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Journal of Postsecondary Education and Disability

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From the Editor

David R. Parker

How do we know what we know? That question was embedded in every article in JPED 27(4), which reported on the 30th anniversary of the *Journal of Postsecondary Education and Disability* (JPED). Goodin shared thought-provoking insights from his 30+ years as a disability service (DS) provider/administrator on several campuses. His "in the trenches" experiences equip him, like so many other JPED readers, with the wisdom that comes from daily interactions with students, parents, faculty, and campus colleagues. Conversely, McGuire and Getzel explored bodies of research on Universal Design and self-determination (respectively), summarizing what the literature tells us and what future studies may yet discover. Both concepts have been thoroughly investigated and, today, infuse many aspects of DS work and campus practices. Two research teams (Madaus, Lalor, Gelbar, Kowitt; and Faggella-Luby, Lombardi, Lalor & Dukes) reported on the topics and methodologies utilized in three decades of studies about postsecondary education and individuals with disabilities. Their statistical analyses created new findings about what this journal has reported and how researchers have established their findings. All of these approaches, and those used by other authors in that special issue, can help us know what we know.

In his classic text, *The Reflective Practitioner*, Donald Schon (1983) described informed practice as "artful doing." Schon described ways that we make sense of our professional activities by observing them (even while engaged in them), listening to the feelings these experiences arouse in us, and seeking out relevant theories to help us understand what is before us. This issue of JPED, which begins and ends with works from international authors, provides readers with a range of articles that can support our reflective practices. Six research articles summarize prior studies about a topic; test theories and assumptions; present "thick descriptions" of individuals' experiences in higher education; and use data to recommend polices and practices that can enhance humane and effective accessibility to postsecondary education for all involved. Three practice briefs inform us from a more hands-on point of view. These shorter articles describe innovative services on a given campus, providing "nuts and bolts" descriptions to support replication elsewhere. Practice briefs offer researchers tantalizing opportunities to more formally investigate the reported activities. In doing so, factors that actually contribute to observed or reported outcomes – and the magnitude of those outcomes - are empirically established. When innovative programs and services are replicated and validated, they truly become evidence-based practices.

In the first research article, Hurst describes the pioneering development of an accreditation scheme for postsecondary DS staff in the United Kingdom. As DS professionals in the U.S., Canada and elsewhere continue to explore complex training and credentialing issues, this article provides a comprehensive description of a rigorous but flexible approach already in use.

Students with psychiatric disorders represent a rapidly growing cohort. Kupferman and Schultz investigated the knowledge, skills and attitudes DS professionals need to provide effective services to students with mental health issues. They conducted a three-round Delphi survey involving 402 DS providers and identified competencies in five different categories.

While much has been learned about college students with ADHD, important questions remain about the role of gender in diagnostic and service delivery practices. Kercood, Lineweaver, and Kugler studied 47 university students with ADHD and 44 students without ADHD to explore differences in reported symptoms and working memory ability. Interesting and somewhat surprising results emerged that inform recommendations for evaluators and campus professionals.

In the next research article, Wessel, Jones, Blanch and Markle conducted an ethnographic study of 10 undergraduate university students who use wheelchairs. Their focus was on the approaches these students used to select a college and how that process influenced their transition to higher education. Like many students without disabilities, the availability of a preferred major emerged as a primary factor, but so did campus accessibility and the perceived helpfulness of the DS office. Students particularly relished their newfound freedom and social interactions in college.

Central to many research studies published in JPED is the question, How many students in higher education have disabilities? Answering this fundamental question can be complicated. Leake compared the two most widely cited sources of data, the National Postsecondary Student Aid Study (NPSAS) and the National Longitu-

dinal Transition Study-2 (NLTS2). The latter data set was determined to be much more reliable, leading to the author's recommendation to discontinue reliance on the first set.

In the final research article, Cullen explored the social needs of college students with autism spectrum disorders (including Asperger's) attending five universities. This qualitative study involved 24 students and identifies ways that participants met their social, academic, and daily living needs. At a time when many campuses report a steep rise in the numbers of students on the spectrum, this study provides rich insights into issues related to social integration, wellness, and self-advocacy for another emerging cohort.

This issue concludes with three practice briefs. JPED is receiving a growing number of such manuscripts, which may have more immediate appeal to busy practitioners. In the first such brief, Bellman, Burgstahler, and Hinke report on a program involving 41 STEM majors with various disabilities at three institutions of higher education. Participants received weekly coaching sessions designed to enhance their executive functioning skills. Self-reported outcomes included increased self-confidence, motivation, and determination to succeed along with enhanced academic and stress management skills.

Campuses continue to explore the kinds of information needed to inform decisions about effective testing accommodations for students with ADHD. Ofiesh, Moniz, and Bisagno report on their use of focus data involving 17 university students with ADHD to better understand this issue. Students provided detailed insights into how they prepared for and took exams. The authors discuss the use of such findings in making test accommodations decisions and in shaping a larger research project they are pursuing.

The final research brief comes from Spain. Judge and Izuzquiza Gasset report on the first Spanish university to provide training to young adults with Intellectual Disabilities (ID). The program is designed to foster meaningful employment and community integration in its graduates. The authors report positive outcomes after reviewing the program's first four years in operation.

Finally, JPED wishes to thank the Guest Editors of JPED 27(4) for their rigor and transparency in reporting slight adjustments to data used in two studies from that special issue. Please refer to their errata sheet on the following pages. Revised electronic copies of both articles will be posted on the JPED website, replacing the earlier versions.

Errata Sheet for JPED 27(4)

Please note corrections to the following articles appearing in the last issue:

Madaus, J. W., Lalor, A. R., Gelbar, N., & Kowitt, J. (2014). The journal of postsecondary education and disability: From past to present. *Journal of Postsecondary Education and Disability, 27*(4), 247-356.

Faggella-Luby, M., Lombardi, A., Lalor, A. R., & Dukes, L. L. (2014). Methodological trends in disability and higher education research: Historical analysis of the journal of postsecondary educationand disability. *Journal of Postsecondary Education and Disability, 27*(4), 257-368.

Coding errors were discovered in the same data set that was used for both articles. Nine (*n*=9) articles were coded twice, and that analysis was included in the results. In addition, three articles were omitted from the original analysis and those data are now included in the corrected version of the article. Overall, there was a difference of six articles (*n*=6). Thus, the total number of articles published in JPED was 336 (instead of *n*=342). One duplicate article was found in the number of articles not meeting study inclusion criteria (*n*=53 instead of *n*=54). The net change in the number of student level studies was three articles (*n*=5 duplicates and *n*=2 omitted) and the net change in the program level studies was two articles (*n*=3 duplicates and *n*=1 omitted). Unrelated to these errors, the total number of articles screened for the larger project was 1,342 (instead of *n*=1,346) as four duplicates were discovered in the subsequent analysis. While these changes were minimal in relation to the total number of articles, there were many changes within the results given the nature of the researchers' primary and secondary analysis. In most cases, the percentage change was quite small (less than 1%), and six instances, more than 1%.

The following table depicts the changes in the numbers and percentages for each domain/subdomain between the original and corrected articles.

Domain / Subdomain	Original Version		Corrected Version		Δ Percentage
	N	Percentage	N	Percentage	
Student Level Studies	95	32.99%	92	32.51%	0.48%
Experiences, perceptions, knowledge, and attitudes of SWD	66	69.47%	62	67.39%	2.08%
Access, accommodations, adjustments	17	17.89%	16	17.39%	0.50%
Profiles/statistics of SWD and graduates	16	16.84%	16	17.39%	0.55%
Learning/using study skills or learning strategies	11	11.58%	10	10.87%	0.71%
Mainstream/assistive technology use	9	9.47%	9	9.78%	0.31%
Career development	6	6.32%	5	5.43%	0.88%
Self-determination	5	5.26%	5	5.43%	0.17%
Other	2	2.11%	2	2.17%	0.07%
Program or Institutional Level Studies	103	35.76%	101	35.69%	0.07%
Description of disability programs	56	54.37%	58	57.43%	3.06%
Programs for specific cohorts	25	24.27%	26	25.74%	1.47%
Institutional compliance, policies/ procedures	24	23.30%	23	22.77%	0.53%
Policies and procedures	21	20.39%	21	20.79%	0.40%
Experience, knowledge, attitudes, beliefs, and professional development of disability service providers	15	14.56%	14	13.86%	0.70%
Other	5	4.85%	5	4.95%	0.10%
Faculty/Non-disability Support Staff-level Studies	38	13.19%	38	13.43%	0.23%
Knowledge, attitudes, beliefs, training, and teaching practices of faculty	32	84.21%	32	84.21%	0.00%
Knowledge, attitudes, beliefs, training, and practices of non-disability support staff	9	23.68%	9	23.68%	0.00%
Other	1	2.63%	1	2.63%	0.00%
Construct Development-level Studies	45	15.63%	45	15.90%	0.28%
Conceptual models, service delivery instruction (e.g., Universal Design)	28	62.22%	28	62.22%	0.00%

Other (including disability studies, evaluation metrics, standards of practice)	12	26.67%	12	26.67%	0.00%
Assessment instruments (development, validation, use to develop diagnostic profiles)	5	11.11%	5	11.11%	0.00%

Note. The percentages in the bolded rows are calculated out of the total articles meeting study criteria (n=283) while the percentages for the subdomains were calculated out of the n for their domain.

The largest change in percentage was 3.06% while the average change was 0.74%. There were also minor changes in the demographics between the original and corrected articles, as follows:

	Original Version		Corrected Version		Δ
Domain/Subdomain	N	Percentage	N	Percentage	Percentage
Original Data	158	54.86%	154	54.42%	0.44%
Did not contain original data	130	45.14%	129	45.58%	0.44%
US	136	47.22%	134	47.35%	0.13%
Canada	12	4.17%	13	4.59%	0.43%
Other	9	3.13%	7	2.47%	0.65%
4 year	127	44.10%	125	44.17%	0.07%
2 year	43	14.93%	41	14.49%	0.44%
International	21	7.29%	20	7.07%	0.22%
University Students	101	35.07%	98	34.63%	0.44%
Sample Size 11-50	29	10.07%	30	10.60%	0.53%
Sample Size 51-100	22	7.64%	21	7.42%	0.22%
Sample Size 100+	35	12.15%	32	11.31%	0.85%
Disability	71	24.65%	70	24.73%	0.08%
Gender	55	19.10%	51	18.02%	1.08%
Class Standing	23	7.99%	22	7.77%	0.21%
Race/Ethnicity	18	6.25%	18	6.36%	0.11%
Non-University Students	70	24.31%	68	24.03%	0.28%
Faculty	29	10.07%	28	9.89%	0.18%
Disability Service Providers	27	9.38%	26	9.19%	0.19%

The largest percentage change for the demographics was 1.08% while the average change was 0.37%. There were slight changes in the percentages for the design categories presented in the following table:

Design category/Type of design	Original Version		Corrected Version		Δ Percentage
	N	%	N	%	
Study reported original data	158	54.9%	154	54.2%	0.7%
Descriptive-quantitative designs	86	29.9%	81	28.6%	1.3%
Group designs	7	2.4%	7	2.4%	0%
Single Subject designs	3	1%	3	1%	0%
Mixed methods designs	21	7.3%	20	7%	0.3%
Qualitative designs	41	14.2%	43	15.1%	0.9%
Quantitative designs					
Simple descriptive design	67	23.3%	64	22.5%	0.8%
Comparative design	40	13.9%	36	12.7%	1.2%
Correlation design	16	5.6%	15	5.2%	0.4%
Qualitative designs					
Phenomenological	38	13.2%	40	14.1%	0.9%
Case studies	14	4.9%	13	4.6%	0.3%
Grounded Theory	10	3.5%	10	3.5%	0%
Not clear	2	0.7%	2	0.7%	0%
Features of Rigor					
Included a control or comparison	6	2.1%	6	2.1%	0%
Two Different Treatments	4	1.4%	4	1.4%	0%
Typical Practice	2	0.7%	2	0.7%	0%
Randomized control trial	3	1%	3	1%	0%
Established group equivalence	3	1%	3	1%	0%
Time of Measurement					
Pretest	6	2.1%	6	2.1%	0%
Progress	1	0.3%	1	0.3%	0%
Posttest	6	2.1%	6	2.1%	0%
Maintenance	0	0%	0	0%	0%

Note. The largest percentage change was 1.3% and the average percentage change was 0.76%. As the percentages changes were minor, these changes did not have an effect on the conclusions drawn from the original analyses.

Developing and Implementing an Accreditation Scheme for Disability Services Staff in Post-compulsory Education in the United Kingdom

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Abstract

In the United Kingdom (UK), policy and provision for students with disabilities in post-compulsory education has made considerable progress in a relatively short time. This growth has been aided by several factors, arguably the most significant being the introduction of legal requirements in 1995. Many institutions and organisations have tried to ensure that what this neglected group of students receives goes beyond legally required equality of access to include best current practices of the highest quality. Other developments include the publication of codes of practice by the Quality Assurance Agency (QAA), a national body responsible for monitoring and enhancing all aspects of institutions' provision including that offered to students with disabilities. This paper examines one dimension of high quality provision by describing the National Association of Disability Practitioners (NADP), whose mission is to provide qualified, experienced staff who specialize in disability services. This innovative practice encourages professionalism, promotes the interests of specialist staff and addresses the interests of students with disabilities. The NADP has devised and implemented a scheme that accredits the practices and procedures of staff in disability services. This paper explores basic principles underpinning the scheme, how the scheme operates, what is required of applicants, the progress made and problems encountered during the first years of its implementation. The paper concludes with descriptions of how the scheme might develop in the future, particularly given challenges faced by disability services staff.

Keywords: Staff training, professional skills, quality assurance

Creating policies and provision for students with disabilities in post-compulsory education and training has become a routine dimension of institutional life in many countries[1]. It has taken more than four decades for specialist disability advice and support services to become firmly established in most institutions providing third level/tertiary/higher education in the United Kingdom (UK). The creation of a new post - an adviser for students with disabilities - was seen as a major first step towards ensuring that the needs of this important minority group were not overlooked and neglected[2]. As the role became better known in the institutions and featured in their student recruitment information, responsibilities expanded and the number of students willing to disclose their impairments grew. Higher Education Statistics Agency ([HESA], 2013) Annual Reports demonstrate this clearly.

An unfortunate spin-off became evident, in that any aspect of policies, procedures, practices, and

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1 It should be noted that in the UK the current preferred terms are "disabled student/disabled person." These originate from those people with impairments following the example of other minority groups such as gays and lesbians who have chosen to show pride in their situation. People with impairments claim that they would not be the individuals they are without some up-front acknowledgement of their impairment. From the point of view of someone trying to encourage faculty and staff to move away from focussing on impairment and to see the student first, this approach seems counter-productive. In line with JPED practice, this paper will use the terms recommended by the American Psychological Association.

2 The actual title of the posts relating to supporting students with disabilities varies considerably in the United Kingdom. These range from the now old-fashioned and outmoded "Adviser for Students with Special Needs" to "Inclusive Learning Officer." There is a debate to be had regarding the job title that best suits the role and responsibilities of staff working in services for students with disabilities. It is interesting to reflect on the ways in which the many different job titles imply an underlying model of disability. The two examples listed suggest that one operates from an individual/deficit model and one is rooted in the social/educational model.

provision in which the word "disabled" appeared was directed immediately to the specialist without considering whether such action was appropriate. Many staff took the opportunity to try to relieve some of the work pressures they were experiencing by off-loading what was really their own responsibility. To counter this and in accord with national trends in many countries, there was a redirection of focus to universal design of the campus environment and curriculum to enhance inclusion. The goal of wider inclusion focused not only on students with disabilities but on a more diverse range of learners. Happily, in many places, this development has made some progress although there remains much to do. In looking at how further changes can be accomplished, perhaps there is now a greater need to reflect on the quality of what students with disabilities experience (Adams & Brown, 2006; Fuller et al., 2009; Riddell, Tinklin, & Wilson, 2005).

The aim of this paper is to outline the development of an accreditation scheme established recently in the UK so that colleagues in other countries can consider whether the scheme is applicable to their own situation. The author was invited to devise and pioneer the scheme, working alongside the professional development sub-group of the National Association of Disability Practitioners (NADP)[3]. It should be noted that the views expressed towards the end of the paper are the author's and not those of the sub-group. The paper should be of particular interest to JPED readers who are familiar with AHEAD's efforts in the 1990's and early 2000's to move towards accreditation/certification of disability services professionals.

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[3] The National Association of Disability Practitioners was originally called the National Association of Disability Officers until 2006. It was set up in 1999 using some initial funding from the Higher Education Funding Council for England as one of HEFCE's special initiative projects. Its aim was to achieve for staff working in disability services what Skill: National Bureau for Students with Disabilities was achieving for disabled students. Membership has grown to just over 1,000 in 2014. They work in approximately 90% of providers of post-secondary education and training undertaking a range of roles. Funding comes from membership fees plus use of income from conferences (NADP is organising its first international conference to be held in July 2015). There is a small national office in Northampton that supports the activities of the NADP Board, all of whom are involved with the organisation on a voluntary basis.

Some Comments on the Quality of the Experience of Higher Education for Students with Disabilities

It is important to note that positive developments regarding students' experiences have been aided by the spread of anti-discrimination legislation in many countries. The most relevant UK laws are the Special Educational Needs and Disabilities Act ([SENDA], Her Majesty's Stationery Office [HMSO], 2001) and the Disability Discrimination Acts of 1995 and 2005 (subsequently subsumed in a single Equality Act, 2010) (HMSO 1995, 2005, 2010). The two key dimensions of the laws were to ensure that "reasonable adjustments" should be made to facilitate access to all goods and services for people with disabilities and that their needs should be anticipated when planning for the future. Without doubt, these had a significant impact on wider access. It is also probably true that many companies/organizations/institutions adopted a position of basic compliance with the law and were unwilling to go beyond this. Johnson's (2003) assertion that "a law cannot guarantee what a culture will not give" (p. viii) is pertinent here. Also, it is possible to discuss the differences between the concepts of "equality" (i.e., equal access) and "equity" (i.e., fair access). That aside, the focus must return to a consideration of how post-compulsory education attempted to stimulate change towards more meaningful, embedded, inclusive policies and practices; to equity rather than equality.

In the UK, the Quality Assurance Agency for Higher Education (QAA) was established to review all aspects of institutional policies and provision. Since its creation in 1997, its role has shifted from quality audit through quality monitoring to quality enhancement. A key part of this work was the development and publication of a Code of Practice (Quality Assurance Agency for Higher Education[QAA], 1999 & 2010) that could be used to guide those involved when QAA panels visited higher education providers to investigate quality. This publication anticipated changes that were to become legal requirements following the implementation of the 2001 anti-discrimination law. An updated version of the Code appeared in 2010 and was based around a different approach to institutional visits, commonly viewed as a "lighter touch" (QAA, 2010). The full Code covered all aspects of university policy and provision in different sections.

Section 3 is about students with disabilities. The Code was used for guidance by those responsible for periodic visits to institutions to consider the quality of the experience it provides for students. Each section comprised a number of general precepts followed by some illustrative examples of good practice. For example, Precept 10 focuses on students with disabilities

and the aspect of inclusive curriculum design and delivery. It states that the design of new programmes and the review and/or revalidation of existing programmes should include an assessment of the extent to which the programme is inclusive of students with disabilities. Precept 11 states that both the design and implementation of learning and teaching strategies and related activities such as the learning environment should recognise the entitlement of students with disabilities to participate in all activities provided as part of their programme of study. It is interesting to note that what were seen as optional extras in the first edition had become legal requirements by the time the second edition was published, as a result of changes to the law. The second edition's approach was much more centered on inclusion. So, when discussing the quality of the experiences of students with disabilities, the aim is go beyond basic levels of provision (Higher Education Funding Council for England [HEFCE], 1999) towards excellence. The original QAA Codes were replaced by an overarching "Quality Code" in 2012/13, so it is too early to assess its impact.

One dimension relating to quality is the recruitment of suitable and experienced staff. However, this has yet to be addressed comprehensively and successfully in the UK (and, perhaps, in other countries). Some years ago, the Universities of Central Lancashire and Plymouth devised a portfolio of courses to meet the needs of both new and inexperienced staff and also those of the more experienced practitioners. At one stage, the two programmes were brought together and validated successfully by quality assurance procedures recognised by both institutions. Sadly, for reasons such as the retirement of the programme leaders, the opportunity for disability services staff to make use of this curriculum has disappeared. Another major influence on the disappearance of the programmes was the growing costs to participants in terms of time and expense. The two individual programmes and the subsequent combined version demonstrated the commitment to a particular philosophy of learning that depended on face-to-face contact. More recently, many forms of electronic information about meeting the needs of students with a range of impairments have emerged. These instructional tools might be more suited to an educational context that has changed significantly in recent years with increased work pressures coinciding with funding cuts. Nevertheless, it remains important to consider the quality of what students with disabilities experience and how this quality can be verified, sustained and enhanced.

Given the realities of limited funding for training and professional development through taught courses like those mentioned above, the NADP proposed a different approach. This involved a shift towards already-existing practices and their accreditation. What follows describes what has been put in place and what has happened during the first two years of implementation.

The NADP Accreditation Scheme: Underlying Principles and Basic Characteristics

What has been put in place is a structure and a procedure within which accreditation can take place. This offers individual practitioners a route to formal, external recognition that they have reached a certain level of professional practice. It is not a course or programme of study leading to a qualification. It recognises the work being undertaken currently by a range of staff working in disability services. The two major principles underlying the NADP approach were (1) to keep it within a small scale and (2) the simpler the scheme, the better for all involved. The scheme has several basic characteristics:

- it is easy to manage in terms of how it is structured and organised;
- it is efficient and effective in terms of use of time by all involved;
- it is cost-effective and provides excellent value-for-money;
- it is credible both within the NADP and also within the world outside the association;
- it is comprehensive in trying to bring together practitioners from a variety of backgrounds – such as psychologists, academics, social workers, occupational therapists;
- it is rigorous and is not a "rubber stamping" or "tick box" approach; rather it seeks to balance being appropriately demanding and challenging with being realistic in terms of what can be expected of working applicants;
- it supports the exchange of knowledge and the dissemination of information and innovation, thereby helping practitioners develop their knowledge and skills and by promoting collaboration;
- it contributes to the development of professionalism and to wider and greater recognition for the status, roles, and responsibilities of staff working with students with disabilities in post-compulsory education and training; and
- it encourages critical reflection by practitioners in both their own attitudes and actions and also those of others.

Who Accredits, Who Can Be Accredited, and When?

In the initial meetings with the NADP's representatives, attention was given to how a scheme might secure wider status and recognition. One possibility was to create something and then seek to have it validated by a university or college. Firstly, this would mean that the validating body would have significant control over the structure and organisation of a scheme that might not fit NADP's aims. Secondly, it would require NADP to pay the validating body and thus increase costs especially for those seeking accreditation. Thirdly, it would offer less flexibility to implement modifications quickly in the light of experience of operating the scheme. It was decided that, if NADP is to be recognised as a genuinely professional body that can sit alongside similar bodies created to serve the best interests of other occupational groups, it should take full responsibility for the scheme. It is interesting to note that this seems to have been one of the major concerns for AHEAD when it considered an accreditation scheme for its own members (C.Funckes, personal communication, March 3 2014).

The NADP established an Accreditation Panel to review applications and make decisions on whether they reach the required standards. The number of members is not proscribed. Currently it is five, comprising two NADP members, two non-members plus a non-member Chair, although membership can be increased if the flow of applications grows. The two non-members are experienced professionals whose work is well regarded in the sector. One was responsible for leading a national project promoting inclusive curricula and pedagogy. The second had completed a number of projects relating to inclusive academic assessment and provision for students with specific learning difficulties such as dyslexia. (At the time of writing this paper, one of the two non-members had resigned and the search was on for a replacement.) The non-member Chair also has considerable experience of working in a university and also at national and international levels especially with regard to organising and delivering professional development. All three have successful publishing experience.

It was agreed that membership of the Accreditation Panel had to include representatives external to the NADP since this contributes to the scheme's more widespread credibility. The elected Chairperson of the association is not formally involved in order to allow her/him to act as final arbiter in any situation where there is serious disagreement about the status of an application. The panel has face-to-face meetings on at least two occasions during every academic year although, in keeping with the desire for efficiency and effectiveness, most of the work is completed using electronic means. However, the face-to-face meetings are useful for considering consistency of approach on the part of the Accreditation Panel members and also the mentors whose role is discussed later. To monitor the quality of the procedures and practices, the Accreditation Chair submits an annual written report to the NADP Board of Directors. This incorporates feedback from mentors. Feedback is elicited from those seeking accreditation about their experiences of the application process. Again, one strategy to accomplish this efficiently and effectively is to hold an open session at the NADP conferences.

Turning to eligibility for application, the scheme embraces anyone who fulfils the criteria for membership of NADP and is up-to-date with subscriptions. However, applicants could encounter difficulties if they have not had a significant amount of experience of working in a context that involves supporting learners with disabilities. On the other hand, there are staff who have spent many years and have considerable experience of working with students with disabilities, some of whom have higher degrees.

The issue of "grandparent rights" was explored but, in keeping with the desire to ensure that the system was simple to implement, it was decided that no exceptions should be made for any members. AHEAD also explored –and ultimately rejected - "grandfathering" people into a scheme should it have been developed (R. Allegra, personal communication, February 24, 2014). It is necessary to levy a fee to cover expenses, since the scheme involves additional work for the NADP administrative staff and also since there is involvement of people from outside the association. No attempt has been made to create a system that would be income generating, a matter that AHEAD considered in its deliberations some years ago (C.Funckes, personal communication, March 3, 2014). In Spring 2014, the fee for registering as an applicant was £52/$80. This amount will need to keep pace with the rate of inflation but, again, the scheme is not viewed as a profit-making opportunity.

In keeping with the desire to retain a simple structure, applications can be submitted at two points each year. The current deadlines are September 1st and February 1st. These are likely to change to October 1st and March 1st as a result of feedback from those who have registered for accreditation in the past. Applicants are informed of the decision of the Accreditation Panel within a maximum of 12 working weeks after the application deadline. Whilst this might seem a long period to wait for a decision, those involved in the decision-making process are volunteers and have other major responsibilities.

Why Should Members Apply and What Does Applying for Accreditation Involve?

The main incentive for applying for accreditation is the contribution it might make to further professional recognition. It will also contribute to professional development through the exchange of good practice that results when some of the applicants' accounts are published in the NADP journal and elsewhere. What accreditation cannot do is to secure promotions or salary increases although, as the scheme grows and becomes recognised more widely, these benefits might start to occur.

The NADP recognises that members/applicants are at different points in their career paths, so the Accreditation Scheme has two levels: Accredited Member and Senior Accredited Member. Everyone has to secure Accredited Member status in the first instance. Application for accreditation involves submitting work under three themes plus one of the applicant's own choosing from a list of three broad relevant areas (i.e., a total of four including the reflective diary):

A. Working with students with disabilities with special reference to the NADP Code of Practice, which could take the form of case studies of individual students or the impact of a particular kind of impairment on learning;

B. Continuing professional development, which could be an analysis of the applicant's own needs and how they might be met or a consideration of a staff development programme for non-specialist faculty colleagues; and

C. A critical, reflective journal containing a selection of activities for a week's work.

Further, applicants must submit one additional item chosen from three themes: disability, society and education, institutional policies and procedures, and quality assurance. For those progressing subsequently to Senior Accredited Member status, all of the above items must be submitted plus one more on a topic of the applicant's choosing and which does not repeat any of the other five topics. A second reflective journal is also required.

Normally, all submissions are made electronically since this facilitates the circulation of materials and thus speeds up the processing. Whilst the implication might be that submissions take the form of written accounts, given the focus of the profession and its concern with social and educational inclusion, it would be embarrassing and inappropriate if alternative formats were not welcomed. Also, since applicants work in different situations and different institutions, the Accreditation

Panel is not anticipating a significant need to identify plagiarism. However, it is concerned that applicants do not submit materials with excessive overlap/repetition. All applications are made anonymous by staff at the NADP national office before they are distributed to assessors.

In discussions during the creation of the accreditation scheme, much attention was given to what the length of items should be. Eventually, it was agreed that submissions should be between 500-750 words with a maximum excess of 10% (i.e., 825 words) for each section. This length was seen to be manageable while also exerting sufficient pressure on applicants to be analytical and succinct. The reflective journal is treated slightly differently in that, in addition to submitting a sample weekly diary/log, applicants have to provide a commentary that should be no longer than 750 words to ensure uniformity of length across all sections of the submission.

Regarding the content of applications, the Accreditation Panel looks for content that can be categorised under two major headings:

A. A range of knowledge, skills, and professional values with reference to the following:

- relevant recent legislation, policies, codes of practice
- disability theories and concepts, the impact of impairment on learning
- relevant research
- internal institutional systems
- funding mechanisms/sources
- course design/course structures
- learning approaches
- academic assessment strategies
- support systems, both human and technical
- information sources
- quality measures and quality enhancement

B. A range of attitudes and activities drawn from the following:

- aspects of working 1:1 with learners
- co-operation and team-working with others
- contribution to needs assessment
- liaison with external agencies
- devising and promoting inclusive policies and practices
- involvement in disability education for staff
- participating in and contributing to key

committees/groups both within and outside the institution
- recognition of roles, responsibilities, boundaries and personal competence

It would have been relatively straightforward during the initial stages of development to identify specific aspects of the two lists and to state that they should be included in specific sections of the application. For example, when considering students with disabilities, applicants should include comment on funding mechanisms and learning approaches from the first list and aspects of working 1:1 and contribution to needs assessment from the second list. Whilst there is some merit in this approach, particularly with regard to consistency, it was felt that it would be too constraining and would not allow for the flexibility and creativity that the scheme is trying to encourage. However, following experience working the scheme, Accreditation Panel members are creating a matrix identifying the characteristic features of accounts at referral/satisfactory/distinctive levels to aid feedback and to bring even more consistency to the process.

Regarding content and coverage, the debates that took place within AHEAD suggested that it might be difficult to identify content and skills common to all those working in disability services given the variety of roles and responsibilities in the field. However, frequent and regular contacts with staff working in countries other than the UK have indicated a large degree of agreement on what disability services staff have to do in these positions. The flexibility and variety of knowledge and skills identified above allow for the scheme to be applicable to a wide range of staff with many different specialisms.

To demonstrate what the Accreditation Panel was looking for, a number of sample submissions were devised to reflect what would be returned for further work, what would be deemed to be of an acceptable standard, and what would be deemed to be of high quality (see examples in Appendix B). However, some members of NADP's Professional Development Group are uncertain at present of the value of these exemplars. They are anxious that those applying might follow the exemplars too closely.

Turning to the presentation of the applicants' accounts, the Accreditation Panel is clear on what it is looking for, namely:

- accounts that are analytical and critically reflective;
- accounts that use a range of supporting evidence including national and institutional pol-

icy documents, research reports and findings;
- accounts that use relevant concepts and theories such as models of disability, principles of independent living, etc;.
- accounts that show insights and innovations;
- accounts that show evidence of thinking and working strategically – demonstrated using the analogy of preventing fires rather than fighting them once they have started; and
- accounts that are logically and coherently structured and presented appropriately and professionally (e.g., in relation to the citing and listing of supporting sources).

What the Accreditation Panel does not want to consider are anecdotal approaches, descriptive narratives, unsupported opinion and conjecture, and loosely organised rambles around a topic.

Processing Applicants' Accounts and Verifying Their Validity

Once submitted electronically to the NADP office, each account is reviewed and commented on independently by two members of the Accreditation Panel, one of whom is nominated as First Assessor. The First Assessor then becomes responsible for providing feedback to the applicant based on a synthesis of the views of herself/himself and the Second Assessor. Two decisions are possible: satisfactory, or return for further work as outlined in the feedback. In cases where the two assessors disagree, the application is passed to the Panel Chairperson for a third review and a final decision. At the discretion of the Accreditation Panel, and with the agreement of the applicant, some items might be forwarded to the Editorial Board of the NADP Journal with a recommendation to publish. Also, when items are returned for further work, the applicant is entitled to one further opportunity to resubmit. Full feedback is provided with guidance about how the submission might be improved. Should this also be deemed to require more attention, there cannot be an application for accreditation for a minimum period of one year. Finally, it is possible to appeal the decision of the Accreditation Panel. Appeals can be submitted only in exceptional circumstances, must be based on procedural matters, and not involve questioning the academic judgements of the Accreditation Panel.

Regarding the validity and veracity of what applicants submit, applications must be reviewed by a colleague (normally a line manager) prior to submission who must sign a pro forma to indicate that the piece has been reviewed and that there are no reasons to question what has been submitted. This also has the

additional advantage of drawing attention to and raising awareness of the work done by staff in disability services who often feel that what they do is unrecognised and undervalued.

Supporting Applications: The Role of Mentors and the Provision of Resources

All applicants are informed that they have been assigned to a mentor. Mentors are experienced colleagues working in a different educational setting or recently retired from long and successful careers working with disabled students; their achievements being demonstrated by their being awarded honorary degrees or national awards. Once the system is fully operational, the group from which mentors can be drawn will grow and comprise many of those who have gained accredited status, although this cannot be viewed as an automatic procedure. The role and responsibilities of mentors are fivefold:

A. To offer advice and support to applicants seeking NADP accreditation; it was envisaged that most of this will take place using telephone or email contacts;
B. To comment on ONE draft only of the applicant's accreditation submission for each part of the process if invited to do so by the applicant; mentors' feedback should have as its major focus the content rather than the presentation of the submission;
C. To be familiar with the submission guidance provided to applicants by the NADP and to ensure that the applicant has followed it;
D. To be familiar with the criteria used by the Accreditation Panel whenevaluating accounts and to ensure that the applicant refers to them; and
E. To offer advice and to be involved in situations where an applicant's submission is returned for further work.

The Accreditation Scheme has been operative since 2012 and mentors are helping others involved in the scheme pioneer the way. At this important formative stage, they work as a very close team and keep each other fully informed of their activities and actions (paying due regard to conventions of confidentiality). The system seems to have had some success. See the short message from an accreditation applicant in Appendix D.

In addition, the NADP has made available on its website a list of resources that applicants can use to collect evidence to support their assertions. The resources comprise research and theory-based books, journal articles, and a range of policy statements and government/national documents. Many of the latter are now available on-line. The intention is that this list grows as the accreditation scheme develops since those going through the process can add sources they have discovered and that others might find useful. This is an important dimension to the sharing of knowledge and the dissemination of examples of good practice.

Dissemination of Information about the Accreditation Scheme

The Accreditation Scheme was developed following support for a proposal at an NADP Annual General Meeting. The NADP Professional Development Sub-Group invited the author of this paper to act as guide and consultant. What has been described above is the outcome of this work and the close and committed involvement of members of the NADP at all levels. Prior to a public launch of the Accreditation Scheme, two small pilot projects were undertaken involving volunteers from the NADP Board of Directors and from the wider membership. These proved extremely useful and indicated where further work was needed. Once this had been done, the scheme was presented at the NADP Annual Conference, other NADP events, and at those organised by other groups. Information about the scheme is also an important section of the website and much of it takes the form of user-friendly Frequently Asked Questions (FAQs). There is also the list of useful resources mentioned above that will grow as the scheme develops since applicants will make others aware of their own preferences for information sources. Also, if any applicants' accounts are of a sufficiently high standard to merit publication either in the NADP journal or elsewhere, this will enhance publicity for the scheme.

Progress (2012 – 2014)

The Accreditation Scheme was launched on June 1, 2012. Statistics regarding the number of members seeking accreditation are included in Appendix A. Based on the experience of implementing the scheme so far, a number of issues have emerged:

- balancing content about daily practice with the need to adopt an academic approach vis-a-vis supporting evidence, etc.;
- reading more widely including materials that are specific to impairment and disability as well as more general materials such as national policy statements with a view to recognising and anticipating possible implications for

students with disabilities and those who work with them;

- avoiding excessive description/narrative and including more informed, reflective, analytical comments (e.g., less on how things are done and more on why they are done in a particular way, what alternatives there might be and why these have not been pursued);
- engaging more regularly and more closely with mentors;
- organising workloads by both applicants and mentors/panel members to ensure that deadlines are met;
- paying appropriate attention to aspects of presentation such as referencing in a professional and conventional fashion and using grammatically correct language and acceptable terminology;
- devising a system that overcomes the problem of ensuring that there are viable cohorts passing through the process, a problem created by the large numbers enrolling and the small numbers actually submitting. Putting a limit on the maximum number who can be enrolled in any one academic year has not been as useful as was envisaged;
- creating a procedure for the recruitment of additional mentors and also members of the Accreditation Panel to ensure that quality standards are maintained; and
- publicising and promoting the scheme.

Four particular matters continue to be the focus of debate. Firstly, the reflective diary seems to be taken by some applicants to be the opportunity to write a story akin to "my day at the office." Such accounts lack the critical approach that the scheme envisaged. NADP members have discussed whether the reflective accounts require support from published sources. It has been suggested that searching for such evidence requires more time and effort from colleagues who are already bearing considerable workloads. This might be true and it might be inappropriate to require this additional level of scholarship. On the other hand, certain sources such as the Quality Assurance Agency's Code of Practice/Quality Code should be in use to guide policies, provision, and practices, so additional effort would seem limited to a manageable amount of time. An example of the guidance given to the creation of a reflective account may be found in Appendix C.

The second continuing challenge is to modify the application system to allow for the fact that only a certain number of applications can be processed prior to each of the two deadline dates. Once the NADP office reaches the agreed quota, no additional applications are accepted for consideration until the next deadline. Given the number of applicants who defer submitting after having registered, there is a block placed in the way of others. So far, a strategy to overcome this has not been found.

Thirdly, looking at the statistics in Appendix A, the large number of NADP members who register for accreditation and then either defer submission of their application or withdraw from the scheme completely needs to be explored. The basic underlying cause seems to be lack of time. One strategy to address this might be through greater involvement of line managers. Currently, their only responsibility and involvement is to confirm in writing the content of the member of staff's application submission. They might wish to consider implementing a more strategic and selective approach to supporting their staff. For example, some line managers currently register all staff working in disability services, reflecting how understandably keen they are to seek endorsement for the work of their staff. However, they could instead identify no more than two members of staff each academic year who would then be given priority in registering for and completing successfully accreditation.

This approach ought to have been negotiated, discussed, and agreed to during an annual appraisal interview. The line manager could then provide an allocation of sufficient time away from daily duties to these individuals to facilitate their achieving accreditation. Progress should be the focus of regular meetings, perhaps twice or three times during the year. This should help staff with their work on securing accreditation. Incidentally, involving line managers more closely might benefit the scheme in other ways (e.g., in allowing them to have a sense of ownership). Having more time would be good for all applicants. A further incentive might be for the line managers to cover the modest accreditation fees and/or subsequently the member might be allowed to continue their membership of NADP at a reduced rate. Whatever strategy might be applied, it should not compromise the quality of the content of the applications or the standards expected.

Finally, and connected to the previous point, all staff appear to be under increasing pressures in their workplaces. The compilation of an accreditation submission has to make way for other priorities. This heavy workload applies also to those involved with policy development within the NADP, all of whom are volunteers. The consequence of this is the rather long time period that seems to intervene between taking decisions at meetings and implementing them in policy and prac-

tice. Appointing additional staff to the main office would not overcome this issue because, when questions arise, almost all of them require discussion by and answers from experienced, education-based people.

