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A Spectrum of Support: Current and Best Practices for Students with Autism Spectrum Disorder (ASD) at Community Colleges

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ABSTRACT

More than 50% of all college students with a disability enroll in public 2-year institutions. Autism Spectrum Disorder (ASD) is a type of disability that affects a growing number of students in postsecondary education. Currently, over 70% of 2-year public institutions enroll students with ASD. In spite of increased awareness, the vast majority of existing ASD research focused on primary and secondary education. Research on practices that support students with disabilities in the community college environment is imperative for promoting student success. The purpose of this mixed-methods study was to explore current and best practices that support students with ASD at 2-year public, postsecondary institutions. A web-based tool was used to survey a nationally representative sample of disability service professionals from 367 2-year, public institutions (35.4% response rate). Our results show reasonable accommodations with an academic focus (e.g., extended exam time) were provided more frequently than sensory accommodations. General support services that focused on the transition to college were offered by 42% of the institutions surveyed, and 26% of institutions supplied ASD-specific services. These results indicated that many institutions provide students with a baseline level of academic accommodations; however, accommodations and support services that specifically target the functional limitations of ASD are offered less frequently. Best practices for supporting students with ASD were synthesized and implications for practice were discussed.

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Almost 11% of college students have a disability (Newman, Wagner, Cameto, Knokey, & Shaver, 2010), and over 50% of students with disabilities who enroll in postsecondary education attend public 2-year institutions (Raue & Lewis, 2011). Students with disabilities have difficulty with retention and graduation (Newman, Wagner, Cameto, & Knokey, 2009). Academic engagement is an important predictor of retention for students with disabilities (Mamiseishvili & Kock, 2010). Faculty members' knowledge about the accommodations process (Vogel, Leyser, Burgstahler, Sligar, & Zecker, 2006), and the perceptions of faculty members (Cook, Hennessey, Cook, & Rumrill, 2007; Kurth & Mellard, 2006) play an important role in supporting students with disabilities.

Autism Spectrum Disorder (ASD) is a type of neurodevelopmental disorder associated with deficits in social interaction and communication (American Psychiatric Association, 2013). Approximately 70% of 2-year public institutions enroll students with ASD (Raue & Lewis, 2011), and 2-year institutions enroll a greater number of students with ASD (8.96 students per institution) than 4-year institutions with master's programs (4.37 students) or bachelor's programs (3.73 students) (Kasnitz, 2011). In the future, it is likely that the number of college students with ASD will rise as the rate of ASD diagnosis has

increased to 1 in 68 children (CDC, 2014). There is a deficiency of research regarding what practices are being used to support students with ASD, particularly at 2-year institutions. An awareness of current and best practices is critical for practitioners who are developing retention programs and faculty members seeing an increase of students with ASD in their classrooms.

2-year college environments are of particular interest because the vast majority of students with ASD attend 2-year colleges, and these institutions have specific characteristics (e.g., open enrollment policies) that create a unique learning environment. This study investigated programs and policies that support students with ASD in postsecondary education.

Conceptual frameworks

Legislative initiatives play a significant role in structuring institutional policies and practices regarding disability. Key concepts that have shaped current research include reasonable accommodation, academic standards, and the transition from K–12 to postsecondary education. To qualify for accommodations in postsecondary education, students with ASD must meet the legal definition of a person with a disability as outlined in Section 504 of the Rehabilitation Act of 1973 ([P.L. 93–112], 1998) and identify themselves to the institution. An accommodation, as defined by the Americans with Disabilities Act ([ADA], [P.L. 101–336], 1991), is “any change in the work or school environment or in the way things are customarily done that enables an individual with a disability to enjoy equal opportunities” (42 U.S.C. sec 121001). There is a tension between creating an equitable learning environment and maintaining the academic standards of a program or institution (Kaplin & Lee, 2007). The Supreme Court set precedent, stating, “Section 504 imposes no requirement upon an educational institution to lower or to effect substantial modifications of standards to accommodate a handicapped person” (Southeastern University Community College v. Davis, 1979, p. 413). Therefore, reasonable accommodations for students with ASD provide access but do not lower academic standards.

A major ideological and legislative shift occurs between K–12 and postsecondary education, and many students with ASD and their parents have experienced difficulty navigating this transition (Camarena & Sarigiani, 2009; Hetherington et al., 2010). Under the Individuals with Disabilities Act (IDEA) (P.L. 105–17), students with ASD in the K–12 system are entitled to special education because they were diagnosed with an impairment, and their parents are often intimately involved in securing these services. However, as students progress into higher education, “the legal focus shifts from entitlement and remediation to *protection from discrimination and equal access*” (Wolf, Brown, & Bork, 2009, p. 72).

