employment opportunities, and the location of job opportunities (Grigal et al., 2012). For example, in the annual report for the TPSID, Grigal and her colleagues (2013) provide additional information on a larger spectrum of vocational-related services and practices (e.g., workplace support). However, the small size (i.e., 27) and the specific nature of the sample may limit the generalizability of findings to all PSE programs in the U.S. Although the above-mentioned studies and reports provide emerging evidence on several vocational-related practices and supports implemented by PSE programs serving students with IDD, additional information is needed on other aspects that are critical to vocational preparation such as work-based experiences, vocational-related services and training, supports aimed at promoting transition from PSE to competitive employment, student awareness of

different adult agencies and their services, and efforts to connect students with IDD with adult agencies.

Gaining a better understanding of the availability and nature of vocational-related support services available to students with IDD enrolled in PSE might be a crucial step in facilitating the attainment of positive vocational outcomes and the effective transition to competitive employment. Moreover, students with IDD who are connected with adult agencies and have the opportunity to receive a variety of vocational-related support services including work-based experiences, workplace supports, vocational-related services, and post-graduation assistance are better equipped to compete with typical candidates for a specific job when entering the competitive employment market and successfully retain it. For example, research shows that PSE program graduates need various levels of support from job coaches ranging from assistance provided on a daily basis for some graduates to assistance provided weekly or once a month for others (Ross et al., 2014). Thus, it is extremely important to develop collaborations and connect students with adult agencies that would be able to provide post-graduation support and facilitate a successful transition to employment and independent living.

A third feature in need of further investigation refers to differences that may exist in the provision of vocational-related support services as a function of the type of PSE institution, the size of the PSE program offered by that institution, and the number of years the PSE program has been in existence. It is possible that larger PSE institutions located in urban or suburban settings may be able to accommodate a large number of students with IDD and may have access to better resources to provide a wide range of vocational-related services compared to smaller PSE institutions located in rural areas. We were not able to locate any studies that provide empirical support on how vocational-related support services may vary across different PSE programs offered by institutions situated in various locations across the country.

Therefore, we proposed to extend the current literature on vocational-related support services by offering a more comprehensive understanding of how PSE programs prepare students with IDD for competitive employment. First, we examined the demographic characteristics of PSE programs serving students with IDD across the nation. Second, we examined the vocational-related support services including vocational-related training and collaboration with adult agencies implemented by PSE programs to prepare students for competitive employment. Third, we assessed whether the provision of vocational-related support services

differs as a function of type of institution the program was affiliated with, the size of the program, and the length of time the program has been in existence. Finally, we collected information on various challenges encountered by PSE programs in preparing students with IDD for competitive employment.

Method

Participants

The targeted respondents for this survey were the directors and coordinators of PSE programs serving students with IDD. First, we generated a list with contact information for directors and program coordinators of the PSE programs from the database created by the Institute for Community Inclusion (ICI) at the University of Massachusetts-Boston and published on the Think College website (www.thinkcollege.net). This database provides the most recent information on the PSE programs for students with IDD in the U.S. Duplicate programs, those located outside the U.S., and those for which no email address was listed were eliminated from the list. The final sample included 206 programs, each represented by a director or a coordinator.

Instrument and Data Collection

Development. The survey was designed to collect information on services and supports implemented by PSE programs serving students with IDD to prepare them for competitive employment. We created an online survey using Survey Monkey. The questions included in the survey were created based on a review of existing literature on PSE programs and vocational preparation for students with IDD. Two university faculty members with expertise in conducting national surveys of PSE programs for students with IDD reviewed the survey and provided feedback on both the content and the format of the survey in relation to its purpose. We piloted the revised survey with four professionals (i.e., PSE program coordinators and faculty members) who were asked to provide feedback on clarity of the items, wording and relevance of items, comprehensiveness, and completion time; this resulted in minimal revisions. The four professionals were not included in the final sample population of the study. The final version of the survey consisted of 16 items grouped in four sections: eligibility criteria, demographic information, support services, and program effectiveness. The program effectiveness results are not reported in this study. The format of responses to questions included yes and no responses, multiple choices, open-ended responses, and Likert-type responses.

Implementation and response rate. We administered the survey between October 15th and November 27th, 2013. An invitation email was sent to 206 potential participants. The email contained a unique link to the survey, a cover letter that outlined the purpose of the survey, and the first author's contact information. The participants were informed that the survey was confidential and the responses would be reported only in an aggregate form. After the first round of survey dissemination, we eliminated 22 participants from the final list due to an email address error or a message from the participants who reported that they are no longer with the program and did not provide an alternative email. Additionally, we eliminated 18 participants from the final list because they did not meet the selection criteria of the study (the program did not serve students with IDD or did not provide employment-related supports). Thus, the final list included 166 participants. Two follow-up emails were sent to increase the response rate. We received complete surveys from 66 of the 166 participants for a response rate of 40%.

Data Analysis

Frequencies, means, and standard deviations were used to describe demographic variables, support services, collaboration with other agencies, and challenges encountered by these programs in preparing students with IDD for employment. Independent sample t-tests were conducted to determine if the scores on the five variables of interest (i.e., vocational-related services, work-based experiences, workplace-support services, training on employment-related contents, and connection with adult agencies) were different among programs based on the length of time the program has been in existence and the type of institution. We conducted an analysis of variance (ANOVA) to assess the extent to which scores on vocational-related services, work-based experiences, workplace-supports, training on employment-related contents, and linkage with adult agencies were different among institutions based on their location. If ANOVA results indicated a significant mean difference across programs, a Tukey HSD multiple comparisons test was conducted to determine which programs were different. Finally, we used a content analysis to examine responses to the open-ended questions included in the survey. Although 66 participants responded to this survey, not all of the participants responded to each question included in the survey. Considering the small sample size, we reported results for all available respondents for each analysis.

Results

Program Demographic Characteristics

Table 1 displays the demographic characteristics of the PSE programs ($n=62$) that responded to this section of the survey. Most of the programs (32.8%) have been in existence for three years or less. Most of the programs (31.3%) served between 11 and 20 students. The primary type of institution was a four-year college or university (61.2%). The majority of the PSE programs were located in a urban (32.8%) or rural area (31.3%).

Vocational-related Support Services

Table 2 indicates the number of students receiving vocational-related services, work-based experiences, work-place support services, and training on selected vocational-related content. The support services provided most often to PSE students with IDD consist of career or vocational counseling, person-centered planning, career or vocational assessment, career exploration, volunteering, internships or co-ops, natural supports (e.g., coworker, supervisor), instruction on transition skills from training to paid employment and between paid jobs, and self-advocacy. To facilitate the provision of employment-related services to their students, most of the programs collaborated with businesses in their area (75%) and with the state VR agencies (74.5%).

Table 3 presents the adult agencies that students with IDD are linked with throughout their enrollment in the PSE program. Results indicate that the agencies with which most students are connected consist of state VR offices, developmental disability agencies, and local social security agencies. Work incentive program assistants, one-stop career centers, and local community rehabilitation providers received the lowest mean scores indicating that PSE programs connect a very limited number of students with these agencies.

Service Provision by Type of Institution, Size, and Length of Program Existence

The differences in the number of students receiving each service were examined as a function of type of institution (i.e., two-year community college, and four-year university) and length of time the program has been in existence (i.e., 3 years or less, and over 3 years). Work-based experiences ($t(53)=2.81, p<.01$) and training on selected vocational-related contents ($t(53)=2.03, p<.05$) differed between institution type with four-year universities offering these services to a larger number of students than the two-year community colleges. No differences in work-place support services

Table 1

Demographic Characteristics of the PSE Programs

Program Characteristic	Number (<i>n</i>)	Percentage (%) (<i>n</i> =62)
Length of existence of PSE program (in years)		
0-3	22	32.8
4-6	12	17.9
7-9	14	20.9
10-12	3	4.5
12+	11	16.4
Number of students enrolled in the program		
1-10	15	22.4
11-20	21	31.3
21-40	19	28.4
40+	7	10.4
Type of institution offering the program		
2-year college/community college	15	22.4
4-year college/university	41	61.2
Vocational, business, or technical school	2	3
Other	4	6
Location of institution		
Urban	22	32.8
Suburban	17	25.4
Rural or small town	21	31.3
Multiple campuses	2	3

and post-school supports were found between four-year universities and two-year community colleges.