Future Developments

Looking at the current Accreditation Scheme and considering what might happen within NADP itself, a number of future developments should be considered. Firstly, there are some likely amendments to the accreditation requirements based on experience acquired and feedback from applicants. For example, following discussion involving mentors, accreditation panel members and the NADP Professional Development Group, future applicants will be asked to select two events from those they include in their journal and then expand and debate these. This allows for more reflection and in-depth discussion than the original approach, which asked for a critical commentary on the full week's activities. Also, the Accreditation Panel members are creating a matrix identifying the characteristic features of accounts at referral/satisfactory/distinctive levels to aid feedback and to bring even more consistency to the process.

Secondly, it might be possible to build upon the implementation of the Senior Accredited Member status to create a Fellowship level, perhaps by invitation or perhaps by application. Linked to this is the possible introduction of post-nominal letters such as Accredited Member of the National Association of Disability Practitioners (AMNADP) and Senior Accredited Member of the National Association of Disability Practitioner (SAMNADP). This matter was discussed during the development stage. The decision was taken to set the matter aside for further consideration at an appropriate point in time.

Despite its brief existence so far, the scheme has been welcomed by the Association of Managers of Student Services in Higher Education (AMOSSHE) and the Association of University Administrators (AUA). Both groups are in an important position with regard to encouraging and facilitating participation by colleagues working in disability services. Already, a small number of posts have been advertised where the position's specification has mentioned successful applicants having NADP accredited status. Also, once the accreditation of individuals has gained momentum, the NADP is considering devising and implementing a scheme that will accredit an institution's entire disability service. This might be based around models used currently in other dimensions of universities' provision such as those for the counselling services.

Finally, colleagues working in disability services outside the United Kingdom have shown a strong interest in this development. So far this has been at the level of enquiring whether they might submit personal applications. However, what ought to be possible is the development of a national system for their own country based on what the NADP has done already. Frequent contacts with staff working in countries in many different parts of the world indicate that the challenges faced when working to support students with disabilities are universal, so the flexibility already built into the NADP scheme should prove helpful. Should accreditation develop in other countries, possibilities for improved international mobility could increase. At the very least, there should be improved knowledge of policies, practices, procedures, and provision in other countries and it might be possible, too, to make use of a wider range of sources and resources. For example, the author often uses cartoons created by the late John Callahan (1998) to convey issues related to individuals who use wheelchairs. Colleagues in Belgium and the Netherlands have shared other cartoons, usually where an issue is conveyed simply and graphically without any need to use language (Hurst, 2006).

Conclusion

Whilst it might appear to have had an excessively lengthy development phase, the fact that NADP's Accreditation Scheme has been implemented and is currently working well is a major achievement. Perhaps the long hours of discussion and argument about structure/content/operation was time well spent, given the lack of major issues that have become evident. However, it is important to remember that the procedures, practices, and processes are relatively untried and tested, so there are likely to be more points to be addressed. Setting this aside, it is heartening to see that staff working in disability services in post-compulsory education in the UK have a structure for ensuring that their work can be recognised formally and an opportunity to engage in valuable professional development.

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About the Author

Alan Hurst received his B.A. degree in history and sociology from the University of Hull, a Ph.D. from the University of Lancaster and an Honorary Doctorate from the Open University. His experience includes working as a teacher educator at the University of Central Lancashire (UCLan) and serving in various national and international roles relating to the inclusion of students with disabilities in post-secondary education. He retired from his full-time post as Professor in the Department of Education at UCLan in 2007. His research interests include inclusive learning and pedagogy and staff training and continuing professional development for those working with students with disabilities. He can be reached by email at: hahurst@yahoo.co.uk

Author's Note

Appendix A

Data regarding status of applications submitted to the NADP office as of February 2014. The February 2012 submission acted as a pilot and, although many DS professionals expressed enthusiasm for participating, they chose ultimately not to submit.

Status	Feb 2012	Sept 2012	Feb 2013	Sept 2013	Feb 2014
Registered	40	16	6	30	39
Submissions	8	3	3	4	13
Referrals	2	0	0	2	?
Deferrals	0	8	0	20*	14
Withdrawals	?	5	3	6	5
Accredited	6	3	3	2	?

Note. Seven disability service providers did not submit to meet the second deadline after having deferred and so are considered to have withdrawn.

Appendix B

Sample Accounts for the Theme of "Working with Students with Disabilities"

An account that would be returned for further work:

I work in a team of advisers which constitutes the University Disability Advisory Service (DAS). Because we have significant numbers of students with disabilities enrolled on our courses, we have structured our provision on each adviser supporting specific impairments. I work with blind and visually-impaired students. This submission looks at the arrangements made for a particular blind student when she first entered the university.

Totally blind since birth, Anna has had experience of both segregated and mainstream schools. On leaving secondary education with qualifications in Literature, French, and History, all at high grades, she chose to spend a year out of education before trying to enter university. She failed to find a satisfying steady job. However, she did acquire a guide dog to aid her mobility. She decided to come to university to study French.

Note that firstly, Anna was born blind and so she has had time to devise effective coping strategies. Secondly, her experience of mainstream school will have given her the chance to decide on which teaching and which exam methods suit her best. Her success in school-leaving exams suggests that she has the potential to become a good student. Her employment will have tested her ability to live independently.

After being offered a place on the basis of her existing qualifications, I arranged for Anna to spend a day visiting the university. An important part of this was the opportunity to identify and discuss her needs. She uses modern software to give her access to print materials although she was aware of the possibilities offered by developing ICT. To give her the chance to find out more and to recommend any specialist equipment she could use, time was spent in the Access Centre talking with specialist staff. The outcome was that she was advised to obtain a lap-top PC along with specialist software. I explained that the costs of this would be covered if she applied and obtained a Disabled Students Allowance. Looking at other points of concern, Anna commented on the problems she would have with lecture notes. I suggested that she ask tutors to ensure their materials are available electronically on the intranet. In relation to exams, information provided by the Department suggested that the main method of assessing students was end-of-module, unseen, three-hour papers. Anna said she needs to work with her specialist software and so I noted that changes would need to be made at exam time. The only other issue was the requirement that students spend a significant period studying or working overseas in the third year of the course. Since Anna was the first blind foreign languages student I had worked with I would need to explore this.

If Anna was to adjust quickly to a new routine and new environment, it was important for her to feel happy with her living accommodation. After some discussion she decided to live in a university hall of residence and asked for a ground-floor, larger room if available since this would allow space to store her equipment and also for her guide dog.

Visits like this have proved extremely helpful both for students and staff in the DAS. Prior to Anna's arrival there was time to ensure that everything was in place ready to give her a flying start. The final piece in the jigsaw was arranging for Anna to arrive a few days in advance of all other new students so that she could be given mobility training along routes between locations she would have to use in the course of her daily life.
(584 words approx)

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An account that would be deemed to be of a "satisfactory" standard:
Statistics demonstrate increased numbers of students with disabilities entering higher education in the last few years. The number of those with visual impairments has remained steady overall (HESA 2008) but my university has acquired a reputation for the quality of its provision for blind students (QAA 2008) and our numbers have increased. This account concentrates on one blind student, Anna, who is now in her final year. Rather than try to cover all the challenges faced I shall discuss four which are the most important.

Totally blind since birth, Anna has had experience of both segregated and mainstream schools. On leaving secondary education with qualifications in Literature, French, and History, all at high grades, she chose to spend a year out of education before trying to enter university. She failed to find a satisfying steady job. However, she did acquire a guide dog to aid her mobility. She decided to come to university to study French.

The first challenge is disclosure. My university has put in place a range of measures designed to promote inclusion, based on a number of published sources (DfES 2002, Rose 2006). In Anna's case, working with a guide dog made evident her impairment. However, some teaching staff who had already worked with blind students appeared to consider that they had nothing to learn. In accordance with the law, every student must be treated as an individual. It was essential to discuss Anna's needs with her and how best to meet them. (In fact, what in the past might have been viewed as "needs" are now entitlements following recent legislation – see QAA 2010).

The second series of challenges relate to learning, teaching and assessment. In devising an approach to meet her entitlements, the university pursued a policy based on a social model of disability recognising Anna's skills and making changes to the environment to allow her to demonstrate them (Oliver 1990) and the creation of a genuinely inclusive curricular environment. Following the structure offered by the Teachability project, we looked at curriculum design, delivery and assessment (SHEFC 2004) and in particular, prompted staff to identify core non-negotiable dimensions of their courses. It became clear that we would need to plan for a period of overseas residence since all students have to undertake this. We were aided in this by the work of Orsini-Jones (Orsini-Jones 2005 and 2009) and by the checklists of provision produced some years ago (Van Acker et al 1996). Also helpful would be the availability of teaching materials electronically, a relatively straightforward "reasonable adjustment" which some tutors are reluctant to undertake, not an uncommon scenario (see Fuller et al 2009).

The third challenge is funding. Anna receives the maxima available according to DSA regulations including costs of time spent abroad. However, what was interesting was that as my university has developed some of the services which in the past Anna might have had to purchase using her DSA are now provided as part of standard services and for which no charge is made. (The HEFCE provides an additional per capita allocation recognising costs of provision.) This was not the case in the University overseas where Ann chose to study.

Creating high quality services for students with disabilities as part of routine provision might be regarded as a step from initial integration to full inclusion. However, there is still much to be accomplished. For example, when the arranging of special facilities for end-of-course examinations was raised, academic staff were quick to try to transfer responsibility from themselves to the disability advisory service.

Practices like is indicate that the university has a long way to go before it can claim to be genuinely inclusive. One step in the right direction might be to improve continuing professional development although as others have shown (Hurst 2006) this really is about changing pedagogic cultures and is difficult to achieve.
(638 words)

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Brief Commentary on the Two Accounts

A deliberate choice was made to focus on the same student – the second paragraph providing information about the student is the same in both accounts. It should be evident that the first account is a simple narrative. At many points it is possible to draw attention to questions needing discussion. For example, what might be the implications of building a service where specialisms are impairment-based? What can be done to check whether the coping strategies used successfully in schools are appropriate to the post-school context? What assistive technology might be useful or has been rejected as inappropriate?   Whilst the content might be informed by knowledge of some recent and relevant sources, these have not been acknowledged as contributing to the approach adopted. In fact, it is incorrect to label them as "References"; it would be more appropriate to use the heading "Bibliography." The second account is much more thoroughly researched and supported and contains more critical reflections and insights. It is based on the identification of three important issues, each of which is explored. Incidentally, as a result of feedback from members, it has been agreed to extend the word limit to 750 words to ensure parity with other sections of the application.

Appendix C

Sample Guidance Available on the NADP Website (http://nadp-uk.org/) and of Particular Relevance to the Reflective Diary

Critical Reflection in Relation to Disability in Further and Higher Education

(written by David Pollak, formerly a member of the Accreditation Panel)

This refers to the cognitive processes which underpin and inform the practical activities of a professional in education and training. One way of summing this up simply: What I do (how and, importantly, why), what I don't do (and why), what I might also be doing (how and why), and the literature which relates to all of these. Below are examples of the sort of questions you may choose to address. Your own professional context and areas of interest will enable you to vary the themes and focus you choose to take. Whatever the question, critical reflection which moves beyond description to questioning, will inform your approach.

Values and perspectives
Ability to move beyond understanding. One way of summing this up simply: What I do (how and, importantly, why), what I don't do (and why), what I might also be doing (how and why), and the literature which relates to all of these. Below are examples of the sort of events in concrete terms into the conceptualisation of underlying values
Example: Critical reflection on the relevance of labelling in assisting disabled students. Reflect on the potential significance of labelling some students in a way which could be interpreted by the student, or others as ''defective''?

Analysis
Ability to analyse professional situations, particularly in terms of underlying issues; theoretical problem solving.
Example: Critical reflection on assessment and intervention to assist students identified with dyslexia .Who should determine which students are dyslexic? What model of dyslexia, and which tests, should be used? Why?

Implementation
Ability to relate reflection to a practical context; taking decisions; practical problem solving
Example: Critical reflection on provision for disabled students in an inclusive institution in 2012. What does 'inclusivity' actually mean in my institution? What sort of provision should be made for individual disabled students and what should be embedded in an inclusive context? Who should be responsible for what? How does legislation influence this? Why?

Communication
Ability to retain positive working relationships with others, to discuss complex ideas, and to have developed an awareness of audience
Examples: Critical reflecting on the role of 'diagnostic assessment' in 2014 from the perspective of the student and the institution. How should assessment reports be written, so that they are helpful both to the student and to the institution? How should the information be presented to students and colleagues? Why?

Reflection/Critical self-awareness
Ability to empathise with others, to work beyond what is given and to devise innovative solutions to problems
Examples: Critical Reflection on my professional approach with neuro-diverse students, and possible alternatives. Why do I use certain approaches with neuro-diverse students? Are there other models of support which might help?

Appendix D

Unsolicited Feedback Message to the NADP Office from an Accreditation Applicant (February 2014)

Hello,

I just wanted to say how helpful I have found it completing the accreditation. I appreciated the opportunity to re-evaluate my job role and learn more about disability studies.

X was an inspiring mentor and I was very grateful for her support.

Kind regards,

Supporting Students with Psychiatric Disabilities in Postsecondary Education: Important Knowledge, Skills, and Attitudes

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Abstract

We began the exploratory process of identifying knowledge, skills, and attitudes that are important for disability service professionals to possess in order to provide beneficial services to students with psychiatric disabilities in postsecondary education. Using a three-round Delphi survey, two groups of experts identified 54 knowledge, skill, and attitudinal items. A national sample of 402 disability service professionals then rated each item. A principal components analysis revealed five factors: (a) Ethical and Legal Considerations, (b) Accommodations and Supports, (c) Disability Aspects, (d) Community Resources, and (e) Campus Considerations. Findings are discussed in regards to implications, assumptions, limitations, and recommendations for future research.

Keywords: Psychiatric disabilities, postsecondary education, disability services, knowledge, skills, attitudes

According to the Government Accountability Office ([GAO], 2009), approximately 11% of students enrolled in postsecondary education have a disability. Students with psychiatric disabilities (24%) constitute one of the largest subgroups (GAO, 2009). This subgroup includes students with post-traumatic stress disorder, depression, schizophrenia, bipolar disorder, obsessive-compulsive disorder, panic disorder, personality disorder, and other related disabilities (Kukla & Bond, 2010). Despite their high enrollment, approximately 86% of students with psychiatric disabilities withdraw prior to degree completion, as opposed to 47% of students with other types of disabilities and 36% of students without disabilities (Hurst & Smerdon, 2000; Kessler et al., 1995; Salzer, Wick, & Rogers, 2008). Being that postsecondary education degree completion is often an important step toward obtaining gainful employment, the high dropout rate has been identified as one reason why people with psychiatric disabilities experience a 90% unemployment rate (Fleming & Fairweather, 2011; President's New Freedom Commission on Mental Health, 2003). These statistics have led to calls for improved postsecondary education services for students with psychiatric disabilities (McEwan & Downie, 2013; National Alliance on Mental Illness, 2012; Sharpe et al., 2004).

Calls for improved services have been directed toward disability service professionals (DSPs) in postsecondary education institutions. Sharpe and colleagues (2004) found that although DSPs were adequately prepared to provide services to students with learning and physical disabilities, they often lacked the competencies necessary to provide services to students with psychiatric disabilities. Scholars have suggested that DSPs need to possess a unique set of knowledge, skills, and attitudes to support students with psychiatric disabilities in postsecondary education (Collins & Mowbray, 2005; McEwan & Downie, 2013). To date, however, these competencies have not been clearly identified. Therefore, the purpose of this study was to begin the exploratory process of identifying knowledge, skills, and attitudes that are important for DSPs to possess in order to provide beneficial services to students with psychiatric disabilities in postsecondary education.

Review of the Literature

All students in postsecondary education face challenges, including (a) high stakes academic pressure and competition, (b) minimal academic support compared with support in high school, (c) faculty and staff who are more distant than high school teachers and counselors,

(d) potential social isolation and alienation as students transition to a new environment, (e) an undergraduate culture of excessive alcohol and drug abuse, and (f) the pressure of long-term financial debt (Archer & Cooper, 1998; Kadison & DiGeronimo, 2004). Students with psychiatric disabilities face additional challenges. For example, their disability can result in functional limitations related to short-term memory, critical thinking, elaboration, and metacognition, including planning, organizing, and regulating learning (Hartley, 2010). Further, the side effects of psychotropic medications have been found to reduce students' attention, concentration, and stamina (Weiner & Wiener, 1996). Other challenges facing students with psychiatric disabilities include stigma, lower academic self-confidence, and conflicted peer relationships (Hartley, 2010).

In a national study, Salzer, Wick, and Rogers (2008) found that little is known about providing services to students with psychiatric disabilities in postsecondary education. Belch (2011) suggested that because of the complex nature of psychiatric disabilities and the related challenges they bring, students with psychiatric disabilities are the least understood and least supported group of students in postsecondary education. What is known is that the amount and type of disability services vary among students with psychiatric disabilities (Salzer, Wick, & Rogers, 2008). Further, not all students with psychiatric disabilities receive DSP services. Students might choose to receive services from private and community mental health providers, who offer more frequent and continuous services beyond the postsecondary education setting.

On campus, the responsibility of providing accommodations to students with psychiatric disabilities generally falls upon DSPs. DSPs have a range of responsibilities, including but not limited to: (a) providing consultation, collaboration, and awareness between programs and departments to ensure equal access for students with disabilities, (b) disseminating information on programs and services, (c) providing consultation with faculty and staff, (d) advocating for student instruction in learning strategies, (e) assisting students with disabilities in assuming the role of self-advocate, and (f) developing and establishing written policies or guidelines for determining and accessing reasonable accommodations, institutional rights and responsibilities with respect to service provision, confidentiality of disability information, and resolving formal complaints regarding the determination of reasonable accommodations (Dukes & Shaw, 1999). Additional responsibilities include the development of natural supports, which Fabian and colleagues (1993) define as enhancing or linking students to existing academic and social supports in the postsecondary education settings that are available either informally (other students, family members, friends) or formally (campus staff members).

Some DSPs specialize in providing services to students with psychiatric disabilities. The majority, however, are generalists who provide services to students with a range of documented disabilities (AHEAD, 2013; Harbour, 2008). DSPs come from a variety of backgrounds, with earned degrees in areas such as human resources, risk management, higher education administration, legal affairs, rehabilitation counseling, psychology, and special education (AHEAD, 2013). Considering this diversity of students served and professional backgrounds, most DSPs are members of professional teams who offer coordinated services to students with psychiatric disabilities. Therefore, the knowledge, skills, and attitudes identified in the current study might be dispersed across several types of professionals working in a variety of offices (i.e., rehabilitation counselors, mental health counselors, social workers, etc.).

Methodology

The following research questions guided this study:

RQ1: What *knowledge* is important for DSPs to possess in order to provide beneficial services to students with psychiatric disabilities in postsecondary education?

RQ2: What *skills* are important for DSPs to possess in order to provide beneficial services to students with psychiatric disabilities in postsecondary education?

RQ3: What *attitudes* are important for DSPs to possess in order to provide beneficial services to students with psychiatric disabilities in postsecondary education?

RQ4: Do *perceptions* of the importance of knowledge, skills, and attitudinal items differ according to demographic and professional characteristics?

Participants

Participants were recruited from a database of DSPs who were members of the Association of Higher Education and Disability (AHEAD; www.ahead.org). Of the 1,609 AHEAD members who received the survey, 402 (24.98%) usable responses were received. Participants had a mean of 11.6 years experience in the field of disability services. In regards to employment characteristics, most participants reported Director/Manager (49%) or Disability Specialist (35%) job titles and were employed in four-year (68%) and two-year

(23%) colleges/universities. In regards to educational characteristics, most participants possessed Master's degrees (72%) in various areas of study, including Other (28%), Rehabilitation Counseling (17%), Counseling (15%), and Psychology (12%). Participants were geographically dispersed with the highest percentage coming from the East North Central region. Full demographic and professional characteristics are listed in Table 1.

Instrument Development

A thorough review of the literature revealed no prior identification of knowledge, skills, and attitudes that are important for DSPs to possess in order to provide beneficial services to students with psychiatric disabilities in postsecondary education. Therefore, a new instrument was required to conduct this study. The development of the new instrument occurred in two phases. The first phase was a three-round Delphi survey with two expert panels: (a) DSPs and (b) students with psychiatric disabilities. The second phase was a field test of the instrument with six DSPs.

Delphi Survey. A Delphi survey is a systematic consensus-building method for gathering and organizing expert opinions about a complex topic (Vazquez-Ramos, Leahy, & Hernandez, 2007). The Delphi survey used a convenience sample of two expert panels. The first panel consisted of full-time DSPs who were considered to have expertise in providing services to students with psychiatric disabilities. The following inclusion criteria were required for each participant: (a) Member of the AHEAD Psychiatric Disabilities Special Interest Group; (b) Minimum of five years of direct experience providing services to students with psychiatric disabilities; (c) Minimum of a master's degree in counseling, psychology, rehabilitation, special education, disability studies, or other closely related fields; (d) Current employment in a two-year college or four-year university disability service office in the United States; and (e) Job responsibilities that include specific duties related to students with psychiatric disabilities. The second panel consisted of students with psychiatric disabilities. The following inclusion criteria were required for each participant: (a) Member of a National Alliance for Mental Illness (NAMI) Student Chapter; (b) Enrollment in a two-year college or four-year university; and (c) Registered with a disability services office as a student with a psychiatric disability. A total of 16 professionals and 21 students participated in Round 1. Round 2 sample size was 16 professionals and 15 students. Finally, Round 3 sample size was 16 professionals and 14 students.

The participants responded to a series of three sequential electronic surveys (also called rounds). They had 10 days to complete each round using online survey software. The first round contained a letter of information that described the purpose, procedures, instructions, risks, benefits, confidentiality, and an Institutional Review Board approval statement. Participants completed a series of demographic and professional experience questions and responded to three open-ended questions that asked them to identify knowledge, skills, and attitudes they perceived to be important for DSPs to possess in order to provide beneficial services to students with psychiatric disabilities in postsecondary education.

Each panel (professionals and students) answered the same three open-ended questions, although their responses were analyzed separately to explore potential differences between panels. This process yielded a list of 139 statements (n = 54 professional panel, n = 85 student panel) from the Delphi survey participants reflecting their initial descriptions of important knowledge, skills, and attitudes. Due to the qualitative nature of the data derived from this round, the authors jointly conducted a content analysis. The purpose of this content analysis was to identify themes and patterns through the facilitation of open coding of data (ad hoc free coding as the data are analyzed) and the sorting of coded data. The number of distinct items was tabulated, which totaled to 61 knowledge, skill, and attitudinal items. These items were used to construct the second round survey.

In the second round, participants were asked to rate each of the 61 knowledge, skill, and attitudinal items on a 6-point Likert scale of perceived importance (0 = lowest, 5 = highest). Each panel rated the same set of items, although their responses were analyzed separately to explore potential differences between groups. Benefits of this round were that areas of agreement and disagreement were isolated, further identification of items needing clarification was accomplished, and a preliminary idea of priorities emerged (Delbecq et al., 1975; Hsu & Sandford, 2007). Once responses were obtained, means and standard deviations were calculated for each item.

In the third and final round, participants were shown the means and standard deviations from the second round and asked to re-rate the 61 items. The purpose of showing participants the means and standard deviations was to provide data that might help to build consensus among participants. The descriptive statistics from Round 2 and Round 3 were compared. Consensus was determined based upon the commonly used criteria of (a) stability - less than a .50 difference between the means in Round 2 and 3 and (b) variation -

Table 1

Demographic and Professional Characteristics of the Sample

Variable	N	%
JOB TITLE		
Director/Manager	198	49
Disability Specialist	140	35
ADA/504 Coordinator	32	8
Advisor or Academic Counselor	20	5
Other	12	3
EMPLOYMENT SETTING		
Four-Year University	273	68
Two-Year College	93	23
Vocational/Technical College	20	5
Other	16	4
HIGHEST OBTAINED PROFESSIONAL DEGREE		
Master's Degree (M.A., M.S., MSW, M.Ed., etc.)	289	72
Doctoral Degree (Ph.D., Ed.D., J.D., etc.)	68	17
Bachelor's Degree (B.A., B.S., etc.)	36	9
Other	9	2
Associate's Degree (A.A., A.A.S., etc.)	0	0
PROFESSIONAL DEGREE AREA OF STUDY		
Other	113	28
Rehabilitation Counseling	69	17
Counseling	60	15
Psychology	48	12
Higher Education Administration	40	10
Special Education	32	8
Social Work	32	8
Disability Studies	8	2
GEOGRAPHIC REGION		
Region 3 - East North Central	95	24
Region 2 - Mid Atlantic	69	17
Region 5 - South Atlantic	48	12
Region 7 - West South Central	45	11
Region 9 - Pacific	45	11
Region 8 - Mountain	32	8
Region 4 - West North Central	28	7
Region 1 - New England	28	7
East South Central	12	3

standard deviation greater than .80 in at least one of the two expert panels (Buck et al., 1993; Hsu & Sandford, 2007). Items that did not meet consensus or items with a mean below 3.0 were removed from the instrument (Buck et al., 1993; Hsu & Sandford, 2007). A total of seven items were removed, resulting in 54 knowledge, skill, and attitudinal items that met consensus.

Field Test. The Delphi survey resulted in a draft instrument with 54 items that was field tested with a group ($N = 6$) of participants who were independent of the Delphi survey. The field test participants were randomly selected from the AHEAD membership database. Their job titles were Director/Manager ($n = 3$) and Disability Specialist ($n = 3$) and employment settings were Four-Year University ($n = 5$) and Two-Year University ($n = 1$). The field test participants possessed Master's Degrees ($n = 5$) and a Doctoral Degree ($n = 1$) within the fields of Rehabilitation Counseling ($n = 3$), Counseling ($n = 1$), Psychology ($n = 1$), and Other ($n = 1$). Their geographic regions were Mid-Atlantic ($n = 2$), Pacific ($n = 2$), New England ($n = 1$), and West North Central ($n = 1$). The field test participants were asked to complete the instrument and evaluate it for instruction clarity, item clarity, and length of time to complete the instrument (Ary, Jacobs, & Razavieh, 1996). Based upon their feedback, instruction clarity was improved.

Data Collection

Subsequent to obtaining support from AHEAD, its Executive Director sent a request for participation email to DSPs who were members of AHEAD. Delphi survey panelists and field test participants were excluded. The participation email included a statement from AHEAD that described the importance of this study because of its alignment with the mission and goals of the organization. It also included a letter of information, survey instructions, and a link to the electronic survey instrument. The survey collection duration was 14 days, with one reminder email prompt sent one week after the initial email and another reminder email prompt sent one day prior to the survey's closing date. The final electronic survey instrument consisted of demographic questions (years of professional experience, highest obtained professional degree, field of professional degree, employment setting, and geographic region), and 54 knowledge, skill, and attitudinal items. Content validity was addressed through the development methodology used in the construction of this instrument (Hsu & Sandford, 2007).

Results

A principal components analysis was used to analyze the knowledge, skill, and attitudinal items and group them into empirically defined categories. A principal components analysis was determined to be feasible because Bartlett's test of sphericity was significant ($p = 0.000$) and the Kaiser-Meyer-Olkin (KMO) measure was high (.874). Further, the sample size of 402 participants met the minimum of at least 300 participants recommended to conduct a principal components analysis (Tabachnick & Fidell, 2013). Variables with correlations that were too high (above .9) and too low (below .1) were removed (Tabachnick & Fidell, 2013). Further, four additional items were removed from the principal components analysis because they did not meet an a priori criterion level (≥ 3.00) of importance (Tabachnick & Fidell, 2013). These four items were: (a) ability of disability service professionals to assist students develop natural supports ($M = 2.87$, $SD = 1.33$), (b) ability of disability service professionals to assist students prepare for employment ($M = 2.86$, $SD = 1.24$), (c) ability of disability service professionals to implement supported education strategies ($M = 2.83$, $SD = 1.39$), and (d) ability of disability service professionals to assist students transition into independent living settings ($M = 2.06$, $SD = 1.31$).

Cattell's scree test indicated a five-factor solution. The five-factor solution with a varimax rotation proved to be optimal for this study, accounting for 60.5% of the variance. In order to assign items to factors, the highest loading for each item was used (Tabachnick & Fidell, 2013). Labels were created to clearly describe the contents of each factor. Factor labels, items, and descriptive statistics are provided in Table 2. The first factor ($M = 4.57$, $SD = 0.69$) was labeled Ethical and Legal Considerations. It contained 13 items that pertained to following the law and honoring ethical obligations, challenging stereotypes, and ensuring a positive professional demeanor. The second factor ($M = 3.85$, $SD = 1.07$) was labeled Accommodations and Supports. It contained 12 items, which related to ensuring access through reasonable accommodations, universal design for learning, and teaching skills and strategies for college success. The third factor ($M = 3.83$, $SD = 1.02$) was labeled Disability Aspects and contained 11 items that pertained to the unique aspects of psychiatric disabilities, such as functional limitations, the recovery process, and medication side effects. The fourth factor ($M = 4.11$, $SD = 0.93$) was labeled Community Resources and contained seven items that revolved around off-campus information and supports such as collaborating with mental health professionals,

Table 2

Each Factor with Group and Item Means and Standard Deviations

Factors (K=Knowledge, S=Skill, A=Attitude)	Mean	*SD*
Factor One - Ethical and Legal Considerations	**4.57**	**0.69**
1. Possession of an understanding that not all students with psychiatric disabilities pose a danger to the campus community (A)	4.86	0.42
2. Rejection of stereotypes/stigma toward students with psychiatric disabilities (A)	4.82	0.47
3. Ability to follow the legal obligations related to providing services to students with psychiatric disabilities (S)	4.77	0.53
4. Desire to see students with psychiatric disabilities succeed in college (A)	4.76	0.58
5. Possession of a friendly attitude toward students with psychiatric disabilities (A)	4.70	0.57
6. Knowledge of legal obligations related to providing services to students with psychiatric disabilities (K)	4.69	0.75
7. Ability to follow the ethical obligations related to providing services to students with psychiatric disabilities (S)	4.69	0.77
8. Knowledge of ethical obligations related to providing services to students with psychiatric disabilities (K)	4.67	0.72
9. Possession of empathy toward students with psychiatric disabilities (A)	4.64	0.66
10. Knowledge of disability disclosure hesitations/difficulties related to psychiatric disabilities (K)	4.25	0.86
11. Knowledge of stereotypes/stigma related to psychiatric disabilities (K)	4.21	0.79
12. Ability to assist students in determining when to disclose their psychiatric disability to faculty, staff, peers, and others (S)	4.20	0.96
13. Ability to address stereotypes/stigma related to psychiatric disabilities (S)	4.17	0.90
Factor Two - Accommodations and Supports	**3.85**	**1.07**
1. Ability to design reasonable accommodations for students with psychiatric disabilities (S)	4.79	0.61
2. Knowledge of reasonable accommodations for students with psychiatric disabilities (K)	4.76	0.61
3. Ability to advocate for students with psychiatric disabilities (S)	4.60	0.70
4. Ability to teach self-advocacy skills to students with psychiatric disabilities (S)	4.10	1.07
5. Ability to teach self-determination skills to students with psychiatric disabilities (S)	3.74	1.32

6. Knowledge of universal design for learning strategies related to students with psychiatric disabilities (K)	3.69	1.10
7. Knowledge of natural supports for students with psychiatric disabilities (K)	3.65	1.13
8. Knowledge of evidence-based practices related to psychiatric disabilities (K)	3.59	1.08
9. Ability to assist students with psychiatric disabilities transition into college (S)	3.54	1.27
10. Ability to teach academic success skills to students with psychiatric disabilities (S)	3.37	1.27
11. Ability to provide outreach to students with psychiatric disabilities (S)	3.26	1.34
12. Ability to teach social skills to students with psychiatric disabilities (S)	3.07	1.32
Factor Three - Disability Aspects	**3.83**	**1.02**
1. Desire to accommodate the cyclical nature of psychiatric disabilities (A)	4.39	0.88
2. Knowledge of how to interpret psychiatric and medical documentation (K)	4.29	0.83
3. Knowledge of specific psychiatric disabilities and their characteristics (K)	4.20	0.83
4. Ability to assess functional limitations of students with psychiatric disabilities (S)	4.19	1.02
5. Ability to assess strengths of students with psychiatric disabilities (S)	4.10	0.93
6. Ability to assess goals and interests of students with psychiatric disabilities (S)	3.83	0.98
7. Knowledge of diagnostic criteria (i.e. Diagnostic and Statistical Manual - DSM) (K)	3.60	1.11
8. Knowledge of psychiatric recovery and rehabilitation processes (K)	3.56	1.00
9. Knowledge of psychiatric medication types and side effects (K)	3.40	1.13
10. Knowledge of the predictors of college success for students with psychiatric disabilities (K)	3.38	1.17
11. Ability to apply diagnostic criteria (i.e. Diagnostic and Statistical Manual - DSM) to the college setting (S)	3.20	1.35
Factor Four - Community Resources	**4.11**	**0.93**
1. Ability to appropriately refer students to other professionals who provide services to students with psychiatric disabilities (S)	4.75	0.53
2. Ability to access information and resources about psychiatric disabilities (S)	4.34	0.81

3. Ability to collaborate with professionals regarding students with psychiatric disabilities (S)	4.22	0.91
4. Desire to pursue continuing education opportunities related to psychiatric disabilities (A)	4.19	1.00
5. Desire to collaborate with community partners to assist students with psychiatric disabilities (A)	4.12	1.02
6. Knowledge of community mental health resources (K)	3.88	1.03
7. Ability to collaborate with families in regards to their family members with psychiatric disabilities (S)	3.26	1.19
Factor Five - Campus Considerations	**3.94**	**1.04**
1. Knowledge of on-campus mental health resources (K)	4.79	0.63
2. Ability to consult with faculty regarding students with psychiatric disabilities (S)	4.34	0.88
3. Knowledge of campus safety concerns related to psychiatric disabilities (K)	4.15	0.87
4. Ability to conduct faculty and staff trainings related to psychiatric disabilities (S)	3.84	1.18
5. Ability to advocate for institutional change to improve access for students with psychiatric disabilities (S)	3.82	1.18
6. Ability to conduct campus needs assessments related to improving the success of students with psychiatric disabilities (S)	3.44	1.25
7. Knowledge of supported education (K)	3.23	1.30

as well as employment and independent living considerations. Lastly, the fifth factor ($M = 3.94$, $SD = 1.04$) was labeled Campus Considerations and contained seven items that pertained to working with faculty and staff, evaluating institutional/campus needs, and implementing supported education programs. In order to estimate the internal consistency of each factor, reliability coefficients were computed. Cronbach alphas ranged from .80 to .95, which indicated a moderate to high internal consistency of the items in each factor.

Post-Hoc Analyses

Two post-hoc analyses were conducted in this study. First, in order to determine whether perceptions of importance of knowledge, skills, and attitudinal items differed according to demographic and professional characteristics of the national survey DSPs participants, a multivariate analysis of variance (MANOVA) was conducted. The dependent variables were the mean scores of the five factors. The independent variables were the demographic and professional characteristics: (a) job title, (b) employment setting, (c) highest obtained professional degree, (d) professional degree area of study, and (e) geographic region. A significant multivariate F (Wilks Lamda = F .90, $p =$ < .05) was found for the employment setting variable. An independent-samples t test comparison revealed that participants who were employed at two-year colleges perceived the community factor as significantly more important than participants employed in other postsecondary education settings.

The second post-hoc analysis utilized four items that were originally removed from the principal components analysis because they did not meet an a priori criterion level (≥ 3.00) of importance. Although DSPs rated these items low in the AHEAD survey, students with psychiatric disabilities rated them high in the Delphi survey. While additional research is needed to establish empirical differences, the differences in ratings warranted analysis because of the unique inclusion of student perspectives. The first item was the ability to assist students with psychiatric disabilities develop natural supports. DSPs rated this item with a mean score of 2.87 and a standard deviation of 1.33. In contrast, students with psychiatric disabilities rated this item with a mean score of 4.00 and a standard deviation of 0.75. The second item was the ability to assist students with psychiatric disabilities prepare for employment. DSPs rated this item with a mean score of 2.86 and a standard deviation of 1.24. In contrast, students with psychiatric disabilities rated this item with a mean score of 3.86 and a standard deviation of 0.77. The third item was the ability to assist students

with psychiatric disabilities transition into independent living settings. DSPs rated this item with a mean score of 2.06 and a standard deviation of 1.31. In contrast, students with psychiatric disabilities rated this item with a mean score of 3.13 and a standard deviation of 0.82. Lastly, the fourth item was the ability to implement supported education strategies for students with psychiatric disabilities. DSPs rated this item with a mean score of 2.83 and a standard deviation of 1.39. In contrast, students with psychiatric disabilities rated this item with a mean score of 3.45 and a standard deviation of 0.99.

Discussion

This study began with a three-round Delphi survey where two panels of experts gained consensus on 54 knowledge, skill, and attitudinal items. A principal components analysis of the survey results organized the items into five interpretable factors: (a) ethical and legal considerations, (b) accommodations and supports, (c) disability aspects, (d) community resources, and (e) campus considerations.

Factor One - Ethical and Legal Considerations

The Ethical and Legal Considerations factor contained 13 items, which received particularly high ratings ($M = 4.57$, $SD = 0.69$). These high ratings were not unexpected. Since 1996, AHEAD has led a series of professional development campaigns and in-service training opportunities related to ethical and legal topics. Further, the profession of disability services in postsecondary education is guided by legislation such as Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act Amendments Act of 2008. Lastly, AHEAD published a Code of Ethics that represented the principles and values DSPs should use to govern their activities and decisions (AHEAD, 1996). This widely disseminated Code of Ethics stated:

> disability service professionals are committed to facilitating the highest levels of educational excellence and potential quality of life for postsecondary students with disabilities and strive to achieve and maintain the highest levels of competence and integrity in all areas of assistance to adult students with disabilities (p. 1).

In an effort to address ethical and legal considerations, Kiuhara and Huefner (2008) suggested that DSPs begin by rejecting stigma (stereotypes, myths, and fears) about students with psychiatric disabilities. This is particularly important considering that stigma can be as debilitating as the functional limitations of a psychiatric

disability (Belch, 2011). When members of the campus community, including DSPs, view students with psychiatric disabilities without stigma, these students will face less opposition when it comes to receiving fair and comprehensive services (Kiuhara & Huefner, 2008). In addition to the rejection of stigma, other ethical and legal considerations were identified in this study. Examples include: (a) possession of an understanding that not all students with psychiatric disabilities pose a danger to the campus community, (b) desire to see students with psychiatric disabilities succeed in college, (c) possession of a friendly attitude toward students with psychiatric disabilities, and (d) possession of empathy toward students with psychiatric disabilities.