This legal shift has tangible implications as students who received services in K–12 education face denial, or a significant reduction, in postsecondary accommodations (Wolf et al., 2009). For example, the ADA does not mandate personal services such as social coaching. Moreover, self-identification and self-advocacy were vital components in obtaining accommodations in postsecondary education (Kaplin & Lee, 2007), which posed an additional challenge for students with ASD. Because ASD was misdiagnosed or undiagnosed (Murray, 2006; Prince-Hughes, 2002), students may have lacked social skills to self-advocate, and students may have chosen not to self-disclose (Murray, 2006). Therefore, programs designed to educate families and assist students in navigating the transition are critical.

Two theoretical frameworks, which provide divergent understandings of disability, informed this study. Historically, the conventional approach to disability was from a functional limitations perspective (Jones, 1996). This perspective was cultivated from a positivistic scientific model and defined disability in the language of medicine (Smart & Smart, 2006). A hallmark of the medical model was the idea that disability is an individual experience (Smart & Smart, 2006). Strange (2000) implied “the need to rehabilitate the individual as the remedy to challenges of disability” (p. 19). Under the medical model, students with ASD have social or developmental deficiencies that interventions were designed to rectify.

A second paradigm, social construction, expanded the understanding of disability to include both individuals with disabilities and those without (Jones, 1996), by considering impairment as a part of normal human variation (Denhart, 2008). This theoretical perspective has viewed disability as a societal creation rather than solely an individual attribute and has encouraged “a more complex view of human behavior than one from a personal or environmental perspective alone” (Strange, 2000, p. 20). Under this paradigm, the definition of ASD itself is a social construction, and the diversity that students bring to the learning environment is valued.

Related literature

Research on practices that supported students with disabilities in the community college environment is of particular importance because national data indicated one in five students with a disability has attended classes from a 2-year or community college compared to 9% who have attended 4-year colleges (Wagner, Newman, Cameto, Garza, & Levine, 2005, pp. 4–8). There are several reasons why students with disabilities may attend community colleges at a greater rate than 4-year institutions including affordability, open-door admissions, geographic accessibility, an emphasis on teaching, and smaller class sizes (Ankeny & Lehmann, 2010).

The vast majority of community college research on students with disabilities focused on the transition to college or work (e.g., Ankeny & Lehmann, 2010). Notably, Garrison-Wade and Lehmann (2009) proposed a conceptual framework for understanding the transition process focused on self-advocacy, planning, accommodations, and access. In a review of existing publications related to students with disabilities in community colleges, Quick, Lehmann, and Deniston (2003) concluded there was a need for research that utilizes participant-oriented methodologies and examines the topics of staff development, accommodations, disability-specific needs, and self-advocacy.

Characteristics of ASD

ASD is a spectrum disorder; this means that functional limitations occur on a continuum, with some individuals experiencing milder symptoms and others having more pronounced impairments. Deficits associated with ASD, as conceptualized under the medical paradigm, generally fall into three main areas: communication, socialization, and restricted interests or activities (Heflin & Alaimo, 2007). Communication problems included difficulties with language acquisition, understanding abstract meanings, and nonverbal communication. Social difficulties manifested through problems with peer relationships, poor eye contact, inaccurate conceptions of personal space, sensitivity to sensory input, and mind blindness (Heflin & Alaimo, 2007; Robertson & Ne’eman, 2008). Interests were often restricted or limited to a narrow range of activities considered atypical by developmental standards (Boutot & Myles, 2011; Heflin & Alaimo, 2007), and people with ASD frequently desired routine or felt comfortable when physical surroundings had a sense of sameness (Bedrossian & Pennamon, 2007). Furthermore, ASD may present as comorbid or in conjunction with other functional limitations such as anxiety, depression, learning difficulties (e.g., Attention Deficit Hyperactivity Disorder [ADHD]), and mental retardation (Boutot & Myles, 2011).

Outside of the medical paradigm, there is a body of literature written by people with ASD that gives voice to their experiences (e.g., Madriaga, 2010; Murray, 2006). Key themes in essays written by postsecondary students with ASD included struggles with misdiagnosis, especially, for students with high intelligence test scores; recognition that social interactions were important, yet consistently struggling with group work; peer rejection and problems interpreting unwritten social norms; sensory issues (e.g., fluorescent lights) hindering the learning experience; and difficulties obtaining a job after graduation (Prince-Hughes, 2002). These themes highlighted ASD as a unique experience and reinforced the concept that abilities occur on a continuum.