Next, the difference in the number of students receiving vocational-related services, work-based experiences, workplace-support services, training on selected vocational-related contents, and connecting students with adult agencies were examined as a function of the location of institution (i.e., urban, suburban, rural or small town) offering the program. The programs that reported multiple campuses as their location were not included in this analysis because of the limited number (i.e., 2) of such programs. ANOVA results indicated a significant difference on vocational-related services training between urban and suburban programs, $F(2,57)=3.00, p<.05$. To examine the difference between urban and suburban programs in providing collateral employment skills instruction, we conducted a post-hoc analysis using Turkey's HSD. Data revealed that the difference between the two programs was significant suggesting the number of students receiving instruction on training on selected vocational-related services was larger in programs located in an urban setting

compared to programs located in a suburban setting. The ANOVA results indicated non-significant differences for vocational-related services $F(2,57) = 1.94, p < 0.15$, work-based experiences $F(2,56) = 0.61, p < 0.54$, workplace-support services $F(2,57) = 0.52, p < 0.59$, and linkage of students with adult agencies $F(2,54) = 1.87, p < 0.16$, suggesting no difference between the number of students receiving such services and supports in urban programs compared to suburban and rural or small town programs.

Challenges in Providing Vocational Support to Students with IDD

A content analysis was used to analyze the responses from the open-ended questions. The response rate for the open-ended questions ranged from 74.6% ($n=47$) for identifying challenges faced by the program in preparing students for competitive employment to 66.6% ($n=42$) for indicating changes necessary to achieve better vocational-related outcomes (see Table 4). The main challenges encountered when preparing students with IDD for competitive employment con-

Table 2

Percentage of PSE Students with IDD Receiving Vocational-related Support Services

	None	Some	Most	All
Vocational-related services				
Career/vocational assessment	6.1	13.6	18.2	62.1
Career/vocational counseling	0.0	10.6	13.6	75.8
Person-centered planning	3.0	10.6	6.1	80.3
Job placement services	15.2	12.1	25.8	47.0
Transportation ON campus	40.9	7.6	7.6	43.9
Transportation OFF campus	36.4	12.1	13.6	37.9
Work-based experiences				
Career exploration	12.1	15.2	13.6	59.1
Job shadowing	21.2	27.3	12.1	39.4
Volunteering	12.1	18.2	16.7	53.0
Service learning	18.2	25.8	16.7	39.4
Internships/Co-ops	12.1	13.6	16.7	57.6
Apprenticeships	43.9	21.2	18.2	16.7
Paid employment ON campus	47.7	38.5	9.2	4.6
Paid employment OFF campus	24.2	42.4	27.3	6.1
Workplace-support services				
Job coach	19.7	27.3	19.7	33.3
Natural supports	1.5	15.2	24.2	59.1
Visual supports	7.6	60.6	19.7	12.1
Assistive technology	30.3	59.1	6.1	4.5
Training on vocational-related services				
Disability benefits	22.7	30.3	24.2	22.7
Work incentives	43.9	25.8	10.6	19.7
Transition from training to paid employment	12.1	16.7	21.2	50.0
Transition between jobs	13.6	30.3	12.1	43.9
Self-advocacy	0.0	6.1	15.2	78.8

Table 3

Percentage of PSE Students Connected with Adult Agencies

	None	Some	Most	All
State Vocational Rehabilitation	6.1	33.3	36.4	24.2
State Developmental Disability	12.5	43.8	28.1	15.6
Local Community Rehabilitation Providers	29.7	46.9	18.8	4.7
Local Social Security	10.8	43.1	33.8	12.3
Work Incentives Program Assistants	45.3	40.6	10.9	3.1
One-Stop Career Center	41.3	38.1	11.1	9.5
Social Services	20.0	47.7	16.9	15.4
Counseling and Mental Health Services	10.6	69.7	15.2	4.5
Community Recreation Programs	12.1	48.5	22.7	16.7

Table 4

Challenges in Preparing Students for Employment as Identified by PSE Programs

	Number (<i>n</i>)	Percentage (%) (<i>n</i> =35)
Resources		
Staff	5	12.2%
Time	4	11.4%
Measurement tools	3	8.5%
Implementation		
Consistency	5	12.2%
Accuracy	4	11.4%
Objectivity	2	5.7%
Expertise	4	11.4%
Student		
Student skill level	1	2.8%
Responding to follow-up surveys	6	17.1%
Other		
Variation in data collection requirements across agencies	1	2.8%

Table 5

The Potential Role of VR Offices in Providing Vocational-Related Support Services to Students with IDD

Type of Service	Provider		
	PSE Program	VR Office	Both
Vocational-related services			
Career assessment			x
Career counseling			x
Person-centered planning	x		
Job placement			x
Transportation ON campus	x		
Transportation OFF campus		x	
Support services			
Job coaching		x	
Visual support			x
Assistive technology			x
Training			
Disability benefits under Social Security			x
Work Incentives			x
Transition from training to paid employment			x
Transition between jobs			x
Self-advocacy			x
Connection and referral to adult agencies			
Follow-up post-graduation			x

Note. PSE=postsecondary education; VR=vocational rehabilitation

sisted of limited financial and human resources, and students and family-related aspects. Respondents also indicated that increasing the number of off-campus paid jobs, developing collaboration with off-campus agencies including state VR offices, providing more support for students in off-campus placements, and identifying a better match between student skills and interests are necessary to improve employment-related outcomes of students with IDD.

Discussion

Our purposes in this study were to: (a) examine the demographic characteristics of PSE programs serving students with IDD across the nation; (b) evaluate vocational-related support services including training and the extent to which students are connected with adult agencies; (c) assess whether the provision of

vocational-related support services differs as a function of type of institution the program was affiliated with, the size of the program, and the length of time the program has been in existence; and (d) collect information on various challenges encountered by PSE programs in preparing students with IDD for competitive employment.

Program Demographic Characteristics

The findings of our study indicate that the majority of PSE programs serving students with IDD were in existence for six years or less. One significant finding is the high percentage of programs created in the last several years, which may be an indicator of recent legislative efforts designed to increase PSE opportunities for students with IDD (e.g., HEOA, 2008; [TIPSIDs] Grigal et al., 2015). A large majority of the existing PSE's are located on a four-year university campus as

reported in previous research (Grigal, Hart, & Weir, 2011; Grigal et al., 2012). Most of these institutions are located in urban and rural areas and a smaller number in suburban areas. Although the results document the demographic characteristics of PSE programs included in this study, one has to be aware that new programs continue to appear across the country and therefore the pattern of demographic characteristics may change with every new program. Moreover, additional variables may need to be considered when examining PSE program characteristics. Examples of such variables include the discrepancy between the type of institution (e.g., two- and four-year institutions) housing the PSE program and the duration of the program, the lack of a systematic classification of existing programs, and the wide variety of program goals, admission requirements, and organization (McEathron et al., 2013).

Vocational-related Support Services

The results of the current study suggest that the majority of students with IDD receive career-vocational assessment, career counseling, and person-centered planning services. These findings are not surprising considering that such services constitute the prelude to a better match between students' abilities, interests, work experiences and, at the same time, are recommended evidence-based practices for program development (Grigal & Hart, 2010; McEathron et al., 2013). Embedding the above-mentioned services in program development has the potential to provide relevant and meaningful work experiences to students, and consequently increase the likelihood of success and effective functioning in the workplace.

Evidence-based practices suggest that paid employment is one of the strongest predictors of post-graduation employment (Grigal & Deschamps, 2012; Luecking, 2010; Test et al., 2009). Moreover, students with IDD attending PSE programs consider their participation in paid on-the-job training as one of the most important aspects of vocational training that allows them to be much better prepared for attaining successful post-graduation employment (Moore & Schelling, 2015). The findings of our study indicate, however, that a very limited number of students with IDD receive work-based experiences in the form of on- or off-campus paid employment. Because better employment outcomes represent a critical aspect of vocational preparation for both the PSE program and the students, programs may want to concentrate their efforts in implementing effective strategies that could overcome various challenges associated with providing paid employment experiences to students with IDD (Griffin, Hamis, & Geary, 2007). One such strategy

may consist of developing collaborative partnerships with local businesses or employers that can lead to an expansion of resources or employment opportunities for students (Carter et al., 2009).

Our data also reveal that many PSE programs offer limited supports to students when at the workplace and rely very often on natural supports such as coworkers or supervisors. Although relying on natural supports is usually an effective practice, PSE personnel have to be cautious when developing programs consisting only of natural supports without assistance from specialized personnel such as transition specialists or job coaches. Relying solely on natural supports may impede the development of friendships between students with IDD and their coworkers. Many individuals with IDD report that having the opportunity to interact and develop friendships with coworkers increases their motivation to work and that feeling judged or bullied by coworkers prevent them from going to work and retaining a job (Andrews & Rose, 2010). Therefore, it is important for PSE personnel to implement a balanced program in terms of the amount of assistance received by students with IDD from different stakeholders to support them on the job.