Factor Two - Accommodations and Supports

The Accommodations and Supports factor contained 12 items ($M = 3.85$, $SD = 1.07$). Common accommodations for students with psychiatric disabilities include reduced course load, extended time on exams, administration of exams in distraction-reduced environments, utilization of note takers, rescheduling of exams, and possible relaxation of attendance requirements due to the cyclical nature of psychiatric disabilities or the side effects of medication. The ability to design reasonable accommodations was the highest rated item in this factor ($M = 4.79$, $SD = 0.61$). Underscoring the difficulty of designing reasonable accommodations, Unger (1991) found that DSPs often lack the expertise to identify functional limitations of students with psychiatric disabilities and translate these limitations into reasonable accommodations. In a related study by Megivern, Pellerito, and Mowbray (2003), students with psychiatric disabilities perceived DSPs as lacking competence to identify reasonable accommodations. Megivern and colleagues noted that this perception by students was a barrier for them to access disability services. When DSPs are competent, the provision of reasonable accommodations is an important factor in predicting the success of students with psychiatric disabilities in postsecondary education (Kiuhara & Huefner, 2008) and plays a role in their seeking out services.

In addition to accommodations, the present study also identified knowledge, skills, and attitudes that pertained to the provision of supports. For example, the ability of DSPs to provide outreach to students with psychiatric disabilities was perceived to be important ($M = 3.26$, $SD = 1.34$). McEwan and Downie (2013) found that many students with psychiatric disabilities were not well served by the self-advocacy model of disability services in postsecondary education, which requires students to independently seek out services

and disclose their disability. They suggested that DSPs develop an "aggressive outreach program targeting current and prospective students, ensuring students are aware of their right to the service" (p. 242). Other professionals on a student's coordinated care team, such as rehabilitation counselors, often assist with outreach as well.

The provision of outreach does not alleviate the need for students to learn self-advocacy skills. In fact, the ability of DSPs to teach self-advocacy skills was perceived to be important in this study ($M = 4.10$, $SD = 1.07$). Students with learning disabilities, for example, typically arrive in postsecondary education with a history of support for their disabilities. Teaching the skills of self-advocacy, including the awareness of rights to accommodations, understanding one's learning style, and how to effectively request appropriate supports, is standard transition training for students with learning disabilities preparing for postsecondary education (Alberta, 2002). However, Pottick et al. (2008) and McEwan and Downie (2013) found that because the typical age of onset for psychiatric disabilities is 18 to 24-years-old (after students leave secondary school), students with psychiatric disabilities in postsecondary education might have had limited opportunities to develop self-advocacy skills before entering college.

Factor Three - Disability Aspects

The Disability Aspects factor contained 11 items ($M = 3.83$, $SD = 1.02$). As Unger (1991) noted, the unique aspects of psychiatric disabilities cause many DSPs to "throw up their hands in despair because the students take so much of the professional's time" (p. 279). Collins and Mowbray (2005; 2008) suggested that DSPs possess specific pre-service or in-service training regarding aspects of psychiatric disabilities, with topics such as medication side effects, recovery and rehabilitation process, and how to interpret psychiatric and medical documentation. These items were identified as being important in this study.

The highest rated item in the Disability Aspects factor was the desire to accommodate the cyclical nature of psychiatric disabilities ($M = 4.39$, $SD = 0.88$). An example of the cyclical nature of psychiatric disabilities is when a student who may have been requiring very little support during previous semesters suddenly needs increased support. Another highly rated item was the ability to assess functional limitations of students with psychiatric disabilities ($M = 4.19$, $SD = 1.02$). According to Mancuso (1990), functional limitations for students with psychiatric disabilities include: (a) screening out environmental stimuli - an inability to block out sounds, sights, or odors which

interfere with focusing on tasks; (b) sustaining concentration - restlessness, shortened attention span, easily distracted, trouble remembering verbal directions; (c) maintaining stamina - having energy to attend long classes, combating drowsiness due to medications; (d) handling time pressures and multiple tasks - managing assignments and meeting deadlines, prioritizing tasks; (e) interacting with others - getting along, fitting in, talking with peers, reading social cues; (f) responding to negative feedback - understanding and interpreting criticism, knowing what to do to improve, initiating changes because of low self esteem; and (g) responding to change - coping with unexpected changes in coursework, such as changes in assignments. Sharpe and colleagues (2004) recommended that DSPs be comfortable with identifying functional limitations of students with psychiatric disabilities, particularly within the context of related factors like substance abuse and social isolation.

Factor Four - Community Resources

The Community Resources factor contained seven items (M = 4.11, SD = 0.93). These items related to collaborating with family members and professionals, as well as accessing information and continuing education about psychiatric disabilities. Kiuhara and Huefner (2008) acknowledged the importance of partnerships between professionals, community members, and DSPs. These partnerships are particularly important considering that DSPs often have large caseloads and may not be able to provide assistance beyond the basic facilitation of academic supports for students with disabilities (Collins & Mowbray, 2005; Sharpe et al., 2004). Further, collaborating with other professionals on a student's coordinated care team may lead to the development, implementation, and maintenance of innovative strategies for addressing the needs of students with psychiatric disabilities.

The collaboration between DSPs and family members is often viewed as being counter-productive to the development of student independence and autonomy in postsecondary education (Doren, Gau, & Lindstrom, 2012). However, McEwan and Downie (2013) found that collaboration between DSPs and family members was particularly important for the success of students with psychiatric disabilities in postsecondary education. Family members may provide emotional, social, advocacy, and financial support, as well as observe early signs of relapse to help prevent withdrawal. Dixon and colleagues (2001) suggested that disability professionals in postsecondary education encourage family members to expand their social support networks (i.e., National Alliance for Mental Illness) and

listen to families' concerns while involving them as equal partners in the planning and delivery of accommodations and supports.

The Community Resources factor yielded a significant finding in the post-hoc analysis. This analysis revealed that participants who were employed at two-year colleges perceived the community resources factor as being significantly more important than participants employed at other postsecondary education setting. A study by Collins and Mowbray (2005) with 275 DSPs yielded similar findings. They attributed their findings to the role two-year colleges play in providing community access to postsecondary education. Further, two-year colleges are often at the forefront of college-community partnerships because of their focus on competency-based education, which are standards developed by business and community leaders (Soska & Butterfield, 2013).

Factor Five - Campus Considerations

The last factor, Campus Considerations, also contained seven items (M = 3.94, SD = 1.04). Similar to Factor Four, collaborating with the campus community was perceived to be important. Bertram (2010) noted that the responsibility to support students with psychiatric disabilities is not solely on DSPs. The broad range of student needs requires collaboration with faculty and staff in Counseling and Psychological Services, Student Affairs, Academic Affairs, Student Health Center, Residential Living, and other campus offices. Stein (2005) revealed an initial hesitation by faculty and staff when supporting students with psychiatric disabilities. However, when DSPs provided technical assistance and training, faculty and staff became more comfortable.

Another highly rated item was knowledge of campus safety concerns related to psychiatric disabilities (M = 4.15, SD = 0.87). In an effort to address campus safety, Mowbray and colleagues (2006) suggested that there should be a well-developed and comprehensive system to prevent psychiatric crises and to respond to crises when they occur. Through campus security, there should be procedures for responding to students who are self-identified or identified by staff, faculty, or other students as being in a psychiatric crisis to ensure the safety of the individual and campus community. DSPs should be key partners in the coordination of campus safety procedures (Flynn & Heitzmann, 2008; Mowbray et al., 2006).

Differences Between Professional and Student Perceptions

DSPs in both the Delphi survey and national survey rated the knowledge, skill, and attitudinal items consistently. However, there were differences in ratings between DSPs and students with psychiatric disabilities who participated in the Delphi study. While additional research is required to establish empirical differences, the discrepancies noted warrant discussion. These differences in ratings pertain to four items in particular. First, students perceived the ability of DSPs to assist them develop natural supports as being particularly important ($M = 4.00$, $SD = 0.75$). DSPs rated this item lower ($M = 2.87$, $SD = 1.33$). According to Fabian and colleagues (1993), natural supports refer to enhancing or linking students to existing academic and social supports in the postsecondary education settings that are available either informally (other students, family members, friends) or formally (campus staff members). Students often view natural supports as attracting less attention from the campus community and thereby reducing stigma associated with seeking disability services (Belch, 2011). While DSPs may perceive the establishment of natural supports as requiring substantial up-front time and effort (McEwan & Downie, 2013), they tend to yield important outcomes for students with psychiatric disabilities such as improved peer relationships, enhanced self-advocacy skills, and an increased persistence to degree completion (McEwan & Downie, 2013).

Second, students perceived the ability of DSPs to assist them prepare for employment as being important ($M = 3.86$, $SD = 0.77$). DSPs rated this item lower ($M = 2.86$, $SD = 1.24$). Researchers have clearly documented the challenges individuals with psychiatric disabilities face when pursuing gainful employment (Henry & Lucca, 2004), as well as the role of postsecondary education in improving employment outcomes (Collins & Mowbray, 2005). However, few studies have explored the role of DSPs in preparing students with psychiatric disabilities for employment (Unger, Pardee, & Shafer, 2000). Unger and colleagues encouraged DSPs to help students with psychiatric disabilities to prepare for employment. With the help of DSPs, students have the potential to develop a stronger understanding of their own disabilities, determine effective accommodations, and practice appropriate social skills for the workplace (Unger, Pardee, & Shafer, 2000). Yet, the substantial time and effort required by DSPs to prepare students for employment is an important consideration. Instead, collaboration with community agencies is imperative. State vocational rehabilitation agencies and community rehabilitation providers often fulfill the role of preparing students with psychiatric disabilities for employment.

Third, students perceived the ability of DSPs to be important in assisting them transition into independent living settings ($M = 3.13$, $SD = 0.82$). DSPs rated this item lower ($M = 2.06$, $SD = 1.31$). In regards to postsecondary education, the topic of independent living is often discussed within the context of on-campus housing. Bybee, Bellamy, and Mowbray (2000) found that students with psychiatric disabilities who rated their on-campus housing experience higher were more likely to persist to degree completion. Bybee and colleagues encouraged DSPs to provide information and resources about psychiatric disabilities to residential life staff. However, similar to the previous item, the time and effort involved in preparing students to transition into independent living settings may not be viable for DSPs. Community agencies like independent living centers and vocational rehabilitation can assist as well.

Lastly, students perceived the ability of DSPs to implement supported education strategies as being important ($M = 3.45$, $SD = 0.99$). DSPs rated this item lower ($M = 2.83$, $SD = 1.39$). Supported education is a psychiatric rehabilitation intervention that provides assistance, preparation, and support to students with psychiatric disabilities enrolling in and completing postsecondary education (Collins & Mowbray, 2005). As Brown (2002) noted, most supported education programs offer the following core services: career planning (providing instruction, support, counseling, and assistance with vocational self-assessment, career exploration, development of an educational plan, and course selection), academic survival skills (strengthening basic educational competencies, time and stress management, developing social supports, and tutoring and mentoring services), and outreach to services and resources (facilitating referrals to campus partners and community agencies). DSPs are important members of the supported education team (Brasher & Dei Rossi, 2009; Collins & Mowbray, 2005). Collins and Mowbray (2005) found that 15 percent of DSPs had extensive involvement in supported education programming, 22 percent had moderate involvement, 43 percent had limited involvement, and 20 percent had no involvement. Based on the outcomes of supported education strategies, and the apparent limited exposure to DSPs, this may be an under-explored approach to working with students who experience psychiatric disabilities.

The current study was unique because students with psychiatric disabilities were active participants who served as experts during the Delphi survey. Bertram (2010) noted that the voice of students with psychiatric disabilities is often a missing component in the research process. Their lack of involvement is not due to an inability to contribute. Rather, researchers may

perceive student involvement as being time consuming, complex, and liability-prone (Knis-Matthews et al., 2007). The topic of participatory research extends to other disability groups as well, such as learning disabilities (Gilbert, 2004), intellectual disabilities (Iacono & Murray, 2003), and physical disabilities (Fawcett et al., 1994). Davidson and McDonald-Bellamy (2010) suggested that including people with disabilities in the research process acknowledges the important disability rights mantra of "nothing about us without us" (p. 6). Beyond the research process, Bertram (2010) called for the involvement of students with psychiatric disabilities in the development of mental health-related policies and supports in postsecondary education institutions, which can expand their own understanding of advocacy and social justice. Importantly, it was not the purpose of the current study to judge which perspective (DSPs or students with psychiatric disabilities) was right or wrong. Rather, the diverse perspectives added to the richness of the findings and implications.

Implications for Disability Service Professionals

The findings from the current study have important implications for disability services in postsecondary education. For example, the knowledge, skills, and attitudes may guide professional development opportunities such as in-service training for DSPs. Collins and Mowbray (2005) suggested that in-service training is an important activity for DSPs because of their diverse educational and professional backgrounds, which leads to many not being prepared to provide services to students with psychiatric disabilities. In their Code of Ethics, AHEAD (1996) also encouraged DSPs to pursue in-service training. The findings from this study provide AHEAD and similar in-service providers with a set of empirically established knowledge, skills, and attitudes to assist with identifying in-service training opportunities related to the provision of services to students with psychiatric disabilities. For training purposes, the next steps are to operationalize each item, establish a training protocol, and develop training evaluations and outcome measures. These elements will take the important step toward grounding the in-service training opportunities in sound pedagogical models. It is important to clarify that in-service training is not a "quick fix" but rather one of many on-going professional development steps that DSPs can take toward continuously improving the services they provide to students with psychiatric disabilities. Further, it might not be realistic to expect DSPs to possess the extensive range of knowledge, skills, and attitudes identified in the current study. Instead, students with psychiatric disabilities often need a well-trained team of coordinated care professionals, of which DSPs are members.

Assumptions and Limitations

All studies have underlying assumptions that are implicit (Remier & Van Ryzin, 2010). In this study, it was assumed that the knowledge, skills, and attitudes needed to work with students with psychiatric disabilities could be identified. The second assumption was that the knowledge, skills, and attitudes identified by the participants are representative of what is needed by the broad population of DSPs. The third assumption was that the participants were able to accurately and honestly assess the knowledge, skills, and attitudes that are needed to provide services to students with psychiatric disabilities. This study's assumptions lead to a series of limitations. Participant responses may have been influenced or limited by the lack of ability to make discriminations about the level and depth of knowledge, skills, and attitudes needed by DSPs. Further, certain knowledge, skills, and attitudes may not have been identified during the instrument development process and therefore were not subjected to analysis. The relatively small survey sample size ($n = 402$) also limits generalizability of findings. Lastly, the Delphi student panelists may have over-selected the disability services they desired. In reality, the selection of services is driven by more than just student desire. DSPs must be cognizant of what is realistic and ethical within their scope of work and the capacity of the postsecondary education institution.

Recommendations for Future Research

It is hoped that the current study will stimulate future research. Addressing the aforementioned limitations offers several research opportunities. Further, because of the exploratory nature of this study, the results are not exhaustive. Researchers should determine the potential presence of remaining knowledge, skills, and attitudes that are important for DSPs to possess in order to provide beneficial services to students with psychiatric disabilities in postsecondary education. Researchers should also determine how DSPs perceive their preparedness for each knowledge, skill, and attitudinal item. The topic of professional development may also lead to future research topics, including the exploration of effective methods for DSPs to develop (acquire, increase, and implement) the knowledge, skills, and attitudes that were identified in the current study. Researchers may also consider the use of alternative research methodologies that do not have the limitations associated with survey research. One example is a qualitative research study that explores the unique experiences of students with psychiatric

disabilities in postsecondary education and how DSPs' knowledge, skills, and attitudes affect the perceived service provision process and student outcomes. This study revealed differences in perspectives between students with psychiatric disabilities and DSPs. As Ferguson (2005) suggested, researchers need to "fully capture the voice and participation of the student with a disability" (p. 331). The inclusion of student perspectives about disability services in postsecondary education represents another future research opportunity.

Conclusion

The current study was the first to identify knowledge, skills, and attitudes that were perceived to be important for DSPs to possess in order to provide beneficial services to students with psychiatric disabilities. Students with psychiatric disabilities are an increasing presence on postsecondary education campuses. Their right to enroll in postsecondary education and reap the personal, social, and economic benefits is undisputed. However, researchers have recognized the challenges these students face, oftentimes leading to their withdrawal prior to degree completion (Belch, 2011; Hartley, 2010). Researchers have also acknowledged the potential of DSPs to support students with psychiatric disabilities toward reaching their postsecondary education goals (Collins & Mowbray, 2005; McEwan & Downie, 2013). The 54 knowledge, skill, and attitudinal items and five factors that emerged from the current study offer DSPs and other coordinated care professionals another step toward improving services for students with psychiatric disabilities in postsecondary education.

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Gender Differences in Self-Reported Symptomatology and Working Memory in College Students with ADHD

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Abstract

The purpose of this study was to examine gender differences in self-reported symptomatology and working memory (visuospatial and auditory) in college students with Attention Deficit Hyperactivity Disorder (ADHD). Forty-seven college students with ADHD and 44 non-affected control participants completed two self-report questionnaires and six tests of auditory and visuospatial working memory. For self-report measures, we found significantly larger differences in self-reported inattention and internal restlessness between female participants with and without ADHD than between male participants with and without ADHD. In working memory, regardless of diagnosis, women significantly outperformed men on one test of visuospatial working memory. Women with ADHD had more difficulty than their non-affected peers on one test of auditory working memory but, surprisingly, men with ADHD performed better than their comparison peers on this measure.   Our results indicate that gender may interact with an ADHD diagnosis to impact both subjective and objective symptomatology of the disorder.

Keywords: Attention Deficit Hyperactivity Disorder, college student, working memory, gender differences, self-reports

Attention Deficit Hyperactivity Disorder (ADHD) is usually diagnosed in childhood but often persists across the lifespan, with numerous implications for adulthood (Babinski, et al., 2011; Barkley, 1998; Barkley, Murphy & Kwasnik, 1996; Cahill, et al., 2012; Reimer, Mehler, D'Ambrosio, & Fried, 2010; Shekim, Asarnow, Hess, Zaucha & Wheeler, 1990; Waite, 2007; Yen, Yen, Chen, Tang & Ko, 2009). ADHD affects between 2% and 11% of the college student population (DuPaul, Weyandt, O'Dell & Varejao, 2009; Weyandt & DuPaul, 2008). College students who are diagnosed with ADHD are at increased risk of being placed on academic probation, having a lower grade point average, experiencing more academic problems, and failing repeatedly than students without this disorder (Blase et al., 2009; Heiligenstein, Guenther, Levy, Savino & Fulwiler, 1999; Norvilitis, Sun & Zhang, 2010; Norwalk, Norvilitis & MacLean, 2009).   Because young adults with ADHD are enrolling in postsecondary education in increasing numbers despite their academic struggles (Dipeolu, 2011; DuPaul et al., 2009; Weyandt & DuPaul, 2008), gaining a better understanding of how ADHD affects young adult college students will

equip both the students who are seeking a collegiate education and the universities mandated by law to help them (Americans With Disabilities Act Amendments Act, 2008; Section 504 of the Rehabilitation Act, 1973) with the information they need for these students to find success in the college classroom.

One area that has received less attention than warranted in the literature is the examination of potential gender differences in symptomatology in college students with ADHD. Gender differences in this population have possible implications for educational and social outcomes, especially for females with ADHD (Cahill, et al., 2012; Rucklidge & Tannock, 2001; Yen et al., 2009). Traditionally, most of the diagnostic and interventional research on ADHD has focused on young boys with the disorder (Gershon, 2002; Rucklidge, 2006; Rucklidge & Tannock, 2001; Waite, 2007). The extent to which the findings of these studies generalize to older college students and to women with ADHD is, thus, an empirical question. Past studies have revealed that adolescent females with ADHD report more overall distress, anxiety, and depression; a more external locus of control; and more

conduct, cognitive, and hyperactivity symptoms than their peers who do not have ADHD (Rucklidge & Tannock, 2001). Additionally, parents and teachers describe girls with ADHD as having more difficulties in attention, hyperactivity, oppositional behaviors, conduct problems, social skills, anxiety, and depression than controls (Rucklidge & Tannock, 2001). Similarly, when adult women with ADHD were asked about their childhood, they reported their childhood relationships with others (teachers, parents, peers) more negatively than controls, felt less in control when faced with difficulties, and tended to demonstrate a "learned helplessness" attributional style (Rucklidge & Kaplan, 2000). Thus, many of the symptoms documented in males with ADHD appear to apply to females as well and many of the internalizing symptoms, impairments in relationships, and tendencies to underachieve in everyday contexts have been shown to persist beyond adolescence into adulthood (Babinski, et al., 2011).

Although the overall symptoms may be similar across females and males with ADHD when compared to their non-affected peers, most past research has documented different characteristics in females and males with ADHD when they are compared to one another. When examining the types of symptoms typically displayed by females versus males, past studies have revealed that females with ADHD are often less hyperactive and demonstrate significanlty fewer externalizing problems than their affected male peers (Gaub & Carlson, 1997; Gershon, 2002). At the same time, females with ADHD tend to show more inattention and internalizing problems, such as depression and anxiety, than males with ADHD (Gershon, 2002; Rucklidge & Tannock, 2001; Waite, 2007), except when they are part of nonreferred populations (Gaub & Carlson, 1997). Most of these studies have focused on children with ADHD. A study by DuPaul and colleagues (2001) did not find gender differences in self-reported symptoms of university students across three different countries, although they focused on the general population of college students rather than those diagnosed with ADHD. These researchers raise the possibility that gender differences may be less prevalent in higher-achieving populations, although advancing age may also reduce differences between males and females (Du Paul, et al., 2001). Lee, Oakland, Jackson and Glutting (2008) also examined prevalence rates of ADHD symptomatology in the general population of college freshman. They found differences between male and female college freshman, with male college freshmen reporting more inattention and combined symptoms than female college freshmen, but the effect sizes were considered small.

Less research has focused on gender differences in the cognitive symptomatology associated with ADHD. Some studies have revealed that girls with ADHD fare more poorly intellectually than boys with ADHD (Gaub & Carlson, 1997; Gershon, 2002), but others have not supported this contention (Rucklidge, 2006; Rucklidge & Tannock, 2001). Rucklidge and Tannock (2001) administered the Wechsler Intelligence Scale for Children-Third Edition, as well as academic achievement measures, to adolescent boys and girls with and without ADHD. Girls with ADHD performed more poorly than their non-affected female peers on tasks involving processing speed, reading, spelling, and arithmetic. They also displayed poorer vocabulary scores than boys with ADHD, although they outperformed boys with ADHD in processing speed. In a later study, Rucklidge (2006) found that both male and female adolescents with ADHD were impaired compared to their non-affected peers in naming, processing abilities, and inhibitory processes. However, the two gender groups did not differ from each other across a large battery of neuropsychological tests except that boys with ADHD were more impaired than girls with ADHD on two measures involving response inhibition. These results supported an earlier study by the same research group (Rucklidge & Tannock, 2002), which also found that adolescents with ADHD showed deficits in processing speed, naming, behavioral inhibition and response consistency relative to controls, but that boys and girls with ADHD did not differ from each other in their cognitive abilities.

One area of common difficulty for young adults with ADHD is working memory. Working memory is the capacity to simultaneously store and manipulate information (Baddeley, 2003). This ability is responsible for the short-term storage and online manipulation of information necessary for higher cognitive functions particularly in the presence of distractions (Baddeley, 1986, 2003; Berti & Schroger, 2003; Shallice, 1988; Swanson & Seigel, 2001) and is essential to learning in a classroom environment (Alloway, 2006). Researchers have examined two primary types of working memory: visuospatial working memory and auditory working memory. Although results are mixed across studies, most agree that young adults with ADHD demonstrate impairments in visuospatial working memory (Barkley, et al., 1996; Clark et al., 2007; Dowson et al., 2004; Karatekin & Asarnow, 1998; McLean et al., 2004; Murphy, Barkley & Bush, 2001; Roberts, Milich & Fillmore, 2012; Young, Morris, Toone & Tyson, 2007), with some, but not all, researchers also documenting deficits on auditory working memory tasks (Barkley et al., 1996; Biederman et al., 2009; Karatekin

& Asarnow, 1998; Murphy et al., 2001; Schweitzer, Hanford & Medoff, 2006; White, Hutchens & Lubar, 2005). A recent meta-analysis concluded that both auditory and visuospatial working memory is impaired in adults with ADHD and that methodological variability accounts for the inconsistent results across past studies (Alderson, Kasper, Hudec & Patros, 2013).

Very few studies have examined gender differences in working memory in individuals with ADHD. Those that have directly addressed this issue have focused on adolescents (Rucklidge, 2006; Rucklidge & Tannock, 2001). Neither of these studies found gender differences in either visuospatial or auditory working memory, but the range of working memory tests examined in these studies was limited (Digit Span, Arithmetic, Spatial Span) because working memory was only one of many cognitive and psychosocial areas assessed. Two other studies included gender in analyses when comparing adults with ADHD to adults without the disorder on several working memory measures (Murphy et al., 2001; Schweitzer et al., 2006). Across these studies, men in general (regardless of diagnosis) outperformed women on some auditory working memory tests (Letter-Number Sequencing and the Paced Auditory Serial Addition Test (PASAT)), but women outperformed men in smell identification and information processing speed. The only gender difference to interact with diagnosis was on the PASAT in the Schweitzer et al. (2006) study, where males with ADHD performed more poorly than males without ADHD, but no gender difference emerged for females with and without the disorder. The researchers did not directly compare males with ADHD to females with ADHD on this or any other tests, so gender differences within the ADHD group were not reported.

The current study attempts to better delineate gender differences in self-reported symptomatology and working memory (visuospatial and auditory) in college students with ADHD. We asked college students with ADHD and age-matched controls to complete two self-report measures of their ADHD symptomatology to help clarify the somewhat inconsistent findings of the DuPaul et al. (2001) and the Lee et al. (2008) studies. Additionally, we administered three tests of visuospatial working memory and three tests of auditory working memory to determine whether male and female college students with ADHD are impaired relative to their non-affected peers and, more importantly, whether gender differences exist in the visuospatial or auditory working memory abilities of college students with ADHD.

Method

Participants

Recruitment of college student participants with and without an ADHD diagnosis spanned several college campuses. We placed advertisements in campus newspapers and requested that Student Disability Services (SDS) Offices send emails informing their registered students of the study. Fliers in doctor's offices, at local college student gathering places, and on campus bulletin boards also informed potential participants about the research project, and we announced the study in psychology courses that offered extra credit for research study participation.

Students with ADHD who volunteered to participate provided written documentation approved by the SDS office. The documentation included a medical record review conducted by the SDS office and a structured clinical interview form that included DSM-IV criteria for ADHD that had to be completed by a physician or a clinical psychologist. Those not registered with the SDS office provided a formal testing report and/or a current prescription for an ADHD medication. Students who had inadequate documentation or reported only a past history of ADHD symptomatology without a current diagnosis were excluded from the study.

Forty-seven college students with ADHD (19 male and 28 female) volunteered to participate in the study. The majority of the ADHD group (97.9%) was Caucasian and 57.4% (n = 27) were receiving academic accommodations at the time of this study. Although students were not directly queried about their medication regimen, the Student Disabilities Office verified that at least 36% (n = 17) of these students had a prescription for and reported taking medication at the time that they registered their disability. An additional 43% (n = 20) included a current prescription as proof of their diagnosis. Thus, the majority of the ADHD participants (at least 79%) likely had access to psychostimulant medications at the time of the study. We did not ask participants to alter their regular medication schedule at the time of their participation.

Forty-four (14 male and 30 female) college students enrolled in either a four-year college or a graduate program served as age- and education-matched controls. Students with a past or current diagnosis of either ADHD or a learning disability were excluded from the control group. Similar to the ADHD group, the majority (88.6%) of these participants were Caucasian.

Materials

Self-Report Measures

Conners' Adult ADHD Rating Scale (CAARS). The CAARS is a reliable and valid self-report measure of ADHD symptoms for use with adults. It requires participants to respond to 66 items by rating themselves on behaviors and characteristics commonly associated with ADHD (Conners, Ehrhard, & Sparrow, 1999). Scores total onto several primary subscales, each of which is normed by gender. For the purposes of this study, we focused on four subscales that represent areas of common difficulty for adults with ADHD (Inattention, Hyperactivity, Emotional Lability, and Self-Concept),

Internal Restlessness Scale (IRS). The IRS (Weyandt et al., 2003) assesses the construct of "mental restlessness" frequently reported by adults with ADHD. A self-report measure, the IRS presents 24 statements such as "Thoughts race through my mind," "I feel internally restless," and "While listening to others my attention drifts to unrelated thoughts." Participants rate each item on a 7-point Likert scale, ranging from 1 = "none of the time" to 7 = "all of the time." A study by Weyandt et al. (2003) evaluated the reliability and validity of the IRS. The IRS correlates significantly with other rating scales such as the Adult Rating Scale and demonstrates adequate test–retest reliability (r = .89). More importantly, the IRS successfully differentiates college students with ADHD from their non-affected peers ($\eta2$ = .431; Weyandt et al., 2003).

Tests of Auditory Working Memory

Digit Span (DS). On the DS subtest from the Wechsler Memory Scale-Third Edition (Wechsler, 1997), participants hear increasingly longer sequences of single digit numbers. For the first portion of this test, participants repeat the sequence out loud in order of presentation (forward span). For the second portion, they recite the sequence in reverse order (backward span). Correct sequences across the two portions of the test are totaled to determine the Digit Span raw score.

Paced Auditory Serial Addition Test (PASAT). During the PASAT (Gronwall & Sampson, 1974), participants hear a sequence of single digit numbers. They add adjacent digits together and verbally report the sum. While calculating the sum, they must also remember the last digit they heard in order to add it to the next number presented. The digits occur three seconds apart during the first trial and two seconds apart during the second trial. Correct responses across the two trials are totaled to determine the PASAT raw score.

Letter-Number Sequencing (LNS). During the LNS subtest from the Wechsler Memory Scale–Third Edition (Wechsler, 1997), the examiner reads a series of intermixed letters and single digits aloud at a rate of one item per second. The participant verbally reports the numbers in numerical order, followed by the letters in alphabetical order. Sequences begin with three items (two letters and one number or two numbers and one letter) and become increasingly longer until the participant fails all three trials of a given sequence length. Raw scores on the LNS test reflect the number of sequences correctly reported.

Tests of Visuospatial Working Memory

Spatial Span (SS). Also from the Wechsler Memory Scale-Third Edition (Wechsler, 1997) and a visual analog of the DS test, during the SS subtest participants watch the examiner tap increasingly longer sequences of raised, blue blocks positioned arbitrarily on a white board. Participants tap the blocks in the same order they witnessed (forward span) or in the reverse order (backward span). Correct responses across forward span and backwards span trials are totaled to determine the Spatial Span raw score.

N-Back. During the N-Back (Awh et al., 1996, Cohen et al., 1994, 1997; Smith & Jonides, 1997), participants view a series of letters that appear serially on a computer screen. Their task is to inform the examiner whenever a letter is identical to the letter that came immediately before it (1-back). In subsequent trials, the task becomes more difficult as the participant attempts to inform the examiner when the letter matches the one that came two before it (2-back) or three before it (3-back). The total number of correct target detections across 1-back, 2-back and 3-back trials comprises the N-Back raw score.

Conners' Continuous Performance Test (CPT). During the CPT, participants watch a long sequence of letters appear individually on a computer screen. They hit the space bar as quickly as they can whenever a letter appears unless the letter is an X, in which case they withhold their response. Across the 20-minute-long task, the computer varies the rate of presentation of stimuli. Both omissions (failing to respond to a letter other than an X) and commissions (responding to an X) count as errors. The computer also records reaction times (Conners, 2000). All CPT scores represent T-scores normed based on a large standardization sample.

Procedure

As part of a larger study examining distractibility in college students with ADHD (Lineweaver, et al., 2012), participants completed two individual testing

sessions two weeks apart. To encourage participation and prevent attrition, they received $30 in compensation after they completed both testing sessions. The first testing session involved the two questionnaires evaluating symptoms of ADHD (the CAARS and the IRS) and four of the tests of working memory: two auditory (DS and the PASAT), and two visuospatial (SS and the N-back). During the second testing session, participants completed the remaining two working memory tests: the auditory LNS test and the visuospatial CPT.

Results

Demographic Comparisons

Table 1 summarizes the demographic characteristics of the male and female participants with and without an ADHD diagnosis. The ADHD group and control group were statistically equivalent in their gender distribution, χ^2 ($n = 91$) = 0.73, $p = .39$. The four groups were also statistically equivalent in age and education. Additionally, the racial composition of the sample was similar across genders within each diagnostic group, ADHD group: $\chi^2 2$ ($n = 47$) = 0.69, $p = .41$; control group: $\chi^2 2$ ($n = 43$) = 2.13, $p = .55$.

Gender Differences in Self-Reported Symptomatology

Self-reported ADHD symptomatology on both the CAARS and the IRS are also summarized in Table 1. We included scores on the four CAARS subscales and total scores on the IRS in a multivariate analysis of variance with two between-subjects factors: group (control versus ADHD) and gender (male versus female). Scores on all of these self-report measures were available for 37 participants from the control group and 37 participants from the ADHD group.

Not surprisingly, the main effect associated with group was highly significant, F (5, 66) = 11.76, $p < 001$, $\eta_p^2 = 0.47$. Univariate analyses indicated that students with ADHD reported significantly greater ADHD symptomatology across all four CAARS subscales as well as on the IRS. The main effect associated with gender neared significance, F (5, 66) = 2.33, $p = .052$, $\eta_p^2 = 0.15$. Female participants described themselves as significantly more emotionally labile on the CAARS than male participants regardless of diagnosis. Finally, although the group by gender interaction did not reach significance in the multivariate analysis (F (5, 66) = 1.48, $p = .21$, $\eta_p^2 = 0.10$), univariate comparisons demonstrated significantly larger differences in self-reported inattention and internal restlessness between female participants with and without ADHD than between male participants with and without ADHD

(see Figure 1). Follow-up simple main effect analyses revealed that male control participants reported more inattention and internal restlessness than female control participants, with both effects nearing statistical significance, CAARS Inattention: t (35) = 1.95, $p = .059$; Internal Restlessness: t (35) = 1.86, $p = .072$. For participants with ADHD, women with ADHD reported more inattention and internal restlessness than men with ADHD, but only the difference in self-reported inattention neared significance, CAARS Inattention: t (35) = 1.81, $p = .080$; Internal Restlessness: t (35) < 1, ns.

Gender Differences in Auditory and Visuospatial Working Memory

Scores on the six tests of working memory are summarized in Table 2. We included total scores on Digit Span, PASAT, LNS, Spatial Span, and N-Back, as well as omission errors, commission errors and hit reaction times from the CPT in a multivariate analysis of variance (MANOVA). Similar to the analysis of self-reported symptomatology, the MANOVA included two between-subjects factors: group (control versus ADHD) and gender (male versus female). Scores on all of the working memory measures were available for 40 participants in the control group and 41 participants in the ADHD group.

Unlike for self-reported symptomatology, none of the main or interaction effects reached significance in the multivariate analysis, group: F (8, 70) = 0.89, $p = .53$, $\eta_p^2 = 0.09$; gender: F (8, 70) = 1.09, $p = .38$, $\eta_p^2 = 0.11$; group x gender: F (8, 70) = 1.08, $p = .39$, $\eta_p^2 = 0.11$. Univariate comparisons indicated that the control group and the ADHD group performed similarly on all working memory tests. Surprisingly, female participants significantly outperformed male participants on the visuospatial Spatial Span test. Finally, group and gender interacted to affect scores on the LNS test. Specifically, women with ADHD had more difficulty on the LNS test than their non-affected peers, but men with ADHD outperformed men without ADHD on this auditory working memory test (see Figure 2). Follow-up simple main effect analyses indicated that male and female control participants performed similarly on the LNS test (t unequal variances (35.59) = 1.21, $p = .23$), but men with ADHD performed better than women with ADHD on this measure, t unequal variances (22.31) = 2.03, $p = .055$.

Table 1

Demographic Characteristics and Self-Reported Symptomatology Means (SEs) of the Male and Female Participants in the Control and ADHD Groups

| | Control Group | | ADHD Group | | df | Test of Hypotheses (F Values) | | |
	Male	Female	Male	Female		Group x Gender Interaction	Group Main Effect	Gender Main Effect
Age	20.0 (0.43)	19.37 (0.29)	19.95 (0.37)	20.14 (0.30)	1, 87	1.40	1.07	0.39
Years of College	2.14 (0.37)	1.90 (0.25)	2.32 (0.31)	2.39 (0.26)	1, 87	0.28	1.22	0.08
CAARS								
Inattention	52.27 (2.34)	47.27 (1.52)	58.64 (2.07)	63.74 (1.62)	1, 70	6.95*	35.57***	0.00
Hyperactivity	51.82 (2.75)	47.46 (1.79)	58.50 (2.43)	57.57 (1.90)	1, 70	0.58	13.92***	1.38
Emotional Lability	43.73 (2.52)	46.27 (1.64)	50.64 (2.23)	58.26 (1.74)	1, 70	1.51**	20.90***	6.05
Self-Concept	45.36 (3.06)	45.77 (1.99)	52.21 (2.72)	55.30 (2.12)	1, 70	0.28	10.63**	0.48
Internal Restlessness	80.64 (4.88)	70.00 (3.17)	102.36 (4.33)	107.78 (3.38)	1, 70	4.03*	55.32***	0.42

Note: CAARS = Conners' Adult ADHD Rating Scale; Internal Restlessness= Internal Restlessness Scale; PASAT = Paced Auditory Serial Addition Test; LNS = Letter Number Sequencing Test; * $p < .05$, ** $p < 0.01$, *** $p < .001$

(a)

(b)
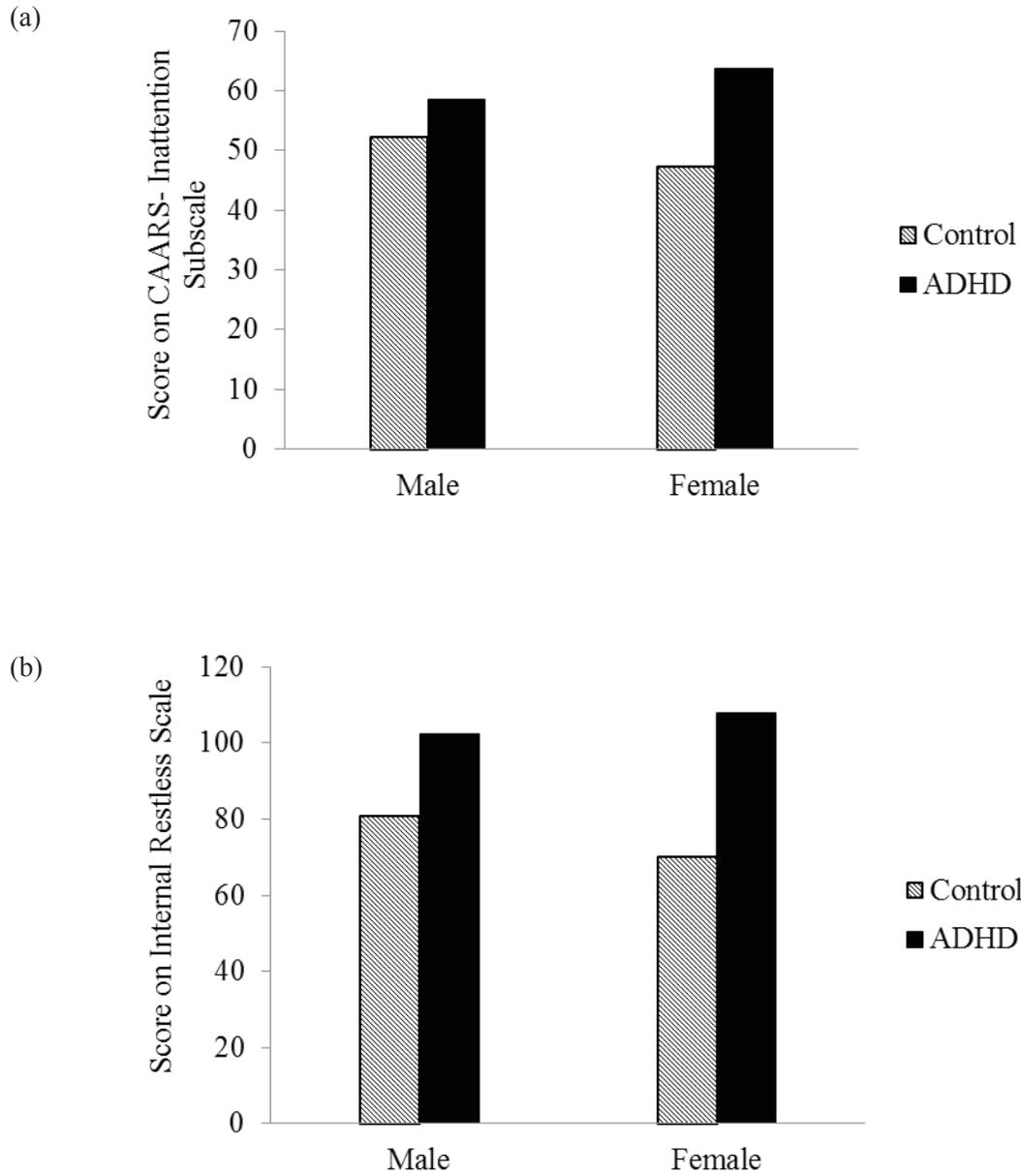
Figure 1. Significant Group x Gender interaction on the CAARS Inattention subscale (a) and the Internal Restlessness Scale (b). Participants with ADHD (black bars) reported more Inattention and Internal Restlessness than controls (hashed bars). Additionally, females with and without ADHD differed more in their self-reported inattention and internal restlessness (right side of both graphs) than males with and without ADHD (left side of both graphs).