Current policies and practices that support students with ASD

The vast majority of existing ASD research focused on students in K–12 education (U.S. Department of Health and Human Services, 2010), and legal distinctions make it difficult to apply K–12 interventions to a postsecondary setting. Existing literature on students with ASD in postsecondary education emphasized the transition into college (e.g., Roberts, 2010); parental experiences (e.g., Peña & Kocur, 2013); or experiences of faculty members or instructors (e.g., Gobbo & Shmulskey, 2012, 2014). There is a paucity of research on postsecondary support for students with ASD (Boutot & Myles, 2011) and a “lack of evidence-based interventions and services adapted for this age group” (Wehman, Smith, & Schall, 2009, p. 135).

The information gap is particularly notable regarding institution level policies and practices. For example, questions regarding programs for students with ASD were absent from a national survey of Disability-Services Offices (Harbour, 2009). An extensive review of the literature found one exploratory study with a nominal ($N = 5$; 4.9%) response rate that addressed interventions provided by Disability Services to support students with ASD (Smith, 2007). No studies that examined ASD policies and practices in the community college setting were found.

Methods

This article presents a subsection of findings drawn from a larger mixed methods study on interventions for students with ASD in postsecondary education. The research questions focused on current and best practices at 2-year public institutions. Specifically, the study sought to find out what services are currently provided to students with ASD, and what are best practices that disability-services professionals use to support students with ASD.

Operational definitions

The definition of *reasonable accommodation* follows the legal parameters outlined in the ADA (42 U.S.C. sec 121001) and interpreted by the courts. General examples of reasonable accommodations included extended test time or a quiet testing environment. The specific type of accommodation a student receives is dependent on the individual’s medical documentation. Disability-services practitioners have tailored reasonable accommodations to provide equal access by addressing functional limitations while maintaining the institution’s academic standards.

The term *general support service* refers to free services or programs designed to support students with disabilities. General support services may provide assistance beyond the level of reasonable accommodations; however, they are programs commonly offered by institutions to a variety of students (e.g., transition programs or general counseling).

The term *ASD-specific service* refers to interventions that specifically target the functional limitations associated with ASD; this assistance is beyond the level of reasonable accommodations and general support services (e.g., ASD-specific first year seminar course or social coaching). Institutions may provide ASD-specific services free or at an additional charge.

Conceptual orientation and research framework

This research was situated in a pragmatic paradigm: “knowledge is viewed as being both constructed *and* based on the reality of the world we experience and live in” (Johnson & Onwuegbuzie, 2004, p. 18). Pluralism, practicality, and a problem-centered approach were important components (Biesta, 2010), and pragmatism allowed “the results from one method to help develop or inform the other method” (Creswell, 2003, pp. 15–16). A pragmatic paradigm situated this inquiry within a thought process that acknowledged pluralistic understandings of disability, was problem focused, and applied to the lived experience of practitioners.

When using a mixed methods approach, the researcher made decisions about implementation (data collection), priority, and the process of integration (Torres, 2006). In this study, data collection followed a concurrent nested framework because the goal was to “converge quantitative and qualitative data in order to provide a comprehensive analysis of the research problem” (Creswell, 2003, p. 16). The data were nested, or gathered in one collection phase by situating open-ended inquiries within a survey. In this study, quantitative data took priority and integration occurred during analysis and interpretation. Prior to data collection, the Institutional Review Board at Bowling Green State University approved this research.

Population and sampling

The desired population for this study was the Director of Disability Services at nonprofit postsecondary educational institutions because ADA compliance was federally mandated and the vast majority of institutions had one person designated as a compliance officer. The sample frame, or group of institutions that had a chance of being selected (Fowler, 2002), was drawn from the *Carnegie Classifications Data File* (Carnegie Foundation for the Advancement of Teaching, 2011). To avoid potentially duplicative or extraneous data, for-profit institutions, branch campuses, professional schools (e.g., seminaries), Tribal Colleges, and institutions in Puerto Rico or Guam were removed. The total sample frame consisted of 2,629 institutions.

Sampling followed a one-stage, stratified random design and consisted of one disability-services professional per institution. Previous research (Collins & Mowbray, 2008; Smith, 2007) guided stratification design and sample size; the selection of institutions occurred via a random number generator. A comprehensive list of disability-service providers does not exist, so manual Internet searches were used to obtain the contact information for the Director of Disability Services at each institution. The sample size for the larger study was 1,245 institutions.

Data collection

A web-based survey regarding interventions for students with ASD was administered via e-mail invitation. The sample size for 2-year public institutions presented in this article consisted of 367 institutions. Sixteen of the 367 2-year public institutions had more than one campus; individual campuses may have different regional locations, facilities, and policies, so 412 recruitment e-mails were sent. A total of 146 individuals or 35.4% responded.

Data analysis

Data were transferred from a SNAP 9™ survey file into SPSS 19™ and NVivo10™. Data cleaning included the screening of individual cases for missing data and repetitive answers. For quantitative data, frequencies presented demographic trends and parametric tests (ANOVA) evaluated group differences.