The results further indicate that a limited number of students receive workplace supports in the form of assistive technology despite the fact that empirical evidence indicates a positive correlation between the use of assistive technology and employment outcomes (Wehmeyer et al., 2006). Considering the role and availability of technology, PSE programs should consider expanding its use from academic areas to work settings. One approach in providing assistive technology to students with IDD in the workplace may relate to developing collaborative partnerships between PSE programs and employers prior to placing a student at a specific site. Research suggests that employers are usually open to the use of assistive technology in the workplace and some already have it in place for their employees (Greenan, Wu, & Black, 2002; Luecking & Mooney, 2002). A second approach may relate to increasing employers' awareness of the benefits of using assistive technology and ease their fear of high costs associated with the use of technology (Patterson & Cavanaugh, 2013). A third approach consists of involving students with IDD in this process by developing their self-awareness and self-advocacy skills.

An important finding of this study relates to the fact that a large number of programs seem to offer training on self-advocacy to all students with IDD enrolled in the program. Self-advocacy is a critical skill in college and at the workplace. Students with IDD not only have to understand their rights and responsibilities but also

to use them in various situations such as documenting their disability and requesting accommodations or VR services (Luckner & Becker, 2013). The majority of PSE programs offered instruction both on transitioning from training to paid employment and on transitioning between different jobs. For students with IDD, postsecondary education should be an opportunity to explore and experience different aspects associated not only with getting a new job but also with transitioning from one job to another job, or dealing with losing a job (Grigal & Hart, 2010). Numerous opportunities to practice the self-advocacy and transition skills in natural environments increase the likelihood of skill generalization and maintenance, thus empowering students to successfully manage transitions in the future.

Service Provision by Type of Institution, Size, and Length of Program Existence

Our results indicate that a larger number of students receive work-based experiences and training on selected vocational-related content at four-year universities compared to two-year community colleges. These findings extend to the number of students receiving training on disability benefits and work incentives. For example, data reveal that the number of students receiving training on specific vocational-related services was larger in programs located in an urban setting compared to programs located in a suburban setting. One potential explanation for this finding may be related to the available resources allocated to such training by programs hosted at four-year universities or situated in an urban setting. Specifically, programs offered at four-year universities or located in urban settings may have the opportunity to allocate more human resources by developing partnerships with outside agencies which might have qualified personnel to provide specialized training on the above-mentioned services. For programs located in suburban areas such partnerships may not be readily available. Regardless of the availability or unavailability of qualified personnel to provide training on specific vocational-related services, being equipped with knowledge and skills in the above-mentioned services might be critical in increasing students' effectiveness in accessing Supplemental Security Income (SSI), maintaining housing, managing finances, or dealing with marital issues (Grigal & Hart, 2010).

The results of this study indicate that many students with IDD receive VR services during their enrollment in PSE programs. These findings are encouraging taking into account that students who receive VR services (e.g., assistance with life skills, career assessment, career counseling, job coaching, or job placement

post-graduation) are more likely to obtain competitive employment, complete their job responsibilities successfully, and earn higher weekly wages than those who do not receive services (Gilmore, Schuster, Zafft, & Hart, 2001; McEathron et al., 2013; Smith et al., 2013). Although state VR offices play a critical role in providing assistance to students with IDD enrolled in PSE programs, previous studies show that (a) students with IDD who receive VR services are less likely to attend PSE compared to students with other types of disabilities and (b) there is no trend between 2006-2010 at the national level in the number of students with IDD who received both VR services and PSE (Grigal, Migliore, & Hart, 2014). In addition, the number of students with IDD who enrolled in PSE programs and received VR services varies greatly across states with some states reporting increases in the number of students pursuing PSE and other states reporting decreases in PSE outcomes (Grigal et al., 2014).

The lack of research on the role of state VR offices in supporting students with IDD in PSE programs combined with little or no federal and state guidance on provision of VR services to this population facilitates a wide variety and no consensus regarding the type of support services and effective practices that are or should be implemented by VR offices to assist students with IDD interested in pursuing a PSE. For example, Grigal et al. (2014) found that a limited number of states developed written agreements to delineate the type and provision of support services offered by VR offices to students with IDD interested in pursuing PSE whereas in other states supporting students with IDD in PSE is not a priority for VR offices and no clear guidelines exist regarding the provision of support services for this population.

The purpose of our study was not to examine the vocational-related support services offered by VR offices to students with IDD enrolled in PSE programs; however, we would like to provide some suggestions on the potential role of VR offices to promote PSE for students with IDD by providing support services to facilitate students' successful completion of the program and their transition to employment and independent living (see Table 5). Support services provided by VR offices in collaboration with PSE programs to assist students with IDD in pursuing competitive employment are extremely important taking into account that students perceive being supported by college staff, transition specialists, and peers throughout the entire employment process as one of the motivating factors in obtaining and retaining a job (Andrews & Rose, 2010).

An important finding of our study relates to connecting students with IDD with adult agencies. Our

data indicate that although a large number of students receive VR services, only a limited number of students enrolled in PSE programs are connected with adult agencies such as state developmental disability agencies, local community rehabilitation providers, work incentives program assistants, or social services. No statistically significant difference exists between the number of students being connected with adult agencies in urban programs compared to suburban and rural and small town programs. Being connected with adult agencies is an important aspect of transition to employment and independent living after graduation (Noonan, Morningstar, & Gaumer-Erickson, 2008), and thus it is critical that students are aware of these agencies and know how to access different services offered by adult agencies as needed.

Challenges in Providing Vocational Support to Students with IDD

The program directors and coordinators surveyed in this study indicated that some of the challenges encountered in preparing students with IDD for competitive employment refer to lack of paid jobs in their area, a limited number of work hours (i.e., 2-6) per week available to students, and difficulties with transportation to and from work place. Additional challenges indicated by the program directors and coordinators included limited time and staff required to provide quality instruction and support to students at their job placement. Grigal and Hart (2010) argued that these particular challenges, while widely acknowledged as being connected with negative employment outcomes, continue to be areas with no significant push for improvement. The program coordinators also indicated difficulties in establishing relationships with VR offices, community employers and agencies, ensuring adequate preparation of staff and allocating a work load that will expand the time faculty and staff can allocate in developing these relationships may help addressing these particular challenges.

Despite the fact that VR offices play an important role in supporting students with IDD attending PSE programs, many respondents surveyed in our study indicated that sometimes establishing collaborative partnerships with these offices is extremely difficult. Challenges encountered by PSE programs in collaborating with VR offices consist of the amount of time necessary to connect with VR personnel, lack of clear state regulations regarding the provision of services to students with IDD in PSE, an inappropriate referral system used by VR offices, no interest from VR personnel to develop collaborative partnerships with PSE personnel, and technical issues with the VR system regarding payment for

services. Several of the challenges identified in our study such as lack of state guidance regarding the provision of VR services to students with IDD in postsecondary education and issues related to payment for services are consistent with findings of previous studies (Grigal et al., 2014; Raue & Lewis, 2011).

Additionally, the results of the content analysis also suggest that respondents indicated student characteristics as obstacles in preparing students for competitive employment. These characteristics consisted of students' skill level, motivation, responsibility and accountability, difficulty in identifying realistic employment goals, problem behavior, and attendance to work. For example, some respondents indicated that it is extremely difficult to "set realistic employment goals for students" and to "increase their motivation to go to work and complete tasks." Respondents noted that family variables such as expectations and the lack of information about the impact of having a paid job on the social security benefits represent a barrier in preparing students for the workforce. Specifically, one respondent stated that "some parents know that their child will never have a paid job and they are ok with that" whereas another respondent reported that "the fear of losing the social security income determines parents to advise their child not to have a paid job." Different state and agency regulations and employers' expectations regarding student performance add an additional challenge to preparing the students with IDD for competitive employment.

Implications for Practice

The findings of our study have several practical implications for practitioners and Disability Service providers working with students with IDD enrolled in PSE programs. First, a large number of students received vocational-related support services (e.g., career counseling, person-centered planning, career or vocational assessment, and career exploration) but fewer students had the opportunity to participate in work-based experiences such as paid or un-paid employment. Although training on vocational skills is extremely important and represents a prerequisite for entering the competitive job market, it is important to note that without the opportunity to practice the newly acquired skills in the natural environment students with IDD may not be able to transfer and maintain these skills, and therefore may not be successful in obtaining a job post-graduation. Thus, PSE personnel should continue to explore potential avenues that would lead to increased opportunities for work-based experiences during students' enrollment in the program.