Table 2

Working Memory Means (SEs) of the Male and Female Participants in the Control and ADHD Groups

| | Control Group n = 40 | | ADHD Group n = 41 | | Test of Hypotheses F (1, 77) | | |
	Male n = 14	Female n = 26	Male n = 16	Female n = 25	Gender x Group Interaction	Group Main Effect	Gender Main Effect
Auditory WM							
Digit Span	19.21 (0.96)	19.77 (0.70)	18.56 (0.90)	18.28 (0.72)	0.26	1.68	0.03
PASAT	94.57 (4.62)	87.96 (3.39)	86.38 (4.32)	82.00 (3.46)	0.08	3.16	1.90
LNS	11.71 (0.70)	12.62 (0.51)	13.38 (0.65)	11.44 (0.52)	5.60*	0.16	0.74
Visuospatial WM							
Spatial Span	17.71 (0.66)	19.31 (0.48)	17.69 (0.61)	18.52 (0.49)	0.45	0.52	4.60*
N Back	56.86 (0.79)	56.23 (0.58)	55.81 (0.74)	55.56 (0.59)	0.08	1.60	0.20
CPT-Omits	55.24 (4.38)	47.88 (3.21)	52.00 (4.09)	56.79 (3.28)	2.60	0.57	0.12
CPT-Commits	52.11 (2.77)	51.84 (2.03)	52.92 (2.59)	54.36 (2.07)	0.13	0.49	0.06
CPT-Hit RT	43.64 (2.42)	42.34 (1.77)	41.14 (2.26)	43.16 (1.81)	0.64	0.16	0.03

Note: WM = Working Memory; CPT = Conners' Continuous Performance Test; RT = reaction time;   *$p < .05$.
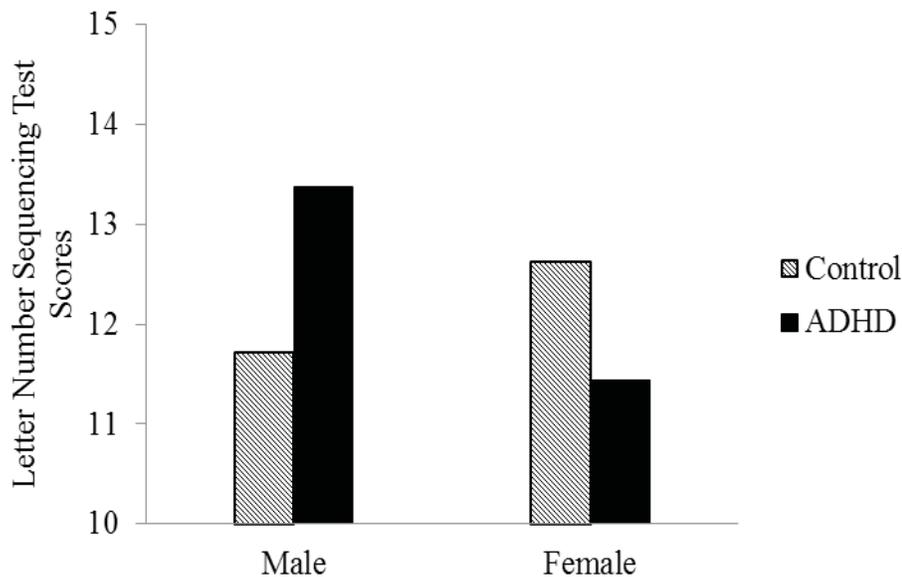
Figure 2. Significant Group x Gender interaction on the Letter Number Sequencing Test. Women with ADHD performed more poorly than women without ADHD on this auditory working memory test (right side of graph), whereas men with ADHD performed better on this test than their non-affected male counterparts (left side of graph).

Discussion

The purpose of our study was to explore gender differences in self-reported symptomatology as well as in visuospatial and auditory working memory in college students with ADHD. Not surprisingly, college students with ADHD reported significantly greater ADHD symptomatology across all four CAARS subscales and the IRS than their non-affected peers, consistent with the purpose and design of these self-report measures (Conners, et al., 1999; Weyandt, et al., 2003). Additionally, female participants described themselves as more emotionally labile than male participants, regardless of whether they were diagnosed with ADHD or not. Although the interaction of gender and diagnosis did not reach significance for this subscale, an examination of the means suggests that women with ADHD (whose average T-score was nearly one standard deviation above the normed mean of 50) had a bigger influence on this gender main effect than women without ADHD (who also outscored their male counterparts on the emotional lability scale, but whose scores averaged only 46, which is below the normed mean T-score of 50). In fact, a follow-up analysis in-

dicated that our women with ADHD did report being significantly more emotionally labile than our women without ADHD ($t\,(47) = 5.03, p < .001$), consistent with prior research that has demonstrated that females with ADHD tend to have elevated emotional lability such as poor temper control, variable mood, and emotional over-reactivity (Robison et al., 2008).

Perhaps more importantly, we found that diagnosis interacted with gender to impact some, but not all, aspects of self-reported symptomatology. Female participants with and without ADHD differed more from each other in their self-reported inattention and internal restlessness than male participants with and without the disorder. This effect emerged because females without ADHD reported lower levels of inattention and internal restlessness than males without ADHD and because females with ADHD reported more difficulty with inattention and, to a lesser and non-significant extent, internal restlessness than their ADHD male counterparts. In combination, this resulted in a larger divide in the self-reported symptomatology for females than males based on the presence or absence of an ADHD diagnosis. Prior research has indicated that females with ADHD primarily have the inattentive subtype

with less hyperactivity than males, leading them to be under-identified at young ages (Grskovic & Zentall, 2010). Thus, it is not surprising that inattention and internal restlessness were the two areas where gender differentially affected self-reports of college students with and without ADHD. In contrast, males with ADHD tend to exhibit greater levels of hyperactivity than females and are, thus, identified more frequently (Abikoff, et al., 2002; Reid et al., 2000). However, even within the general population, males tend to be more physically active and to derive greater self-worth from physical activities (Fairclough & Ridgers, 2010; Trew, Scully, Kremer, & Ogle, 2009). This gender difference in the general population is taken into account with the gender norms applied to CAARS raw scores, reducing the hyperactivity scores of the ADHD males as a result. Thus, this factor was less vulnerable to the interaction of gender and diagnosis.

Our results do not align with those of either DuPaul et al. (2001) or Lee et al. (2008). DuPaul and colleagues did not identify gender differences in self-reported ADHD symptomatology in university students. Although Lee and colleagues did find some gender differences in ADHD symptomatology amongst college freshmen, they found that males reported more inattention and combined symptoms than females. Our results instead suggest that women college students with ADHD report more inattention than men college students with ADHD and that women with ADHD differ more from their non-affected women peers in their internal restlessness than men college students with ADHD differ from men without the disorder. One reason for the discrepancy between our results and those of the two previous studies may be due to the comparisons being made. Both the DuPaul et al. (2001) and the Lee et al. (2008) studies examined the prevalence rates of symptoms in the general population of college students instead of making specific comparisons between students with and without ADHD. Our results identify gender differences in self-reported symptomatology and suggest that, like for children, ADHD may affect young adult men and women differently. Thus, gender differences that emerge in childhood ADHD (Gershon, 2002; Rucklidge & Tannock, 2001; Waite, 2007) may persist throughout adulthood.

In examining gender differences in auditory and visuospatial working memory in college students with and without ADHD, we found that women significantly outperformed men in our sample on the visuospatial Spatial Span test regardless of the presence or absence of an ADHD diagnosis. Existing literature has been inconsistent in establishing gender specific strengths in visuospatial working memory. When school-aged children completed the Corsi Block-Tapping Test, boys performed better than girls (Orsini, Schiappa, Chiacchio & Grossi, 1982), but when the same test was administered to young adults aged 20-29, no gender differences were observed (Ruggiero, Sergi, & Iachini, 2008). In another study that utilized a test of both the processing and the storage components of spatial working memory, males were found to have greater visuospatial working memory spans than females, and the authors used this finding to explain males out-numbering females in science courses and programs (Geiger & Litwiller, 2005). In contrast, on a novel multi-trial test, female college students made significantly fewer visuospatial working memory errors and took significantly less time to reach criterion than males (Duff & Hampson, 2001). Thus, studies have reached conflicting conclusions with regard to whether male or female college students demonstrate stronger visuospatial working memory skills. We expect that because our sample exclusively included college students, our young adult females may have had ample opportunities to develop advanced visuospatial working memory skills compared to the general population of young women the same age. We did not query our participants about their college major or future career plans but, because of our recruitment procedures, many of our non-ADHD student participants were likely psychology majors with at least some interest and background in the sciences. Thus, our student sample may have included a large number of women who utilize visuospatial working memory skills in their academic areas of study, thereby contributing to our finding that women outperformed men on the Spatial Span test.

Beyond this gender difference, we found a group by gender interaction on the auditory working memory Letter Number Sequencing test. Women with ADHD had more difficulty on the LNS test than their non-affected peers. Although these results are not particularly surprising, previous studies have not documented this difference in auditory working memory between women with and without ADHD (Schweitzer et al., 2006). What was even more unexpected and counterintuitive was that the results were the opposite for men; men with ADHD performed better than their comparison peers. Although we did not anticipate this effect, similar to our study, the limited existing research on auditory working memory and ADHD has documented better performance by men with ADHD than women with the disorder, particularly on the LNS test (Schweitzer et al., 2006). However, it is unclear as to why the male students with ADHD in our sample performed better than their non-affected peers on this measure. Future studies will be necessary to further investigate this issue.

Limitations

Our study extends prior research on ADHD by exploring and identifying gender differences in both self-reported symptomatology and auditory and visuospatial working memory among male and female students with and without attentional difficulties. However, our results may or may not generalize to all adults with ADHD due to a few limitations. First, our sample was comprised of college students from an urban private university who may not be representative of all adults with ADHD. Our participants have likely been successful at developing strategies for overcoming the academic obstacles imposed by their ADHD symptoms given their successful enrollment at a private university. Secondly, we did not ask the students to provide any information about their age of diagnosis, years of remediation, presence of other mental health issues such as anxiety or depression, or current medication regimen. Each of these variables could have a possible influence on self-reported symptomatology and working memory skills. Approximately 70% of adult women with ADHD report mental health issues such as depression, anxiety, phobias, or substance abuse (Rucklidge & Kaplan, 2000). Thus, a large percentage of our participants may have been on medications for their mood or for their attention problems. Although we have reported that medications do not strongly affect the working memory skills of college students with ADHD in distraction free environments (Kendall, Dye, Lineweaver & Kercood, 2013), other past studies have demonstrated that psychostimulant medications improve working memory in both children (Kobel, et al., 2009; Strand, Hawk, Bubnik, Shiels, Pelham & Waxmonsky, 2012) and young adults (Agay, Yechiam, Carmel & Levkovitz, 2010) with ADHD. Because we did not ask participants to report their current medication regimens, we cannot directly examine the influence of medications on self-reports and working memory on self-reports and working memory across the participants in our study, nor can we determine whether medication effects may differ by gender.

Future Research

Our study paves the way for future research expanding our understanding of gender differences in self-reported symptomatology and working memory in college students with and without ADHD. Because our results suggest that the types of subjective symptoms experienced and reported by boys versus girls with ADHD during childhood may persist into adulthood, additional research with larger and more diverse adult ADHD samples designed to directly examine gender differences in self-reported symptomatology appears

warranted. Many of the gender differences we documented emerged when young adult college students with ADHD were compared to their same-sex peers without the disorder (i.e., young men with ADHD showed a different pattern of strengths and weaknesses relative to their non-affected peers than young women with ADHD did). This indicates that future studies examining subjective and objective symptomatology in students with ADHD should include control groups of peers without an ADHD diagnosis to better control for gender differences in the general population.

Although our findings answer several questions related to gender differences in young adult college students with ADHD, there are several issues and lingering questions that our results cannot address. Because our study was cross-sectional in design, the developmental trajectory of gender differences in individuals with ADHD remains unknown. Future longitudinal studies should examine whether gender differences are stable or dynamic across early to late childhood, adolescence, and young adulthood. Additionally, we utilized laboratory tasks to evaluate working memory in our study. Future research will be necessary to examine whether our results generalize to the broader context of academic and behavioral tasks more similar to those encountered on a daily basis by college students with ADHD. Another interesting question we were unable to address with our study is whether gender affects the impact medications have on subjective symptomatology and working memory in students with ADHD. Designing a future research study that randomly assigns students to take or withhold their medications before completing subjective and objective test measures could help shed light on potential interactions between gender and medications in influencing self-reported symptoms, as well as auditory and visuospatial working memory. Finally, we did not introduce any interventions in our study, but it is possible that young adult men with ADHD may differ from young adult women with ADHD in their response to both medical and non-medical interventions targeting their subjective symptomatology and working memory. Future studies focused on the efficacy of various treatments for ADHD should include gender as a key variable to directly evaluate this possibility.

Implications

The gender differences we documented in self-reported symptoms and in working memory skills have implications for practitioners who conduct diagnostic evaluations as well as those who provide services and accommodations to students with ADHD. College students with disabilities cite an accurate knowledge

of their disability, a clear explanation of the results of their psychoeducational evaluations, opportunities for self-advocacy, and strong support systems as vital to their success in college (Skinner, 2004). Some universities address these factors as part of their existing curriculum of study skills courses offered to students with learning disabilities and ADHD (Chiba & Low, 2007) to help students smoothly transition to college and find continued success within the postsecondary environment. Integrating empirically-based information about gender differences in subjective and objective symptomatology into these courses or into feedback sessions explaining the results of diagnostic evaluations and their implications to young adults with ADHD is recommended. Sharing this type of information might help increase students' understanding of their own personal struggles. Better awareness of gender differences in ADHD symptomology could also enhance students' ability to advocate for the services and accommodations they need (1) within the classroom environment, (2) when attempting complex academic tasks that place demands on working memory outside of class, and (3) in other non-academic aspects of their everyday life.

In the context of clinical or educational evaluations, our findings have strong implications for diagnosing ADHD based on subjective and objective symptomatology. Assuring that gender-specific norms are utilized when scoring both subjective and objective measures appears to be critical. Because self-reported symptoms and performance on working memory tests may depend upon gender in the general population, using normative data that take these gender differences into account will increase the meaningfulness and interpretability of the results of diagnostic measures. For example, women with ADHD do not need raw scores as high as men with ADHD on self-report scales assessing inattention or internal restlessness to indicate a clinically significant issue due to the lower base rate of these characteristics in women without than in men without the disorder. Additionally, women with ADHD and men with ADHD demonstrated a different pattern of strengths and weaknesses across multiple tests of their auditory and visuospatial working memory in our study. Thus, clinicians should be aware that young adults with ADHD may not simply demonstrate impaired scores on all tests that require working memory. Auditory and visuospatial working memory may dissociate in women or men with ADHD, and some young adults with ADHD may actually show above average performance on some tests of working memory, like our male students with ADHD did on the auditory Letter Number Sequencing Test.

Auditory working memory is important in academic settings because it is essential to comprehend-

ing, processing linguistic information when reading, remembering classroom lectures, and following multi-step instructions (Alloway, 2010; Rogers, Hwang, Toplak, Weiss, & Tannock, 2011), skills that are utilized regularly by college students. Our results suggest that male college students with ADHD have very strong auditory working memory skills, outperforming their non-affected male peers in some instances, whereas female college students with ADHD struggle with auditory working memory compared to female college students without the disorder. Our study included a select college student sample, and our participants have likely found ways to maximize their working memory despite the presence of their disorder. Because male students tend to get diagnosed with ADHD earlier in their school years than female students, our male ADHD students may have received more years of remedial training in developing their auditory working memory skills in order to be successful in the classroom. If this is the case, identifying girls with ADHD earlier in the course of their development or increasing the interventions offered to young women with the disorder when they are diagnosed at older ages may give them a similar opportunity to improve their auditory working memory. Another possible explanation for the enhanced performance of our male ADHD college students on a test of auditory working memory is that the men with ADHD in our sample enjoyed the challenge of the LNS test and were able to focus their attention and fully utilize their auditory working memory for the short duration of this complex task. In this case, helping all students with ADHD reframe academic challenges in a positive light might help them to thrive even when working memory demands are high.

One of the primary tasks facing many students during their college years is reaching a decision about an academic major and future career path. Understanding gender-specific working memory challenges can assist disability service providers in discussions they have with students about major and career choice. Some majors and careers may require more visuospatial working memory (e.g., careers in the sciences or mathematics, dance performance), whereas others may place higher demands on auditory working memory (e.g., philosophy, English, foreign languages). Understanding gender difference in these types of working memory demands could help students select career paths that fit their strengths or help plan necessary accommodations for students who may have already chosen paths that may pose challenges for them. Interestingly, our finding that women outperform men in visuospatial working memory suggests that women need not avoid disciplines in the sciences or mathematics when selecting majors or choosing a career.

Finally, we documented high levels of emotional lability in the women in our study. Emotional lability is associated with severe ADHD core symptoms and a higher prevalence of oppositional behavior, anxiety, affective symptoms, and substance abuse (Sobanski, et al., 2010, Skirrow & Asherson, 2013). Thus, the emotional lability reported by females, particularly those with ADHD, may put them at risk for behaviors and for alterations in mood that may affect their success socially and academically in college. Practitioners who work with these women on college campuses should be aware of these issues in order to provide support services that will best prevent emotional lability from putting young women with ADHD at risk for more significant behavioral, emotional and social challenges.

Conclusions

In summary, our study was able to document gender differences in both self-reported symptomatology and in performance on standardized tests of working memory. Our gender differences were revealed both through direct comparisons of young adult men and women with ADHD and through relative differences between women with versus without ADHD compared to men with versus without ADHD. Together, our results suggest that gender differences that emerge in childhood may continue into the young adult years. Understanding these gender effects can help scientists and practitioners alike in their work with young adult college students with ADHD.

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Authors' Note

Pre-enrollment Considerations of Undergraduate Wheelchair Users and their Post-enrollment Transitions

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Abstract

The purpose of this study was to examine the pre-enrollment considerations of undergraduate wheelchair users (i.e., the decision to attend college, college selection factors) and their post-enrollment transitions (i.e., adjustments from high school to college, academic and social integration). Qualitative ethnographic research methodology was used to reveal the voices of 10 students using wheelchairs and four of their parents. The determining factors in the college selection process for students using wheelchairs were the academic majors available at the university, coupled with the physical accessibility of the campus and a strong office of disability services. The freedom that is attached to making personal decisions and friends was a new experience to many of them and, after a brief transitional time, they relished it. From being able to get around on their own to and from class, to hanging out with friends, a feeling of independence was the key to integrating into college. Similar to peers not in wheelchairs, these students had learned how to navigate the higher education setting and be vocal about their needs (i.e., self-advocate). A series of recommendations for students in wheelchairs, their parents, and colleges and universities is provided.

Keywords: Students with disabilities, disability services, wheelchair, transition, self-advocacy, qualitative

"This is a defining moment in people's lives."
Sally, a university student and wheelchair user

The number of students with disabilities (SWDs) enrolled in postsecondary education who disclose a disability hovers around 11 percent, totaling 2,154,000 students in 2003 and 2,266,000 in 2008 (National Center for Educational Statistics, 2012). Seventy-six percent of colleges and universities reported having students with mobility limitations or orthopedic impairments on their campuses (Raue & Lewis, 2011). These students have unique and diverse needs. Although the physical environment at colleges may be changing, many barriers still exist in understanding SWDs and their needs (Bento, 1996). The intent of this study was to examine the pre-enrollment considerations of undergraduate wheelchair users and their post-enrollment transitions.

Literature Review

The philosophical underpinnings for this study rest in the college enrollment and transition literature. Tinto's (1993) work on the reasons college students leave college and factors that can prevent student attrition were adapted from Van Gennep's (1909, 1960) studies on assimilation. Tinto created a three-stage progression for students to remain in college: separation from past communities, transition between high school and college, and incorporation into the college community. He also discussed the importance of academic and social integration and how these are associated with a student's involvement, retention, and persistence to graduation. Academic integration refers to the student's intellectual incorporation into the new academic system. Social integration takes place primarily through informal associations with other

college students and extracurricular college activities, including informal faculty interactions. The greater the student's level of social and academic integration, the greater the student's commitment to the institution and to persistence to graduation. Multiple researchers have discussed the utility of Tinto's model in predicting college student attrition (e.g., Cotton & Wilson, 2006; McKay & Estrella, 2008), whereas additional authors (e.g., Braxton, 2000, Braxton, Doyle, Hartley, Hirschy, Jones, & McLendon, 2014; Braxton, Hirschy, & McClendon, 2004) have questioned the empirical backing of the theory and reworked issues associated with student departure.

Schlossberg (1981, 1984, 1989) demonstrated that adaptation to life changes, or transition, is a complex process and adults in transition need to adjust and adapt to their new situations. Because students in college are engaged in a complex transition, it is important for universities and higher education practitioners to be aware of transition theory to best help students adapt to their new roles, relationships, and responsibilities. She defined transition as an event or nonevent which results in a change in assumptions about oneself, or the world, and noted that individuals must adapt to the new roles, relationships, and behaviors required by the transition. Schlossberg described three particular factors affecting an individual's transition process: characteristics of the individual, perception of the transition, and characteristics of the pre- and post-transition environments. Each of these three factors (e.g., age and life stage, socioeconomic status, health, and psychosocial competence among others) plays a role in impacting an individual's ability to adapt to the transition they are facing. The greater the difference in the pre- and post- environments, for instance, the more complex the transition becomes.

Tinto's and Schlossberg's theories have many implications for SWDs entering higher education, as they often experience a significant educational transition from high school to college. Only 60% of persons with disabilities enroll within eight years of leaving high school, as compared to 67% of adults in the general populations (Newman et al., 2011); 62% of individuals with orthopedic impairments were found to have ever enrolled in college. Since many higher education institutions were designed with able-bodied students in mind (Kottke, 1956), SWDs often require modification to the physical and academic environments. However, the greatest disadvantage may be the lack of social acceptance, as stigma related to having a disability is noted by some (Trammel & Hathaway, 2007) to be the more significant barrier to higher education success.

The College Decision

As some SWDs struggle for "dignity, citizenship rights, and access to the marketplace" (Loewen & Pollard, 2010, p. 5), education is often a way for SWDs to level the playing field, a tool to gain recognition and respect (Paul, 1999), and a way to learn self-determination and self-management skills (Getzel & Thoma, 2008). Many persons with disabilities decide to go to college not only to increase their knowledge but also to develop their social skills and obtain good qualifications for future employment (Fuller, Healey, Bradley, & Hall, 2004).

The decision to attend college for SWDs is often more complex than for students who are able-bodied; it is not just simply a matter of finding a desired college, applying, and going. There are many other factors and barriers, such as independence and dealing with external pressures, that must be considered. Additional considerations such as parking, course selection, transportation, scheduling difficulties, fear, and faculty resistance can complicate the search process (Causton-Theoharis, Ashby, & DeClouette, 2009). Many high schools do not have specialists who assist SWDs with the college decision (Coleman, 1994). Parents may not know how to help their SWDs with the college decision (Janiga & Costenbader, 2002). The disability of the student cannot be ignored. SWDs need to consider factors such as major areas of study, size of the campus, demographics of the student population, extracurricular activities that are offered, and support services available (Coleman, 1994).

Some institutions are not considered by SWDs because of accessibility issues, thus options are reduced (Baron, Phillips, & Stalker, 1996; Hadjikakou, Polycarpou, & Hadjilia, 2010). Sometimes SWDs choose the only school that invited them for a tour (Jacklin, Robinson, O'Meara, & Harris, 2007). Like most students, those with disabilities used the Internet to search for colleges; however, many higher education web sites were not accessible. For example, Irwin and Gerke (2004) checked home pages, links to disability services, and search engines on the top 50 four-year colleges in the United States and found that, for blind or visually disabled students, only three schools' home pages passed accessibility guidelines, two had a disability link on the home page, and 10 schools did not even have contact information for disability services.

Wheelchair users indicated that choosing the right university was of high importance and one that created much anxiety (Paul, 1999). As would able-bodied students, these SWDs considered not only the institution's academic status and city location but also proximity to family, public transportation options, and

the safety of the city. Additionally, factors such curbs, smoothness of streets, physical accessibility of buildings and classrooms, and other wheelchair travel issues were also considered. Most of these students based their decision on the extent of the school's disability services. Many large, public universities enrolled more SWDs because they had more available resources for SWDs (Sharpe & Johnson, 2001).

Parental involvement in the college decision also adds complexity to the process. Some SWDs attend college because of pressure from their parents and end up in programs they do not enjoy (Janiga & Costenbader, 2002). When SWDs attend college, it can be difficult on their families (Wilgosh, Sobsey, & Cey, 2008) because often, in addition to friends, parents are foremost in the student's support network (Paul, 1999). Parental over-protectedness, and the resulting degree of dependency, may hinder SWDs' decision to attend college (Enright, Conyers, & Szymanski, 1996). SWDs are often more fused to their families of origin than able-bodied students (Smith, Ray, Wetchler, & Milhail, 1998) and this may lead to maladjustment in higher education settings.

Transition to College

The transition from high school to college can be difficult for SWDs (Barnard-Brak, Davis, Tate, & Su-lak, 2009; Rothman, Maldonado, & Rothman, 2008) as social support systems change, contact with educators lessens, academics become more rigorous, and many emotional and physical changes occur (Enright et al., 1996). This difficulty may be amplified because every student with a disability has a unique set of circumstances (Wehman & Yasuda, 2005).

High school SWDs receive significantly different assistance as a result of the Individuals with Disabilities Education Improvement Act (2004) than SWDs in college receive, as a result of Section 504 of the Rehabilitation Act (1973) and the Americans with Disabilities Act (1990) as amended in 2008 (ADAAA, 2008). In higher education, SWDs must learn to advocate for themselves, a role that parents and others have previously filled in many cases. Although accessibility has improved greatly over the years, early planning is still necessary for college students who use wheelchairs (Clark, 2007). Such planning includes visiting classrooms beforehand to make sure that screens are visible, making sure bus schedules align with course meeting times, and determining if courses entail fieldwork in accessible areas.

The transition period for SWDs is vital for success (Jacklin et al., 2007). The inaugural semester or year of college is the most difficult for many students. An important part of the transition for SWDs is disclosing one's disability (Barnard-Brak, Lechtenberger, & Lan,

2010) and learning how to request accommodations. Research regarding the attitudes of SWDs requesting accommodations is in its infancy. Since many SWDs have little understanding of the accommodations available to them or effective ways to implement their rights after transitioning to college (Palmer & Roessler, 2000), many of them need assistance in negotiating this information. Training can enhance the ability of SWDs to self-advocate and become more competent in requesting accommodations.

"Nothing is more important to student retention than academic support, especially during the critical first year of college" (Tinto, 2012, p. 25). While academic support comes in many forms (e.g., summer bridge programs, first year seminars, supplemental instruction, learning communities), the success of many college students is somewhat determined by interactions they have with faculty members (Cook, Rumrill, & Tankersley, 2009). Faculty attitudes are even more important to students with disabilities (Barnard, Stevens, Siwatu, & Lan, 2008). By providing accommodations for SWDs, faculty members foster the development of these students and embrace diversity on their campuses.

A satisfactory college experience goes beyond academics (Paul, 1999). Many SWD do not become academically and socially integrated enough and fail to complete their education (Barnard-Brak et al., 2009). SWDs must have a life outside the classroom including things such as sports, jobs, hobbies, etc. (Clark, 2007). The more socially integrated SWDs feel, the longer they will remain in school (Enright et al., 1996). SWDs living on their own, managing a normal course load and their physical needs and finances, more readily blend in with the university community (Paul, 1999). The application of these skills is a precursor to success in larger society. Having practical experiences in college is important for future employment (Burgstahler & Bellman, 2009). Internships play a critical role for SWD as they may help to bridge the transition from classroom to career (Severance & Starr, 2011).

Self-determination is an important factor in SWDs success in college (Getzel & Thoma, 2008). Being told their goals were not possible to achieve made many SWDs more determined to succeed. Seeking services from the disability office and making smooth academic and social transitions were also important to their success. Barnard-Brak et al. (2009) suggested that research examining the factors that influence how SWDs select institutions of higher education was needed. Additionally, attitudes toward disclosing disabilities and requesting accommodations would be helpful as SWDs select colleges or universities to attend. Quali-

tative studies on personal care attendants and family members could also provide additional richness to our knowledge (Paul, 1999). This information would be helpful as disability service providers assist SWDs in successfully manipulating the college environment (Quick, Lehmann, & Deniston, 2003).

Method

The purpose of this study was to examine the pre-enrollment considerations of undergraduate wheelchair users (i.e., the decision to attend college, college selection factors) and their post-enrollment transitions (i.e., adjustments from high school to college, academic and social integration). The study sought to answer the following research questions. How did undergraduate wheelchair users (1) arrive at the decision to attend college and decide which college to attend and (2) transition from high school to college and integrate into academic and social settings in college?

Design of Study

Qualitative research methodology was chosen based upon the researchers' belief that the best way to understand college experiences was through questioning, understanding, and analyzing individual experiences, searching for common themes among these experiences, and comparing these experiences to Tinto's (1993) theoretical framework. The qualitative research method ethnography was used to reveal the student and parent voices. "Disability communities are ripe for ethnography investigation" (Couser, 2006, p. 123). Ethnographies focus on a group or subset of a group in order to "explore the beliefs, language, behaviors, and issues facing the group" (Creswell, 2013, p. 94). Understanding group dynamics from an analysis of the group allows the researchers to create a cultural portrait of the group with both etic (views of the researcher) and emic (views of the participants) views.

Data Collection

Data were collected from 10 college students who used a wheelchair and the parents of four of these students, who were purposively sampled (Patton, 2002) from a public, four-year, doctoral granting institution in the Midwest with 20,000 students (17,000 undergraduates and 3,000 graduate students). The university focused on residential undergraduate education with emphases on the professions plus the arts and sciences (The Carnegie Foundation for the Advancement of Teaching, n.d.). External data in the form of transcribed interviews and internal data in the form of reflexive researcher field notes were subject to analysis.

Students were solicited through Disability Services at the university to participate in a 90- minute focus group. At the end of the focus group session, students were asked if they would consider participating in one-on-one interviews. All ten students agreed to participate. Students were also asked at the end of the focus group if a parent would be willing to be interviewed. Five students volunteered their parents. These parents were contacted and four agreed to be interviewed. Individual interviews with students and parents were conducted. Two semi-structured interview guides were constructed and used because they allowed participants to share stories and the researchers to follow-up with probing questions (Patton, 2002). The research questions served as the organizational framework for the protocols. The researchers were careful to ensure trustworthiness of the instruments. The initial student interview guide, constructed upon the research questions and literature, was field-tested during the focus group of college students who used wheelchairs. Then, a panel of experts (two disability educators and three faculty members skilled in qualitative methodology) collaboratively created the interview protocols for both students and parents based upon their professional work and research in the disability and higher education fields. Questions were modified and developed according to the study's primary research questions, informed by the theoretical framework. They were organized to address the decision to attend college, the college selection process, separation from home and transition to college, and integration into academic and social settings. Examples of the questions asked of students were: When did you realize that you wanted to go to college? What was the most significant factor in selecting a college? What were your biggest fears or concerns about going away for college? What has been your biggest issue or concern as you have transitioned into a college student? Do you feel you fit in? Did you ever doubt that you should be in college? How did you prepare yourself emotionally and academically to attend college?

Parents were asked not only about their pre- and post-transitional concerns for their students (e.g., how their transition concerns were different for their child in a wheelchair versus a child who does not use a wheelchair, when they realized their child would attend college, what their most important factors were in choosing a college with their child), but also what their emotions were in making those decisions, what their expectations and dreams for their children were in attending college, and their experiences of bringing their students to campus and moving them onto campus (e.g., what concerns did

you have about this child that were different from others, describe the process of making a decision to send your child to college, what were your expectations for your child attending college).

After approval by the Institutional Review Board, individual interviews were conducted, each lasting about one hour. They were digitally recorded and transcribed. The informants' personal information was kept confidential by usage of pseudonyms. During the interviews, the researchers adhered to the suggestion of Lofland and Lofland (1984) to write brief notes during the interview process to help in the creation of field notes. Field notes, according to Bogdan and Biklen (2007), are "the written account of what the researcher hears, sees, experiences, and thinks in the course of collecting and reflecting on the data" (p. 108). The researchers also utilized reflexivity by examining "the ways in which a researcher's involvement with a particular study influences, acts upon and informs such research" (Nightingale & Cromby, 1999, p. 228). One researcher's personal experiences, as the mother of a student in a wheelchair, informed the data collection process. All of these methodological techniques were used to increase reliability.

Data Analysis

Data analysis was multifaceted and based on the open and axial coding techniques described by Strauss and Corbin (1998). This type of data analysis is iterative in nature and required the researchers to visit the data multiple times. Strauss and Corbin defined open coding as the "analytical process through which concepts are identified" or "discovered" in the data (p. 101). Axial coding is defined as the "process of relating categories" (p. 123). The goal of open coding is to open up the data to possible interpretations and the goal of axial coding is the "process of reassembling the data that were fractured during open coding" (p. 124). Thematic categories are produced through the process of inductive, open, axial coding of data, the interpretation of the data, the researcher's expertise and experiences, the researcher's analytical memos and field notes, and the literature regarding the topic. The researchers utilized the constant comparative analysis method (Glaser & Strauss, 1967) to develop each level of coding and final thematic categories to reveal how participants integrated academically and socially to college. In evaluating the credibility, dependability, and confirmability of the study, the researchers adhered to the recommendations of Lincoln and Guba (1985) for qualitative research studies.

Three cycles of coding were employed by the researchers in this rigorous analysis of both the student and parent interviews. The same three qualitative cycles and process of coding were employed with both the student and parent data sets; each data set was coded separately. "A code in qualitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data" (Saldana, 2012, p. 3). At the first level of coding, the data were culled and each time a student or parent spoke, that exchange was holistically or "lump coded" using the participant's language or actual words. During the second level of coding, the codes were split and the participant's words were used; this is referred to as "In Vivo coding." "In Vivo coding is particularly useful in education ethnographies" and with marginalized cultures because it allows the researcher to broaden the reader's perspective of the "cultures and world views" (p. 74) of the young adults being studied. At the third and final level of coding, pattern or focused coding was used to categorize or organize the data.

After open and axial coding at three different levels was completed, and the researchers were able to see the commonalities among themes, the scope of the findings was narrowed down to exemplar themes (Hopper, 1988) that answered the research questions. During the lump and In Vivo coding, first and second level of analysis, key phrases and comments repeated several times by the participants were discovered, so note was made of this in a perpetual fashion while collecting and analyzing the data. To induce the data as the researchers moved through level three of the coding process, the data were moved through differentiating between the chaff, "that data which is determined to be non-significant or redundant" and the wheat, "that data which is deemed significant or exemplary" (Chenail, 1995, para. 14). Once the repeating themes, or "wheat," were identified, the researchers allowed the data to be the "star" in terms reporting exactly which themes were revealed in understanding the pre-enrollment considerations of wheelchair users and their post-enrollment transitions.

Findings

The findings begin with a discussion of the participants' attributes related to their backgrounds as college students using wheelchairs. Then the decision to attend college and the college choice process are presented, followed by transitional issues these students faced when moving from home and high school to college. Finally, findings related to students' academic and social integration patterns are presented.

Attributes

The study encompassed a diverse sampling of students in terms of gender, course of study, reasons why a wheelchair was used, and ethnicity. Four of the SWDs were female and six were male. As is representative for students who attend the university, the majority were in-state students. They lived no farther than a three-hour drive from the university, but none were from the local area. The majority of the students were Caucasian, but one was African-American, one was of Hispanic heritage, and one was of a Middle-eastern ethnicity. The students also had multiple reasons for wheelchair use; some had used wheelchairs all of their lives, while others had not. Reasons for wheelchair usage included Osteogenesis Imperfecta, Muscular Dystrophy, Spina Bifida, Cerebral Palsy, Congenital Spastic Quadriplegia, Friedreich's Ataxia, and a Spinal Cord Injury.

Participants' courses of studies also varied, including journalism, pre-medical studies, telecommunications, speech and language pathology, English, theatre, computer science, and political science. The students chose their courses of study for different reasons, some because of interests generated in their high school courses of study or because family members were professionals in a particular field. Some were inspired by people they encountered working in those fields. For example, one student decided to pursue pre-medical studies because of his own time spent within the medical community. Another student had an aunt who worked as a speech therapist. The student had observed her and realized that was what she wanted to practice. As often happens, a few students changed their majors once enrolled at the university and encountered a larger glimpse of options and of the world of work.

The parent participants consisted of one male and three females. Three of the parents had other children besides the ones we interviewed. All parents interviewed were the primary caregivers of the students in this study.