Qualitative analysis focused on coding answers to open ended questions for recurring themes following an a priori conceptual framework derived from intervention literature (Runyan & Yonas, 2008). The study unitized the data, generating an initial set of approximately 80 codes, many of which were in the respondents' own language. Then, initial codes were sorted into five categories: target of the practice, purpose of the practice, method by which the practice occurred, value criterion associated with the practice, and emic or emergent themes.

Meta-inferences, or the combining of quantitative and qualitative pieces to develop a coherent whole (Tashakkori & Teddlie, 2008) occurred by writing initial drafts of the best practice findings separately. After this initial phase, themes were generated by comparing drafts; the quantitative data provided a foundational building block, and qualitative data served an explanatory function. The result was 11 best practices for supporting students with ASD.

Measures of research quality

Steps to insure content validity included reviewing existing surveys that assessed interventions (e.g., Collins & Mowbray, 2008) and employing a panel of disability experts to evaluate survey drafts. Pilot testing addressed reliability of the survey instrument and randomized national sampling reinforced generalizability. Several techniques enhanced the trustworthiness of qualitative findings; these included maintaining an audit log and engaging in reflexive discussions with disability professionals (Creswell, 2003). Strategies used to assess meta-inferences followed an integrative framework (Tashakkori & Teddlie, 2008) and analysis refinement occurred through feedback from presenting the findings to faculty at a 2-year public institution and to disability professionals and student affairs practitioners.

Findings

Table 1 provides characteristics of survey respondents. Notably, 95.9% of institutions in this sample enrolled at least one student with ASD and, on average, 2-year public institutions served 16.37 (*SD* 18.85) students with ASD. Qualitative data indicated that 2-year institutions served students with a broader range of functional limitations due to open enrollment policies.

Current practices at 2-year public institutions

Overall, every institution surveyed provided some type of reasonable accommodations to students registered with documentation for ASD. Reasonable accommodations with a clear academic focus were the most frequently offered; over 95% of 2-year public institutions provided a note taker, the use of an audio recorder, extended exam time, and an alternate testing location (see Table 2). In comparison, only 36.3% of institutions provided sensory accommodations. Accommodations offered

Table 1. Characteristics of participating disability service officers at 2- year public institutions.

Characteristics	<i>n</i> (%)
Enrollment	
Under 1,000	5 (3.3%)
1,000–5,000	41 (28.1%)
5,000–10,000	43 (29.4%)
10,000–20,000	36 (24.6%)
20,000–30, 000	13 (8.8%)
More than 30,000	8 (5.4%)
Location	
Urban	45 (30.8%)
Suburban	45 (30.8%)
Rural	46 (31.5%)
Multiple campus	10 (6.8%)
Full-time staff	
None	21 (14.5%)
1	45 (30.8%)
2	27 (18.6%)
3	13 (8.9%)
4	13 (8.9%)
5	8 (5.5%)
6 or more	18 (12.4%)
Reporting structure	
Academic affairs	20 (13.7%)
Student affairs	126 (86.3%)
AHEAD member	
Yes	97 (66.4%)
No	49 (33.6%)

Note: *n* = 146. AHEAD is the Association on Higher Education and Disability.

Table 2. Reasonable accommodations offered to students with ASD at 2- year public institutions.

	Disability Services Office	Other office	Not provided	Total <i>n</i>
Type of accommodation	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	
Note taker	133 (92.4%)	3 (2.1%)	8 (5.6%)	144
Priority registration	67 (47.9%)	13 (9.3%)	60 (42.9%)	140
Use of audio recorder	134 (94.4%)	3 (2.1%)	5 (3.5%)	142
Extended exam time	142 (97.9%)	3 (2.1%)	0 (0.0%)	145
Alternate test location	134 (93.1%)	10 (6.9%)	0 (0.0%)	144
Sensory accommodations	44 (32.6%)	5 (3.7%)	86 (63.7%)	135
Single room (reduced price)	7 (5.2%)	14 (10.4%)	114 (84.4%)	135

Table 3. General support services offered to students with ASD at 2- year public institutions.

	Disability Services Office	Other office	Not provided	Total <i>n</i>
Support service	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	
Tutoring	65 (44.8%)	71 (49.0%)	9 (6.2%)	145
Transition program	30 (21.7%)	28 (20.3%)	80 (58.0%)	138
General counseling	75 (52.8%)	52 (36.6%)	15 (10.6%)	142
Career counseling	61 (42.4%)	79 (54.9%)	4 (2.8%)	144
Student organization	38 (27.0%)	13 (9.2%)	90 (63.8%)	141
Peer mentor program	22 (15.6%)	31 (22.0%)	88 (62.4%)	141

on a less frequent basis, such as single residence hall rooms and priority registration, may not fit with the characteristics of 2-year institutions.