Second, students who have the opportunity to participate in work-based experiences during enrollment in the PSE program are provided with limited supports at the workplace and rely mostly on coworkers and supervisors to assist them with task completion. It is laudable that coworkers and supervisors are involved in providing supports to students with IDD to perform their job responsibilities, but PSE personnel and Disability Services providers should be aware that some students may need intensive levels of support that require a lot of time, training, and expertise. Emerging data show that even after graduation from PSE programs students with IDD need variable levels of support ranging from a daily basis to weekly or twice a month (Ross et al., 2013). Consequently, it is important for PSE personnel to design programs that use a balanced approach in regard to the amount of assistance provided by different stakeholders involved in the process.

Third, many PSE programs establish collaborative partnerships with external agencies such as VR offices, local businesses, and employers but a limited number of programs collaborate with adult services such as local rehabilitation service providers, work incentive programs, or social services. Developing collaborations with multiple adult services and raising students' awareness of the various services offered by the above-mentioned agencies should be a critical component of PSE programs. Students with IDD are very likely to need post-graduation support in many domains (e.g., independent living, employment) while transitioning to adult life. Adult services represent one of the potential avenues students may want to pursue to obtain the support needed to function as independently and effectively as possible and to be viewed as active and valued members of their community.

Fourth, Disability Service providers who may serve students with IDD enrolled in PSE programs can contribute in several ways to students' success in achieving vocational goals and transitioning effectively to independent living and employment. To begin with, Disability Service providers may assist PSE personnel in providing vocational-related support services both on- and off-campus. The higher education institution might already have these types of supports and qualified personnel in place. Examples of vocational-related services include assistive technology, transportation, career counseling, and support groups to develop students' self-advocacy skills, build confidence, and increase self-esteem. Another way to support students with IDD in PSE programs is to organize career-related events (e.g., Career Fair, Career Awareness) in collaboration with on- and off-

campus agencies with the ultimate goal of providing opportunities for social networking both for students and for employers. Expanding the social network of students with IDD is extremely important considering that many students rely heavily on parents and caregivers prior to entering college (Eisenmann et al., 2014; Gotto, Calkins, Jackson, Walker, & Beckman, 2010). Additionally, Disability Service providers might want to consider organizing training sessions for students with IDD, typical college students, and staff members working with students with IDD. For students with IDD, training may consist of providing information on disability benefits and their impact on employment, resources provided by different adult agencies and effective ways to access them, support services provided by Disability Service providers, and self-advocacy skills. For typical college students and staff members working with students with IDD, training may focus on how to best support these students across different settings (e.g., classroom, community, and workplace) to increase the likelihood of successful independent functioning.

Finally, Disability Service providers may want to initiate collaborative partnerships with VR offices to facilitate the delivery of support services to students with IDD. Such services may range from career exploration, career counseling and assessment to referrals, job coaching, assistive technology, and environmental modifications. A significant part of this collaborative partnership would consist of developing clear guidelines or agreements regarding the role and responsibilities of each party in promoting PSE for students with IDD interested in continuing their education. For example, Disability Service providers in collaboration with VR and PSE personnel could develop a handbook accessible to students and parents delineating each service available, the party responsible for providing the service, and the requirements necessary to access a specific service. The availability of such information would reduce confusion, increase awareness of the wide range of available services, and facilitate student accessibility to such services.

Implications for Future Research

This study provided detailed information on vocational-related support services offered to students to IDD attending PSE programs with the purpose of gaining a better understanding of how PSE prepare these students for competitive employment. However, future research is needed to continue and expand this line of research to better address the needs of a growing population of students with IDD attending PSE. First, future studies may conduct a more in-depth analysis of

the characteristics and provision of vocational-related support services by vocational and technical schools. It is possible that support services provided by these schools may be different than the support services provided by four-year universities and two-year community colleges because of the emphasis on vocational content rather than academic content of such schools.

Second, it would be also important to examine the effectiveness of various planning and job development strategies in providing increased opportunities for paid employment to students with IDD and assess whether paid employment is a predictor for successful post-graduation employment for students with IDD who graduate PSE programs taking into account that paid employment is a predictor of post-school graduation for students with disabilities existing high-school. Third, future investigation may explore to what extent the connection and involvement of students with IDD with adult agencies leads to positive employment and personal outcomes after graduation. This has implications for adult agencies such as VR offices and Disability Services providers at the university level that may need to get a more comprehensive understanding of effective strategies to better serve the needs of students with IDD enrolled in PSE programs.

Finally, future studies may explore the perceptions of students with IDD enrolled in PSE programs regarding the quality of vocational-related support services received during enrollment in the program and their contribution to achievement of vocational goals and post-graduation employment.

Limitations

The results of this survey have to be interpreted with caution due to several limitations. First, data provided in this study is representative only of the programs ($n=66$) that responded to this national survey. Therefore, generalization of the findings to all PSE programs serving students with IDD for competitive employment may be limited. Specific caution should be considered when generalizing the findings to vocational, business, or technical schools given that only two of the programs reported as being affiliated with such institutions. Second, the response rate of this study was not very high. This may be due to a survey fatigue of directors and coordinators of PSE programs. Specifically, the database developed by ICI and made available on the Think College website represents one of the few national resources about PSE programs for students with IDD. Thus, these programs may receive invitations to participate in various surveys disseminated both by ICI and by researchers not affiliated with ICI (M. Grigal, personal communication, November

15, 2013). Third, it is difficult to design a survey that captures the full extent to which students receive each of these services. For example, one student who had one meeting with a state VR office representative and another student who had his or her own VR counselor would be counted the same in this survey, although they may have obtained different outcomes. Despite these limitations, the data provided by this study significantly contributes to the existing literature on vocational-related support services received by students with IDD attending PSE.

Conclusion

In sum, the findings of this study document the type of vocational-related support services received by students with IDD in PSE including vocational-related training and collaboration with adult agencies and the differences in service provision as a function of type of institution, size of the program, and the length of time the program has been in existence. The results suggest that most students with IDD received vocational-related support services including career or vocational counseling, person-centered planning, career or vocational assessment, instruction on transitioning from training to paid employment and between paid jobs, and self-advocacy. Moreover, PSE programs associated with a four-year university offer these services to a larger extent than programs associated with a two-year community college. The number of students receiving training on vocational-related support services was larger in programs located in urban areas compared to programs located in suburban areas. No differences exist in the provision of work-based experiences, workplace supports, and connections with adult agencies based on location. Data also indicate that challenges encountered by PSE programs in providing vocational-related support services to students with IDD consist of limited or no paid jobs in their area, limited number of work hours per week available to students, transportation, and limited time and staff. Thus, this study expands our understanding of the practices and supports implemented by PSE programs to prepare students with IDD for competitive employment. Grigal, Neubert, and Moon (2004) argued that data collection of different aspects of students' activities, including employment, should be part of the regular course operation of PSE programs. As more and more students with IDD attend PSE programs, research also needs to concentrate on examining the assessment procedures implemented by these programs to assess and monitor student progress and program effectiveness.

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PRACTICE BRIEF

Effective Job-Seeking Preparation and Employment Services for College Students with Disabilities

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Abstract

This article describes the approach implemented by one university to mitigate typical barriers encountered by college students with disabilities when attempting to find post-graduation employment. The unique vocational program offered is reinforced by the successful employment outcomes and case studies discussed in this review. Over a span of five years, this approach yielded close to a 40% employment rate among graduates with disabilities. This is a significant percentage when considering the severity of disabilities within the target population and the national rates of employment for persons with disabilities. Recommended job-seeking preparation and employment services are outlined in this article with supporting literature. Implications for postsecondary institutions, disability services centers, state vocational rehabilitation counselors and researchers are provided.

Keywords: Vocational, employment services, internship

As a result of policy, attitudinal shifts, and labor market trends, the number of college students with disabilities (CSD) has risen over the years to represent 19% of all students attending postsecondary education (National Council on Disability, 2011). Unfortunately, the employment rate for college graduates with disabilities (52.7%) is still demonstrably below that of college graduates without disabilities (83.7%) (Erickson, Lee, & von Schrader, 2014). Moreover, these numbers may be deceptively high when considering that Dutta, Gervy, Chan, Chou, and Ditchman (2008) found professional employment rates at 19% for individuals with sensory/communication impairments, 16% for people with physical impairments, and 7% for individuals with mental impairments.

Part of the issue involves the intense focus in college on academic success, as opposed to the traditional development of work experiences, proven to increase post-graduation employment outcomes (Lindstrom, Doren, & Miesch, 2011; Raue & Lewis, 2011). It is assumed that CSD are intrinsically able to complete

an independent job search or tap into the general (non-disability expert) career services on campus, resulting in ill-equipped job seekers and generic job search activities (Lindsay, 2011). When job-seeking services and training are provided by disability agencies, they often involve the assistance of a job developer who is more accustomed to working with individuals with entry level employment opportunities (Suarez-Balcazar et al., 2013), has not been trained in higher level or literature-supported job development activities, and may not have personally attained higher education themselves (Migliore, Hall, Butterworth, & Winsor, 2010).

