Managing Autism: Knowledge and Training in Autism Spectrum Disorders Among Special Education Administrators in Texas

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- The number of children with ASDs quadrupled between 2000–2001 and 2009–2010, from 93,000 to 378,000.
- More children with ASDs are being served in public school systems.
- Due process hearings and cases involving students with ASDs represent the most rapidly growing area of litigation in special education.
- Special education administrators’ knowledge of ASDs will impact what types of instruction, resources, and related services are made available to address this growing need.

Autism spectrum disorders (ASDs) represent a neurobiological condition characterized by complex and pervasive manifestations affecting communication, socialization, and adaptive behaviors. The number of children identified with ASDs has continued to rise at alarming rates over the past decade (Fombonne, 2005). According to national reports, the number of students with ASDs served in schools has increased by more than 500% (United States Government Accountability Office, 2005). This trend is also supported by evidence from the Centers for Disease Control (CDC) reporting about one in 88 children identified with ASDs (CDC, 2012). Data collected from the Office of Special Education Programs (OSEP), U.S. Department of Education reflect this increase from nearly 120000 children with ASDs reported in 2002, to 370011 children in 2010 (Data Accountability Center, n.d.). Questions remain regarding the dramatic increase in prevalence rates. There is evidence to suggest the increase may be due in part to heightened awareness, refined diagnostic practices, development of standardized assessment tools, and environmental factors (Croen, Grether, Hoogstrate, & Selvin, 2002; Fombonne, 2001).

According to national reports, the number of students with ASDs served in schools has increased by more than 500% (United States Government Accountability Office, 2005).

While there is no known cure for ASDs, a body of research has emerged in recent history documenting the impact of these conditions on many aspects of the affected person’s life (Hume, Bellini, & Pratt, 2005; National Autism Center [NAC], 2009; National Research Council [NRC] 2001). As such, there is growing urgency to identify evidence-based practices for improving outcomes by addressing needs across multiple domains (Koegel, Koegel, & McNerney, 2001; NRC, 2001; Wolery, Barton, & Hine, 2005). As more children with ASDs enter the public school system, a wide array of school personnel and related service providers must be adequately prepared with the knowledge and skills to meet the complex needs of learners with ASDs, engineer components for effective instruction, and implement interventions with precision and fidelity. According to Simpson, McKee, Teeter, and Beytien (2007), “Indeed there is a general consensus that
only by qualified professionals using effective methods in an approved fashion will optimal student outcomes be achieved” (p. 203). Although all stakeholders hold responsibility for achieving positive student outcomes, the special education administrators play a vital and unique role in the public school setting.

Special Education Administrators and ASDs

The role of special education administrators (which may include directors, executive directors, and coordinators) is to ensure appropriate instruction, plan for the provisions of special education and related services, and allocate resources (Thompson & O’Brian, 2007). Because the educational needs of learners with ASDs are so complex, knowledge of the disorder within these contexts is essential for several reasons. First, special education administrators are responsible for ensuring students with disabilities receive a free, appropriate education designed to meet their individual needs. Second, administrators must have knowledge of student needs in order to allocate the resources necessary to realize positive outcomes. Additionally, special education administrators must be able to represent district and student interests in issues involving litigation. School districts and parents frequently litigate what constitutes a free, appropriate public education (FAPE) for children with ASDs. In fact, Zirkel (2002) reports that due process hearings and cases involving students with ASDs represent the most rapidly growing area of litigation in special education.

As more children with ASDs are served in the public school system, special education administrators’ knowledge of ASDs will impact what types of instruction, resources, and related services are made available for developing academic and functional skills. It therefore becomes necessary for special education administrators to have knowledge and training about ASDs to ensure a free and appropriate education for this expanding heterogeneous population. In addition, knowledge is a precursor for complex decision-making, often necessary for a diagnosis of ASDs. Although several studies have examined the knowledge and training of ASDs among professionals in the school environment and community (Heidgerken, Geffken, Modi, & Frakey, 2005; Schwartz & Drager, 2008), a literature search of electronic databases (ERIC, ESBSCO, PsychLit) failed to produce studies that specifically investigated the knowledge of ASDs among special education administrators.

The current study investigated special education administrators’ self-reported (a) general knowledge of characteristics of ASDs, (b) knowledge of educational programming associated with learners with ASDs, and (c) training and professional development needs for serving students with ASDs. The following research questions guided the study:

1. What general knowledge do special education administrators have concerning autism spectrum disorders and what is their knowledge of educational programming?
2. What educational training and professional development experiences do special education administrators receive in autism spectrum disorders?
3. What are the training needs of special education administrators in autism spectrum disorders?

Methods

Data were collected by means of a web-based questionnaire. Survey methodology was utilized as it is useful in describing the characteristics of a large population (Gall, Gall, & Borg, 2007). Further, distribution of the instrument in an online format allowed for access to individuals in distant locations who may have otherwise been difficult to contact, and automated data collection which reduces researcher time and effort (Dillman, 2009). The target population (N = 475) consisted of special education administrators in Texas who were presented with the survey of 54 carefully constructed items within five sections. The survey platform used for collecting and organizing the data was Qualtrics®.