The vast majority, over 95% of institutions, offered general support services such as tutoring and career counseling (see Table 3). In contrast, fewer institutions provided general support services with a social focus such as peer mentoring (37.6%), disability student organization (36.2%), and transition programs (42.0%).

Compared to reasonable accommodations and general support services, ASD-specific services were uncommon: 38 out of 146 respondents (26.0 %) indicated that their institution offered free ASD services. Only one out of 143 respondents (0.7%) indicated that their institution offered ASD-specific services for an additional charge.

Over half of the institutions surveyed offered faculty some form of ASD education, and disability service professionals used a variety of methods to educate the campus community. The most common educational methods were informal and unstructured such as faculty initiated inquiry (95.0%) or one-on-one discussions (94.3%). About 2-thirds of the institutions surveyed used educational opportunities that involved a large group format such as workshops (61.7%) or new faculty in-services (67.6%). Slightly more than half of the institutions provided education to faculty via online information (53.6%).

Best practice

The Council for Advancement of Standards in Higher Education (CAS) defined best practice as “a level of professional conduct or practice identified as being necessary for college and university personnel to exhibit in their daily work for the host program or service to be judged satisfactory, sufficient and of acceptable quality” (CAS, n.d., para 6). In this study, the term best practice was operationalized to mean practices that multiple disability-services practitioners reported as successful, or conversely, learning experiences that respondents gained from difficult situations. Eleven best practice meta-inferences emerged by combining findings from quantitative and qualitative data; see Table 4 and further description below.

Promote equity

Best practices were those that promote equity through individual interactions with students and advocate for a campus that values all forms of diversity. Enacting equity began with the providers’

Table 4. Summary: Best practices for supporting students with ASD at 2-year public institutions.

Best practice
Promote equity through individual interactions with students and advocate for a campus that values diversity through universal design, community responsibility, and celebrations of success.
Know that each student with ASD is unique and customize accommodations or services.
Educate the campus community by providing information about ASD and tangible recommendations on how to work with students.
Create policies designed to support students with ASD and enforce current policies on a consistent basis.
Facilitate transitions by educating students and their families about the change; foster early relationships with students and involve multiple constituents in the transition process.
Build relationships with students via advising meetings that occur on a regular and scheduled basis; promote a sense of connection, safety, support, and empowerment.
Cultivate strong working relationships with faculty, other campus colleagues, and community partners to support students with ASD.
Be intentional and thoughtful about using groups to support students with ASD; focus on task specific programs and social engagement rather than disability or deficiency.
Engage with students and faculty in a proactive and preventative manner throughout the course of the semester.
Provide students with sensory accommodations to address the functional limitations of ASD.
Limit ambiguity and provide students with concrete and explicate directions, particularly in written documents such as course syllabi and institutional policies.

own interactions. One respondent advised, “Be genuine in your approach to all students; nonjudgmental with conditional positive regard. Students can see and feel!” Additionally, multiple respondents stated that “different is not necessarily bad or wrong,” and practitioners should promote the diversity that students with ASD bring to campus.

Supporting universal design was one method of promoting equity; a respondent explained, “The student and I dialogue with faculty to provide information regarding learning style and classroom accommodations that will help all students.” Encouraging campus-wide responsibility was another approach. A participant said, “I communicate to faculty and staff that these students [with ASD] are college students just like any other college student and therefore it is not just the responsibility of the disabled students program.” Promoting equity also involved “celebrating success,” and respondents stated that although success took many different shapes, it was imperative to honor accomplishments through praise or commemoration. One participant specifically described how their institution celebrated a student with ASD:

Our first Aspergers student graduated and we had him as the guest speaker at Disability Services Academic Awards Banquet. He worked with me several times in writing the speech. It was very hard for him to personalize the speech but he did add a couple of anecdotes. There was not a dry eye in the house when he related a discussion where he told his dad that he was going to be OK at the university because of the foundation he received from our college and his family.

Best practices promoted equity by valuing neurodiversity (Robertson & Ne’eman, 2008), using universal design, encouraging campus-wide responsibility, and celebrating success.

Customize accommodations or services

One of the strongest themes was the concept of students with ASD as unique individuals benefiting from personalized accommodations or services. Nineteen comments in response to open-ended questions directly used the phrase “individual”; and an additional 37 comments used the terms “one-on-one,” “unique,” “personal,” “each student,” or indicated that services were based on the “student’s functional/educational limitations.” Similarly, “taking a one size fits all approach” was a pitfall to avoid. One respondent explained how the spectral nature of ASD results in practitioners supporting a range of students. “Students with ASD vary. It is unfair to assume that all students with ASD are at the same functioning level; socially, intellectually, or emotionally.” Whereas another respondent noted the implications of student individuality on service provision: “You cannot expect to use the same strategies with each student. Some students with ASD need a lot of support and time from our office and some do not.” Best practices took

into consideration “that each student is an individual with certain strengths and challenges”; and they recognized that ASD is a spectrum disorder, so accommodations will vary in accordance with the student’s unique functional limitations.