Depiction of the Problem

Although career advisors and vocational rehabilitation counselors can provide guidance on appropriate career choices and résumé building, only 26% of 2- and 4-year degree granting postsecondary institutions are providing career or placement services targeted for

CSD and only 26% report working either formally or informally to a “moderate extent” with state vocational rehabilitation agencies and 37% to a “minor extent” (Raue & Lewis, 2011). In this climate, CSD are not aware of the unique job seeking strategies they can employ in order to sidestep common pitfalls (such as lack of ability to communicate and provide examples of field-specific skills abilities) and shine above the throngs of other eager, unemployed college graduates (McConnell et al., 2013). The purpose of this practice brief is to describe services implemented by an office of disability services (ODS) at a midsized state university in the Midwest to improve previously unacceptable employment outcomes of CSD prior to and after graduation.

Participant Demographics and Institutional Partners/Resources

Presently, the ODS provides employment services to a diverse population of students with disabilities, including individuals with mobility impairments (30.3%), sensory impairments (9.4%), and multiple disabilities (5.9%). Students learn about the program through ODS marketing efforts and encouragement by staff to students seeking other services. All services are voluntary and may be discontinued at any time. Between 2008 and 2013, 254 CSD elected to participate in employment assistance. Among those students, 106 have graduated and 42 (39.6%) are employed. Of those working, the top sectors of employment for employed graduates include human services (26%), STEM (21.4%), and government/public administration (16.7%).

Services are primarily implemented by the ODS vocational support coordinator (VSC) through a partnership between ODS and a professional development organization specifically serving CSD and minority students (Wright, 2014). The VSC often works intensely with CSD based on individual student needs and motivation. Services may also be provided by the university’s career services office, state vocational rehabilitation agency and other community/campus resources when appropriate, allowing the university-funded VSC to act in a coordinating capacity.

Description of Practice

Services provided by the VSC through the comprehensive vocational program include literature-supported, strengths-based strategies development (McConnell et al., 2013). The emphasized strategies (communication skills, disability knowledge, campus

involvement work experience, targeted job-seeking activities and resource building) are tailored to jobseekers with autism spectrum or significant visible disabilities. Combined, these strategies provide a well-rounded job search approach for successfully competing in the job market upon graduation, resulting in improved employment outcomes for students.

Communication Skills

Generally, effective and confident communication is the cornerstone of finding employment (Robles, 2012) and, therefore, the foundation of the program’s job seeking services. Whether making new friends in a student organization, meeting professionals in an internship, networking for hidden job leads, or presenting themselves effectively to hiring managers, students need to deliver information clearly, concisely, confidently, and persuasively. Once a job is obtained, retention and promotion decisions often hinge on internal and external communication. Students are encouraged to engage in diverse activities that promote face-to-face communication on a consistent basis and to practice interviewing with ODS and Career Services staff well before the first official interview. Other common opportunities endorsed include general and field-specific communication courses (Yale, 2014), classroom discussions, public speaking and Toast Masters.

Personal Disability Knowledge and Preparedness

Prior to and during college, there are several personal considerations for CSD to be aware of and realistically evaluate for successful post-degree employment. Often through the guidance of a disability benefits analyst and a VSC, CSD are encouraged to understand how employment will impact their benefits and readily available work incentives. The student and VSC consider individual needs in the home and at the job site. Assistive technology and personal care attendant services need to be addressed, as well as potential funding sources (whether employer, state vocational rehabilitation agency, or personal). CSDs need an accurate understanding of their strengths and limitations in order to develop appropriate goals and attain a college degree leading to an attainable job (Lindstrom et al., 2011). With better personal awareness, CSD can realistically compare personal stamina to job requirements, full time vs. part time employment, and telecommuting or flextime opportunities in order to create a viable pathway from studies to employment. All job-seeking students are recommended to complete a comprehensive review and plan with the VSC (see Appendix A).

Campus Involvement

Because campus involvement can foster professional skill sets that help round out résumés with minimal or unrelated work histories, all college students are encouraged to pursue these opportunities. During the early years, campus organizations can assist with the transition to college by providing a group of people with common interests. Later on, students may seek leadership roles and serve as peer mentors (Moreno & Banuelos, 2013). Ideally, these opportunities provide a chance to hone appropriate social and self-advocacy skills in a safe and supportive environment (Agarwal, Calvo, & Kumar, 2014). Unfortunately, this message is not always conveyed to or encouraged effectively in CSD, who may be redirected to focus their energies on academics alone. The program recommends CSD take advantage of multiple opportunities to be active and fully engaged on campus. With skills and confidence supported through community-building activities and organization involvement, many CSD have even taken on the difficult task of initiating their own student organizations, a process that takes considerable time, effort, and collaboration.

Work Experience

Although not always required by specific degrees, practicums and internships support skill development, networking opportunities, and relevant experience that can lead to job opportunities. Field experiences also cultivate confidence in a job interview when CSD are able to draw on previous demonstrations of skills and abilities. Outside of structured field experiences, students are able to volunteer in field-related areas or to complete service learning activities (Ramson, 2014). Both provide similar benefits to a field experience while also demonstrating a firm commitment to the student's field of study. Additional opportunities to demonstrate understanding and skills outside of community activities might include the completion of a thesis or electronic portfolio (Worley, 2011). These activities assist students in demonstrating abilities and building a track record of accomplishments when self-promoting to a potential employer.

Résumé Development

Although there are literally thousands of résumé resources available to college level job seekers, combining a skill-focused résumé with a self-marketing plan (see Appendix B) can help CSD stand out from other similarly qualified graduates while minimalizing job gaps or a sparse work history. Another typical exercise completed during the process involves CSD reviewing examples of résumés of varying quality.

Students then rate and critique the résumés, clarifying strong and weak résumé construction attributes.

Understanding Resources

The final piece prior to applying for jobs involves a CSD putting his or her individual resource puzzle together. The student may be requiring SSI/SSDI, Medicaid/Medicare, state vocational agency services, waiver programs, accessible transportation, accessible housing, orientation to a new environment, mobility devices, assistive technology, ASL interpreting/c-print, and/or personal care attendant services. These services often pull from different agencies that have very specific eligibility, timeline, and financial requirements. Students will benefit from having the knowledge of all the resources available, what s/he needs and is eligible for, and how to coordinate all of those moving parts in order to obtain and maintain appropriate employment (Lindstrom et al., 2011).

Job Leads

Once all of the above strategies are in place, the focus shifts to locating open positions and facilitating job interviews. Post-graduation employment, especially the first job in the field, is often obtained through networking. Students are encouraged to take every opportunity to network during classroom and community experiences (i.e., following up with guest speakers and professionals met through job shadowing or company tour experience). Students also register with the career services office for job leads, practice interviewing skills with unfamiliar professionals, feedback on résumés and presentation skills, and career fairs. In addition, job opportunities may be uncovered by discussing interests with fellow students and others within specific departments. Having a discussion with professors and advisors will inform all parties that the student is actively looking for employment, what s/he is specifically looking for in terms of a job, and what current positions exist. Students should investigate listservs, professional organizations, departmental bulletin boards and social networking sites for job postings.

Evaluation of Observed Outcomes

To highlight the unique program's guidance in action, two case studies of students with significant physical impairments in well-saturated career fields are provided. The students' names have been changed to maintain anonymity. Mara, a very determined individual with a complex physical disability, utilized a specially designed power wheelchair with fiber optic lights to maneuver around campus with only one finger and her voice. During her four years at the university,

Mara expanded her public speaking abilities, became involved in campus activities, obtained a position as an English tutor for students with disabilities, and completed three internships based on guidance from her VSC. After graduating with a B.A. in Mass Communications, specializing in Public Relations and with a 3.78 GPA, Mara continued to build her résumé by volunteering. Approximately one year after graduation, Mara obtained a position as a Communications Specialist for a private school.

Sophie, another student with significant physical limitations, participated in on-campus organizations and worked as a tutor in the university writing center while obtaining her undergraduate degree in English with a concentration in Professional Writing. Upon completion of her Bachelor's degree, she began a graduate program for Teaching English as a Second Language (TESOL). The program offered several opportunities to complete practicums, internships and other related experience on campus. Additionally, Sophie completed an internship through the Workforce Recruitment Program and worked on campus editing papers written by Ph.D. students in engineering. Following graduation, Sophie combined part-time positions as a TESOL instructor, adjunct English instructor and Test of English as a Foreign Language exam grader until obtaining a full-time TESOL instructor position for a small university.