The Decision to Attend College

Overwhelmingly the students asserted, and their parents confirmed, that they had always known they would attend college. It was an expectation the students and their parents had always set. The fact that the students used wheelchairs was never a part of the equation in making the decision about whether or not to attend college. Jerry said, "My parents assumed that I was going to go to college. I can't imagine a scenario in which I did not go to college." It never occurred to many of the students that they had the option not to attend college. Sally summed up the other participants well with, "There really wasn't any sort of talk about

me not going to college. I want all the support and resources at my disposal that I can possibly have. And having a higher education is going to give me those." Aiden explained that he waited until he was in high school to consider attending college.

Starting my sophomore year I realized it was something that I wanted to do because coming to a university would be a great way to obviously find out what you want wanted to do with the rest of your life. Education is really important.

When parents were asked about the college decision process, both if and when their child would attend college, their responses mirrored their student's answers. Carrie said of her son, Michael:

When he was born, he didn't have a choice. College was a given. That's how it is with my kids – you're going. He has to get a good education so he knows an undergrad [degree] is probably not going to be enough.

A father further illustrated that it did not matter if his son was in a wheelchair or not because "he's from a high achiever family. We always expected our kids to go to college. Going to college is just a normal part of life for this family." Only one parent expressed initial concern by divulging,

When Daisy was diagnosed [at 10 months old], there were three things that went through my mind. One was, "Will she go to college?" One was, "Will she ever date?" And the third one was, "Oh my gosh, what would happen if there were a fire?"

She then went on to share how she immediately went home and began researching how to address those three concerns and discovered the university Daisy now attends. It was the only university she found that talked about accessibility openly on their website. So, she started talking to her daughter about college at 10 months old. She decided she would go because it was possible.

Only one student had a different answer. His parents did not think he could go to college, but the "teaching assistants became my friends and they told me, 'You know, you could go to college and then all this difficult home life you have would change.'" His ideas were denounced by his family, but he finally was able to attend by pressing the issue and repeatedly posing the following questions: "What happens when you guys all pass away and what am I going to do then? Where am I going to get that care?"

The College Selection Process

Two major factors influenced students' and parents' decisions to choose the college of their choice: accessibility and choice of major. Danny and Lois (respectively) said, "It's a combination of the accessibility and my major because I want to be a sports broadcaster," and "because it's accessible and the special education department." Eighty-seven percent of the students who attend the university where this study was conducted are in-state residents. Sally reflected this trend by saying, "I live in [name of state]. I'm interested in journalism. I'm a student with a disability." However, it is important to note that students did visit other universities both in and outside of the state. Some were advised that they should attend a different university because of what the individual students wanted to study, but accessibility trumped that decision.

For example, Michael, a pre-med major, was advised to attend another university because of that institution's better pre-med programming. He explained, however, "I went there for a visit and it was just a nightmare to get around. I chose accessibility over what was academically advised." Danny shared that he really wanted to attend another university but his family insisted they at least do a campus tour of the school he eventually attended. During their tour, he and his family were left behind because he could not access a building. The guide said he would return but did not; after waiting for an hour, Danny and his family left. He agreed with his parents that the university was too large and difficult to navigate. Jerry concurred when explaining his experience of vising another university. He said, "If I can't move around the campus, it doesn't really matter how good the school is because I can't get anywhere. Accessibility has to be priority one." Mary, colloquially and with a matter-of-fact attitude, explained that because of her academic major, her choices were limited because the university of her first choice "sucks at accessibility. I didn't want to spend all my time commuting to class."

Disability services was another factor in the college selection process and included references to wide availability of automated doors on buildings and on individual residence hall rooms, special housing for wheelchair users, a community where wheelchair users were visible and prevalent, one-on-one faculty mentorships, a student support group, local accessible transportation, and the director of disability services on campus. Aiden offered that, while the university may not have been his first choice, the appearance of the campus, accessibility of sidewalks and wheelchair ramps, and the student-friendly disability office changed his mind. Daisy endorsed this idea by saying,

What sold me was we went to [the disability service] office and my mom brought this huge accordion folder with everything we could possibly need. And [name] took one look at me and at the papers just to verify everything and he's like, "Anything you want, you will get." And I did!

Parents expressed the same ideas concerning the college choice. "The most important one? [Name of disability service director]. Second was knowing that there was full support for people in chairs."

Half of the participants expressed that being able to have a single room with an accessible single bath was a critical factor since many have health aides who come in to assist them with bathing and bedtime routines. Peggy shared that her biggest fears were "the dorm room and an accessible bathroom" and those were "non-issues at [institution name]." Several students expressed that the entire disability office served as both a source of support and reason for growth because they needed to learn to self-advocate, which was not necessarily something they experienced in their secondary school environment. One student, Jake, was having a problem with an instructor making accommodations. He sought help from the DS director the week before classes were out. The director helped him understand that he should have previously sought out help. Also, having access to a disability services supported shuttle on campus was critical. As Jake shared,

I was telling some of my friends who went to [university name] about the disability shuttle that will take students anywhere they need to go on campus. They don't have a shuttle at [university name]; it's not a knock against them but again, if I can't move around the campus, it doesn't really matter how good the school is because I can't get anywhere.

The Transition from High School to College

Transitions can be positive or negative experiences and, for the college student, there are a myriad of concerns. Along with the typical issues most college students face, such as the fear of failing the first semester and having to take certain subjects again, SWDs have the additional concerns of attendant care and personal care needs. However, transitions can also be favorable. SWDs enjoyed their greater independence in college despite the stress of time management that accompanied this new degree of autonomy. Jerry was concerned about college because he "didn't want to deal with math and science," which had "nothing to do with the chair." Some students were worried that

not being successful in the first semester would mean "failing at life." Sam tried to be more "social instead of being more scholarly," which led to academic problems. Sally thought she was prepared to manage her time but still struggled with balancing all of the work.

Besides time management, attendant care represented the most difficult part of transition for these students. To take care of their personal needs, some students used companies that provided personal attendants, some employed their friends, and others did everything for themselves. Problems included finding an agency, finding attendants to accommodate students' schedules, and attendants being absent or tardy. Sam had attendants who on occasion would not show up or who were consistently late. Since he preferred to be non-confrontational, some of the attendants took advantage of him. Eventually, he ended up paying his friends to help him. Jerry said that there is "an adjustment period to get used to the idea that these people were coming in to take care of me and that they are not Mom and Dad." Lois has struggled with finding attendants who worked with her schedule. She missed classes because attendants did not arrive on time. She often had to lie in bed when she was not tired and others were outside of her door socializing because it was the only time an attendant could come to help her into bed.

Although time management was a struggle, college schedules did allow for a newfound independence for these students. Students talked about getting to do what they wanted and having control over where and when they went. Danny agreed that the independence was good but, as he had "always relied on other people to get me where I needed to go," transportation was a concern for him. For Sam, the independence was life changing. "It's like, me being my own person and going on my schedule instead of somebody else's."

While the participants cherished their independence, their parents struggled with it. When Peggy left her daughter at college she did not cry until the ride home because she did not want to be emotional in front of her. She did not like the fact that, as a mom, she lacked the ability to help if things went wrong. However, she realized that after being the person who took care of her daughter's problems her whole life, it was time for her daughter to "be the adult." That change was a big adjustment for them both.

Karolyn's big realization came on her daughter's move-in day. She went to the desk and told them that she was moving her daughter into the residence hall. She was taken aback when she was informed that the student, not the parent, had to check in. "I kind of looked at them and said: Wow, wait a minute. I'm the mother." She laughed as she continued, "and that was

one of the best things that they could ever do because it was breaking me of being the person in charge… of Daisy's life. Daisy was now in charge of Daisy's life." She was happy for her but "cried the whole way" home. Carrie also talked about giving her son as much freedom as he needed and "a lot of times that means keeping my mouth shut." She says he does not call or email as much as she would like, but it is his life now. In contrast, another parent commented that his son needed to be more independent because he came home "too often." Most of the parents were excited, but understandably nervous and worried, about their child leaving and living independently. Like their students, they worried about attendant care such as dressing, showering, and toileting assistance, and accessibility and transportation in bad weather. And while the above parent was also concerned about these issues, he explained that his son was too dependent on the family. He added that he was looking forward to spending time with his other children and hoping that his son would learn to be independent so he could manage the future on his own. He went on to explain, "When you've got a kid with handicap like that in the family, everyone has to make sacrifices." It is important to note that this was the only father interviewed. The mothers also wanted their children to be independent and successful, but noted fear and loss while describing their child leaving. The new realization that they no longer had to be the primary caregiver was a source of grief for some of them. Cindy remarked that, on the drive home from taking their son to college, everyone in the family cried. She recalled, "Everybody [in the family] worked together and then, all of a sudden, he wasn't with us."

Academic and Social Integration

Personal independence affected students' academic performance and social integration. As with any group of university students, some of these students felt singled out while others felt that they fit in perfectly. All of them were happy with their feelings of independence and the social atmosphere that college afforded them. From being able to get around on their own to and from class, to socializing with friends, a feeling of independence was the key to integrating into college.

In high school, Daisy would eat in the library because she did not have friends to eat with; Lois did not have friends either and hung out with her parents. Sam was accompanied by aides throughout the day and other students would not interact him. Michael thought high school revolved around sports and most school activities were useless to him since he was in a wheelchair. However, in college, these students had

adapted well socially. Students noted that in their elementary and secondary school settings, they spent more time with adults (e.g., teachers, attendants, instructional aides, therapists) than they did with other students. So working with the staff in Disability Services, the attendant care staff, and the faculty members were not difficult transitions. Since there were many students in wheelchairs in their classes and residence halls, for the first time in their lives, they were not the only wheelchair user at the school. Additionally, they had the freedom to go anywhere on campus. Lois shared that, besides school and doctor's offices, she had never taken her wheelchair out of her cul de sac in her neighborhood. Michael expressed this excitement well by saying, "There's so much stuff to do, and you can do basically whatever you want."

Although there was a residence hall at this university that specifically catered to students in wheelchairs, not all students opted to live there. Lois was an honors student and wanted to live with her peers in another hall. She did not like the stereotype of living in the hall specifically retrofitted for students in wheelchairs because that would stifle her experience. Academically, all of them shared that because they had always wanted to go to college, they were determined to make that goal a reality. And because the accessibility of the university (including housing and transportation) was better equipped to handle students' needs than their former secondary settings, a student support group, and academic supports such as notetakers and assistive technology, students could thrive and focus more on their social integration.

All of the parents hoped that their children would make friends and get good grades in college. When asked what her expectations were for Michael, Carrie said, "I expect him to do well and I expect him to work hard." She added that she "hopes he has fun in the process and makes friends and kind of spreads his wings and just gets an incredible life experience out of it." Sally's mom wanted her to get her degree and have "the ability to support herself." Jerry's father cared more about the social aspect of college than grades. "He has no social skills with peers." He commented that college was not about the wheelchair, but about Jerry. He wanted Jerry to have an experience similar to other college students, but Jerry had resisted and goes "back to his room and stays by himself and doesn't talk to anyone. So our expectation now is that he just graduate." Sally's mom also wants her daughter to get her degree but added, gaining "the ability to support herself" was important. Daisy's mom wanted her daughter to have "four years of independence" and "a great college experience and meet new friends." As

she continued she started crying. "I think four years because I really thought after four years I didn't know what the world was going to hold for Daisy." She now realizes that college did more for her than educate her; it let her "grow as an adult and that is everything a parent could hope for."

Discussion

The discussion is presented as a response to the two research questions. Then a set of recommendations for student wheelchair users and their parents, disability educators in higher education, and college and university policy makers are provided. These are followed by limitations and a conclusion.

The College Decision

The first research question asked how did undergraduate wheelchair users arrive at the decision to attend college and decide which college to attend. Tinto (1993) reported that pre-entry attributes including family background, individual characteristics, and K-12 schooling influenced undergraduates' college decisions. That was confirmed with the population of undergraduate wheelchair users in this study as they considered and made decisions to obtain their personal goals of seeking a university education. It was also evident during the decision-making process regarding which college or university to attend. These results supported data from previous authors (Fuller et al., 2004; Getzel & Thoma, 2008; Paul, 1999) regarding expectations that students and their parents had regarding attending college. Using a wheelchair did not limit the expectation or motivation for a student to meet the personal goal of obtaining a higher education.

However, the decision for a student in a wheelchair to attend college is more complex because of the disability (Causton-Theoharis et al., 2009; Hadjikakou et al., 2010; Janiga & Costenbader, 2002; Schlossberg, 1981, 1984, 1989). Students and parents expressed concern about the availability of services to enable the student to be successful. This concern was often due to the students' K-12 educational settings where they had received services, including accommodations and modifications, in order to access and fully participate in the physical and academic environments. Regardless of the concerns and complexity, the parental expectation that students would attend college and the potential academic major drove the decision to visit and consider attending different college and universities. Students' ultimate choice of college to attend, supported by their parents' agreement, was influenced by three factors: the academic majors available at the university, the

physical accessibility of the campus, and a strong office of disability services.

Students in wheelchairs had many of the same concerns as peers who do not use wheelchairs. While able-bodied undergraduates would not need to consider physical accessibility and may not need to work with disability services, they would consider the choice of academic majors, availability of student housing, student work options, and extra-curricular opportunities (Paul, 1999). Students in this study discussed the availability of academic majors and amenities such as housing options that were fully accessible for students in wheelchairs (e.g., roll in showers, automatic door openers, and recreational sport opportunities).

Transition to College

The second research question asked how undergraduate wheelchair users dealt with the transition from high school to college and how they academically and socially integrated into the collegiate culture. This transition is difficult for many adult students (Schlossberg, 1981) but is often more difficult for SWDs (Barnard-Brak et al., 2009; Rothman 2008) as they have to learn to advocate for themselves, both academically with faculty and socially with friends. The results of this study showed that college students in wheelchairs were able to self-advocate well (Barnard-Brak et al., 2007) when presented with this challenge. However, parents had more trouble with the transition and often experienced difficulty letting go. For example, Daisy's mother was reminded that it was the students' responsibility to check-in to the hall, not the parents'. Many parents had to keep themselves from calling and visiting too often. Michael's mother explained that, prior to her son attending college, "everything revolved around making things okay for him." But then, "all of a sudden he wasn't with us." Giving up the caretaker role is difficult. Most of the students relished the independence; their parents thought that they did not call enough. Many of the issues that confront parents of students in wheelchairs are the same issues as parents of students who are not in wheelchairs.

The freedom that is attached to making personal decisions and making friends was a new experience for most of the college students in wheelchairs. Yet, after a brief transitional time, they relished it (Paul, 1999). For example, Daisy cried a lot the first year of college but now considers her friends at school "family." She claimed to have not known what friendship was until college. Many of the students in this study explained that in the K-12 setting, because of the nature of the care they required or limitations with transportation or school facilities, their parents or school assistants

or teachers were often their only social outlets. Daisy was so engaged socially during her first year that she thought she would "flunk out" of all her classes. However, she learned how to successfully balance and integrate both academics and social life. Enright et al. (1996) reported that SWDs will experience various academic and social transitions, and the more then can cope with these transitions and especially become socially integrated, the more likely they will persist to graduation. Laura shared that unless her parents or the school transported her, the only places she could go to by herself was in her neighborhood or the hallways of her school. At the university, she could join friends to go out to eat or to events without having to necessarily be transported. Similar to peers not in wheelchairs, this study's participants had learned how to navigate the higher education setting.

Students in wheelchairs need to learn how to be vocal about their needs, the process of becoming a self-advocate (Barnard-Brak, Sulak, Tate, & Lechtenberger, D., 2010; Palmer & Roesler, 2000). For example, Sam explained that "it takes time…my first year was bad. And then, second year it got better. And then third year it got better. And then now, it's pretty good." He had some trouble adjusting academically the first year but only because he became too socially integrated. Although the first year of college is the most difficult in the transition from high school to college, students are offered services such as summer bridge programs, orientation sessions specifically for students with disabilities, and direct access to faculty members through a faculty mentorship program. Students often fail to take advantage of these services. This is especially true for students with disabilities, some of whom may be trying to reinvent themselves by avoiding any contact with other students with disabilities or college staff members who may have roles similar to high school personnel who had assisted them in the past.

However, student in wheelchairs should be encouraged to seek out these services, especially from the office of disability services, to help create a smooth academic and social transition (Quick et al., 2003). Having a competent, student-focused staff in disabilities services offices is helpful but they must refrain from being too intrusive in order to promote students' emerging self-determination (Getzel & Thoma, 2008). For example, Sally explained this by saying, "Be ready for us to ask. Let us get to the point where we know what we need, and then help us. Don't help us to death." How these students with wheelchairs used the disability office varied. For example, Sam only used the office when he needed it as "a last resort," while Michael explained that in high school "everything felt

cobbled together. With [name of disability office director], nothing felt cobbled together." Aiden had troubles with his attendant care. He nervously approached staff in the disability office about this and they helped him solve the problem. During Daisy's first year, she was scared and wanted to go home. She went to the disability office and the director helped her. "He works magic," she recalled. Competent and student-centered staff in a office of disability services can make the transition process unfold in a more effective manner.

Recommendations

Building upon the conversations the research team had with participants and their parents, several best practice recommendations regarding successful transitions from high school to college for students using wheelchairs can be identified. They are provided here as part of the discussion. These recommendations stem from participants' experiences and are supported by the literature.

For students in wheelchairs and their parents. Visit multiple colleges, beginning as early as the sophomore or junior year of high school (Clark, 2007). While time on these campuses may cause some anxiety (Paul, 1999), it will serve students and parents well (Wilgosh et al., 2008). Although these visits typically can be arranged through the college's admissions office, make sure that a meeting with the disability services office is planned during the visit. Inquire with the disability services staff as to how many students using wheelchairs attend the college. Tour a residence hall to learn of accessibility features for students using wheelchairs. Inquire as to which residence halls are accessible for students using wheelchairs and ask how many of these students live in the residence halls. Many buildings, such as residence halls, may appear to be accessible and staff may claim that they meet relevant codes; however, it will be helpful to know other students' experiences living there. To determine the college's commitment to the academic and social integration of these students (Tinto, 1993), ask disability services staff members to share data regarding retention and graduation rates for students with disabilities at the institution.

An important consideration in the transition to college for some students who use wheelchairs is the provision of attendant care. Because of the complexity that attendant care brings to some new college students, in may influence their ability to adapt to the transition they are facing (Schlossberg, 1981, 1984, 1989). Ask the university to provide information as to how other students in wheelchairs have managed their care and what resources the college can provide to assist with this process if needed.

Ask if staff in the disability services office can arrange to connect potential students with current students at the college who are wheelchair users. Staff members in the office of disability services can provide important information about the institution. The vantage point of a student with a similar disability who has transitioned into the cultural settings of the campus (Tinto 1993), however, will give valuable insight as to the strengths and weaknesses of that college's approach to assisting students with disabilities during what has the potential for being a difficult transition (Barnard-Brak et al., 2009).

For colleges and universities. Because the college decision is more complex for SWDs (Causton-Theoharis et al., 2009), and some parents may not know how to help SWDs in the college decision (Janiga & Costenbader, 2002), provide regular training for admissions staff members on access to college and accessibility issues regarding students using wheelchairs. Admissions tour guides need to know the accessibility features of the buildings they will show prospective students and their families. Students participating in this study indicated that some staff members did not seem prepared to assist students using wheelchairs at some of the universities they visited, which they then chose not to attend.

Having a well-developed disability services office with competent professional staff assisted students in this study and other staff members overcome some of the participants' academic and social barriers (Tinto, 1993). Disability services staff facilitate change and advocate for social justice for SWDs, helping them be successful college students (Loewen & Pollard, 2010). Students, parents, and staff members in various departments need to be familiar with the disability services office and know they can contact the office for assistance, suggestions, and resources. Empower a disability services staff that is experienced and comfortable in helping students who are wheelchair users transition into college (Schlossberg, 1981, 1984, 1989), develop self-management skills (Getzel & Thoma, 2008), and obtain skills for future employment (Fuller et al., 2004). Staff members in the disability services office should be able to teach students with disabilities how to self-advocate but the staff should also, as necessary, be willing to advocate for students. These related responsibilities empower disability services professionals to address the fundamental goals of promoting equitable and usable postsecondary environments for persons with disabilities (Association of Higher Education and Disability, 2004-2014).

Provide multiple ways for students in wheelchairs to become socially integrated (Barnard-Brak et al., 2009; Tinto, 1993). Coming to a campus that has a

community of students using wheelchairs was important to the participants of this study. While some students indicated that they were impressed with the disability-specific programs the college offered (including a power soccer team and a student group focusing on disability issues), other students liked that they were welcomed into co-curricular clubs and organizations available to all students. Students need lives outside of the classroom (Clark, 2007). Disability services educators can work with SWDs to develop programs and routine events that raise the consciousness of college/university resources and empower students to use their voices for social integration throughout the campus (Cory, White, & Stuckey, 2010).

Provide opportunities for students in wheelchairs to integrate into the academic culture (Tinto, 1993), preferably directly through interactions with faculty members (Cook et al., 2009). This provides opportunity for social justice and equality for SWDs (Loewen & Pollard, 2010). At the institution where this study took place, a mentoring program exists where new students with disabilities are paired with faculty members in the student's academic major (Patrick & Wessel, 2013). These faculty members mentor SWDs to navigate the many transitions during the first year of college, including how to disclose disabilities (Barnard-Brak et al., 2010).

Provide accessible housing options for students using wheelchairs. Many participants appreciated having a residence hall where several students using wheelchair lived, possibly because of the perception of higher likelihood of social acceptance (Trammel & Hathaway, 2007). Other participants chose not to live with those with similar disabilities. Accessibility features offered in various residence halls at the university should include push button openers, proximity card readers (instead of keys), single rooms or suite arrangements, with just a few rooms sharing restroom facilities, and restrooms that offer roll-in showers and adapted toilets. It is also helpful for students to be allowed to move in early to have time to make any necessary adaptations to their living space and to learn to navigate campus before other students arrive.

The disability services staff and/or housing personnel need to provide information to students regarding attendant care, which for many students will be a defining transitional process (Schlossberg, 1981, 1984, 1989). Most postsecondary institutions do not offer personal care to students; however, the college should provide detailed information as to where students can arrange for care. A listing of local home health care agencies or fellow students interested in serving as attendants should be provided to new students needing attendant care.

Limitations

The results of this study were limited to the experiences of undergraduate students who used a wheelchair and some of their parents, while enrolled at a doctoral-granting, public, midsized, Midwestern university. The study did not seek out students from private colleges or universities or from other geographical areas. The experiences of these students and parents were self-reported. Future studies could explore training needs for disability services staff when helping students in wheelchairs make the transition to higher education and transitions of parents as their college students in wheelchairs begin to exercise their independence. This study could be contrasted with future research about college students who use wheelchairs whose transition experiences were less positive, to further understand how Tinto's and Schlossberg's theories predict negative as well as positive cases. It may also be useful to more fully understand attendant care and how that unfolds for new college students and influences their undergraduate experience.

Conclusion

The intent of this study was to examine the pre-enrollment considerations of undergraduate wheelchair users and their post-enrollment transitions. The college decision process is similar to peers not using wheelchairs. But the decision for a student using a wheelchair to attend college is more complex because of the disability. In addition to the parental expectation that students would attend college, the determining factors of students in this study about their college choice were the academic majors available at the university, the physical accessibility of the campus, and a strong office of disability services.

The results in this study showed that college students using wheelchairs learned how to advocate well for themselves. This transition component is difficult for some students in wheelchairs. The freedom that is attached to making personal decisions and making friends was a new experience for many of the participants in this study and, after a brief transitional time, they relished it. From being able to get to and from class on their own, to hanging out with friends, a feeling of independence was the key to integrating into college. Just as do other students, these students had learned how to navigate the higher education setting and self-advocate for their needs.

Students in wheelchairs should be encouraged to seek out available resources on campus, especially from disability services offices, to help create a seamless academic and social transition. Competent and student-centered staff in a disability services office can make the

transition process smoother. In all of our conversations with students and parents, the researchers felt that Aiden summed up the college selection and transition process well when he said, "We're all the same. We just want to find something we want to do for the rest of our lives."

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Problematic Data on How Many Students in Postsecondary Education Have a Disability

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Abstract

The most widely cited statistics on postsecondary students with disabilities in the United States are based on the Department of Education's quadrennial National Postsecondary Student Aid Study (NPSAS). However, these statistics are called into question by their substantial variability across NPSAS administrations and by results of the second National Longitudinal Transition Study (NLTS2). For example, according to NPSAS 2008 telephone survey results, fewer than 10% of postsecondary students with disabilities reported having learning disabilities, compared to the NLTS2 finding of nearly 70%. The NLTS2 results can be considered to be of superior validity and reliability given that study's (1) longitudinal tracking into early adulthood of a large nationally representative sample of high school students in special education and (2) categorization of participants as to their disabilities based on their school records. By contrast, the cross-sectional NPSAS relies on self-reports by postsecondary students who are likely to interpret questions about disabilities in varied ways. In addition, many NPSAS participants may decline to identify themselves as having disabilities, as suggested by NLTS2 findings that most postsecondary students with disabilities decide not to self-disclose to their institutions. It appears that NPSAS disability statistics are misleading and their dissemination should be discontinued. Given the potential utility of accurate data on students with disabilities, postsecondary education institutions may want to consider conducting their own campus-level disability surveys.

Keywords: Transition to postsecondary education, disability surveys, self-disclosure

This review examines the quality of data available from various sources to answer the question, "How many students in postsecondary education have a disability?" The question is surprisingly difficult to answer, as reflected in Schroedel's (2007) literature review finding that estimates of the number of postsecondary students with hearing impairments in the United States ranged from 25,000 to over 400,000. Such variability raises doubts about the accuracy of data on postsecondary students with disabilities (SWD). Accurate data are important for better understanding of postsecondary SWD subpopulations and for meeting statutory requirements to evaluate the effectiveness of special education and related services in preparing children with disabilities for adulthood.

The Statutory Framework of Education for Individuals with Disabilities

The Education for All Handicapped Children Act was passed by the US Congress in 1975 to redress the exclusion from school of numerous children due to their having disabilities. The Act assured that all children with disabilities have available to them "a free appropriate public education which emphasizes special education and related services designed to meet their unique needs." It also included provisions "to assess and assure the effectiveness" of these services, which implies a requirement for accurate data.

By the most recent reauthorization of the Act in 2004 (renamed the Individuals with Disabilities Education Act, or IDEA, in 1990), it had evolved to specify that the ultimate purpose of "special education" is to prepare children with disabilities for "further education, employment, and independent living" on reaching

adulthood. To support this goal, the IDEA requires that high school students in special education be provided with transition-to-adulthood services guided by individualized plans. These plans are to be developed by age 16 based on student needs and preferences and designed to lead to valued adult outcomes, including participation in postsecondary education, which is listed as a transition goal in more than four out of five transition plans (Cameto, Levine, & Wagner, 2004).

The special education and transition services mandated by the IDEA are among the primary factors promoting a steady increase over the decades in the proportion of youth with disabilities who go on to postsecondary education (Johnson, Stodden, Emanuel, Luecking, & Mack, 2002). Other key legislation includes Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 (ADA), which both require that education institutions at all levels provide equal access for people with disabilities (the ADA extended the Section 504 requirements from just institutions receiving federal financial assistance to all institutions, except for those controlled by religious organizations).

The scope of the IDEA is limited to the public preschool-to-high-school (P-12) education system. The law's regulations specify that eligibility for special education services requires a diagnosis of at least one of 13 qualifying disability types and furthermore that the disability hampers learning. The regulations also require states to collect and regularly report detailed data on SWD in the P-12 system. By contrast, the ADA and Section 504 apply to all ages and life domains, including education, employment, transportation, and so on. The ADA defines disability as "a physical or mental impairment that substantially limits one or more major life activities" including "seeing, hearing, eating, sleeping, walking, standing, lifting, speaking, learning, reading, concentrating, thinking, communicating, and working." Postsecondary institutions generally face no statutory reporting requirements on their SWD populations.

Postsecondary institutions have typically responded to Section 504 and the ADA by establishing disability support services offices responsible for determining eligibility and supporting equal access through appropriate services and accommodations (Madaus, 2000). Examples of widely available accommodations include digital textbooks with voice and large print options for students with vision impairments, note takers for those with hearing impairments, and extended test taking time for those with disabilities, such as dyslexia, that make it difficult to rapidly read and comprehend test items (Stodden, Whelley, Harding, & Chang, 2001).

A major challenge for many youth with disabilities transitioning from high school to postsecondary education is that they must adapt to a new legal milieu. Under the IDEA, the public P-12 system is required to identify them, assess their disabilities, and provide a potentially wide range of special education and related services according to regularly updated Individualized Education Plans (IEPs). However, in the postsecondary education environment, governed by the ADA and Section 504, SWD must take the initiative by identifying themselves to those responsible for disability support services and providing proof of their disabilities (Stodden & Conway, 2003).

Data Sources on Postsecondary Students with Disabilities

The IDEA stipulates two primary evaluation activities to gauge how well special education and related services are achieving their purpose of preparing children with disabilities for adulthood. One activity is specified under IDEA Part B Indicator 14 (Post-School Outcomes), requiring that states report the percent of youth who are no longer in high school, had IEPs in effect at the time they left school, and were enrolled in postsecondary education and/or competitively employed within one year of leaving (Unruh, 2010). States typically collect this information through mail and/or telephone surveys and have the option of adding items or extending the post-high school time period covered beyond one year. However, these surveys tend to be characterized by low response rates and unrepresentative samples and are generally not considered to give accurate portraits of postsecondary education participation (Alverson, Naranjo, Yamamoto, & Unruh, 2010; U.S. Government Accountability Office [GAO], 2003). In addition, the one-year time frame is likely to miss many youth who first enroll beyond one year, since delayed enrollment is more common for those with disabilities compared to their peers without (Newman et al., 2011).

The other major stipulated evaluation activity (in Section 664, Studies and Evaluations, of the IDEA as amended in 2004) consists of longitudinal studies tracking the outcomes of students in special education. This requirement is currently being met by the third National Longitudinal Transition Study (NLTS). As discussed by Halpern (1990), earlier studies on the adult outcomes of former students in special education tended to be limited in geographic coverage, had relatively small sample sizes, used divergent definitions and outcome measures that prevent the comparison or pooling of results, and used cross-sectional designs yielding data not well suited to analyzing change over time. The NLTS design addresses these shortcomings

by assembling nationally representative samples of large numbers of high school students in special education and then following them into their early adult years; assigning participants to disability categories based on their documented diagnoses rather than relying on student or caregiver reports; and gathering information on participant characteristics and experiences using survey questions adapted from validated instruments (Wagner, Kutash, Duchnowski, & Epstein, 2005). NLTS results can be considered to provide a portrait of post-school outcomes according to disability category that is about as accurate as possible given the likely biases of self-report measures (e.g., youth might not be truthful about their substance use) and the inevitable loss to the study of some participants. The second NLTS (called NLTS2) reported respectable response rates of 81.9% for baseline data collection in 2000-2001 and 71.9% for the final wave eight years later (Newman et al., 2011).

An emerging potential source of quality data on postsecondary SWD is the development of state longitudinal data systems tracking all students, each with a unique identifier, from preschool or kindergarten through postsecondary education (Alverson et al., 2010). The U.S. Department of Education (DOE) has promoted development of these systems through grant competitions for states (Sparks, 2011). States that establish comprehensive systems will be able to gain a much clearer picture of the school careers of SWD, including their postsecondary education numbers and experiences.

Another data source is the American College Health Association's (ACHA) National College Health Assessment, second version. The survey is meant to be administered to an institution's entire enrollment or a randomly selected subset, and includes a set of yes-no questions on whether the student has any of eight disabilities or an "other" disability. The ACHA cautions that, because the participating institutions are self-selected (totaling 153 in Spring 2013), the results cannot be generalized to the broader postsecondary education universe (American College Health Association, 2013).

Currently, the most commonly cited statistics on numbers of postsecondary SWD in the United States appear to be those generated by the U.S. DOE's quadrennial National Postsecondary Student Aid Study (NPSAS). This study gathers data from a variety of sources including telephone interviews with a large sample of postsecondary students, who are asked among other things whether they have disabilities, and if so to specify what types of disabilities. Results for the percentage of postsecondary students reporting they have disabilities were 6.6% in 1990, 6.5%

in 1993, 5.5% in 1996, 9.3% in 2000, 11.3% in 2004, and 10.9% in 2008 (Horn & Berktold, 1999; Snyder & Dillow, 2013) (the NPSAS 2012 disability figures had not been publicly reported as of this writing in July 2014). Although the SWD proportion of total enrollment fell in 1993, 1996, and 2008, the number of SWD enrolled actually increased but at a slower rate than that of the overall student population. The jump in the percentage from 1996 to 2000 resulted from a broadening of the disability definitions in order to increase the amount of information obtained about SWD (Wolanin & Steele, 2004).

Postsecondary disability statistics derived from the NPSAS are reported in the Congressionally-mandated *Digest of Education Statistics*, published annually by the US DOE's National Center for Education Statistics (NCES). The digest for 2012 provided a table summarizing percentages of undergraduates (NPSAS 2004 and 2008 data) and post baccalaureate students (NPSAS 2008 data) with and without disabilities according to sex, race/ethnicity, age, full- or part-time attendance, living on- or off-campus, dependency status, military veteran status, and field of study (Snyder & Dillow, 2013, Table 269, p. 376). The "Fast Facts" section of the NCES website answers the question "How many students in postsecondary education have a disability?" by reproducing the relevant data from the *Digest of Education Statistics* (http://nces.ed.gov/fastfacts/display.asp?id=60). Data provided by these authoritative sources are used to describe and make assertions about postsecondary SWD subpopulations in numerous academic and general audience publications.

Doubts about the Accuracy of NPSAS Disability Statistics

However, the validity and reliability of NPSAS disability data are called into question by inexplicable data variability within and across the survey's administrations. The author was first struck by this variability in the process of working with colleagues to write up the results of a literature review on factors influencing the postsecondary education access and success of SWD of culturally and linguistically diverse backgrounds (Leake et al., 2006). To provide a statistical overview of the population, we adapted a table from Horn and Berktold (1999, Table 2, p. 8) that summarized NPSAS 1996 data on the percentages of undergraduate students with various disabilities according to racial/ethnic group.

However, there seemed to be considerable variability in the data, which is a possible sign of poor validity unless there are good explanations for the variability.

For example, the table showed that when the disability rate of 5.5% reported by all survey participants was broken down by racial/ethnic group, the rates ranged from 1.9% of Asian/Pacific Islanders to 13.4% of American Indians/Native Alaskans. There was also much variability in the rates of different disabilities according to racial/ethnic group. The variability seemed puzzling. Why, for example, would Hispanics report speech or language impairments at a rate of over 16% while the rates for both Black and White non-Hispanics were under 2%? The validity of these rates is questionable in view of data showing that of students ages 6-21 in special education in 2003, 14.3% of Blacks, 18.3% of Hispanics, and 20.6% of Whites were classified as having speech/language impairments (Office of Special Education Programs, 2007, Table 1-7, p. 36).

We nevertheless decided to use the NPSAS data because they were provided by the NCES, the U.S. government's lead agency for educational statistics. As such, the data variability had presumably been examined and found acceptable given the many factors known to influence the disability experiences of different racial/ethnic groups. For example, many Asian cultures are known to be oriented to keeping personal and family problems private and not seeking outside help (e.g., Bui & Turnbull, 2003), which might help explain the low disability rate reported by Asian/Pacific Islander postsecondary students.

The author recently conducted an Internet search with Google and Google Scholar for assessments of NPSAS disability data using the search terms *NPSAS, disability, validity, reliability, and accuracy*. A search was also conducted at the U.S. DOE website using the search terms *NPSAS* and *disability* to see if internal assessments of validity and reliability are available. These searches identified only a few relevant publications. The earliest was an in-depth statistical profile of postsecondary SWD based primarily on data from the NPSAS 1996 and three longitudinal studies, two of which followed subsets of NPSAS participants (Horn & Berktold, 1999). An appendix of this report compared NPSAS 1996 results with those for (1) the NPSAS 1993 (the survey was then conducted every three years) and (2) a 1996 survey of entering freshmen conducted by the Cooperative Institutional Research Program (CIRP) (compared to NPSAS results for freshmen only). Some substantial differences were noted in the proportions of students reporting different kinds of disabilities.

The NPSAS 1993 versus 1996 comparison showed substantial differences in every disability category (Table A1, p. 55). For example, orthopedic limitations were self-reported at a rate of 2.4% in 1993 and 1.3%

in 1996, while learning disabilities increased from 1.2% to 1.6%. According to Horn and Berktold (1999), a possible explanation was that one or both survey samples were not representative of postsecondary SWD. One reason for this could be that the institutions sampled might vary from one survey to the next in their disability support services and therefore the numbers and kinds of SWD they attracted. Another possible reason could be that while the NPSAS appeared representative of postsecondary students overall, with about 21,000 surveyed, the number who self-identified as having disabilities (around 1,300) was too small. However, as demonstrated below, there is also substantial variability in the results of recent iterations of the NPSAS even though the sample has grown to be over five times larger.

Comparison of the results for freshmen showed that CIRP respondents reported higher rates than NPSAS respondents in every disability category, with the rates for "any disabilities" being 7.0% versus 5.7% (Table A1, p. 55). Horn and Berktold (1999) suggested that respondents may have been more reluctant to reveal their disabilities during NPSAS telephone interviews than on the more private written questionnaires of the CIRP survey. As also discussed further below, NLTS2 results support the idea that many NPSAS respondents might decline to self-disclose disabilities.

The only authors found to directly question the validity of NPSAS disability data were Wolanin and Steele (2004). They were struck by some of the seemingly unexplainable results for the NPSAS 2000, stating, "High percentages of orthopedic impairment and low percentages of learning disability are unusual findings and contrast sharply with the breakdown in other data sources" (p. 11). They concluded that the NPSAS results "simply lack face validity" (footnote 15, p. 49).

Another relevant publication is the U.S. GAO's (2009) response to a request of the Committee on Education and Labor of the US House of Representatives to examine what was known about postsecondary SWD and how they could be better supported to succeed. The U.S. GAO (2009) report primarily used NPSAS data to characterize this population, but noted that "NPSAS data on type of disability differed from studies that have examined the population of students with disabilities before they reached college age" (p. 12). For example, for the NPSAS 2008, fewer than 10% of students who reported having disabilities specified having learning disabilities. By contrast, two longitudinal studies conducted around the same time found that of high school students in special education who went on to postsecondary education, about 70% had been previously diagnosed with learning disabilities. The U.S. GAO (2009) attributed this discrepancy to

the different purposes and target populations of the NPSAS compared to the longitudinal studies, as well as the possibility that NPSAS respondents "may have chosen not to disclose that they had a disability" (p. 13).