Educate campus constituents

Educating the campus community about ASD was a robust theme. Multiple respondents indicated that “educating faculty on what to expect” was vital, and campus constituents including counselors and tutors were critical partners. Common educational topics included “tips about having structure and routine in the class,” information about the use of “innuendo, sarcasm, and inference,” the “importance of communicating in a direct manner,” and suggestions on how to address “disruptive behavior in the classroom.” Participants described several methods to educate the campus community; the most common methods were “one-on-one conversations” and “faculty information sessions.” The specific outcomes of educational programming on the experience of students with ASD varied. For example, one respondent stated, “we have one student that gets anxious easily so her instructor allows her to slip out of class if she starts to get overwhelmed”; whereas, another respondent indicated that a student found it helpful when the teacher selected groups as a method of negotiating social interactions. Positive outcomes associated with education included a campus culture where disability services was “seen as a resource” and the development of “close working relationships.” Educating the campus community by providing information about ASD and tangible suggestions on how to work with students was a best practice.

Facilitate transition

A fourth theme involved assisting students and their families with navigating the transition to college. One respondent explained, “The transition from high school to college is so different for any student and can be a great ‘shock’ to ASD students and parents.” The purposes of transition assistance involved helping students “navigate change” and “explaining the differences in practices and expectations ...from secondary education,” particularly in regards to self-advocacy skills. Fostering early relationships and involving multiple constituents in the transition process worked well: One respondent summarized this best practice by stating, “The sooner the student can get connected with staff the better.”

Practitioners described facilitating transition for students with ASD an imperative because self-identification and self-advocacy are critical to gaining access to accommodations in postsecondary education, and these skills are not necessary to acquire services in K–12 education. Several respondents noted that due to social limitations, the transition to a system of self-advocacy was particularly difficult for students with ASD. One respondent explained how their office proactively addressed this: “Lack of social skills can interfere with the student’s ability to self-advocate. The disability service provider must check to ensure that the student understands how the accommodations will benefit him/her and also model how to use accommodations successfully.” Social coaching, role modeling, patience, and attentiveness were practices that supported students with social impairments as they develop self-advocacy and navigate transitions.

Numerous transition comments focused on educating and interacting with parents. One respondent explicitly stated that “Good preparation of parents...” was a beneficial activity. Other respondents indicated that “over involved parents” and “unrealistic expectations” were difficult situations. Best practices balanced family support with empowering the student and recognized that this experience is also a change and an educational opportunity for their parents.

Institutional transition resources varied; a few respondents described programs that were intentionally structured (e.g., “summer transition academy”). Others modified existing institutional programs to meet transitional needs. For example, one participant used summer classes—taught by counseling staff—on study skills and stress management as a “safe environment” for students with ASD to “familiarize themselves with campus and the rituals associated with college life.” The vast majority of participants, however, described facilitating transition through collaborative

relationships. For instance, “developing good working relationships with high school counselors” and “making it [a] point to connect with the local autism support group” were two examples “that helped students become comfortable with the college” and provided the opportunity to “meet parents/student before they come to college.” Best practices were creative and involved developing relationships with multiple constituents including community partners.

Create and enforce policies

Respondents indicated that administrative policies were important in creating successful outcomes, and two guidelines emerged as best practices. First, a policy that promoted formal or informal cross-campus communication was a successful practice. Second, a policy that allowed students to take a “reduced course” or “light academic load,” particularly during the initial transition period, was also beneficial. One respondent explained, “We have set up a 3-year plan for a few students with ASD; extending their time with us, but lessening the stress for the student. That has worked exceptionally well.”

Along similar lines, institutions must consistently implement their current policies. Respondents indicated that “making exceptions so students are not required to follow the same student code of conduct” was problematic. This is not always easy, as one respondent explained:

We’ve had to be careful to walk a healthy line along Code of Conduct compliance. Our institution had to think carefully about not permitting destructive behavior from a student with a disability that would not be permitted from a student without a disability.

Best practices consistently enforced current policies, and supported students with ASD through the creation of policies that promote cross-campus communication and allow a reduced course load.

Build relationships

The theme of relationship building was interwoven through topics of education, transition, and policy creation. Respondents developed relationships with students through counseling or advising meetings. When asked what worked well, a common response was “check-in meetings with the student” that were “frequent,” “regularly scheduled,” and “one-on-one.” The consistency and structure of these interactions was important, and “anything on an optional/drop-in basis seems to be less appealing/manageable.” The purpose was to foster connection, provide encouragement, and invest in the student. A participant explained, students with ASD “may need a sense of safe connectedness more than academic accommodations”; while another participant noted, “we aim to empower students.” Best practices used regularly scheduled one-on-one meetings to build relationships, fostering a sense of safety, connection, and empowerment.