Implications and Portability

To further assess the impact of this or any employment service program and build a cache of evidence-based practices specifically targeting CSD, the authors recommend a comprehensive plan for evaluation integrated into the daily practices of the service provider. Record keeping of specific services, interactions, and outcomes must be tracked for all students served in order to analyze the variables and pinpoint effective practices. Student satisfaction and perceptions of services as well as employer feedback should also be surveyed regularly.

Ultimately, this article provides a blueprint for literature-supported activities to assist CSD find employment. Offices interested in replication should focus on engaging students early and intermittently over four to five years as opposed to rushing through several steps during the final term prior to graduation. For maximum outreach and impact, whether hiring a dedicated VSC is possible or not, ODS staff should disseminate their unique disability knowledge and best practices for working with CSD to career services, academic advisors, faculty, and community job placement specialists when possible.

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Appendix A

Example Comprehensive Review and Plan

Name: Temperance (Tempie) Potter

Date: 8/23/14

Major: MRC Severe Disabilities

Grad Date: 4/30/15

Minor: None

College: CEHS

Long Term Goals: Counselor at college level. Specialize in AT. Buy a house.

Short Term Goals: Volunteer more- elementary school, local rehabilitation agency.

Strengths: Communication, organization, presentation skills.

Weaknesses: Time management, networking.

Need To Work On: "Poker face"

Work Experience: Student Employee (10/12- present), daycare teacher, medical assistance, waitress

Volunteer Experience: Youth Art Program, 4 years

Activities: Employment Committee, DDIP

Projects: Created 200 page reference binder

Disability: Spina Bifida- manual wheelchair, service dog for pulling, can't lift/grab over shoulder height.

Self Marketing Profile: Done

Transportation: **Public Transit** Driver Drive Self

VR Services: **BVR** BSVI Worker's Comp Veterans None

Accommodations: Speakerphone/headset, WC access

Computer: Trackball mouse, Dragon Naturally Speaking

Personal Attendant: AM/PM at home, lunch toileting

Other: Service Dog- Lily

Experiences: **Internship** Job Volunteer Co-Op Any

Term: Fall Winter **Spring** Summer # of Hours: 40

Schedule: Any **M T W R F** S SU

Compensation: Paid Unpaid **Either** SSI SSDI

Location: Anywhere in two state radius

Type of Experience Desired: Full time internship at a university in Midwest

Student Homework: Work on résumé/cover letter, register with Career Services, investigate universities within the region and create a top 5 list to target.

VSC Homework: Review résumé and cover letter once sent in, check with Career Services on next mock interviewing event.

Additional Comments:

Next Appt: 9/13/14

Appendix B

WrightChoice U-ACT's Self-Marketing Plan Template

A self-marketing profile tells who you are, what you have to offer the job market, and can be used in a variety of situations. A self-marketing profile should include:

Skills: Choose one or two skills that are most marketable in your chosen field, such as Java programming or grant writing. Always be prepared to illustrate how you used your skills with stories from your work or academic experience.

Knowledge: You can have knowledge of an industry (banking), academic subject (Finance), region or culture (Japan), or organization/type of organization (military, non-profit, IBM). Your knowledge can come from professional, academic, or personal experience/background. For example, someone who worked in a family business during their formative years has knowledge of small business environments; someone who is an accomplished athlete may have knowledge of a particular sport (resulting in opportunities in sports management, equipment, events, etc.).

Experience: It is best to quantify experience in terms of years, whenever possible. Experience can be professional, volunteer, internship, or entrepreneurial. For example, working for several companies in sales may be represented as "five years of progressively responsible positions in marketing/sales."

Personal Qualities: Highlight qualities that are applicable to the job; being outgoing and extroverted are valuable in a sales position. "Show me, don't tell me" is the guideline for discussing qualities. Always illustrate claims with examples from your experience such as "I am especially innovative as evidenced by my approach to solving systems problems at XYZ company."

How to Use Your Profile

Elevator Speech

An "elevator speech" is a 30-60 second introduction that tells who you are as a professional, what you enjoy doing, and what you are looking for. It offers the opportunity to express your expertise and strengths, and to position your capabilities in the mind of the listener. In creating your "elevator speech" you need to be creative and innovative, yet tactful and professional. Keep in mind the finished product should take you no more than approximately 60 seconds to verbally recite and something that you are comfortable with so that you can draw upon it at any time, even an unexpected place like an elevator.

- I am a (professional/student/at the level of)
- With experience in (functions/capabilities)
- My strengths and interests include (unique activities and professional qualities)
- I have worked with/for (types of organizations/industries/fields)
- I am seeking an opportunity in...
- Do you know anyone who happens to work in that field?
- Would you be willing to keep an eye out for something that matches those qualifications?
- Do you know someone else I can contact who might be able to assist me?

This can be used in a variety of settings, such as a career fair

- It is a pleasure to meet you. I am particularly interested in the cosmetics industry and your firm is a recognized leader. I have had an internship (experience) in retail sales and am pursuing a degree in marketing from XYZ University's College of Business, where I specialized in international marketing (knowledge). I am very entrepreneurial, as evidenced by my success as an independent beauty consultant (qualities). I am also knowledgeable about Latin American business practices (knowledge) and speak Spanish (skills). Are there opportunities in your firm for someone with my qualifications?

Or to answer “Tell me about yourself” in an interview

- I hold a bachelor’s degree in Mass Communications with a minor in English from XYZ University and graduated with a 3.8 GPA. I am especially interested in Social Media and took three additional classes to learn more about how it is changing the field of marketing. During my senior year I did a co-op with an area non-profit that gave me the opportunity to use my editorial and marketing skills to revamp their website and social media presence. I am also very passionate about helping my community and continue to volunteer with Habitat for Humanity.

PRACTICE BRIEF

Accommodating Deaf and Hard of Hearing Students in Operating Room Environments: A Case Study

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Abstract

Increasing numbers of deaf students in the health professions require accommodations in the clinical setting to ensure effective learning and accurate communication. Although classroom learning barriers have long been identified and addressed, barriers to clinical education have been far less analyzed. Operating room clerkships, which include many competing auditory and visual stimuli, pose unique obstacles to deaf students. Disability Services worked collaboratively with other campus offices to accommodate a fourth-year medical student with almost complete hearing loss in an anesthesia clerkship who had limited knowledge of any manual language such as ASL. Accommodations implemented for the student are reviewed within the context of their successes and challenges, with the goal of providing a roadmap for future deaf graduate health sciences students in the operating room environment.

Keywords: Operating Room, accommodations, ADA, anesthesia, medical students

Hearing loss affects over 1.2 million individuals between the ages of 20-29 years in the United States (Lin, Niparko, & Ferrucci, 2011). Yet only 5.8% of all deaf¹ individuals are employed in health care occupations, compared to 9.7% of all hearing individuals (McKee, Smith, Barnett, & Pearson, 2013). This underrepresentation is a problem not only for deaf individuals who wish to enter the health professions, but also for deaf patients. Ineffective communication is a contributing obstacle to deaf patients receiving preventive care (McKee, Barnett, Block, & Pearson, 2011), which likely contributes to an already significant health disparity between people with and without disabilities (Centers for Disease Control and Prevention, 2006; Drainoni et al., 2006). Research also suggests that deaf physicians are more likely to serve the deaf population and enter the primary care field, increasing access to appropriate health care for deaf individuals (McKee et

al., 2011). Training deaf students to become doctors is therefore essential, but such training requires the implementation of effective accommodations, which can be complex, particularly in clinical settings. This article describes how disability accommodations for a deaf medical student in a clinical setting were created and implemented, and suggests that these accommodations have benefits far outside the deaf student's immediate communication needs.

Summary of the Relevant Literature

This article responds to recent calls for the publication of case studies describing how accommodations for medical students with disabilities in health sciences education are determined (Ouellette, 2013) and for further data regarding assistive devices and their use by deaf students in medical education (McKee, et al., 2013). Little data regarding clinical accommodations for deaf students currently exists. Although several articles identify the general need to accommodate medi-

¹ For purposes of this article, we are including all degrees of hearing loss and cultural identification when we refer to deaf individuals.

cal students with disabilities (Helms & Helms, 1994; Moore-West & Health, 1982; Sack et al., 2008), none contain practical advice regarding how to design accommodations for individuals with hearing disabilities in the clinical education environment. Those studies that focus on deaf issues often do so in the context of medical school admissions, an important hurdle for deaf students, but this leaves an important gap in our understanding of comprehensive approaches to post-admission accommodation support (DeLisa & Thomas, 2005; Schwartz, 2012; VanMatre, Nampiaparampil, Curry & Kirschner, 2004).