The U.S. GAO (2009) report also included a chart and a table showing proportions of postsecondary students reporting different disabilities across the 2000, 2004, and 2008 iterations of the NPSAS. The results are reproduced in Figure 1 (which omits the speech or language impairment, brain injury, and developmental disabilities categories due to their low prevalence). Much variability is visually obvious. The U.S. GAO (2009) report authors remarked that "the distribution of disability type has changed in some notable ways over time" (p. 19) and summarized some of the larger changes, but did not offer possible explanations as to why they occurred or question the accuracy of the data. Why, indeed, would self-reports of orthopedic and mobility impairments fall from 29.0% in 2000 to 15.1% in 2008, health impairments or problems fall from 17.3% in 2004 to 5.8% in 2008, attention deficit disorders increase from 6.7% in 2000 to 19.1% in 2008, and other disabilities fall from 13.2% in 2000 to 5.8% in 2004 and then rise to 15.0% in 2008? In contrast, the national percentages of students ages 6-21 in the 13 IDEA disability categories remained unchanged or changed by only 0.1% from year to year between 1998 to 2007 (Office of Special Education Programs, 2012, Table 13, p. 49). It might be argued that greater variability would be expected for NPSAS statistics given that survey's smaller sample size, but the sample is actually quite large, with the 2008 sample numbering nearly 119,000 undergraduates of whom close to 12,500 reported having disabilities.

NPSAS Disability Statistics Seem to Lack Construct Validity

As noted earlier, Wolanin and Steele (2004) concluded that NPSAS 2000 disability results "simply lack face validity." The term *face validity* is generally taken to refer to the extent that survey questions and instrument items make sense to respondents and elicit answers that reflect the target construct at an acceptable level. However, according to Cook and Beckham (2006), "prior distinctions of face, content, and criterion validity" are now increasingly being subsumed "with the unitary concept 'construct validity,' the degree to which a score can be interpreted as representing the intended underlying construct" (p. 166.e7).

Cook and Beckham (2006) identified five sources of evidence for assessing construct validity, of which two stand out with regard to the NPSAS's disability-related questions. One evidence source is correlation with scores from other instruments assessing the same construct. As noted by Horn and Berktold (1999), Wolanin and Steele (2004), and U.S. GAO (2009), NPSAS results often diverge substantially from other data sources.

Another relevant source of construct validity evidence is examination of how the interpretations of survey questions by respondents tend to lead to answers that reflect the intended construct to varying degrees of accuracy (Cook & Beckham, 2006). The results of any survey are highly dependent on the wording of items. The NPSAS disability-related questions are adapted from those of the American Community Survey (ACS), conducted annually by the US Census Bureau. There is an ACS Disability Working Group that assesses how wording affects reliability and validity, leading to occasional adjustments of disability-related questions, as was done for the 2003 and 2008 ACS surveys (http://www.disabilitystatistics.org/faq.cfm#Q1dash). Development of the 2008 revisions was guided by cognitive testing of various wording and format options when implemented via mail, telephone, or personal visits (Miller & DeMaio, 2006). Interviews with participants showed much variability in how they interpreted the wording of questions, with deciding whether their own conditions merited reporting being especially problematic. With regard to *learning*, which is of possible relevance for understanding why so few NPSAS respondents report having learning disabilities, participants reported the word evoked such thoughts as learning how to use a computer, what is needed to start a new career, or being open to new ideas.

The wording of the NPSAS's disability-related questions does seem as though it might lead to misreporting of disabilities. The first of three questions asks students whether they have "long-lasting conditions" such as blindness, deafness, or a severe vision or hearing impairment. The second question asks whether they have "a condition that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting, or carrying." These two questions establish the presence of vision, hearing, and orthopedic or mobility disabilities. All other disabilities are identified through the third question, which asks students whether they have "any other physical, mental, or emotional condition that has lasted 6 months or more." They are recorded as having a disability if they answer "yes" and *also* respond positively to follow-up questions about whether their condition makes it difficult for them to get to school, get around on campus, learn, dress, or work at a job (Horn & Nevill, 2006, p. A-10). Thus respondents are only exposed to the word
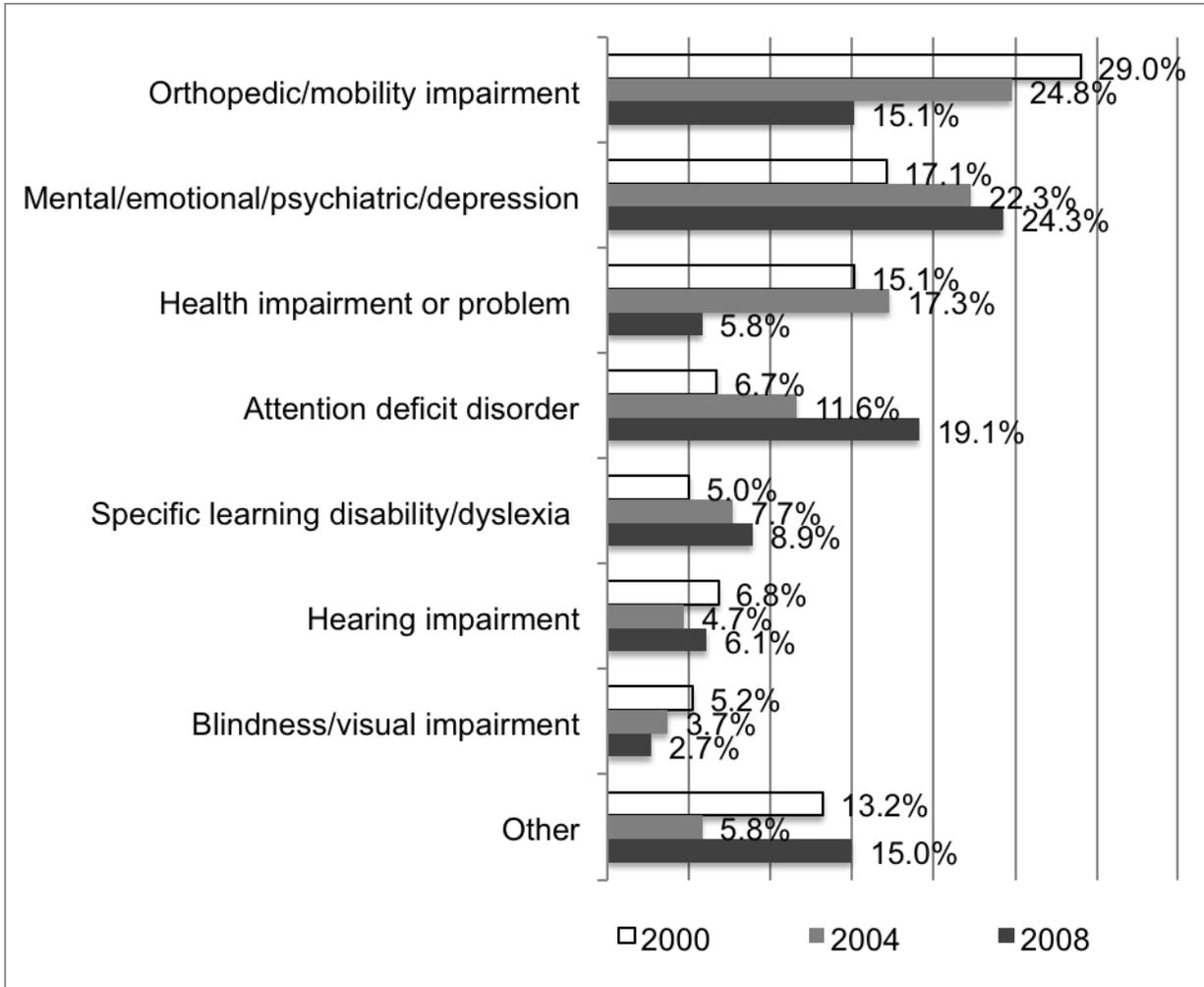
Figure 1. Breakdown of NPSAS Respondents Reporting Disabilities According to Percentages in Main Disability Categories, by Year of Quadrennial Administration.

"learn" if they answer "yes" to this third question. According to the cognitive research of Miller and DeMaio (2006), there is also much variability in interpreting this question's phrase "physical, mental, or emotional condition." Some of their participants, for example, interpreted it as referring mainly to mental health, and we might surmise that students with conditions like learning disabilities or attention disorders who interpret it similarly might answer "no" and become false negatives.

In summary, the NPSAS is seen to have serious shortcomings as a way to gain an accurate picture of postsecondary SWD. Similar problems are evident for survey data collected on other disability subpopulations (e.g., in the workforce), due to disability definition and measurement issues and the predominance of cross-sectional designs (Livermore, Whalen, Prenovitz, Aggerwal, & Bardos, 2011; Stapleton & Thornton, 2009). However, as described below, postsecondary SWD are one disability subpopulation for which higher quality longitudinal data are already available. These data also confirm that a potentially substantial bias of the NPSAS is that many postsecondary students may decide to not disclose their disabilities.

More Accurate Data from Major Longitudinal Studies

The two longitudinal studies cited by the U.S. GAO (2009) avoided the earlier described construct validity problem of how to phrase and present questions about disabilities in ways that consistently elicit accurate information. Instead of posing such questions, as is done during telephone interviews for the NPSAS, these studies categorized participants according to their "primary disability" as recorded in their school records. Of course, diagnostic practices and determinations for special education are known to be somewhat variable depending on the socioeconomic status and ethnic/racial heritage of students, geographic location, diagnostic trends, the predilections of individual diagnosticians, and so on (e.g., Donovan & Cross, 2002; Getahun et al., 2013; MacMillan & Siperstein, 2002; Rice et al.., 2011). However, we can presume that, compared to the self-reports of postsecondary students, diagnoses for special education eligibility determination are likely to have much higher levels of validity (reflecting the IDEA definitions and adhering to the criteria of the Diagnostic and Statistical Manual of Mental Disorders or other authoritative guides) and reliability (assigning the same diagnoses when sets of signs and symptoms are more or less the same). One factor in the special education diagnostic process that supports validity and reliability is that it typically triangulates input from different perspectives within a student's multidisciplinary team, often including those of caregivers and the student (Reber, 2012).

One of the two studies in question is the U.S. DOE's Education Longitudinal Study of 2002, which is following over 15,000 individuals who were high school sophomores when they were randomly selected at about 750 participating schools across the country (http://nces.ed.gov/surveys/els2002/surveydesign.asp). Data collected in 2006 indicated that of those participants who went on to postsecondary education, about 14% had been assessed as having disabilities at the time baseline data were collected in 2002 (U.S. GAO, 2009). This figure is somewhat higher, and presumably more accurate, than NPSAS results reported for the same timeframe (11.3% in 2004 and 10.9% in 2008). The study also found that 71% of these postsecondary SWD had been identified with learning disabilities at baseline, compared to the NPSAS 2008 figure of less than 10%.

The other longitudinal study appears to provide the most reliable and valid data available on the categorical breakdown of postsecondary SWD, because it has followed a much larger nationally representative sample of students in special education as they transitioned from high school into the early adult years. It also collected a broad range of data on numerous other issues, including that of self-disclosure. This is the NLTS2 that began following about 11,300 students in special education between the ages of 13 and 16 in school year 2000-2001. Data were then collected every two years through mail surveys and telephone interviews with youth themselves and/or their caregivers. Findings regarding postsecondary education are reported by Newman et al. (2011) for those who were between 21 to 25 years old and out of high school for between one month and up to eight years when the final data wave was conducted in 2009.

The NLTS2 found that high school students in special education, compared to their same-age peers without disabilities, go on to postsecondary education at significantly lower rates; are more likely to attend vocational-technical and two-year institutions and less likely to attend four-year ones; and are less likely to complete their postsecondary education programs (Newman et al., 2011). Table 1 shows the percentages of NLTS2 participants who had "ever enrolled" in postsecondary education by disability category and type of institution.

Comparison of NPSAS and NLTS2 Findings

The above discussion indicates that the NPSAS and NLTS differ in a number of significant ways. Regarding their purpose, the NPSAS is designed to examine how

Table 1

Percent of Young Adults with Disabilities out of High School for up to Eight Years Who "Ever Enrolled" in Postsecondary Education, by Primary Disability, According to NLTS2 (N = Approximately 4,800; Standard Errors in Parentheses)

% of N	Primary Disability[1]	Type of Postsecondary Institution Attended			
		Any	Voc-Tec	2-Year	4-Year
62.5% (2.60)	Learning disabilities	66.8% (3.89)	35.8% (3.96)	49.9% (4.13)	21.2% (3.38)
11.7% (1.73)	Intellectual disability	28.7% (3.60)	16.4% (2.94)	18.9% (3.12)	6.7% (1.99)
11.5% (1.71)	Emotional disturbance	53.0% (4.53)	33.3% (4.28)	37.7% (4.40)	10.8% (2.82)
4.6% (1.13)	Other health impairments[2]	65.7% (4.04)	32.2% (3.98)	51.6% (4.25)	19.6% (3.38)
4.1% (1.07)	Speech or language impairments	66.9% (3.63)	28.5% (3.48)	46.0% (3.84)	32.5% (3.61)
1.6% (0.67)	Multiple disabilities	32.8% (5.07)	17.5% (4.10)	21.7% (4.45)	7.4% (2.83)
1.4% (0.62)	Hearing impairments	74.7% (4.24)	42.9% (4.84)	51.5% (4.88)	33.8% (4.62)
1.1% (0.57)	Orthopedic impairments	62.0% (4.42)	26.2% (4.08)	50.3% (4.56)	26.1% (4.00)
0.6% (0.42)	Autism	43.9% (4.65)	21.0% (3.82)	32.2% (4.38)	17.4% (3.56)
0.5% (0.37)	Visual impairments	71.0% (5.00)	26.2% (4.84)	51.5% (5.52)	40.1% (5.40)
0.3% (0.29)	Traumatic brain injury	61.0% (7.37)	36.9% (7.30)	42.4% (7.47)	18.5% (5.88)
0.1% (0.20)	Deaf-blindness	56.8% (7.09)	22.1% (6.21)	36.9% (7.30)	18.5% (5.88)
100%	All disabilities combined	60.1% (2.63)	32.3% (2.51)	44.2% (2.67)	18.8% (2.10)

Note. Table created with data reported by Newman et al.. (2011) in Figure 1 (p. 16), Figure 2 (p. 18), Table 2 (p. 19) and Table B-1 (p. B-3), with Table 2 providing the following note: "Young adults who had enrolled in more than one type of postsecondary school were included in each type of school they had attended….NLTS2 percentages are weighted population estimates based on samples that range from approximately 4,770 to 4,810 young adults with disabilities."

[1] The disability categories are those used by the US DOE for classifying students served under the IDEA (the "developmental delay" category is not included in the table because it was not employed by the NLTS2).

[2] Other health impairments are defined by the IDEA as chronic or acute health problems that adversely affect educational performance. The most common are attention deficit disorders, with other examples including asthma, diabetes, epilepsy, and heart conditions.

postsecondary students finance their educations, taking a cross-sectional snapshot every four years, while the NLTS tracks how former students in special education fare after they exit high school for up to eight years. The demographic information collected by the NPSAS includes self-reported disability status, the results for which are used to fill the statistical gap left by the lack of statutory requirements for postsecondary institutions to collect and report data on their SWD populations. The NPSAS disability data are suited for this role in that they are gathered using widely used survey items based on the disability definition of the ADA, which governs the treatment of postsecondary SWD. By contrast, the NLTS classifies its participants according to the disability categories specified by the IDEA for students in the P-12 system.

Although the NPSAS and NLTS disability categories do not exactly match, it is informative to compare their disability profiles. Table 2 compares the results of the NPSAS 2008 and the NLTS2. NLTS2 findings are shown at the left according to the standard "primary disability" categories of the US DOE, while the NPSAS findings are at the right with its "main conditions" lined up according to their closest matches with the NLTS2 categories. The results are seen to be quite different for each of the disability categories. The most divergent results are those for *orthopedic impairment* of the NLTS2 versus *orthopedic/mobility impairment* of the NPSAS, with the latter's proportion of postsecondary SWD being 14.1 times larger than the former's. The least divergent results are those for the NLTS2's *emotional disturbances* versus the NPSAS's combination of two categories, *mental, emotional, or psychiatric conditions* plus *depression*, with the latter's proportion of postsecondary SWD being 2.3 times larger than the former's. The divergent results of perhaps greatest import are those for learning disabilities (because learning disabilities are by far the most common primary disability of postsecondary SWD), with the NLTS2 reporting a rate of enrollment 7.6 times that of the NPSAS.

There are undoubtedly numerous factors contributing to these divergent results. As noted earlier, we would expect student self-reports to generally be less valid and reliable (relative to U.S. DOE disability definitions and criteria in diagnostic guides) compared to the assessments of diagnosticians. Results probably also differ to an extent because special education eligibility is based on determination that identified disabilities pose barriers to learning, while the NPSAS elicits reports of disabilities that impair functioning in any daily life domain, not just learning. However, the most significant reason for the great divergence

between NLTS2 and NPSAS results appears to be the reluctance of many postsecondary SWD to self-disclose their disabilities as required by the NPSAS. This issue will be discussed in the following section.

The different target populations of the two studies are worth further delineating. The individuals tracked by the NLTS2 comprise a group of particular concern because their disabilities had, during their P-12 years, been assessed to interfere with their learning and they would presumably experience greater postsecondary education access and success if given appropriate supports and accommodations. The broader group targeted by the NPSAS, which includes students with disabilities that may not impact the learning domain, is also of concern because disability stigma is pervasive and potentially impacts all postsecondary SWD (Belch, 2005; Trammel, 2009b).

Likely members of this broader group include P-12 students with disabilities who did not receive services under the IDEA. An unknown proportion of these students received Section 504 accommodations to ensure their equal access to the school environment. In contrast to the IDEA, Section 504 does not require data collection on numbers of students involved. Holler and Zirkel (2008) conducted a national survey of a representative sample of schools and estimated that about 1.2% of all students could be classified as "504 only." In comparison, the national special education rate was 13.0% of total enrollment in 2010-2011, the latest year for which NCES data are available (http://nces.ed.gov/fastfacts/display.asp?id=64). Another group not covered by the NLTS2 would be individuals who incurred disabilities after leaving high school due to accidents, manifestation of chronic physical or mental illnesses, combat injuries while serving in the military, and so on. However, these other groups appear to be much smaller than that of postsecondary SWD who had previously received special education services.

The Issue of Self-disclosure of Disabilities

The NLTS2 queried its participants who had "ever enrolled" in postsecondary education about self-disclosure to their institutions and found that 28% reported doing so, with most then taking advantage of available disability services and classroom accommodations. Most postsecondary SWD in this group would presumably report having disabilities if participating in the NPSAS. The question then becomes: What is the likelihood that postsecondary SWD who do not self-disclose to their institutions will self-disclose when asked NPSAS disability questions?

Table 2

Comparison of Proportional Representation of Disability Categories in Postsecondary Education Enrollment, NLTS2 versus NPSAS

NLTS2 "Primary Disability" [1]	% of SWD	% of SWD	NSPAS "Main Condition"[2]
Learning disability (LD)	69.5%	9.1%	Specific LD or dyslexia
Emotional disturbance	10.1%	23.6%	Mental/emotional/psychiatric condition + depression
Intellectual disability	5.6%	0.9%	Developmental disability
Other health impairment	5.0%	24.6%	Health impairment + ADD
Speech/language impairment	4.6%	0.9%	Speech/language impairment
Hearing impairment	1.7%	6.4%	Hearing impairment
Orthopedic impairment	1.1%	15.5%	Orthopedic/mobility impairment
Multiple disabilities	0.9%		
Visual impairment	0.6%	2.7%	Blindness or visual impairment
Autism	0.4%		
Traumatic brain injury	0.3%	1.8%	Brain injury
Deaf-blindness	0.1%		
		14.5%	Other
TOTAL	100%	100%	

[1] Percent of young adults with disabilities who "ever enrolled" in any postsecondary program after leaving high school for up to eight years; percentages calculated using data collected in 2009 and reported in Newman et al.. (2011, Table 2, p. 19, and Table B-1, p. B-3).
[2] Percent of postsecondary students who reported having a physical or mental impairment that affected their daily functioning; data collected during school year 2007-2008 and reported in U.S. GAO (2009, Table 7, p. 38).

The NLTS2 results suggest the likelihood is low. A surprising finding was that 63% of study participants who had "ever enrolled" in postsecondary education responded to questions about self-disclosure to their institutions by stating *they did not even consider themselves to have disabilities* (another 9% considered themselves to have disabilities but did not self-disclose) (Newman et al., 2011). Further insight was gained by breaking down these results according to disability categories. Participants with "hidden" disabilities – defined as those that are generally not obvious to others during casual interactions – were much more likely to state they did not have disabilities, at rates over 60%. Common hidden disabilities include learning disabilities, attention disorders, chronic diseases such as diabetes, and psychiatric disorders such as depression. As shown in the NLTS2 portion of Table 2, the great majority of postsecondary SWD have hidden disabilities.

One explanation that might come to mind for the high rate of students not considering themselves to have disabilities could be the possibility that some may have "outgrown" their learning disabilities or attention disorders. However, the consensus in the field is that this once-common view is wrong and learning disabilities and attention disorders are usually lifelong conditions (e.g., Resnick, 2005). On the other hand, people with these conditions can certainly improve how they manage their challenges over time (Corley & Taymans, 2002) and might therefore conclude they should no longer be classified as having disabilities.

It is beyond the scope of this review to go deeper into the complex issue of self-disclosure. Interrelated topics of relevance for non-self-disclosure on which there have been research reports or reviews in the literature include:

- Experiences of being stigmatized that make postsecondary SWD want to keep disabilities hidden (Belch, 2011; Litner, Mann-Feder, & Guerard, 2005; Price, Gerber, Mulligan, & Williams, 2005; Trammel, 2009a, 2009b);
- Use of information or perception management to control who finds out what information about one's disabilities (Deschamps, 2001; Gerber & Price, 2008; Higbee, Katz, & Schultz, 2010; Olney & Brockelman, 2003; Trammel, 2009a); and
- Self-identity formation, which may involve acceptance or rejection of one's disability status (Marshak, Van Wieren, Ferrell, Swiss, & Dugan, 2010; Najarian, 2008; Olney & Brockelman, 2005; Olney & Kim, 2001; Rodis, Garrod, & Boscardin, 2001), and which

is likely to be a more problematic process for those with hidden compared to obvious disabilities (Adams & Proctor, 2010; Davis, 2002; Valeras, 2010).

Conclusion

There is no "right" answer to the question, "How many students in postsecondary education have a disability?" It depends on how the realm of disabilities is sliced and how the slices are defined. The NLTS employs the IDEA categories, which have the virtue of being well-established throughout the P-12 system for decades, with assessments typically employing validated instruments and often using information from multiple perspectives. The NPSAS and a number of other surveys use items that reflect the ADA functional definition of disability and depend on individual students to understand the intent of the questions they are asked and to self-disclose the disabilities they may have.

Currently, the US DOE's "official" statistics on postsecondary SWD are those obtained through its NPSAS, which however appear to "simply lack face validity" (Wolanin & Steele, 2004). The corresponding figures reported for the NLTS2 appear to be of acceptable reliability and validity, although they do omit the relatively small populations of postsecondary SWD who were served in the P-12 system under Section 504 or were not identified with disabilities at all, or who developed disabilities after leaving high school.

One obvious conclusion is that the NCES should halt dissemination of the NPSAS disability figures unless their reliability and validity can be substantially improved – something, however, that appears impossible to achieve in view of the reluctance of many postsecondary SWD to disclose their disabilities to others.

Instead, the NCES could better meet the IDEA's post-school evaluation mandate and get more value for the NLTS investment by analyzing existing NLTS data to produce and disseminate more accurate estimates of the numbers and proportions of postsecondary students with different disabilities. Heretofore NLTS2 results do not seem to have been provided in a format showing the proportions of postsecondary students in different disability categories. Table 2 above was created from published NLTS2 data to show the categorical proportions of participants who had "ever enrolled". What is also needed is the categorical breakdown for particular school years. Given the NLTS2 finding of different patterns of postsecondary education enrollment and persistence for different disabilities (Newman et al.., 2011), we would not expect the proportions of students with different disabilities who had "ever enrolled" to

match those for students attending during a particular year. For example, we might expect a higher percentage of individuals with more severe disabilities (e.g., intellectual disabilities) to be in the "ever enrolled" than the "enrolled this school year" group because they might be more likely to drop out or be in short-term programs than peers with less serious disabilities.

One drawback of relying on the NLTS is that it is not implemented on a regular schedule and it can take close to a decade to get the final results – but less frequent "good" data are surely preferable to more frequent "bad" data. The third iteration of the NLTS, known as the NLTS 2012, is now underway (http://ici.umn.edu/index.php?projects/view/135). It is following a nationally representative sample of about 12,000 high school students with IEPs, and is an improvement over previous versions in that it is also following about 700 students on Section 504 plans and, for comparison, about 3,000 general education students (the two previous NLTS studies made comparisons between their participants with disabilities and the general population of same-age peers using data from other national studies, which was less than ideal due to differing study methodologies and samples).

The focus of this article has been on national data on postsecondary SWD and, as such, may be primarily of interest to scholars, advocates, and others examining postsecondary education disability issues from a broad perspective. However, even highly accurate national data might lack relevance for individual postsecondary institutions, since there is certainly great variability in the SWD populations they serve. Yet disability support personnel and administrators could benefit from knowing the extent and kinds of common disabilities on a campus in order to support outreach to "hidden" populations and better tailor services to their needs, which might encourage more SWD to self-disclose and gain the supports to which they are entitled.

One option for examining the SWD population at any postsecondary institution is to use a commercially available survey, such as the previously mentioned ACHA National College Health Assessment, second version (ACHA-NCHA II). This survey would be particularly suited for an institution wanting insight into a wide range of health-related issues on campus, including disability status. However, this survey appears to yield rather high disability percentages, with respondents reporting having disabilities in the nine categories that added up to 23.2% in Spring 2009 and 30.7% in Spring 2013 (see reports at http://www.acha-ncha.org/, which however do not clarify what proportion of students reported multiple disabilities so the overall rate of students with disabilities could be calculated).

The ACHA-NCHA II results suggest that simply asking about the presence of particular disabilities may yield rates that are higher than are likely to qualify for disability support services under the ADA. To get a more accurate view of what might be called an institution's "ADA population" may therefore require expanding survey items to include ratings of the level or intensity of reported disabilities. However, the author is unaware of an existing survey instrument suited to this purpose. This gap poses a challenge to disability support personnel or researchers to consider developing such an instrument, which could be of much practical value for postsecondary institutions around the country.

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About the Author

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The Needs of College Students with Autism Spectrum Disorders and Asperger's Syndrome

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Abstract

Many colleges and universities have seen increases in students identified as having autism spectrum disorders (ASD) or Asperger's syndrome (AS). The purpose of this study was to analyze the needs of college students with autism spectrum disorders. The study implemented a naturalistic inquiry design incorporating three data collection formats. A total of 24 students from five universities were asked about their primary social needs and how those needs were met in college. Data were analyzed in a two-step process to examine the emergence of both a main category set as well as subcategories. Data analysis revealed the emergence of a main category entitled Needs Related to College as well as four subcategories- Social Needs, Academic Needs, Daily Living Needs, and How Those Needs Are Met. Implications for higher education services and programming for students with ASD are discussed as are suggestions for future research.

Keywords: Autism, Asperger's Syndrome, services in college, college needs

The prevalence of autism spectrum disorders (ASD), which currently also includes Asperger's syndrome (AS), has increased over the past several years. According to the Center for Disease Control (2012), reports of the prevalence of ASD among children in the United States represents a 23% increase from 2006 to 2008. While the exact numbers of individuals diagnosed with ASD or Asperger's syndrome in college is challenging to ascertain due to the reluctance of some students to identify with the disability service programs, it is purported that some 50,000 adolescents with ASD were 18-years-old in 2012 (Wilkinson, 2012). While not all individuals with ASD may be qualified to attend college, the numbers of individuals with ASD able to attend postsecondary institutions may increase. Thus, postsecondary institutions may need to consider programming to meet the needs of students with ASD attending their schools and seeking services. The purpose of the current study was to give a voice to the needs of college students who had self-identified as having AS or ASD. The current research study was designed to enable students to discuss their needs at the postsecondary level in order to enlighten administration and support providers in the creation of more appropriate and beneficial services.

The diagnosis of AS has undergone significant changes. The most significant change came with the release of the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM 5) in May 2013 (American Psychiatric Association, 2013). Prior to the publication of the DSM 5, there was much controversy and speculation around the diagnosis of AS, as it was anticipated that the diagnostic criteria were to be integrated into the umbrella of ASD. Those familiar with Asperger's syndrome have come to recognize the strengths-based identification that those with AS or "Aspies," as they often refer to themselves, have developed (Holliday, 1999). Attwood (1999) proposed a method of diagnosis that emphasized attributes such as being focused on truth seeking, unconstrained by social conventions in social conversations, being extremely loyal and dependable as well as having intellectual gifts such as a strong vocabulary. Attwood (1999) proposed a more strengths-based, rather than the deficits-based, model that focuses on impairments in social interactions and social communication. As anticipated, AS no longer exists as a distinctive diagnosis in the DSM 5 with criteria that separate it from the autism spectrum. Instead, those currently identified as having AS would now be classified as having an ASD with a specifier

such as without intellectual or without language impairments (American Psychiatric Association, 2013).

Diagnostic Characteristics

Individuals diagnosed with ASD (now including AS as well) struggle with challenges in the form of atypical social development, which includes difficulties with nonverbal communication (American Psychiatric Association, 2013). According to the DSM 5, the classification of ASDs now encompass disorders such as autism disorder, Asperger's disorder and pervasive developmental disorder NOS and include those individuals with symptoms such as "deficits in social communication," and "restricted, repetitive patterns of behavior" (American Psychiatric Association, 2013, p.50).

Lorna Wing identified the characteristics of Asperger's syndrome as consisting of social impairments to imagination, communication, and interaction (Wing & Potter, 2002). These impairments create difficulties for individuals diagnosed with ASD as they include difficulties in navigating the nuances of socialization including the idiosyncrasies of facial expressions, body language, and the reciprocity of conversations (Adreon & Stella, 2001; Attwood, 2004; Myles & Simpson, 2001).

Although the social challenges for some individuals with ASD and AS can make peer interactions difficult, many individuals do not have intellectual impairments and therefore are at the same level as their birth cohort in their academic achievements. While specific data related to the number of students with ASD in college are not currently available, one study conducted at a university indicated that about "1 in 130 and 1 in 53 college students likely meet criteria for HFASD [high-functioning autism spectrum disorder]" (White, Ollendick, & Bray, 2011, p.694). Thus, some individuals with ASD are in college or preparing for postsecondary education. However, as Dillon (2007) explained, the services available for college students are designed to support the academic needs of students with few services provided that include social support. Students with average or even superior intellectual ability but who require support in social interactions and social communication, such as those with ASD without language or intellectual impairments, may have difficulty finding the support they need at the postsecondary level.

Significance to Disability Services Programs

Services and accommodations provided by disability services programs are governed by the Americans with Disabilities Act (ADA) of 1990 and its amendments in the Americans with Disabilities Amendments Act (ADAAA) of 2008. The origins of the ADA date back to the Civil Rights Act of 1964 and the Rehabilitation Act of 1973 (Gordon & Keiser, 2000). The purpose of the ADA, particularly the Amendments of 2008, was to ensure that organizations and institutions *provide reasonable accommodations* to individuals with disabilities. The term reasonable accommodations did not originate with the ADA; it was instituted by the Rehabilitation Act of 1973. However, this concept of 'reasonable' was often interpreted as referring to the financial costs to the institutions to make accommodations (Rubenstein and Milstein, 1993). The ADA and the ADAAA were attempts by the United States Congress to limit discriminatory practices of institutions and organizations with regard to accommodating individuals with disabilities (Americans with Disabilities Act, 2008). Terminology within the legislation mandates that *reasonable accommodations* be made to ensure equal access to education provided the accommodations do not alter the essential elements of the academic programs (Americans with Disabilities Act, 2008). However, there are no specific legislative elements that provide guidelines or mandates for specific services at the college level for students with disabilities (Smith, 2007). Services provided by institutions are at the discretion of the service coordinators to determine the appropriateness of an accommodation. Thus, social support services are usually not indicated as a form of accommodation through disability service offices. The significance of this study for colleges and universities is to provide insights into the service needs of individuals with ASD in college related to social challenges that extend beyond the typical academic support services but assist in providing them better access to the social elements and participation requirements in the classroom. Results from this study will help service providers at the postsecondary level have a better understanding of the needs of this population, and therefore help them design more appropriate services that may be able to increase the academic success and retention of this population of students.

The challenge for disability service providers is that "no laws have been set stating what 'reasonable accommodations' should be" (Smith, 2007, p. 519), thus, services that can address the social challenges that face students with ASD in college may not be required or deemed "reasonable" by an educational institution. For disabilities service providers working to support individuals with ASD in college, the research provided in this article may provide insight into the social supports that would help individuals be more successful in their academics.

Research on Services at the Postsecondary Level

The challenge for families and individuals with ASD is that there continues to be a notable lack of research on supports for students with ASD in college or the perspectives of individuals regarding their social needs in college, in spite of the increase in research on etiology and treatment. Research on services for individuals with disabilities in college indicated that services should be designed more specifically to the needs of the stakeholders (Getzel, 2008; Tagayuna, Stodden, Chang, Zeleznik, & Whelley, 2005). There are several services to support individuals and their families in their pursuit of a college education. Programs such as Achieving in Higher Education with Autism/Developmental Disabilities ([AHEADD], n.d.), Treatment and Education of Autistic and related Communication handicapped Children ([TEACCH], n.d.), Online Asperger's Syndrome Information and Support ([OASIS], n.d.) center, and Think College (n.d.) are just a few services available to provide information and online support for students and families [for URL's see the reference page]. Additionally, there are several institutions that have programs for students with ASD such as Drexel University and Saint Joseph University's Kinney Center for Autism and Support (Hochman, 2011, p. E2) or the College Program at Marshall University in West Virginia (Hansen, 2011). However, these programs may have additional costs to the university's tuition. In one review of research on opinions of students regarding disability services, Stumbo, Martin and Hedrick (2009) indicated that students reported that disabilities service programs, in general, would be more effective if they had more personnel and created support networks based on the individual needs of students rather than attempting to create generic supports.

In order for services to benefit individuals with ASD they must provide supports that the individual identifies as meeting their needs. Support services in college are voluntary and individuals with ASD must seek out these services independently, which is a transition from the specialized education services many received in high school. Thus, for young adults diagnosed with ASD to invest in services to support their needs, the services must be created with their needs as the main goal. Many support service programs are designed to address diagnostic deficits, and while those services may be beneficial, students who did not identify with those needs may not utilize the services.

The voice of autism. "The loneliest thing in the world is having nobody understand you" (Adler, 2006, p. 163). There are a number of studies related to the diagnostic criteria, treatment groups, and treatment methods pertaining to individuals diagnosed with ASD (Barnhill, Hagiwara, Smith Myles, & Simpson, 2000; Bowler, 2007; Klin, Volkmar & Sparrow, 2000). However, there is limited information aside from books and autobiographies that attempts to explain the meaning and experiences of individuals with ASD from their viewpoint. In creating a research study designed to give a voice to the social experiences of individuals with AS and ASD in college, it was necessary to begin with a general understanding of the experiences of individuals living with autism or Asperger's syndrome. Many individuals and family members described their experiences of feeling disconnected from others. Several accounts addressed language and communication barriers that kept any connections with others superficial. One author wrote:

> People would say they were laughing with me, not at me, but I wasn't laughing. So I copied them, and made what they said correct. Then they would laugh at my strange laugh, and I would laugh with them, and they would think I was amused and amusing. This would prove useful when I was older. I'd get invited back again (Williams, 1992, p. 16).

A common theme in these accounts included feelings of isolation and loneliness as the authors began to realize their difference and how it created barriers in their ability to connect with others (Ariel & Naseef, 2006). In addition, some individuals who began to understand their difference in terms of social challenges tried techniques to feign fitting in. Some accounts indicated that communication and the subtleties of nonverbal mannerisms were little more than mimicry with little connection to meaning or independent thought. Williams (1994) explained that there was no connection to or understanding of her "self" and so she was susceptible to manipulation and programming because she did not differentiate her "self."

This discussion of the experiences of individuals diagnosed with ASD raises awareness of the challenges that they face in daily social interactions as well as their attempts to fit in socially. It also illuminates the necessity of research to understand the needs of individuals living with ASD as they define them rather than as professionals define them based on diagnostic deficits. Specifically, research such as this study may enlighten professional service providers at the postsecondary level as to the needs of the population of college students with ASD in order to design services that might better address the exploration of their emerging professional adult self as well as their social needs.

Method

Naturalistic inquiry utilized in this study examined the phenomena of students with AS or ASD in colleges, their perceptions of their social needs, and their experience of how their social needs were met. Naturalistic inquiry enables the researcher, as the human instrument, to assess the multiple realities of a phenomenon within the context of the phenomenon (Guba & Lincoln, 1985). Examining their perspectives through a naturalistic approach enabled the researcher to develop an understanding of the multiple realities for college students living with ASD in the context of their college experience. This provided an opportunity to identify the needs and recommendations of students with ASD. For the purpose of this study three methods of data collection were incorporated: questionnaires, individual interviews, and focus groups. Using these methods of data collection allowed for the triangulation of the emergent themes by enabling the cross analysis of themes in order to assess the validity of the findings. This study also utilized three different collection methods in order to accommodate the comfort level of the participants, as some individuals might have felt less inhibited participating in the anonymous questionnaire than with the social exposure of an interview or focus group.

A questionnaire was sent to the disability service offices at five participating universities in the southeastern Pennsylvania area to be disseminated through an email link to those individuals who had self-identified as having AS or ASD. In addition, a link to the questionnaire was sent to individuals who contacted the researcher and expressed interest in participating in the study through snowball sampling or Internet message boards. Snowball sampling is a participant recruitment process in which participants are referred to the study by other participants (Patton, 1987). The Internet message board called wrongplanet. net, a blog site that enables individuals, caregivers and providers with opportunities to communicate through online postings, was used to post a link to the survey. In addition to data gathered through questionnaires, five individual interviews were incorporated to further interpret and elicit emergent themes. Finally, two focus groups consisting of two to five individuals were conducted to add a richer description of the perspectives of students with ASD in college as to their social needs, their experiences related to having those needs met, as well as services available to them in college.

Specifically, the research questions for this study were:

1. What do students with Asperger's syndrome in college perceive as their primary social needs?
2. What is the experience of students with Asperger's syndrome in college as to how their social needs are met?

Sampling Process

The researcher obtained approval from an Institutional Review Board (IRB) to ensure the protection of human subject procedures used in this research methodology. The approval process included an application format that required an explanation of the participant's rights throughout the study and how those rights were protected. In addition, informed consent forms for each method of data collection were incorporated. An informed consent page was included as the first page of the online questionnaire as well as at the beginning of each interview and focus group.

As a part of the scientific rigor in naturalistic inquiry, thick description of both the setting and sampling process supports transferability (Erlandson, Harris, Skipper, & Allen, 1993). In order to maintain scientific rigor in such a study, it was essential to incorporate an audit trail to guard against assumptions and biases. Scientific rigor was preserved through use of a reflexive journal, member checks throughout to incorporate the feedback of the participant members to enhance credibility, and thick description of the context to ensure transferability (Erlandson et al., 1993; Guba & Lincoln, 1985). In this study, the thick description of the setting and the sampling process enables transferability of the findings to similar students in similar settings. Additionally, the settings for the individual interviews and the focus groups from this study were particularly important as to enhance the comfort of the participants who might have been inhibited in certain social settings.