Building relationships with faculty members and campus constituents (e.g., financial aid and campus police) was also important to respondents. Respondents developed relationships by providing educational opportunities and serving “as a resource” for others as they engaged with students with ASD. One participant developed a mentoring opportunity that included faculty members with ASD. This situation seemed to have worked because the student-faculty pair shared an academic interest. Best practices included relationship building with campus constituents by providing education and resources for others regarding students with ASD.

Use groups intentionally

Problems negotiating social interactions are a hallmark of ASD. As one respondent explained, “It can be challenging to design a socially-oriented program for students who have difficulty interacting in a social environment”. Attendance at group activities was the most common struggle; a participant summarized, “we have not had much luck with students attending workshops just for students with ASD. One-on-one seems to work better.” Respondents who reported successful group experiences offered the following suggestions: concentrate on tasks (e.g., teaching e-mail etiquette) rather than focusing on disability or deficiency; make the group a purely social experience (e.g., board games or

movies) without a definite agenda; and expand the group to include former students with ASD who have graduated or transferred as mentors. Adopting a strengths-based approach and using group activities in a thoughtful and intentional manner were best practices.

Be proactive

Successful interactions with students are those that took a proactive approach and had a preventative purpose. Respondents described preemptive techniques that included “having the student come several times before classes to get familiar with the environment,” “helping students select appropriate classes,” “making certain they [students] know exactly what the expectations are before classes start,” “keeping in close touch during the first weeks of class to head off any problems before they become crises,” and “doing regular counseling check-ins.” These techniques allowed practitioners to anticipate and prevent potential problems and to respond immediately if issues arose.

Being proactive was also important when working with faculty members, and this process begins by “getting permission from the student to speak with instructors about ASD.” Successful preemptive approaches included customized accommodation letters, a “premeeting,” and providing “websites and case scenarios,” or links to a “video series that is presented by students with ASD.” Proactive communication with faculty members was not limited to the start of the semester; rather, “ongoing” and “frequent contact was helpful.” Best practices were those that engage students and faculty in a proactive manner throughout the semester.

Address functional limitations

Best practices were those that addressed the functional limitations of ASD. For example, ambiguity was difficult for students with ASD to interpret. Respondents indicated that using “concrete language,” “explicit instructions,” and “clear or specific directions” were effective methods of communication. This practice was particularly notable for course syllabi and student codes of conduct. Additionally, numerous participants noted executive functioning or organization “was a huge obstacle” for students, and they suggested that on-going case management and showing students “how to use a checklist” were effective interventions. Respondents also described using online classes, teaching students social scripts, “encouraging students to become tutors in their area of expertise,” and, if necessary, providing “strict guidelines for behavior—like you may only ask three questions in class” as methods of addressing difficulty with social interactions.

Students with ASD may experience sensitivity to sensory input. A commonly identified best practice was providing a “sensory break room” or “safe space” in the form of “a quiet area” “free of florescent lighting” with “minimal visual distractions” where students could go to manage sensory overload. Creative, cost-friendly alternatives included adapting a staff member’s office or using the “support plan to give students the opportunity to leave class when overwhelmed.” Best practices addressed the functional limitations associated with ASD by limiting ambiguity, teaching organizational and social skills, and providing sensory accommodations.

Discussion and implications

Findings from this study confirmed and extended the existing literature. These findings have direct implications for disability-service professionals, and many of the best practices apply to the broader campus community including advisors, councilors, administrators, and faculty.

A spectrum of support

Institutional support for students with disabilities occurred on a continuum (Kurth & Mellard, 2006). In this study, the majority of institutions used academically focused reasonable accommodations to provide baseline, or ground level, support for students with ASD. For example, 94.5% of institutions provided note takers, and 100% offered additional exam time to students with ASD.

Comparatively, on a national level, 77% of institutions provided note takers, and 93% offered additional exam time to students with disabilities (Raue & Lewis, 2011). Academically focused reasonable accommodations for students with ASD were offered at a rate that is consistent with, or higher than, national data for all students with disabilities; this supported the idea that some types of academic accommodations are essentially standardized. This uniform approach to accommodation fitted within the medical definition of disability, focusing on impairment as located within the student by providing the individual with an altered format rather than reconceptualizing the learning or assessment process. A standardized approach to ASD accommodations also corresponded with a legal framework that limits the definition of learning to an intellectual construct and does not acknowledge the inherently social components of learning.