The most relevant study regarding deaf health sciences students reported the results of a recent survey of practicing physicians, residents, and medical students with hearing loss. This article tallied the types of disability accommodations used by deaf physicians in practice and training, resulting in list of standard accommodations used (Moreland, Latimore, Sen, Arato, & Zazove, 2013). However, this survey lacked detailed information regarding how the accommodations were determined or implemented. Furthermore, most physicians surveyed practice in non-surgical specialties, so the accommodations used by these physicians offer limited guidance in operating room environments.

Depiction of the Problem

Medical clerkships with surgical components, both core (e.g., anesthesia, obstetrics/gynecology and surgery) and elective (e.g., critical care, neurosurgery, orthopedics, otolaryngology, urology), pose unique obstacles to the deaf learner. For example, the use of standard masks in the operating room (OR) prevents lip reading. Further, clinicians are expected to receive instruction from clinical supervisors regarding the current plan of action while simultaneously monitoring the patient and checking the relevant monitors; a deaf student must attend to all of this information using only visual channels. Accommodations are needed that allow the deaf clinician to smoothly engage in all aspects of learning while successfully providing competent surgical care to the patient.

Participant Demographics and Institutional Partners/Resources

This case study took place at a public university that offers solely graduate-level education in the medical sciences. The deaf student involved was a fourth-year student, completing a visiting student elective anesthesia clerkship, requiring the student to be a member of a surgical team in an OR. In order to determine the most

effective accommodations for the setting, a team consisting of Disability Services (DS), Educational Technology Services (ETS), the Anesthesia Clerkship Director, additional anesthesia clinical faculty and trainees, and the deaf student convened. Guidance was also sought from a sister institution, which had successfully utilized a similar method of accommodation with a deaf medical student several years before.

Description of Practice

To begin determining accommodations for the OR setting, the DS office conducted an intake with the student to determine the level of hearing loss, previous successful accommodations and proficiency with ASL. The student had extensive hearing loss, previously mitigated by the use of bilateral cochlear implants, but had experienced a "soft failure" of the implants two weeks prior to the start of the clerkship, resulting in almost complete hearing loss. The student's normal course of accommodation included the use of an FM system in the classroom and a personal amplification device to increase sound in clinic. The student relied on lipreading to supplement her hearing, a method of communication not available in the OR due to the use of opaque surgical masks. The student had limited experience with sign language interpreters and CART, as the cochlear implants provided considerable assistance with functional hearing.

To assess the disability-related needs, the medical school's Department of Anesthesia, DS, and ETS examined two clinical sites to better understand the space, culture, requirements and nuances of each environment. Together we identified general operating room auditory, physical space, and technology needs through a series of questions (see Table 1).

The general operating room needs included: spoken communication (especially instructions and feedback from supervisors and other team members), auditory signals, and alarms emitted by the equipment that monitors patient stats. The barrier in this case was inability to access auditory-based instruction and feedback.

Next, the team worked to identify all potential accommodations that might provide access to this auditory information. Ideas included use of transparent surgical masks, so that lipreading would be possible for the student; interpreters; use of Computer Assisted Realtime Translation (CART) to allow the student to read the spoken communication in the room; and handwritten notes.

Once all of the options were identified, the team analyzed each accommodation's feasibility. Handwrit-

Table 1

Assessing the Operating Room Environment for Students Who are DHOH

Size of the OR

Is there ample space to house two sign language interpreters in the planned surgical environment?

- If not: consider CART or move to a larger OR.

Essential sounds

Does the student require access to all voices in the room? Or, is the surgeon and anesthesia attending sufficient for direction and feedback?

- If student needs all voices: Consider infrared system with area microphone, which captures all voices but contains transmission to the specific room thus maintaining HIPPA compliance. Such a device may be used to collect the sound to be transmitted via an internet connection to a CART provider.
- If attending and surgeon are sufficient: Consider placing a small lavalier mic on the inside of their masks, connecting them to CART provider or an amplifier for the student's personal use.

What are the essential instruments or monitors that use alarms for alerting care team to a need and monitoring patient vitals?

- Consider: A vibrating alarm attached to a beeper or other small device to alert DHOH students to an alarm.

Viewing captions

What are the potential devices for displaying visual output?

- Consider: Proximity and ease of viewing. Possible solutions: iPad, overhead monitor, large television screen

Previewing key vocabulary and terms

Does student have the ability to review the case one-on-one with a member of the surgical team before going into surgery?

- This process assists students with familiarizing themselves with the procedure, vocabulary, anticipated outcome, potential concerns, and the technique being used.

IT

If using CART, infrared transmitter or other technological device: Is there an IT specialist available to troubleshoot technological issues?

- Can someone be “on-call” during the surgery to ensure a fast response time?
- If using CART: Is the internet connection in the OR strong and consistent?

Culture and Education

Is the culture supportive of having a DHOH student/resident in the OR?

- If not: What education is needed for the surgical team before the student begins the clerkship?
- In all cases: A brief reminder about etiquette and communication tips when working with DHOH individuals should be circulated to the surgical team.

ten notes, though effective in some settings, were not practical in the OR environment where speed can be critical. And although transparent surgical masks could offer a significant benefit to facilitate lipreading, clear surgical masks could not be obtained as they are not yet in production.

The elimination of lipreading due to the use of conventional surgical masks made providing access to the spoken communication in the OR an even greater need. Although the student did not use a signed language, oral interpreters could mouth words to the student that may not have been visible to her when uttered by the speaker and alert the student to auditory signals from OR equipment.

Even in the best of circumstances lipreading can never be completely reliable. Consequently, and despite the decision to include oral interpreters, CART was also determined to be a necessary accommodation for providing accurate access to spoken communication. It was clear, though, that modifications to the traditional CART set-up would be necessary to adapt it to this unique setting. Due to the space limitations, having the CART transcriptionist present in the OR was not practical, so it was determined that the CART provider would be in a remote location receiving an audio feed from the OR via an internet connection. Further, the CART provider would deliver captions to the student via an online host platform, GoToMeeting, a secure forum that meets federal patient privacy regulations. The attending anesthesiologist was fitted with a wireless Revolab lapel microphone, chosen because of the clarity of sound delivered by their products, to transmit sound to the CART provider. Although the team considered the possibility of projecting the captions onto the wall for all present to view, captions were ultimately delivered to the student via an iPad, which provided the flexibility she needed to move around the room while allowing her to easily view the text. The oral interpreters were able to correct and clarify inevitable errors due to the “real time” nature of CART. Because the OR contains multiple parties, an area microphone was tested in an effort to deliver captions from the remainder of the surgical team. This was not successful due to background noise in the environment. In addition, a laminated chart listing the top 20 drugs used in anesthesia was created so that the interpreters could point to it where needed. This was a useful time saving clarification device, as lipreading can confound similar-sounding words.

Once the most appropriate and feasible accommodations were established, all equipment and technology were tested in an empty OR and again during a surgery for a “sound check.” Arrangements were made for in-

terpreters to be incorporated into the OR team, which required fingerprinting (per hospital requirements) and an orientation to the OR. Interpreters had to “scrub in” to surgeries, were instructed not to touch anything in the “sterile field” and were given a specific place to stand in the room. The sister institution staff were critical in advising members of the team regarding technique, technical products and the use of CART in an OR setting. ETS provided expertise with identifying appropriate technology and technical platforms, and in setting up and testing equipment.

It was critical to inform the entire OR team in advance about the process, the student's needs, and the assigned accommodations, to prevent surprises in the OR. The clerkship director (i.e., the head faculty member in the clerkship block) contacted the “need to know staff” – the attending surgeon (i.e., the head doctor in the surgery), the clerkship coordinator, and the charge nurse (i.e., the head nurse in the surgery) – by email and phone to advise them that the deaf student would be rotating through the clerkship, explain the communication arrangements that would be in place, and address any concerns that arose. See Table 2 for a list of questions that were used to exchange this information.

Evaluation of Observed Outcomes

The combination of accommodations provided allowed the student to receive the necessary information in real time and respond to communications from clinical supervisors in the surgical environment. The student commended the willingness of faculty to engage in a trial and error process for determining accommodations, which contributed to inclusivity and led to a positive experience for the student. The faculty and staff who participated in creating the accommodations in this clerkship reported that working through the process of identifying appropriate accommodations as part of a consultative and interactive process helped them to learn more about DS and the disability accommodation process. They expressed surprise and satisfaction about what could be achieved with creative accommodation strategies and a collaborative team. Their newly-acquired knowledge about working with and teaching deaf individuals resulted in an increased comfort and better ability to educate future deaf learners. As one surgeon said, “I would never have believed this was possible until I saw it come together.”