Sampling method for questionnaires. Participants for the online questionnaires were obtained through disability services offices at four-year colleges or universities, through snowball sampling as well as through postings on message boards of Internet support websites such as wrongplanet.net. The disability service directors at five universities in southeastern Pennsylvania emailed a link to the questionnaire to students who had self-identified with their office as having AS or ASD. The postings on wrongplanet.net included the purpose of the study, the researcher's contact information as well as a link to the anonymous questionnaire.

Sampling method for the individual interviews. Participants who received the questionnaire were asked

if they were interested in participating in an individual interview, both a focus group and interview, or neither option. Participants had the option of providing contact information on the questionnaire in order to have an interview arranged or they could contact the researcher directly. Those who expressed interest in the interview portion of the study, and who qualified based on inclusion criteria were then contacted by phone or through email. The purpose, procedure, and data collection process as well as the informed consent forms were explained.

Sampling method for the focus group. Participants for the focus groups were obtained through two methods. First, the participants who completed the questionnaire were asked through one of the items if they were interested in participating in a focus group. Participants who expressed interest in the focus group and who qualified based on inclusion criteria were then contacted through email or by phone, if contact information was provided on the questionnaire. The second method through which participants for the focus groups were accessed was through disability services (DS) offices. The DS directors at the participating colleges were asked to assist in the arrangement of several focus groups at their offices. The directors were then asked to send an email to all of the original recipients of the questionnaire link to invite them to participate in the focus groups.

Inclusion criteria. There were several inclusion criteria for participation. First, individuals were included who self-identified as having AS or ASD. Additionally, to be included, students had to be enrolled in or had to have completed at least one semester of an undergraduate program at a four-year college or university. A final criterion for inclusion was that individuals who were not currently enrolled in a college or university had to have graduated from a college or university with a Bachelor's degree within the previous five years. Therefore, individuals who were in graduate school or who were recent graduates would have been included in the study. Changes in legislation such as those in the ADAAA may have changed DS in colleges. Service providers are required to provide reasonable accommodations to support students with disabilities and the nature of the legislative changes are designed to prohibit institutions from making excessive requirements of students for proving disabilities through documentation (Americans with Disabilities Act, 2008). Therefore, with this change in the impetus for institutions to provide accommodations, students having attended college longer than five years ago may not have had the access to support and services such as those available since the changes to the ADAAA.

Participants

Based on the inclusion criteria, 24 students participated in the study. Demographic information was elicited from participants completing the online questionnaire; however, in order to protect the confidentiality and anonymity of the students in the focus groups and interviews, no self-identifying information was elicited. Participants in all three methods were asked their grade level. Participants' most frequent response to the question of grade level was "freshman." While graduate students would have been included based on the inclusion criteria, no students directly indicated that they were currently in graduate school. The majority of the participants were undergraduate students; however, some participants who did not respond to the question of grade level may have already received their Bachelor's degree. Participants consisted of 10 female students and 14 male students. The range of ages for the participants was 18 to 29 with a mean age of 22.5 years and a mode of age of 19. Table 1 represents all of the demographic information for participants separated by the collection method. All of the data represented in Table 1 are from distinct individuals.

Setting

As indicated in the discussion of the naturalistic inquiry method of data collection, thick description of the setting facilitates the transferability of the findings. The settings for the interviews as well as the focus groups were located either on the campus of the participating colleges and universities or, in one case, the participant's room via Skype. The settings were chosen by the student participants in conjunction with the researcher to assure the comfort of the students and decrease any anxiety or intimidation related to social settings. Two of the interviews were conducted separately in small, private study rooms in the libraries of the universities that the students attended. As mentioned, one interview was conducted via Skype. The remaining interviews were coordinated with the DS directors and the student to enable use of private rooms in the DS offices. The two focus groups were coordinated with the assistance of the directors of the disabilities programs by sending detailed email invitations to students who had originally been sent the link to the online questionnaire. These focus groups were conducted in a conference room at the DS offices.

Data Analysis

This was a qualitative study that employed a naturalistic inquiry where the researcher is the human instrument that conducted the interviews and focus groups as well as the data analysis. The researcher ana-

Table 1

Participant Demographics

Collection Group	Age	Gender	Ethnicity	Grade	College Type
Questionnaire					
	18	M	Caucasian	Freshman	*
	18	M	*	Freshman	Public
	19	M	*	Freshman	Public
	19	F	Caucasian	Freshman	Private
	19	F	Caucasian	*	Public
	19	F	Caucasian	Freshman	Private
	19	F	Caucasian	Sophomore	Public
	19	F	Caucasian	Freshman	Public
	20	M	Caucasian	Sophomore	Public
	20	M	Caucasian	Sophomore	Public
	21	M	Caucasian	Senior	Public
	22	M	Caucasian	Senior	Private
	24	F	Caucasian	*	Private
	25	F	Caucasian	Freshman	Public
	27	F	Caucasian	Junior	Public
	27	M	Caucasian	*	Public
	29	M	Caucasian	*	Public
Interviews					
	22	F	*	Senior	Private
	26	F	*	Junior	Private
	21	M	*	Sophomore	Private
Focus Group					
	22	M	*	Junior	Public
	28	M	*	Senior	Public
	28	M	*	Sophomore	Public
	29	M	*	Senior	Public

* Indicates missing data

lyzed the data in a continuous two-step process. The first step in the process involved a line-by-line analysis of the responses for all three collection methods to assess for the emergence of converging themes. This first set of main themes or categories was then analyzed in a second line-by-line step to assess for the emergence of any newly identifiable main themes or the divergence of the categories into subcategories. The main categories that emerged consisted of general discussions of experiences in college, social experiences, needs, and services at the postsecondary level. With each new set of responses to the questionnaires, interviews, and focus groups, the data were coded according to the existing category sets and the researcher assessed for the emergence of new categories. Data analysis continued to the point of saturation at which time no new themes emerged from the responses. Throughout the analysis, the researcher maintained scientific rigor by periodically performing member checks and peer reviews of the emerging themes. The purpose of this article is to explore the student responses to their needs at the postsecondary level.

Results

Needs Related to College

The purpose of this research study was to identify the needs of students with ASD in college to provide information to administrators and service providers at the postsecondary level to assist in the development of supports for students. As students were asked to identify their social needs, the responses and discussions related to social needs expanded to include discussion of some elements related to daily living skills and academic needs; therefore, a general category of Needs Related to College emerged. The main category of Needs Related to College further diverged into four subcategories: Social Needs, Academic Needs, Daily Living Needs, and How Those Needs Are Met.

Social needs. The first subcategory that emerged in the responses related to Needs indicated that social needs were a prevalent although not exclusive need. Thirty-nine responses from all three data collection methods related to the subcategory of Social Needs. There was a dichotomous sentiment related to meeting new people. Nine responses revealed that meeting more people was a social need, while seven reported that they did not feel a need to meet people. Student responses on the questionnaires expressed, "I would have preferred an easier way to find others who went to college to study and not goof off" and "I definitely needed places to talk to people." For those who indicated that they had social needs, these needs were

in the form of finding places to meet people. One student explained, "You just want to get out there, but you don't know where to go or what to do." Another student shared:

> It's just really challenging socially… kind of the feeling of not really knowing what to say and what to do and as a result of that people kind of leave me out or think I'm a little weird or quirky or more likely just shy… when that is not really true at all. I just really don't know what to do.

Other responses indicated they were not able to conceptualize their needs. One student responded, "I am not sure what my social needs would be." Another student stated, "I don't really feel the *need* to socialize outside of my limited social circle." However, the themes that evolved from this data cluster indicated that students who did express a desire to meet people, expressed needs in terms of finding places to meet others with similar interests. In order to facilitate the meeting of people, students indicated that their needs related to knowing how to meet people and what to do or say to meet people. This need for some social skills around initial socialization bridged with the second subcategory that developed related to Academic Needs. Several students indicated that their Academic Needs related to assistance with social elements of group work.

Academic needs with group work. College students with ASD who may be challenged by social communication skills may find that the group work environments simply accentuate their difficulties with social communication. This was a common theme that emerged in terms of Academic Needs, while addressing social needs relevant to college. Several students indicated that their social needs were related to needing assistance with social interactions during group work, thereby bridging the theme of Academic Needs and Social Needs through the teaching methods of group work. Students who responded to the online questionnaire reported that they struggled with navigating the group process. One questionnaire respondent stated:

> In class, every time I am placed into a group, slowly everyone starts to act distant and angry with me, leaving me to become the scapegoat and take the blame for anything that goes wrong, despite being a straight A student. When I contact instructors about my concerns, I am often told to talk it out with my group, which goes nowhere.

Through the individual interviews, the needs of college students with ASD became clearer. The academic skills

were not as much a concern as the social elements of the classroom. For example, one student shared in the interview that, "the other big challenge was definitely managing people in class, particularly when I was at the liberal arts college. There was a lot of group work and that was a major problem."

The challenge of group work related to managing the social elements of the group process. Individuals with AS or ASD had to discuss, problem solve, and cooperate with other students in a way that increased social interaction and required the ability to lead in some circumstances. One student explained:

> It's like, okay, the other people in the group are already interacting with each other. Sometimes it's a little bit social and not just getting into the assignment. Like, there is a lot of stuff that has to be done… all that little small talk and stuff, and I just kind of freeze up.

In terms of addressing specific needs, the common theme that emerged was the sense that group work was a source of difficulty for college students with ASD. Group work required utilization of social skills that were a challenge to participants. They struggled with knowing how to engage in the group as well as how to navigate the distribution of assignments. Students with ASD in college, as was evident from this study, have social skills needs relating to how to navigate social settings in both the social arenas of college as well as the classroom setting.

Daily living needs. Participants reported a variety of living arrangements: some lived at their parents' homes, others reported living in dorms, while others reported commuting from their own apartments. Thus, the living arrangements of students varied greatly, but a common theme emerged in terms of needing support in daily living skills. Specifically, a student reported, "I have difficulties taking the bus due to anxiety issues. In addition, the bus routes and schedules are often changed, which flusters me quite a bit." In the individual interviews students elaborated further, explaining that independent living posed a challenge. Maintaining a schedule for functional skills such as eating, sleeping, and organization was difficult for some of the students. One student shared:

> Even just things like figuring out what to eat and things like that. I mean, it seems like a simple thing and in isolation it is a simple thing, but when there are all these things that I also have to – that are otherwise really simple – they start to feel a lot more complicated or I just forget about them.

Part of the daily living difficulties involved prioritizing. As one student explained, when he became overwhelmed in his course work, his daily living needs began to suffer. He indicated that his hygiene and self-care suffered due to his coursework. Thus, part of the adjustment to college for students diagnosed with ASD involved Daily Living Needs and help navigating tasks such as where and when to eat, sleep, how to navigate transportation and so on. Even students who commuted from home struggled with these issues related to independence. For example, as one student explained:

> I missed my first train today because I couldn't find my keys and I know that is not something that is limited to people on the spectrum but the reason I couldn't find them was because I don't remember to just put them in the same spot when I come home. Like, unless somebody is there to tell me, like, "Oh, you have to put your keys in the same spot every time you come home," I just have to rely on visual memory of like where I last saw my keys. You know, um, it is just simple things like that, that like in isolation are pretty insignificant but then when things like that are kind of like the building blocks of your life, it gets really difficult.

As students were addressing their needs in college they discussed the challenges they faced with daily tasks. It became clear through the discussion that Needs Related to College expanded beyond social needs to include social supports in both the Academic as well as Daily Living activities.

How Needs are Met

Analysis of the data clusters of Needs Related to College revealed a subcategory entitled, How Needs Are Met. In discussion of their needs, students identified three avenues for having their needs met: Through family, school, or social media.

Family. Thirty-three responses to questions related to needs pertained to How Those Needs Are Met. Of those 33, 11 responses indicated that students had their social needs met through their family. Responses to online questionnaires indicated that several students, particularly those who indicated that they commuted, regularly socialized with their parents. While that is logical for students who lived at home, social needs met through family interaction was still a common response for those students living on campus as well. Take as example statements from both questionnaires and interviews. One student stated, "I was so lonely in college, I would drive home to be with family a lot on weekends." Another student stated, "I come home

to visit my parents every other weekend; they live an hour and a half away. They don't share my interests, but it's nice to have people talk to me."

School. While family satisfied the social needs for many students, others indicated that some of their socialization needs were met through friends they had made at college. Of the 33 responses regarding how social needs are met, 15 responses indicated that students socialized with classmates or through other school related activities. One student indicated, "I've found friends in various areas. For example, I found one friend at a school club and another one outside during a fire alarm at my dorm." Responses in the interviews and focus groups corroborated this sentiment. One student stated:

> I got along like with everybody in my classes and stuff, um, so I can actually like, I can actually do like the witty banter and stuff so that helps, um, I find that if you can be funny people react well to you.

Finally, other students shared that their colleges sponsored group activities that facilitated their social interactions and helped them meet people. The students indicated that they had met individuals and benefited socially from these groups.

Social media. The third divergent theme related to How Needs Are Met was through social media. Students indicated that they utilized Internet sites and social media sites to engage other individuals with similar interests. One interviewee explained:

> I use Facebook and I have met other people on the spectrum, which has been nice. Um, and I have been able to interact with females on the spectrum that way. So that's nice because like you can just post certain things and they just get it, you know? Like, if I am trying to explain an experience… people will try to make you feel better about it by saying, "Oh well, I think a lot of people have trouble with that"…[but] it is really invalidating… Then you can just go online to these other girls you have met with autism and say, like, "Oh my gosh! This happened today." They are like, "Oh gosh! Not that" and they just get it because it has happened to them too… that has been nice.

Discussion

Responses to the question of social needs in college expanded to include discussion of college needs in general. These responses clustered to form a main category entitled Needs Related to College. Through further analysis, this main category diverged into subcategories: Social Needs, Academic Needs, Daily Living Needs, and How Needs Are met. The subcategory of How Needs Are Met further diverged into three means through which the students' social needs were met: through family, school activities or classmates, and social media. While many students indicated that they interacted socially with their families, some indicated they had met friends through college and had some of their social needs filled through social interactions at college. In addition, other students indicated that social media was a source of social satisfaction that enabled them to meet people with similar interests.

While the divergent themes emerged as separate subcategories, there was some linking and bridging among the subcategories in Needs Related to College. In particular, social needs statements centered on needs related to skills and opportunities to meet other students with similar interests. Also, Academic Needs bridged with Social Needs such that students indicated that their Academic Needs centered on the social elements of group work in the classroom and navigating the social challenges of the classroom environment. Additionally, Academic Needs linked to Daily Living Needs as student statements indicated that their daily living needs suffered at times, due to difficulties managing challenging course loads and daily routines.

The findings of this study mirror earlier findings about the need for support for social interaction and social communication to navigate a variety of social situations (Müller, Schuler, & Yates, 2008; Sperry & Mesibov, 2005; Taylor, 2005). In addition, findings related to the main research question of social needs indicated that students needed support beyond socialization to include supports for navigating the social elements of the classroom such as appropriate participation and group work. These findings are important for professionals who provide campus services. In addressing the main research questions, students discussed their needs in terms of the social challenge of knowing how and where to meet people who might share their interests. Beyond that, some students also shared their social needs in terms of navigating the social elements of the classroom setting such as group work and group assignments.

In a study of students without disabilities and the significance of organized activities in college transition, Bohnert, Aikins, and Edidin (2007) found that increased time spent participating in activities in college was more beneficial to students who had difficulties with social transitions, which was identified through reports of loneliness and social dissatisfaction. Researchers speculated that students whose social ex-

perience was more negative were more likely to benefit from organized activities. As the researchers explained:

> Emerging adults with a poor history of social adaptation may carry forward social information processing biases or social skills deficits that make the transition to college particularly difficult. For those individuals, involvement in organized activities may provide a smaller, structured social context…which facilitates the creation of high-quality friendships and feelings of social acceptance (Bohnert et al., 2007, p.203).

While the Bohnert et al. study's respondents were neurotypical college students, the findings could be applicable to college students diagnosed with ASD, as many of them come to college with a sense of social anxiety in light of their past experiences of social challenges. Thus, the needs for a way of meeting individuals with similar interests, as expressed by students in this research, supported the idea that organized activities such as new student orientation meetings, dormitory floor meetings, clubs, or other socialization groups could not only fulfill the social needs of students with ASD in college but also increase their sense of social acceptance.

Implications for Disability Service Providers

While changes to the ADA in the Amendments of 2008 do not specify accommodations to be made for college students with disabilities, many DS programs provide an array of services that meet the needs of students from academic accommodations to accommodations to support individuals with physical needs such as those with hearing or visual impairments. The challenge as highlighted by Dillon (2007) is that services specifically designed to support the social needs of individuals are not universally considered to be necessary elements of the postsecondary programming. However, some institutions already incorporate programming to increase socialization among students with peer mentoring services as well as orientation groups and other social clubs and services to coordinate the transition process (Fatscher & Naughton, 2012). Results of this study such research that indicates that success in the postsecondary environment can be enhanced by activities and services that encourage the development of social relationships and social interactions for students with ASD (Fatscher & Naughton, 2012).

When considering the implications of this research, services that promote the development of social communication skills, particularly in the classroom and during group work, would help individuals with ASD

be more successful in their academic endeavors as well as their social endeavors. Thus, programs that create opportunities for students to practice appropriate classroom behaviors, groups that encourage students to discuss techniques for successful group work experiences, as well as experiences for students with ASD to interact with neurotypical students to begin to feel more comfortable with their own style of communicating in groups, would ultimately benefit students academically. Disability services coordinators attempting to better accommodate the needs of students diagnosed with ASD may need to conceptualize accommodations for the social elements of the classroom. Doing so may enhance students' access to the learning experiences that professors and postsecondary institutions are attempting to create through group assignments and collegial learning environments.

Potential services to be considered as identified by participants in this study might include, as one student suggested, a peer mentor that was "there for whatever I need her for." A peer mentoring program designed to support students with ASD in the transition to college could not only provide opportunities for those students to practice social skills in a variety of college settings (dorm living, cafeterias, study groups) but such opportunities could also benefit neurotypical students by enhancing their sense of belonging and connection to the university or college. Fatscher and Naughton (2012) discuss the benefit of programs to support students with ASD such as peer mentoring and training programs to increase awareness for the needs of the population of fellow students struggling with the social challenges associated with the diagnosis of ASD. In addition to helping and supporting students with ASD in navigating the transition to college, peer mentoring programs available in many colleges also provide opportunities for students to engage other students through group activities (Fatscher & Naughton, 2012).

Other services that could support students with ASD would include groups through which they could meet other students with similar needs and interests. Often universities and colleges have clubs, meetings, and social events such as orientation activities that enable and encourage students to meet and connect with other students. Results of this study support research of first year students related to the importance of developing a sense of belonging (Pittman &Richmond, 2008) and peer led support groups in college (Mattanah et al., 2010). Students who reported an increase in their sense of belonging in terms of college adjustment also reported increased self-perceptions associated with academic competence (Pittman & Richmond, 2008). Additionally, students who participated in peer led sup-

port groups reported increased feelings of adjustment (Mattanah et al., 2010). While these two studies were conducted with neurotypical first year students, results from the current study support earlier findings about increased social adjustment and sense of belonging. Services that took student needs and recommendations from this research into consideration would enable students to achieve autonomy in service selection and would encourage them to identify their academic and social needs and interest. In addition, administrators could use information from this study to create trainings for student staff members such as Resident Assistants and Teaching Assistants in ways to better understand the needs and communication styles of college students with ASD. Results of this study could also be used to help administrators create professional development opportunities for faculty, administrators, counseling center staff and other support personnel, focusing on the communication patterns and classroom needs they may encounter with this population.

Limitations

Limitations to be considered in reviewing these findings involved aspects of the population studied. Specifically, due to potential communication challenges experienced by some individuals with ASD, misinterpretation of the questions in the three collection methods was possible. However, steps were taken to ensure opportunities for clarification and discussion should misinterpretation or misunderstandings of the questions have arisen. These measures included provision of the researcher's contact information for the online questionnaire as well as discussion and examples provided during the interviews and focus groups for clarification purposes. Also related to population elements, the majority of the participants were obtained through the disabilities services offices of their colleges or universities. Therefore, students who may have ASD but were not connected with their DS offices would not have had the opportunity to participate aside from the snowball sampling approach. Therefore, there may have been larger numbers of individuals with ASD on the college campuses who could have participated but were otherwise unaware of the study. Thus, responses and themes may only be applicable to students with ASD in college who are comfortable seeking support from the DS programs at their colleges.

Future Research

Several implications for future research emerged from the data. First, as individuals discussed the use of social media to accommodate their social needs,

further exploration of this medium for socialization might prove beneficial not only to students but also to service providers. Specifically, as social media is becoming more widely utilized, studies to assess the use by individuals with ASD as a means of not only socializing, but also gaining and practicing social skills, would be insightful. For example, researchers could study interest groups or orientation groups that were conducted via an online format, chat room, or message board. Such a study could explore social media as a potential avenue for supporting the success and transition of students with ASD at the postsecondary level. Finally, postsecondary education is conceptualized to prepare young adults for careers in their chosen field of study. The academic curriculum at the postsecondary level is designed to prepare students for their future employment. Many students with ASD may succeed academically but find it very difficult to navigate the job search process, including the interview phase, in order to obtain employment. Thus, services that teach skills for navigating group work in courses should be studied for their effectiveness in supporting the development of professional social communication etiquette that would also support students in the job search process. Future studies should assess the effectiveness of social support services for their significance in helping students with ASD as they enter the job market and in their search for employment.

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PRACTICE BRIEF
Academic Coaching: Outcomes from a Pilot Group of Postsecondary STEM Students with Disabilities

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Abstract

Faced with poor retention and graduation rates for students with disabilities, postsecondary institutions have experimented with interventions to help students succeed in college. This practice brief describes a pilot initiative in which 41 students with disabilities pursuing science, technology, engineering, and mathematics (STEM) degrees at three postsecondary institutions engaged in weekly academic coaching sessions primarily aimed at improving students' executive functioning. Data collected through an online survey of participants at the end of the initiative suggests that the academic coaching services increased their self-confidence, motivation, and determination to succeed. Participants reported that they gained skills in time management, studying, note taking, organization, prioritization, writing, self-advocacy, and stress management as a result of the academic coaching. Although literature regarding academic coaching and students with disabilities has often focused on students with LD or ADHD, results of the pilot initiative suggest that students with a variety of disabilities can benefit from coaching relationships.

Keywords: STEM, disabilities, academic coaching, executive functioning

Individuals with disabilities experience less academic and career success than their non-disabled peers, particularly in fields such as STEM (National Science Foundation, 2012). Street et al. (2012) suggest that students with LD and/or ADHD may be at increased academic risk in STEM, at least in part because they cannot meet STEM course demands regarding executive functioning (i.e., managing the cognitive processes used in planning, organizing, strategizing, paying attention to details, and managing time). They point out that STEM courses place a particularly heavy demand on cognitive skills that are often weak in students with some types of disabilities. Since the development of the frontal cortex in humans and the associated acquisition of executive functioning skills continue well into the third decade of life (Giedd et al., 1999), appropriate interventions in the college years hold promise for improving the executive functioning of undergraduate students with disabilities.

Academic coaching interventions have been shown to help at-risk students acquire the skills necessary to succeed in a competitive postsecondary environment (Field, Parker, Sawilosky, & Rolands, 2013; Parker & Boutelle, 2009; Zwart & Kallemeyn, 2001). In a seminal book on the topic, ADHD coaching is described as "a unique collaborative relationship designed to help college students with ADHD develop the awareness, cognitive processes, behavioral patterns, and environmental structures needed to overcome the performance deficits caused by their disability" (Quinn, Ratey, & Maitland, 2000, p.17).

In an early study (Zwart & Kallemeyn, 2001), researchers explored the effectiveness of a peer-based coaching program designed primarily for college students diagnosed with ADHD and/or learning disabilities (LD). The purpose of the coaching intervention was to help students improve their self-efficacy and study strategies. The results suggest that students who participated in the coaching program experienced reduced anxiety and improved time management skills, motivation to take responsibility for school-related tasks, study skills, and test preparation strategies.

Observing that students most at risk for underachieving or dropping out of college are typically in their first or second year, one university adopted an academic coaching intervention designed to help first- and second-year students succeed in college studies (Robinson & Gahagan, 2010). In this work, academic coaching was defined as a "one-to-one interaction with a student focusing on strengths, goals, study skills,

engagement, academic planning and performance." Ninety-two percent of the participants in the intervention during the 2007-2008 school year improved their grade point average and otherwise demonstrated academic improvement over the academic year (Robinson & Gahagan, 2010).

In another study (Parker, Hoffman, Sawilowsky, & Rolands, 2011), seven undergraduates with ADHD who were enrolled in a highly competitive university setting participated in a semester-long pilot program that examined the effects of coaching on their executive functioning skills. All but one of the students had achieved a cumulative GPA of 3.0 or higher, suggesting that even high achieving students with impairments that affect executive functioning can benefit from academic coaching. Participants reported in interviews that coaching enhanced their ability to achieve academic goals, that they enjoyed working with their coaches, and that they felt less stressed and more in control of their lives. These findings, supported by quantitative data, suggest that coaching may help students with executive functioning challenges achieve greater academic success.

Another recent article (Field et al., 2013) explored the effects of academic coaching on learning and study skills, self-regulation, and subjective well-being of undergraduates with ADHD attending two- and four-year colleges. Results from this study, which included a control group, suggest that coaching can be highly effective in helping students improve their executive functioning skills and manage their daily stress. Specifically, students who received coaching earned higher scores on the Self-Regulation cluster of the Learning and Study Strategies Inventory and the College Well-Being Scale than did similar students in a comparison group.

Some studies have explored the characteristics of successful academic coaching programs. For example, Swartz, Prevatt, and Proctor (2005) studied the impact of an eight-week intervention in which graduate students in a Counseling and School Psychology program provided one-to-one coaching to undergraduate students with ADHD. The approach was designed to transfer responsibility for change to the undergraduate students by focusing on strategizing about behaviors, giving carefully tailored feedback, and asking questions rather than giving recommendations. Among other things, the study highlighted the importance of the quality of the student-coach relationship in the success of any coaching intervention.

Depiction of the Problem

The authors of this article, who have worked with students who have a wide range of disabilities as they transition to and pursue college studies, have observed that underdeveloped executive functioning presents a barrier to success for some students, particularly those pursuing rigorous fields of study such as those in STEM. Postsecondary STEM students with disabilities regularly talk about struggling to manage time, complete assignments, maintain focus or shift focus from one task to another, make plans, and organize tasks. Further, it has been observed that such struggles can affect a student's ability and/or motivation to maintain relationships on campus and engage in school-related activities.

In contrast to earlier studies that focused on students with LD and/or ADHD, the pilot study described in this article explored the efficacy of providing academic coaching services to postsecondary STEM students with a wide variety of disabilities who reported a need for academic support. While the coaching services offered in the current study were not specific to STEM coursework or learning, all participants were pursuing STEM fields.

Participant Demographics and Institutional Partners and Resources

Forty-one students who were members of the National Science Foundation-funded project called *AccessSTEM* (DO-IT, 2013a), which is directed by the Disabilities, Opportunities, Internetworking, and Technology (DO-IT) Center at the University of Washington (DO-IT, 2013b), participated in at least one session of the *AccessSTEM* pilot coaching initiative. About half of the students identified as male (53%), while the other half (47%) identified as female. Students reported their disabilities as follows: 11 (27%) had attention deficit disorder (ADD) or ADHD; nine (22%) had a mobility impairment; eight (20%) had a learning disability; eight (20%) had a mental health diagnosis such as depression or anxiety; four (10%) had a sensory impairment; four (10%) had a systemic health diagnosis; three (7%) had post-traumatic stress disorder; two (5%) had an autism spectrum diagnosis; and two (5%) had Tourette's syndrome. Ten students (24%) reported having more than one disability. Four students (10%) reported that they were a veteran of the United States military.

Twenty-nine (71%) of the students were attending a two-year community college and twelve (29%) were enrolled at a four-year institution. Twenty-eight (68%) students identified their race as Caucasian; eight (20%) identified as Asian; six (15%) identified as African

American; one (2%) identified as Hispanic; and one (2%) identified as American Indian. Three students (7%) reported belonging to more than one race.

Students learned about the coaching service through a combination of announcements and referral. The pilot initiative was advertised in the *AccessSTEM* electronic community, in the *Opportunities!* Newsletter sent to *AccessSTEM* members, and in flyers distributed to disability support offices at the participating institutions. Ultimately, the most effective form of student recruitment proved to be through faculty and staff member referrals after hearing about the academic coaching service through email announcements on campus or through their relationships with staff of the DO-IT Center.

Description of Practice

The purpose of the *AccessSTEM* academic coaching pilot initiative was to employ evidence-based practices in academic coaching to help postsecondary STEM students with a range of disabilities develop skills and strategies in support of their academic goals. The service was provided at no cost to *AccessSTEM* students enrolled at the University of Washington, Bellevue College, and South Seattle Community College. Funding to support the initiative was provided by the University of Washington and the National Science Foundation. The academic coach traveled to the three campuses to provide the service in-person. In between sessions, the coach communicated with students via telephone and email.

For the purpose of this intervention, academic coaching was defined as a "one-to-one interaction with a student focusing on strengths, goals, study skills, engagement, academic planning and performance" (Robinson & Gahagan, 2010). Recognizing that everyone is different and that even the same disability can affect people differently, coaching sessions were tailored to the specific needs of each student. Concepts fundamental to the practice of coaching – self-assessment, reflection, and goal setting – provided the framework for the coaching intervention (Robinson & Gahagan, 2010). Quality counseling and communication skills such as listening, reflection, questioning, and empathy perceived as important to the success of the intervention (Swartz et al., 2005) were utilized. Students were offered one-hour in person coaching sessions each week. Some chose to attend sessions less frequently.

The academic coach utilized in the current study had over ten years of experience providing coaching services at several universities in England. The coach had completed the Portfolio of Experience for Study

Skills Support Tutors by demonstrating proficiency in three core skill areas: (1) Designing and Implementing an Individualized Learning Plan, (2) Effective Communication and Specific Learning Disabilities, and (3) The Learning Process of Specific Learning Disabilities: Assessment and Analysis. The coach also participated in semi-annual training workshops and conferences over many years and held a Certificate in Personal Coaching from the Coaching Academy (www.the-coaching-academy.com/). More information about credentials and training for academic coaches is available at TREE (http://www.ntatutor.com/certification-training-topics-for-academic-coaches.html), the Center for Credentialing and Education (http://www.cce-global.org/bcc/training), and the International Coach Federation (http://www.coachfederation.org/).

Student Self-assessment. During the initial meeting, the academic coach and student discussed the student's challenges, strengths, resources, and perceived needs as well as his/her expectations for coaching. Students were asked to identify short-term and long-term academic goals and to evaluate skills related to time management, studying behaviors, interpersonal communication, organization, and academic planning. Self-reporting that occurred during these initial conversations provided a foundation for future work.

Inquiry model. During subsequent sessions, the coach asked a series of open-ended questions in an effort to learn more about the student's interests, goals, and motivations. This coaching approach, referred to as the "inquiry" model, emphasizes asking over telling (Parker & Boutelle, 2009; Robinson & Gahagan, 2010). By asking specific types of questions, the coach also modeled reflective thinking and helped students develop the ability to plan and set goals. This has been found to be especially important for students with ADHD, who benefit from having decision-making, prioritizing, and time management skills modeled for them (Parker & Boutelle, 2009). Coaching also encouraged students to replace negative thoughts with positive ones and to view their challenges from different perspectives. Parker and Boutelle (2009) discussed how coaching influenced undergraduates' use of "self-talk" in this manner.

Evaluation of Observed Outcomes

Coaching services were offered during the 2011-2012 and 2012-2013 academic years. At the end of the each academic year, students provided feedback about the coaching experience through an online survey consisting of six open-ended questions. The survey was created by the coach and a project evalua-

tor and administered anonymously online. Participants were given the opportunity to respond but were not required to do so. Survey results from 16 students who completed more than three coaching sessions and responded to the survey are described below. On average, these participants attended 12 coaching sessions. The majority of survey respondents engaged in in-person, weekly coaching sessions during an academic quarter.

Item 1. What impact, if any, have the academic coaching sessions had on you? Students mentioned, in order of decreasing frequency:

Improved structure, organization, or time management skills	7
Decreased stress, felt reassured or supported	5
Increased motivation, confidence, self-esteem, or self-advocacy	5
Gave effective strategies to meet goals	4
Improved communication or writing skills	3
Improved ability to focus on tasks	3
Clarified goals or provided support for goals	2

One student stated, "The academic coaching has really helped my self-esteem greatly." These results seem to reflect cognitive and affective benefits reported in other studies.

Item 2. In what ways, if any, has participating in the academic coaching sessions helped you achieve your educational or personal goals? Students mentioned, in order of decreasing frequency:

Improved goal setting, prioritization of goals, or goal advancement	6
Increased confidence/self-advocacy or decreased self-criticism/negativity	6
More focused and organized career search, or internship success	5
Improved writing, reading, study skills, or information retention	2
Experienced reduced stress or manages stress better	2
Improved awareness/strategies to overcome barriers imposed by disability	2
Improved grade point average	1

Specific comments included: "The work we do is invaluable and I can't put a price on [my coach's] gifted tutoring and support," and "The academic coaching has made my grades better and I am able to navigate school transitions easier and talk to school officials better."

Item 3. Do you feel that participating in the coaching sessions has made a difference in where you are today? Every student responded "yes" to this question.

Item 4. Please describe the differences you have experienced as the result of participating in the coaching sessions. What, specifically, has changed? Students mentioned, in order of decreasing frequency:

Improved self-awareness or confidence	6
Improved organization, goal-setting, or priority-setting	5
Improved emotional regulation, stress management	5
Feeling of being supported	4
Improved learning strategies or knowledge retention	4
Improved communication	2

One student said, "I am now able to ask better questions to my professors and the school financial aid, registrar, and disability service offices."

Item 5. List three strategies or skills you have learned as a result of participating in the coaching sessions. Students mentioned, in order of decreasing frequency:

Time management and organization skills	8
Goal setting	5
Strategies to improve writing and reading skills	4
Study skills	2
Breaking projects into smaller steps or making outlines	2
Self-awareness	2
Utilize existing resources	2

Students also mentioned seeing things to completion, test-taking strategies, and asking others for feedback about progress.

Additional feedback was received when participants shared benefits of academic coaching with their academic coach and with the *AccessSTEM* electronic community, which includes peers and mentors interested in STEM fields. Students with a variety of disabilities talked about learning how to prioritize action items, figuring out how to obtain the right accommodations, learning how to stay on track when things did not go as planned, gaining perspective, acknowledging success, improving time management skills, and organizing things such as email messages, notebooks, calendars, and other correspondence.

Discussion

As noted earlier, development of the frontal cortex and the associated acquisition of executive functioning skills continues well into one's 20s. This is of particular importance when one considers that post-secondary STEM students with disabilities are often undergraduate students aged 18-25 who are not faring well in retention and graduation rates compared to their non-disabled peers. Although the literature regarding academic coaching and students with disabilities has often focused on students with LD and/or ADHD, the results of the *AccessSTEM* academic coaching pilot initiative suggest that students with a variety of disabilities can benefit from coaching relationships. Every participant who completed the survey responded that coaching had made a difference in his or her life. Overall, students reported that coaching helped them learn new skills and strategies to help them succeed at college.

Data collected during the pilot initiative also suggests that the academic coaching service improved the study skills, self-confidence, and motivation of postsecondary STEM students with a variety of disabilities. Specifically, students identified time management, note taking, organization, prioritizing, writing, self-advocacy, and stress management among the strategies and skills they had learned through their academic coaching experiences. These reports suggest that the academic coaching services provided in the pilot study enhanced the executive functioning of students with disabilities, increasing their capacity to manage the cognitive processes used in planning, organizing, strategizing, paying attention to details, and managing time.

Implications and Portability

Individuals who wish to implement coaching interventions on other campuses can benefit from the developing literature base that defines critical aspects and perceived benefits of academic coaching and the existence of training programs for academic coaching. However, the lack of availability of well-trained coaches and funding to support their work remains a barrier to wide-scale implementation of academic coaching services at postsecondary institutions.

Limitations in this pilot study are related to the small size of the participant group and lack of a comparison group, the qualitative nature of the self-reported student feedback, and issues related to self-selection. However, the results of this pilot initiative add to the growing body of evidence that students with disabilities perceive that academic coaching helps them acquire executive functioning skills that contribute to academic success.

The authors recommend that future research be undertaken to explore the efficacy of providing academic coaching to postsecondary STEM students with a wide range of disabilities. Future efforts could include the utilization of a control group, comparisons of reported gains and academic success by disability type, and pre/post measures of skills and well-being.

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Authors' Note

PRACTICE BRIEF
Voices of University Students with ADHD About Test-taking: Behaviors, Needs, and Strategies

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Abstract

In order to understand the test-taking behavior, needs, and strategies of postsecondary students with Attention Deficit Hyperactivity Disorder (ADHD), focus group comments from 17 university students with ADHD were analyzed. These comments formed the basis for a series of research studies that are in progress regarding test-taking and individuals with ADHD. The overarching goal of the current research agenda is to identify methods and instruments that disability service providers (DSP) can use in order to support decisions about test accommodations for students with ADHD. To accomplish this goal it is necessary to first identify specific test-taking behaviors that postsecondary students with, and without, ADHD demonstrate. This practice brief describes those test-taking behaviors that were self-reported during focus groups and is intended to raise awareness about the test-taking characteristics of postsecondary students with ADHD.

Keywords: ADHD, test-taking, test accommodations, postsecondary, extended time

The population of students with Attention Deficit Hyperactivity Disorder (ADHD) is on the rise in postsecondary settings (Kessler et al., 2006). Some of these students request test accommodations in order to ameliorate the functional impact associated with ADHD. The most commonly requested test accommodations for students with ADHD are extended time (Gregg & Nelson, 2012), a private room or distraction-reduced environment, and test breaks (Wagner, Newman, Cameto, Garza, & Levine, 2005). Individuals with ADHD, and the professionals who evaluate them, suggest test accommodations as a way to reduce the interference of ADHD symptomology in the test-taking environment. However, there appears to be minimal clarity about how the functional limitations of ADHD manifest in a test-taking situation and, subsequently, what constitutes reasonable accommodations. Results of one study suggest that students with ADHD do not differ significantly from their peers in terms of certain reading or test-taking variables (Lewandowski, Gathje, Lovett, & Gordon, 2013), but some students with ADHD self-report time limits as an impediment to test-taking performance (Fox, 2013; Lewandowski, Lovett, Codding, & Gordon, 2008).

Therefore, if the functional limitations associated with ADHD may not be, for example, reading rate or task completion, what are they? A review of the literature on postsecondary students with ADHD indicated that individuals with and without ADHD perform similarly on many neuropsychological test instruments but differ in terms of inattention, inadequate coping strategies (e.g., organizational skills), and higher levels of internal restlessness and intrusive thoughts (Weyandt & DuPaul, 2006). Given these characteristics, we have attempted to understand how ADHD symptomology impacts test-taking and why some students with ADHD believe additional test time is an important accommodation.