Moving along the continuum, approximately one third of institutions provided upper level support via interventions that addressed tactile and sensory impairments or social limitations that are common in students with ASD. This study extended the existing literature, finding that 36.3% of 2-year institutions offered sensory accommodations, 42.0% offered transition programs, and 26.0% provided free of charge ASD-specific services. Connecting to theoretical frameworks outlined earlier in this paper, the functional limitations of ASD compelled institutions to ascribe to a constructionist model of disability, and thereby they provided reasonable accommodation or support services targeting the social and sensory components of learning.

Application of best practices

This study extended the literature by offering best practices as a method of moving institutions along the spectrum of support. Previous research showed that faculty members play a significant role in the accommodation and support process (Cook et al., 2007; Kurth & Mellard, 2006). Unfortunately, faculty were often unfamiliar with disability resources and accommodation strategies (Burgstahler, 2002; Wilson, Getzel, & Brown, 2000), or had limited experience teaching students with disabilities (Vogel, Leyser, Wyland, & Brulle, 1999). This study confirmed the importance of campus education (Burgstahler & Moore, 2009; Vogel, Holt, Sligar, & Leake, 2008) and the importance of employing ASD-specific practices in the classroom setting (Gobbo & Shmulsky, 2012, 2014). This study also extended the literature, finding that one-on-one educational methods were most frequently used; about two thirds of institutions employed a large-group-oriented approach, and about half of all campuses used online education.

Several authors (e.g., Brown & Broido, 2015; Korbel, McGuire, Banerjee, & Saunders, 2011) described the importance of collaboration and cooperation across functional areas (e.g., academic units, counseling, career services, financial aid, student activities, and study abroad) as essential to ensuring the engagement of students with disabilities. Similarly, this study confirmed the importance of campus communication and posited relationship building as a best practice.

In order to create an equitable learning environment, it was imperative to address functional limitations of students with ASD. While visual, auditory, and tactile sensitivity are common for students with ASD (Boutot & Myles, 2011), only 36.3% of the institutions offered sensory accommodations. This finding confirmed Smith's (2007) suggestion that "academic accommodations that are being made for students with AS[D] are the accommodations that were created for other disabilities" (p. 526), and it extended Smith's finding to a nationally representative sample. This study also extended the literature by demonstrating that individualized accommodation plans and the provision of sensory accommodations were best practices when working with students with ASD.

Routine and consistent surroundings were important for people with ASD (Bedrossian & Pennamon, 2007), and attending college inherently involves change in schedule and physical location. Additionally, students with ASD frequently lacked self-advocacy skills crucial to postsecondary transition success (Camarena & Sarigiani, 2009), and they were not always fully engaged in the transition process (Hetherington et al., 2010). This study reiterated the importance of facilitating transitions as a best practice, particularly in regard to support for development of self-advocacy skills. It also extended

the literature, finding that less than half of the institutions provided a general transition program for students with disabilities or a specific transition program for students with ASD.

College administrators make difficult decisions about resource allocation. As one participant in this study noted, “With the severity of budgets, there are not specific resources [and] we have resorted to being reactive when issues arise rather than proactive”; other practitioners routinely described low-cost and creative methods for supporting students. This study advocates for a proactive approach and confirms Duffy and Gugerty’s (2005) assertion that many accommodations are comparatively low-cost, although potentially more time intensive.

Importantly, this study extended the literature by moving away from a deficit driven, medical model of disability towards concepts of social construction and social justice. Many of the best practices outlined above—including promoting equity, valuing neurodiversity, empowering the student, and promoting universal design—are tangible steps faculty and administrators can take to develop a socially just approach to supporting students with ASD.

Limitations and future research

When interpreting the present results, readers should consider limitations to this study. Although respondents were randomly selected and nationally representative, participation in this survey was voluntary and, therefore, inherently self-determined. Comorbidity of diagnosis is common (Boutot & Myles, 2011), and practitioners designing successful interventions must see the student as a complex individual. Additionally, this research does not measure the effect of best practice interventions on student outcomes. Rather, it presents the perceptions’ of practitioners, which could be biased. Future research should evaluate the effectiveness of interventions based on these best practices as related to retention and graduation and explore the potential for additional supportive practices such as online education. Future research should also answer Quick, Lehmann, and Deniston’s (2003) call for participant-centered methods by exploring how best practices support academic and social success from the students’ perspective.

Conclusions

This study was a mixed methods exploration of current and best practices to support students with ASD at 2-year public institutions. Many institutions in this study provided a “ground floor” or standardized baseline level of support for students with ASD by using accommodations that may have been originally created to address other types of impairment. The type of assistance for students with ASD occurs on a continuum; about one-third of postsecondary institutions address the functional limitations of ASD by providing “upper level” support such as sensory accommodation and transition programs. The best practices outlined in this article are tangible methods of helping institutions improve their spectrum of support.

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