Table 2

Concerns Expressed About DHOH Students in the OR

-
1. What happens if the student fails to hear all the instructions?
 2. Many anesthesia medications sound alike. How can we be sure the correct medication is understood?
 3. The addition of sign language interpreters to the OR increases the risk of infection. Can the interpreters remain outside of the sterile environment and still communicate effectively with the student?
 4. Who is responsible for setting up the equipment needed to utilize CART?
-

Implications and Portability

Although this case study focused on a medical student in the medical school OR environment, similar challenges exist for deaf learners in other health professions and during clinical simulation trainings. This stage of training plays a large role in professional health science education and credentialing. Challenges also exist in the pre- and post-operative environment, as clinicians attempt to conduct patient interviews, deal with patients' family members, and coordinate care with essential team members. The accommodations described here could largely be incorporated into those settings as well, providing access to deaf students before, during, and after the surgical arena. Further research and practice is needed to confirm the most effective accommodations in these environments.

Despite the success with accommodating the student, there were inherent logistical challenges to overcome. First, although the CART provider was remotely based, the use of CART still required the set up and tear down of equipment (e.g., laptop, iPad, receiver for microphone) in the OR for each procedure and during pre-op interviews with patients. This added approximately 10 minutes to each procedure and required the student to transport the devices from OR to OR. Further, while the iPad's size and portability were benefits, finding a secure and stable location within the OR for easy visual reference proved challenging. Additionally, the workspace in the OR for the anesthesiologist – the role the deaf student had during this clerkship – is often small, leaving little to no room for additional devices. One remedy would be to purchase a portable iPad stand with a wheeled base, similar to an IV pole. This would likely be a more effective means of adjusting display height and would allow quicker mobility while using minimal space.

A communication challenge that the accommodations did not fully address relates to teaching clinical skills that require ongoing feedback to the student

from clinical faculty. The deaf student's visual attention often needed to focus directly on the surgical field while simultaneously receiving feedback from the attending surgeon via the interpreter or CART. This difficulty with attending to two separate visual fields at once was particularly apparent when dealing with unexpected situations in the OR, where rapid two-way communication was essential. The use of Google Glass is a possible solution that should be explored. Delivery of CART via Google Glass could provide an effective, seamless conduit to allow students to view the transcript through the Google Glass lens while viewing the surgical field, preventing the need to split attention between multiple locations within the OR to read the real-time transcript, as well as eliminate the need for an iPad with its attendant logistical difficulties.

The accommodations created in the OR setting will often benefit not only the deaf student. The use of CART as a matter of standard practice in operating rooms would provide a visual confirmation of spoken information for all OR participants. As our existing pool of physicians ages, CART would provide a visual confirmation of auditory information. The CART transcript can also be saved for later use as a written record that proper procedures were followed, an educational tool for students who have not yet participated in a surgery, or as a record of events that transpired in the OR in the case of a medical error. It is our hope that this article helps to elucidate what is possible in the OR environment and expands on the existing repertoire of effective disability accommodations. Creative accommodations will allow an increasing number of deaf students to succeed in medical school and go on to fill the great need for culturally competent physicians serving the deaf community.

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- Write sentences using active voice.
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You will receive an email reply from Richard Allegra (Managing Editor of JPED) to confirm receipt of your submission within 5-7 business days.

Upon Acceptance for Publication

For manuscripts that are accepted for publication, Valerie Spears (JPED Editorial Assistant) will contact the lead author to request:

- A 40-50 word bibliographic description for each author, following the template that Valerie will send you.
- A signed and completed Copyright Transfer form that she will send you.
- Manuscript submissions by AHEAD members are especially welcome. The JPED reserves the right to edit all material for space and style. Authors will be notified of changes.

Practice Brief Manuscripts

JPED invites practitioners and/or researchers to submit Practice Briefs that can inform readers of innovative practices that could, in time, become the basis of an empirical study. Practice Briefs will describe new or expanded programs, services, or practices that support postsecondary students with disabilities. Practice Briefs are not research articles. Manuscripts that involve data analysis beyond the reporting of basic demographic data or evaluative feedback should be submitted as research articles. The overall length of a Practice Brief will be limited to 12 double-spaced pages, which includes separate title page, abstract, and references pages. Tables and/or figures may be submitted, too, above and beyond the 12 page limit.

Please submit all components of a Practice Brief (i.e., cover page, abstract, body, appendices) as a single Word document. These manuscripts should use the following headers/sections:

- **Title Page:** Title not to exceed 12 words. Identify each author and his/her campus or agency affiliation. State in your email cover note that the work has not been published elsewhere and that it is not currently under review by another publication.
- **Abstract:** The abstract needs to answer this question: "What is this paper about and why is it important?" The abstract should not exceed 150 words.
- **Summary of Relevant Literature:** Provide a succinct summary of the most relevant literature that provides a clear context for what is already known about your practice/program. If possible, describe similar practices on other campuses. Priority should be given to current

literature published within the past 10 years unless an older, seminal source is still the best treatment of a particular topic/finding.

- **Depiction of the Problem:** In addition to a clear statement of the problem being addressed, consider the following questions when stating the purpose of the article: What outcome, trend, or problem might improve if your practice/program works? What gaps or problems or issues might persist or arise if this practice/program did not exist?
- **Participant Demographics and Institutional Partners/Resources:** Maintain the anonymity of the students, colleagues, and campus(es) discussed in the article but provide a clear demographic description of participants (e.g., number of students, disability type, gender, race and/or ethnicity whenever possible, age range if relevant) and the types of offices or agencies that were collaborative partners (if relevant).
- **Description of Practice:** Briefly and clearly describe your innovative practice/program and how it has been implemented to date. Tables and figures are encouraged to provide specific details you are comfortable sharing. They condense information and enhance replication of your practice/program on other campuses.
- **Evaluation of observed outcomes:** Whenever possible, summarize formative or summative data you have collected to evaluate the efficacy of your practice/program. This can be anecdotal, qualitative, and/or quantitative data. Support any claims or conclusions you state (e.g., “Our program greatly enhanced students’ ability to self-advocate during their transition to college”) with objective facts and/or behavioral observations to support these claims.
- **Implications and Portability:** Discuss what you have learned thus far and how you could further develop this practice/program in the future. Be honest about any challenges you may have encountered. This transparency enhances the rigor of your reporting. What would you do differently next time to achieve stronger outcomes? Provide a clear description of how and why disability service providers on other campuses should consider adapting your practice/program. Finally, how could your practice be studied by researchers? Identify possible research questions, hypotheses, or potential outcomes that could be studied if you and/or colleagues could expand the practice/program into a research investigation.
- **References:** Use the current APA guidelines to format and proofread your paper prior to submitting it. This includes the proper use of spelling, punctuation and grammar, appropriate use of headers, correct formatting in listing references, and formatting any tables or figures appropriately.

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Guidelines for Special Issues

JPED publishes one special issue per year (normally Issue 3, published in the fall). Special issues feature a series of articles on a particular topic. JPED welcomes ideas for special topical issues related to the field of postsecondary education and disability. The issue can be formatted as a collection of articles related to a particular topic or as a central position paper followed by a series of commentaries (a modified point/counter point). Authors who wish to prepare a special issue should first contact the JPED Executive Editor at jped@ahead.org.

The authors should describe the topic and proposed authors. If the series appears to be valuable to the readership of the JPED, the Executive Editor will share an Agreement Form to be completed and returned by the Guest Editor. The Executive Editor may provide suggestions for modification to content or format. The Guest Editor will inform authors of due dates and coordinate all communications with the contributing authors. Each special edition manuscript will be reviewed by members of the JPED editorial board members. The Guest Editor and the Executive Editor will be responsible for final editing decisions about accepted manuscripts.

Book Review Column Guidelines and Procedures

Please contact the JPED Executive Editor at jped@ahead.org to suggest books to be reviewed or to discuss completing a book review. Contact and discussion should be done before the book review is completed in order to expedite the procedures in the most efficient and fairest way possible.

Content and Format

In general, the book review should present:

1. An overview of the book, providing the book’s stated purpose, the author’s viewpoint, and a general summary of the content.
2. An evaluation of the book, elaborating on the author’s objectives and how well those objectives were achieved, the strengths and weaknesses of the book along with the criteria you used for making that assessment, and the organization and presentation of the book. Recommendations should specify to whom you would recommend the book, why, and how you would suggest the book be used, and address its potential contribution to our field.
3. Citations within the book review should follow the current edition of the American Psychological Association (APA) style manual.

At the end of the review, please list your name and institutional affiliation.

Submission

The length of a book review can range from 800-1200 words. Please send in an email attachment in MS Word, double-spaced to jped@ahead.org per instructions above in “How to Submit Manuscripts.” After the review is submitted, the Executive Editor or designee will edit the manuscript and follow up with you about the publication process.

Publication Statistics

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