Use of Psychoeducational Evaluations for Decisions About Accommodations

Researchers have documented the widespread use of psychoeducational report data to make decisions about service delivery in postsecondary settings (Madaus, Banerjee, & Hamblet, 2010; Ofiesh & McAfee, 2000). Reports written for students with ADHD and learning disabilities typically include standardized measures of cognition, academic achievement, behavior, and in some cases, measures of executive functioning (EF). Part of the challenge in addressing the needs of postsecondary students with ADHD is that they present in as complicated a manner as students with learning disabilities. Simply stated, both populations of students with ADHD and learning disabilities are highly heterogeneous. Furthermore, not only are both categories of disability multifaceted, students with ADHD do not and cannot be expected to present with the same functional limitations as students with learning disabilities.

Therefore, if a disability service provider (DSP) seeks to find evidence of functional impact for a student with ADHD through, for example, fluency, decoding, or processing speed measures, as one may for a student with a learning disability, they can be stymied when the psychometric test data from the student's psychoeducational evaluation does not suggest weaknesses in these areas. There may be little information from standardized tests of achievement to suggest that the individual with ADHD would have difficulty completing a test within a standard time frame or need an accommodation such as a distraction-reduced environment or test breaks. Uncertainty about the functional impact may, for example, continue if the DSP and student with ADHD meet and the student emphasizes that extended time and a separate test room is indeed needed during test-taking because of his or her ADHD.

These diverging observations and research findings leave unanswered the questions, "What about having ADHD necessitates the need for test accommodations, especially more test time, which is so commonly requested?" and "What actually happens for a student with ADHD before and during a test, and is this significantly different from students without ADHD?" Unfortunately, there is a paucity of research on test-taking behavior and students with ADHD as well as on student perceptions of test accommodations. Further investigation in the area of test-taking behavior among college students with ADHD is critical in order to help those charged with making decisions about test accommodations do so in a professional manner.

ADHD and Test-taking

A literature review on test-taking and postsecondary students with ADHD was conducted. Lee et al. (2008) investigated the effects of pacing on the academic test performance of 21 students with ADHD. The researchers speculated that a computer-paced presentation would enhance the performance of students with ADHD by regulating their attention. In this study, students with ADHD were randomly assigned to one of two computer-based test situations. One test provided controlled timing (i.e., computer paced) and the other provided a student-paced testing condition within a computer-based environment. No score differences were found between the two environments, but students reported that the computer-paced testing environment, in and of itself, positively provided structure for them. Qualitatively, of the 21 students, 15 reported that the open spatial layout of the text on the test enhanced their performance as they could better focus on the content of the passage. Many students felt pressured with the time limits despite the structure. Additionally, most endorsed preference for a distraction-reduced environment and believed it enhanced their performance.

In a study that included information about test-taking concerns, Lewandowski et al. (2008) compared academic complaints of students with (n = 38) and without (n = 496) ADHD. Results indicated that 67.7% of students with ADHD, as compared to 45.4% of students without ADHD, felt they did not perform well on standardized tests. More students with ADHD (64.9%) than without (28.6%) felt they had trouble finishing timed tests. Similar results between the two groups (78.4% among ADHD vs. 30% without ADHD) were observed regarding self-perceptions about length of time to complete assignments compared to others. The researchers concluded that students with ADHD are more likely to perceive academic or test-taking problems, although these self-reported concerns are not specific to those with ADHD. In order to further investigate test-taking and postsecondary students with ADHD, focus groups were held to better understand the experience of these students. The results of these focus groups are discussed in this practice brief and form the basis for preliminary findings about how students with ADHD perceive their disability interacting with test-taking. The results informed the development of a survey (Nassar-McMillan & Borders, 2002) and interview protocol about test-taking behavior for a qualitative study that is in progress (Ofiesh, Bisagno, & Moniz, 2015).

Focus Groups

Focus group participants were comprised of ten female and seven male postsecondary students. Fifteen were diagnosed with ADHD and two were diagnosed with ADHD and a Specific Learning Disability: Reading Disorder, according to the guidelines for each of the universities' office for students with disabilities or one University's medical center. The students were enrolled at three institutions of higher education: two private (n=15) and one public institution (n=2). The students represented five graduate students and twelve undergraduates.

Twenty questions served as the interview guide, with four categories of questions: (a) impact of ADHD on test-taking, (b) test study strategies that work and do not work, (c) use of extended test time, and (d) medication and test-taking. Only the questions that pertained to test-taking are included in this analysis. Four focus groups were held with participation ranging from two to six participants per focus group. Conversations were recorded and transcribed with MSWord Notebook View. The primary investigator and one research assistant served as the moderators in order to maintain the focus of the discussion (Nassar-McMillan & Borders, 2002). Themes were organized using NVIVO10 (QSR International).

Discussion

This paper reports the results of focus groups that were held to inform the development of studies on ADHD and test-taking. The results are presented in order to inform professional practice for service delivery to support the academic success of postsecondary students with ADHD; it is not intended to suggest that offices of disability services should conduct research or hold focus groups as part of their mission or responsibilities. Several distinct themes emerged from the collected data; direct quotes are listed in Appendix A. These themes clustered around four main topics: the impact of ADHD on test-taking, study strategies, use of extended test time, and medication issues. The comments and themes that emerged from the focus groups suggest that DSPs may be able to use observational, formative, summative, and executive functioning data from a student's psychoeducational evaluation to make more effective decisions about test accommodations for students with ADHD. Additionally, DSPs may find the comments students made regarding test study strategies and medication useful when talking to students about campus resources and the challenges they face in school.

ADHD and Test-taking

Four main issues were raised with respect to how ADHD generally impacts test-taking: attention and focus, distractibility/switching or shifting, movement, time management and perception. The set of diagnostic criteria for ADHD includes inattention, inattentive or hyperactive-impulsive features before age 12, symptomology present across two or more settings, clear evidence that the symptoms interfere with functioning, and do not occur during the course of another mental disorder (American Psychiatric Association [APA], 2013). It is not surprising, therefore, that many focus group respondents commented that having ADHD impacts test-taking through inattention, lack of focus, distractibility, and the need for movement. Indeed, several students stated that self-imposed breaks were utilized to "zone out" or engage in movement/physical activity during a test session where extended time was granted. These behaviors are not primary characteristics of learning disabilities and help to illustrate the difference in functional limitations between students with learning disabilities and students with ADHD.

Study Strategies

In response to questions about test study strategies that did and did not work, six major themes emerged, with engagement in movement and the need to reduce distractions described as positive strategies. Seeking outside support, taking breaks, and self-managing time were seen as negative strategies. There was mixed support for working with others in groups as some participants found it to be a useful strategy, whereas others did not find it useful. Some students with ADHD seem eager to study in groups but may feel their time management difficulties make it hard to actually get to the study group or because they feel too far behind in course material to participate.

With respect to study breaks, it is noteworthy that many practitioners recommend a "time on-time off" approach to help allocate study time productively, with some practitioners recommending the use of timers and alarms. Participants' comments, however, suggest students need practice with time management before implementing a "scheduled break" approach in studying. Scheduled or not, students feel that frequent breaks and movement are critical to address the symptomology of ADHD while studying. Therefore, disability service providers may want to ask students about their need for support with time management, ability to manage breaks, as well as use and effectiveness of timers and alarms.

Extended Time

Participants who had experience taking a test with extended time were asked how they actually used the additional test time. Five major themes emerged including: attention and focus, speed, movement/breaks, (lack of) perception of time/pacing, and shifting thought processes. Focus group students with ADHD indicated a desire for extended test time for different reasons than focus group students with ADHD and learning disabilities. Rather than a need to ameliorate a slow reading rate or inaccurate decoding as the students with a co-existing learning disability stated, students with ADHD said extended time was used to give them more time to focus or take a break as a result of difficulty maintaining attention, distractibility, executive functioning issues, the need to move around, self-monitor time, or a combination of these.

Given these comments, breaks may be a more appropriate and reasonable accommodation than extended time for some students, but this will take retraining of DSPs and students regarding the purpose of breaks as compared to extended time. Some students with ADHD appear to need "stop the clock" breaks to simply take a mental break or engage in movement (Barkley, 2011). Initial findings from the study by Ofiesh, Moniz, and Bisagno (2015) have found that some students with ADHD are actually resistant to stop the clock breaks because they are unaware of periods of inattention thus don't know when to stop the clock appropriately.

These comments are important given that many accommodation decisions are based on the functional impact noted in academic diagnostic tests. In reality, the areas of functional limitation noted by students with ADHD are not well captured by diagnostic academic assessments. This is important because it is the diagnostic academic assessments that professionals in the field are encouraged to look at in order to identify how the disability impacts learning. Furthermore, diagnostic academic tests are designed to slice out how an individual performs on different aspects of reading, writing, and math tasks. These aspects usually fall into the categories of basic skills, fluency, and application. Students with ADHD often fall short on application and fluency measures, but the diagnostic academic tests are so short in length the weakness that appears on a test does not correspond to the real life tasks of a college student. The two respondents with co-existing reading disorders were the only ones who indicated extended test time would help with answering more of the test.

Students' comments about how they use extended time and how it is related to their ADHD suggest a more refined use of the psychoeducational evaluation should consider comments about observations of movement and distractibility, executive functioning, and awareness of medication use in addition to performance on timed tasks. If executive functioning instruments are included in evaluations of students with ADHD, the results should be closely evaluated but with the caveat that some specialists question the ecological validity of those tests (Barkley, 2011; Meltzer, 2007). In general, if clinically significant ratings of these behaviors are noted, the use of a solo room as a way to reduce distractions, allow for externalizing behaviors (e.g., positive self talk), and breaks for physical activity may be reasonable accommodations.

Finally, strategy use and coaching may be needed in the area of time management for some students. For example, students who have difficulty with time management may need to learn how to manage time within the test-taking environment, especially if they will use other accommodations as well (Parker & Boutelle, 2009).

Medication

Participants were asked about medication use in the treatment of their ADHD. Those who did take medication were asked if the time of day they took the medication impacted their ability to take a test. Several participants reported changing the time in order to accommodate a scheduled exam. Some students who use medication for ADHD seem to adjust their medication based on when a test is scheduled. Comments suggest this may have negative side effects with respect to sleep patterns. Additionally, the adjustment of medication could have an impact on the ability to perform well on other tasks later in the day or the following day.

Summary

Focus group comments about test-taking from postsecondary students with ADHD were analyzed. The results provide insight into how the test-taking environment intersects with the symptomology and functional limitations of ADHD for college students. Most of the functional limitations (i.e., behaviors) described by students with ADHD indeed capture the diagnostic criteria of ADHD, as well as executive functioning deficits. The findings of these focus groups are in the process of validation in a series of research studies. In the meantime, DSPs are encouraged to look for observational data noted in the student's psychoeducational evaluations as well as to rely on the evaluator's comments in order to make accommodations.

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Appendix A

Focus Group Questions

Please Indicate: ADHD Combined Type/Hyperactive/Inattentive/Don't Know/Also LD

1. What is ADHD?
2. How does having ADHD impact your ability to take a test?
3. What is something that you do to help you study for a test, which students without ADHD probably do not do?
4. Why do you think that helps you?
5. What is something that you have tried, because of your ADHD, in order to help you study for a test that did not work?
6. Why do you think that didn't work?
7. What is your understanding of why the disability service office on your campus provides test accommodations?
8. What kinds of test accommodations are available to university students with ADHD?
9. What are some reasons students with ADHD need test accommodations?
10. What are some reasons students with ADHD do NOT need test accommodations?
11. What stops some students with ADHD from asking for test accommodations?
12. What kinds of test accommodations do you request?
13. Do you ever use extended time?
14. If yes, how much time? 50% more (time and a half) or 100% (double time)
15. How do you use the extra time?
16. What do you do with the extra time that you are provided?
17. If you take medication for ADHD, does the time you take your medication impact your ability to take tests?
18. What do you want faculty to know about having ADHD?
19. What do you want those of us who work in the disability service office know about having ADHD?
20. What do you want your classmates to know about having ADHD?

ADHD and Test-taking Comments		
Impact of ADHD on Test-taking	Attention & Focus	"I can forget that I'm taking a test and my mind can just go somewhere and I just end up daydreaming and staring off and I don't realize that I'm doing it during a test and time goes by." "I start zoning out and I can no longer focus on the material." "My focus is all the way zoomed in or all the way zoomed out."
	Distractibility / Switching	"I am a fast test-taker so I actually give myself time to check everything out before I get started, so that I don't get distracted during the test." "I think it takes me longer to take a test, especially when it comes to writing. I know I am not a good writer, and I persist to make a written answer what I want it to be, and that can be a distraction in itself. All the different ways you can express a thought or an idea or get distracted by all the little things and maybe lose track of time." "I hyper-focus, so the problem is really when people move around or proctors are moving around and I get focused on all that." "Suddenly I'll notice everything and the test is secondary to everything that's going on. So it's switching between those two things. You can focus for so long, then that just stops." "When people are walking around the room it's really distracting and I can't get back to a problem."
	Movement	"I just can't sit down and study for a long period of time without moving." "I just can't focus. I can't actually make myself sit there for that long."
	Time Management and Perception	"I'll run out of steam, or I just lose my pace, and not do any work for 10 minutes and just feel tired." "I don't have the ability to perceive time when I'm working; I just have no internal clock."

ADHD and Test-taking Comments		
Test study strategies that work and don't work	Engage in movement	"I like to have an area where I can walk around. If I cannot sit there any longer I can stand up, and walk" "When I notice I get zoned out, I can't get myself to zone back in unless I do something physical, so I just like, do push-ups in my room or something, when walking around no longer does it." "I have to break up my assignments; not do them all at once. I need breaks. I have trouble sitting down."
	Reduce distractions	"I am very inflexible. I can actually only study in the library, and only specific places in the library. I can't study in small places. I have to be in the right place, in the right frame of mind, and then it takes all that to, like, even study." "I need to be away from distractions."
	Work with others	"I want to study with others, but I don't study with other people because I don't feel prepared enough to study with anyone else, because I feel I am so behind; it's kind of embarrassing." "I fidget all the time while I'm studying. I know sign language so I sign while I'm reading and my friends say you're really distracting me." "I like working in a group." "I procrastinate on studying until I get enough adrenaline to actually focus. The costs of not studying have to outweigh the benefits of working on projects or other things like that, um, in order for me to study. If I'm working on something with a group then I prioritize that." "I like to interact with people. I can write on boards, I can sit, I can walk around, rather than sit and look at a textbook. Somehow textbooks can make interesting problems sound really boring. Professors can do that too."
	Seek outside support	"I work best when I'm working with other people, but oftentimes, and the same thing applies to preparing for tests, I don't make it to office hours because I feel like I'm too behind [I haven't done the reading]." "I want to get help for a class, but the problem begins with the process of getting to the tutor…you know, actually signing up, then getting the correct date, all those things are exactly what I struggle with (with ADHD) so it doesn't become a tool I use regularly." "You know, I'm already behind on everything, and adding an appointment with a tutor, and getting that appointment before a test is, you know, hard."

ADHD and Test-taking Comments		
Test study strategies that work and don't work	Breaks as related to transitions and shifting	"I have been told to take frequent breaks, but that's too hard. It's hard to get back to studying; the transitions are hard and by the time I'm studying I'm already pressured and I just want to focus on my work and I get to the point where I don't want to do anything else." "I need to have activity and I need to do something that's not what I was doing while I was studying. Mostly it's taking a break and doing something physical and coming back. I have to come back and do something different. If I was working on math I'll work on reading or doing other things completely different. I can shift gears, but it's really hard for me to zone out and zone right back in."
	Self-manage time	"I always have three different text books open and I'm like, alright, I'm going to read a few pages…oh, I'm bored with that, I'm going to do this one…so I have a giant checklist on my computer of every topic I have to do, and I don't have to do it all at once." "I was told to use a timer. That did not work because I don't get it done." "Someone told me I should study like every day for the week leading to a test or project. That didn't work. I just could not remember something I studied a week ago. Especially if I am studying a lot of foreign language stuff." "I don't write out my answers to essays ahead of time for practice, because writing is just too hard; I just memorize more."

ADHD and Test-taking Comments		
How extended test time is actually used	Attention and focus	"For me, with Italian, I have to start thinking in Italian, which takes so much longer to get focused to think in another language." "I take some time to get focused, look at the number of questions on the test and sort of plan out how long I want to spend on each one so I make sure I'm covering the material, and I guess for each question I might make some notes, just off the top of my head in the margins." "I have a poor memory and there's just a lack of time. I need time to remember things. I takes me longer to memorize and to remember." "I find myself getting distracted I just go with it, and give myself time to look around the room and check everything out and then I am able to get back to the test." "Sometimes I give myself permission to just 'space out' and then get back to work." "I need time to zone out or space out, and get back to work."
	Speed	"To finish the test, I need more time to respond to more of the test. [Person with coexisting reading disorder]." "I can't finish the test without extended time. I mean, I just can't. I read slow. It's literally me finishing the test. [Person with coexisting reading disorder]."
	Movement/Breaks	"I need to get up and walk around or take a break." "I need to just stop and take a break and move around." "I need time to move around the test and just space out."
	Perception of time/ pacing	"I go through the test and decide what I know and don't know. I skip around a lot, 'cause it keeps me going. Sometimes I lose track of time and then I'm all messed up." "I just can't pay attention that long and all of a sudden time is out."
	Shifting	"It's hard to shift gears between things and I lose track of time."

ADHD and Test-taking Comments		
Medication and Test-taking	Change medication to accommodate test time	"I always take my medication in the morning and my tests have typically been in the morning. For study and test-taking my medication helps. It does help me to keep myself on track if I take medication before a test, but I also get pretty juiced up with adrenaline so maybe I don't really need it on test days." "For me, short-acting medication is like firing on all pistons. It helps a lot. I'm taking it more times than I should. I've done that sometimes and it's intense how much work I get done." "I was taking medication, but it never worked out."
	Changes to medication to accommodate test time with impact on sleep patterns	"I've tried many different types of medication; they're all different. But I think a lot of them require you to take them early in the day so if you have a later test, by that time it's started to wear off. If I have a test I plan my medicine around the test so that I will be at my best performance during the test. But that can affect my sleep sometimes, for the night…or the day before, so I have to plan it out in advance, not just one day. It almost always affects the day before and the day after." "I change when I take my medication according to when the test is, but sometimes it messes up my sleep pattern, especially if the test is late in the day."

PRACTICE BRIEF
Inclusion in the Workforce for Students with Intellectual Disabilities: A Case Study of a Spanish Postsecondary Education Program

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Abstract

The Autonomous University of Madrid (UAM) is the first Spanish university to provide training to young people with intellectual disabilities (ID) in the university environment, which qualifies them for inclusion in the workforce. In this practice brief we describe the UAM-Prodis Patronage Chair program, a successful model used at Spanish universities within the European Higher Education convention framework, which addresses the inclusion and occupational training of young people with ID in order to help them obtain employment. We begin with a review of the special education system for young people with ID in Spain. We report outcome data for students with ID who completed the program at UAM during its first four years of implementation. These outcomes indicate that the UAM-Prodis Patronage Chair program has become one of the main strategies to achieve independent living and community integration of people with ID through a postsecondary education option.

Keywords: Employment, inclusion, postsecondary education, intellectual disability

Literature Review

There is a growing trend for developing innovative postsecondary education (PSE) options for students with intellectual disabilities (Grigal & Hart, 2010; Thoma et al., 2011). The Higher Education Opportunity Act of 2008 and the promising practices for transition services as required by the IDEA (2004) have increased the opportunity for students with intellectual disabilities (ID) to participate in PSE options. Postsecondary educational experiences for students with ID include a wide range of options within two- or four-year colleges or universities, or adult education programs.

Although a range of PSE options are available nationwide (Thoma et al., 2011; Kleinert, Jones, Sheppard-Jones, Harp, & Harrison, 2012), the three most common types of PSE programs for students with ID are inclusive/integrated, hybrid/mixed, or separate. Table 1 shows the different types of PSE programs, their features, and examples of program types; however, one program may look very different from another even though it may be categorized as one of these common types. Even with the range of options available, Thoma et al. (2011) found in a recent review of the literature regarding the PSE experiences of students with ID that there is a paucity of information about the PSE experiences of students with ID and their outcomes. It is crucial that the disability research community closely examine ways to support better PSE outcomes for individuals with ID. Given that PSE options for individuals with ID are still new and relatively rare, efforts in other countries serve as resources for additional evidence-based practices from which to learn.

In Spain, special education has a long and successful history (Cardona, 2009). Over the past several decades, significant legislation reveals a definitive trend towards inclusion. The most recent legislation,

Table 1

Types of PSE Programs for Students with ID

Classification	Descriptions	Examples
Separate/ Stand-alone	Offers specific classes designed exclusively for student with ID. May include inclusion in residential life and extracurricular activities. Curriculum is focused primarily on skills, with rotation through a limited number of work experiences.	Austin Community College-STEPS West Texas A&M University-WTLC
Inclusive/Integrated	Students with and without disabilities take existing coursework together. Includes inclusion in residential life and students are active members of the campus community. Students receive individualized supports and services for academic and social inclusion. All services are student centered, based on student choices and preferences. May offer internships and employment-related supports.	Virginia Commonwealth University- ACE-IT College of New Jersey- Career and Community Studies University of Tennessee, Knoxville-FUTURE
Hybrid/Mixed	Provides a combination of specific and integrated courses or provides separate coursework for students with ID but inclusion in residential life and extracurricular activities. Students are provided academic support in inclusive college courses, but most of the curriculum is focused on functional skills, with rotation through a limited number of work experiences.	University of Iowa- REACH University of Alabama-CrossingPoints University of Arkansas-LAUNCH

Note. Hart, Grigal, Sax, Martinez, and Will (2006) identified three types of PSE programs for students with ID based on a level of inclusion with their peers without disabilities.

the *Ley Orgánica de Educación* (Act on Education), establishes the resources needed to achieve inclusion and integration of students with the specific need of educational support, which includes students with special educational needs (Abellán et al., 2010). Thus, the majority of students with disabilities are being served in inclusive settings (Cardona, 2009).

In the Spanish education system, basic education is compulsory and free for everyone. It consists of primary education and compulsory secondary education (ESO), which covers ten years between the ages of 6 and16. Compulsory lower secondary education establishes the first tier of secondary education and the final stage of basic education. Students who meet all the standards set for this stage of education are awarded a Compulsory Secondary Education Certificate, which provides them access to the second tier of secondary education. This tier includes either the two-year Bachillerato or intermediate vocational training. Students who do not achieve the objectives at the ESO level receive an Education Certificate stating the number of years of attendance and the marks obtained. The Bachillerato lasts two academic years from ages 16 to 18 and, if students obtain passing grades in all subjects, they receive a Bachiller certificate that enables them to access higher education. Students who successfully complete the intermediate vocational training studies are awarded a Technical Certificate, with which they have access to the Bachillerato program. In order to study advanced vocational training, it is necessary to hold the Bachiller certificate.

The Problem

Although there is no common definition of ID in Spain, the definition most often used is that of the American Association on Mental Retardation (2002), which defines ID as involving significant impairment in both intellectual functioning and in adaptive behavior and stresses the link between limitations in social, conceptual and practical skills and age of onset before 18 years (Verdugo, 2003). In addition, the International Classification of Functioning, Disability and Health (World Health Organization, 2001) is used as the basis for definition and classification of disabilities in Spain (European Intellectual Disability Research Network, 2003).

Students with disabilities are provided basic compulsory education (6 to 16 years of age) and Programs for Transition to Adult Life (16 to 19 years of age). Students at these institutions may be enrolled up to the maximum age of 21. However, to gain access to the upper level of secondary education, students with disabilities must obtain the Compulsory Secondary Education Certificate, which means that they have met all of the standards at the ESO level. However, few students with ID obtain the Compulsory Secondary Education Certificate because of the academic subject specialization and rigor of the program and, therefore, have limited access to higher education. According to Cardona (2009), less than 1% of students with disabilities are enrolled in Bachillerato programs in Spain. Thus, the most significant challenges of meeting the needs of students with disabilities are in secondary education and postsecondary education.

Participant Demographics and Institutional Partners/Resources

Observing this problem, the Prodis Foundation, a Spanish non-profit institution whose purpose is to maximize social and employment inclusion of individuals with ID, and the Autonomous University of Madrid (UAM), a large public university, created UAM-Prodis Patronage Chair, a PSE option for individuals with ID between the ages of 18-30 years who live in the Community of Madrid. This paper will describe this innovative program and the outcomes for students with ID enrolled at UAM during its first four years of implementation.

The UAM-Prodis Patronage Chair program´s first cohort of students enrolled at UAM in Fall 2005 with 15 students. Each fall semester thereafter, a new cohort of 15 students were enrolled in the program. The participants described here represent the first four cohorts consisting of 60 students with a 100% completion rate. Thirty-four (57%) students were female and 26 (43%) were male. The majority of the students were under 25 years of age (69%) while 31% were over 25 years of age.

Description of Practice

The overarching purpose of UAM-Prodis Patronage Chair is the provision of PSE for young people with ID in the university environment and the promotion of supported employment in an inclusive work environment. The specific objectives of the program are:

1. Provide training, tailored to individual differences, to enable youth with ID to work in inclusive work environments;
2. Provide continued employment support to promote equal opportunities in the maintenance and promotion of employment;
3. Provide ongoing training throughout the life of participants in order to continue exercising their right to work in inclusive work environments; and
4. Provide the necessary support for individuals with ID to achieve independent living as full members in their community.

The training takes place over two academic years and is conducted through the College of Professional Training for Teaching and Education at UAM. As the resources are unfortunately limited, the number of students accepted into the program needs to be restricted to an average of 15 students per year. One of the selection criteria is to have a group of students with a wide range of disabilities, including Down Syndrome and other developmental and cognitive impairments, in order to promote inclusion and diversity within the group itself. In addition, students must be able to safely navigate the campus and use public transportation.

During the first year, students receive more training in the classroom whereas during the second year a greater emphasis is on practical application. Table 2 provides the plan of study for the two academic years (70 credits total). The plan of study is very specific and the classes are held in the College of Professional Training for Teaching and Education at UAM. The most important feature is its humanistic character as it seeks to develop youth with ID who accept themselves, satisfactorily relate to others, and can work in teams. These classes and the curriculum are designed solely for UAM-Prodis Patronage Chair students. The courses are taught by professors in the Department of Teaching and Theory of Education at UAM and special education professionals from the Prodis Foundation.

The practicums are one of the fundamental aspects of training during the second year. The theoretical framework of the practicums is based on the methodology of supported employment that is considered one of the strategies more efficient for the successful inclusion of people with disabilities in regular employment. It has

Table 2

The UAM-Prodis Patronage Chair Program Requirements

First Year	Credits	Second Year	Credits
Interpersonal relationships in business	4	Labor relations	3
Developing social skills I	3	Developing social skills II	2
Specific labor skills	4	Banking and documentation	2
Utlization of community services	3	Filing and organization	5
Thinking strategies	3	Culture and society	2
Business technologies I	2	Business technologies II	2
English I	2	English II	3
Foundations for learning I	3	Foundations for learning II	2
Logic and accounting	4	Praticum	14
Development of values	3		
Quality of life skills	2		
Organization and planning skills	2		
Total	35	Total	35

an objective of individualized support through a series of strategies that allows youth with ID to develop successful and autonomous employment skills (Salvador, Argos, Ezuerra, Osoro, & Castro, 2011).

Prior to placements, students meet with the academic director to identify career interests and abilities in order to decide the best placement and necessary supports. These supports may be adaption of spaces, working times, and job assignments. During the first semester of the second year, students take classes three days a week and are placed in a practicum work experience at UAM for two days. Such placements may include departmental offices, libraries of the various colleges, research centers, and administrative offices. A typical UAM undergraduate student majoring in education is matched with each student with ID to provide individual support and mentoring during the practicum experience. The UAM undergraduate students receive three hours of university credit for this volunteer experience.

During the second semester of the second year, students are placed in a full-time practicum in one of over 50 public agencies or private companies in the Community of Madrid that have partnered with the program. Under this model, the university provides labor mediators as job coaches and employers provide internship opportunities and worksite managers to act as mentors. By providing sufficient opportunities to gain work experience while still in a supportive environment, students with ID can develop employment histories, decide their career preferences, and identify the services and supports that will maximize their opportunities for employment success. During the final semester, students seek paid employment in their chosen career, which is often in their practicum placement. Upon successful completion of the two year program, students participate in a graduation ceremony and receive the certificate of "Training for Employment Inclusion."

However, on-going training continues after the completion of the program. When the graduates begin their paid employment, a labor mediator of the Supported Employment Services of the Prodis Foundation develops a training process and prepares any supports as required for successful integration. The labor mediator provides continuous monitoring (although different in intensity and time) to help maintain the balance with all the changes that are occurring through the working life of the employee with ID. In addition, participants may continue taking a weekly course offered at UAM that focuses on socio-occupational competencies and leisure management skills. This continuing education program is optional and takes into account the individual needs of each participant. More information

about this program can be found at http://www.fundacionprodis.org/programas/catedra-de-patrocinio/.

Evaluation of Observed Outcomes

Of the 60 students who completed the program by Spring 2010, 55 (92%) are currently employed. Of those employed, 74% have permanent contracts, which is equal to workers who are not disabled (75%; Izuzquiza Gasset, 2012). The graduates work in a wide range of business sectors with 94% of the graduates working part-time and 6% working full-time. While the goal of the program is for students to be gainfully employed part-time, few full-time positions exist because the number of working hours has been reduced and the amount of part-time jobs has increased because of the current economic crisis. With regard to annual salary levels, taking into account that 94% had part-time positions, 21% earn $11,050, 45% earn between $11,050 and $13,810, 24% earn between $13,810 and $16,575, and 10% earn more than $16,575. These annual salary levels also are equal to part-time workers who are not disabled.

As can be seen from Figure 1, the business sectors in which the graduates are employed are varied since the university training that the students with ID received is more generic. When they begin the practicums and paid employment, the supported employment methodology enables them to learn the specific job skills. These commercial and public businesses range from public administration, travel agencies, banks, law firms, pharmaceutical, advertising, insurance, construction, food, communication, printing, and real estate. However, the majority of the graduates (70%) are working as assistants for commercial businesses. The degree of satisfaction of employers with workers with ID is high with the graduates are rated highest in the areas of responsibility and enthusiasm at work by their employers.

A computer-assisted telephone interview with structured questionnaire was used to collect data from 268 members in the university environment on their attitudes and the impact of the integration of students with ID at UAM. All members of the university community surveyed reported that the PSE program for young people with ID abolishes stereotypes and promotes values such as solidarity, openness, flexibility, and inclusion. They considered that the acceptance in the university makes this a benchmark of social accountability. In addition, the graduates of the program are highly valued by their line managers and directors of the companies in which they are working.

Implications and Portability

The UAM-Prodis Patronage Chair program has become one of the main strategies people with ID in the Community of Madrid can use to achieve independent living and community integration. The UAM was the first Spanish university to provide students with intellectual disabilities a certificate program that qualifies them for inclusion in the workforce. Otherwise, students with ID can receive vocational training at the Programs for Transition to Adult Life, which is organized into a two-year duration cycle and may be extended according to the student's educational process and the employment opportunities. In these programs, students receive instruction in vocational training in order to promote the development of work-related attitudes as well as the acquisition of multi-purpose employment skills.

Outcomes from the first four cohorts who have completed the program suggest that there are many more factors of success than risk. High levels of satisfaction were obtained from the university professors, students, and administration, employers, youth with ID and their families. In all companies, and mainly in the private sector, the program has achieved very high rates of satisfaction without sacrificing the quality and efficiency goals. The program has received high levels of employability and provides quality assurance to companies that employ people with ID by the professionalism of its labor mediators trained at UAM. It has been recognized as "Good Practice" in the context of "Active Inclusion of Young People with Disabilities or Health Problems" by the European Foundation for the Improvement of Living and Working Conditions. Students and graduates with ID showed a deep appreciation for their acceptance in the university environment and stated that the university has given them the opportunity to increase their autonomy and self-confidence. In 2012, the model was implemented at the Saint Anthony Catholic University in Murcia, Spain. The UAM-Prodis Patronage Chair program maintains continuous collaboration with this university to promote the dissemination of the model. However, the current economic crisis in Spain hinders its dissemination to other Spanish universities. When the Spanish economy begins to improve, the need to design a dissemination plan involving other universities is warranted.

The program is recognized by UAM and continually adapts to the needs of students with ID and the labor market demand. In spite of these successes, there are several areas of concern. Because of the limited number of students with ID allowed to enter the program each year, there is a waiting list. However,
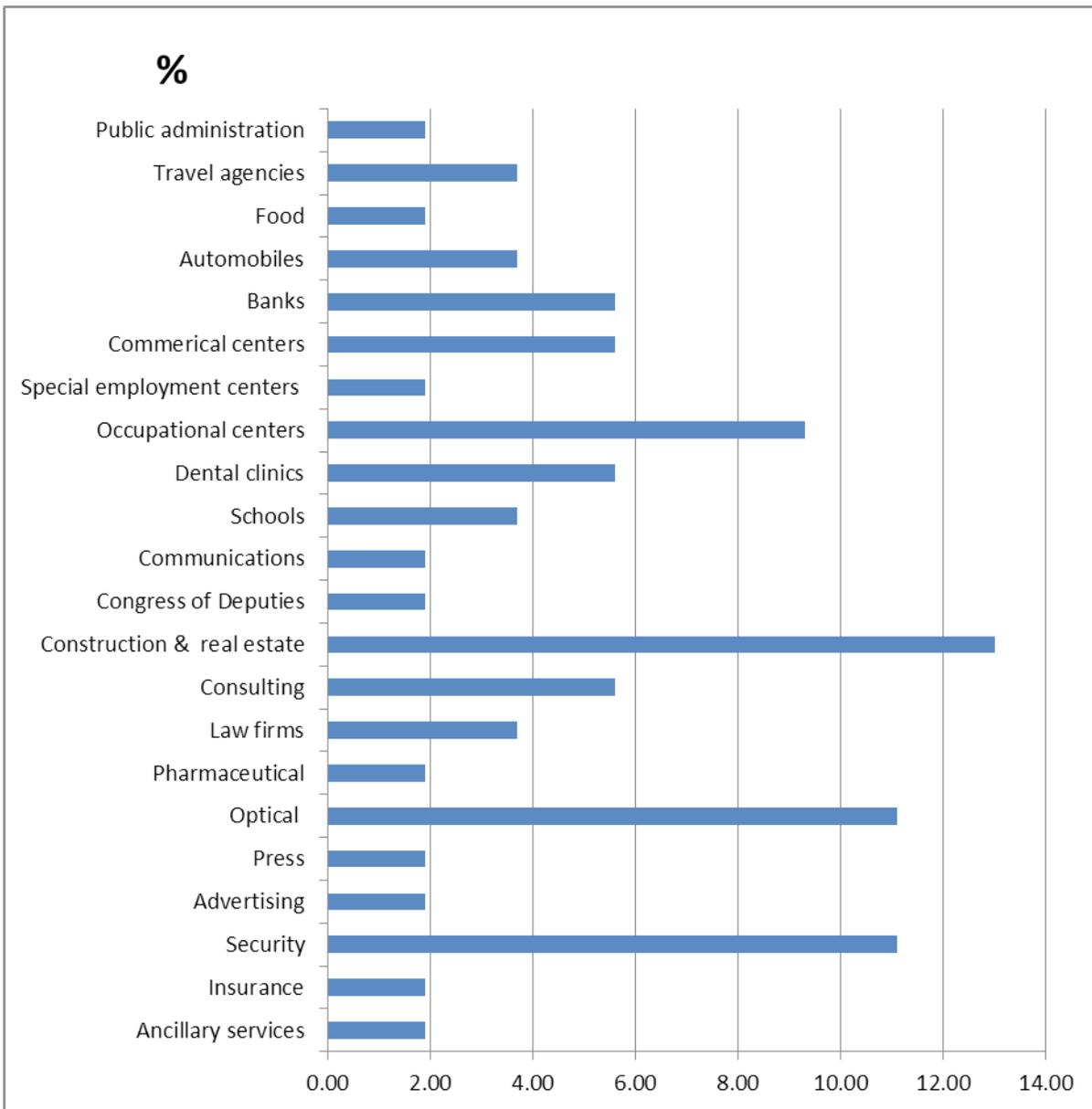
Figure 1. Business sectors in which graduates with ID are employed.

everyone on the waiting list will be accepted. The lack of physical space at UAM also limits the number of students with ID in each course.

The UAM-Prodis Patronage Chair program is a resource for additional evidence-based practices from which to learn. Given that inclusive PSE options for people with ID are still new in Spain and many other countries, this innovative model provides an example of an educational option for young people with ID to attain meaningful, inclusive, competitive employment while being integrated in a university environment. Just as with other university students, young people with ID have the opportunity to develop their employment skills before starting their real inclusion in the work environment of private and public sector companies.

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JPED Author Guidelines

Manuscripts must be submitted electronically as attachments via email to jped@ahead.org

Content

Manuscripts should demonstrate scholarly excellence in at least one of the following categories:

- Research: Reports original quantitative, qualitative, or mixed-method research.
- Integration: Integrates research of others in a meaningful way; compares or contrasts theories; critiques results; and/or provides context for future exploration.
- Innovation: Proposes innovation of theory, approach, or process of service delivery based on reviews of the literature and research.
- Policy Analysis: Provides analysis, critique and implications of public policy, statutes, regulation, and litigation.

Format

All manuscripts must be prepared according to APA format as described in the current edition of *The Publication Manual, American Psychological Association.* For responses to frequently asked questions about APA style, consult the APA web site at http://apastyle.org/faqs.html

- All components of the manuscript (i.e., cover page, abstract, body, and appendices) should be submitted as ONE complete Word document (.doc or.docx).
- Provide a separate cover letter asking that the manuscript be reviewed for publication consideration and stating that it has not been published or is being reviewed for publication elsewhere.
- Manuscripts should be double-spaced and range in length between 25 and 35 pages including all figures, tables, and references. Exceptions may be made depending upon topic and content but, generally, a manuscript's total length should not exceed 35 pages.
- Write sentences using active voice.
- Authors should use terminology that emphasizes the individual first and the disability second (see pages 71 - 76 of APA Manual). Authors should also avoid the use of sexist language and the generic masculine pronoun.
- Manuscripts should have a title page that provides the names and affiliations of all authors and the address of the principal author. Please include this in the ONE Word document (manuscript) that is submitted.
- Include an abstract that does not exceed 250 words. Abstracts must be double-spaced and located on page 2 (following the title page). Include three to five keywords below the abstract.
- Tables and figures must conform to APA standards and must be in black and white only. All tables and figures should be vertical and fit on the page; no landscape format. If Tables and/or Figures are submitted in image format (JPEG, PDF, etc.), an editable format must also be submitted along with a text description of the information depicted in the Table/Figure. This will be provided as alt format in the electronic version of JPED, making Tables/Figures accessible for screen readers.

How to Submit Manuscripts

All manuscripts (research and practice briefs) must be submitted to JPED at this email address: jped@ahead.org and must include the following:

- Subject Line: JPED Manuscript Submission
- Body of Email: Include a statement that you are submitting a manuscript for consideration for the JPED. Include the title of the manuscript and your full contact information.
- Attach to the email:
  ○ Your complete manuscript, prepared as directed above
  ○ Cover letter as outlined above

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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- 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.

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.

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