Instrumentation

The five-section survey was developed to investigate knowledge and training in ASDs among special education administrators. Section I, Demographic Information, asked participants about district enrollment, number of students meeting IDEIA eligibility for ASDs, and dispute and resolution activities. Section II, Professional Background and Training, sought to determine training experiences of participants, exposure to learners with ASDs, and identified knowledge in key areas. Items in this
section were derived from competencies identified by the Council for Exceptional Children (CEC) for special education administrators (Council for Exceptional Children, 2008).

Section III, Understanding Regarding ASDs, consisted of 24 true/false items designed to gain insight into the general knowledge special education administrators had regarding ASDs. Items were adapted from a commonly used survey developed by Stone (1987) to assess autism knowledge. Items queried eligibility criteria, characteristics of individuals with autism, current myths regarding autism, instructional strategies, evidence-based practices, and false claims surrounding issues of autism.

Section IV, Knowledge of Educational Programming, investigated expertise related to educational considerations for learners with ASDs. These considerations are mandated by Texas Commissioner of Education rules (TAC 89.1055(e), Content of the IEP). Section V, Professional Development Needs, asked respondents to rate their individual needs for professional development on topics derived from CEC (2008) knowledge domains. Each topic was rated as “L” if there is a “Limited” need for information, “M” if there is a “Moderate” need for information, or “S” if there is a “Significant” need for information.

For the purpose of this study, “knowledge” regarding ASDs was measured by responses to items in Sections III (Understanding Regarding ASDs) and IV (Knowledge of Educational Programming) against a discrete set of criteria for which there was only one correct response. As previously mentioned, items in Section III were based upon Stone’s (1987) Autism Survey. The survey has been widely used (Heidgerken et al., 2005) and evaluated for reliability and validity (Campbell, Reichle, & Van Bourgondien, 1996; Ray & Mehta, 2010). Campbell, et al. (1996) found the Autism Survey to be stable across time and the total score to be internally consistent. Ray and Mehta (2010) recently updated items from the original survey to reflect current terminology in autism and person-first language. Additionally, based on a review of literature, items were added in their research that reflected current issues in ASDs (e.g., childhood immunizations cause autism).

Items in Section IV also were measured against a discrete set of criteria with one correct response. Thirteen items in this section were presented in a multiple-choice format. These items were created directly from Texas State rules regarding specific program components that must be considered as part of the Individualized Education Program (IEP) for students with ASDs, as mandated by Texas Commissioner Rules (TAC 89.1055(e), Content of the IEP).

Seven experts in ASDs assisted with establishing content validity of the survey. The experts responded to the instrument’s ability to assess knowledge about ASDs and to the organization and structure of the survey platform. In accordance with guidelines suggested by Dillman (2009), a small pilot study was conducted. Participants in the pilot study were ASDs administrators, specifically the Texas education service center ASDs consultants representing the 20 educational regions across the state. The pilot study allowed the researchers to identify problems with the survey and to reflect implementation procedures. Feedback from the experts and pilot study resulted in changes being made to terminology used to describe the population of students with ASDs and to how the questions were presented on the survey platform.

Participants
Nonprobability sampling in the form of convenience sampling was utilized to recruit participants for the study. Participants were special education administrators representing local education agencies across Texas. All participants were current members of the Texas Council of Administrators of Special Education (TCASE). Based upon the inclusion criterion of TCASE membership and current tenure as a special education administrator, the sample size for this cross section of the population was 475 subjects.

Data Collection Procedures
A modified Dillman’s (2009) approach was used to distribute the survey with three points of contact. The survey was launched to the target population to begin the study. Special education administrators received a direct e-mail explaining the research. The notification included an introductory statement with a direct link to the survey. Upon accessing the survey, respondents provided informed and voluntary consent for participation. Two and three weeks after the initial e-mail request, follow-up messages were sent to remind the administrator of the survey and to seek their assistance with the research efforts. Of the 139 participants who activated the link, 106 responses were recorded, representing a 24% response rate.
of the special education administrators surveyed ($N = 106$).

Data Analysis Procedures

Initial inspection of data for item responses was conducted within Qualtrics® as frequency data displayed as percentages. Qualtrics was selected because this software supported the design of the study by allowing the survey to be created, distributed, and compiled through a web-based platform (Qualtrics Labs, Inc., 2012). For in-depth analysis, data were imported into SPSS 11.5 statistical software package (IBM, 2012). The SPSS allowed for the translation of raw data into a transformed data set which enabled statistical analysis of the defined variables. Represented in the sample were school districts and shared service arrangements with student populations of various sizes. All of the respondents indicated they served students identified with ASDs.

Demographics of Participants Related to ASDs

Demographic data including educational training and professional development experiences were gathered. Three participants did not respond to the demographic section of the survey, resulting in a sample size of 103 ($N = 103$). As shown in Table 1, all participants held advanced training above a bachelor’s degree. A majority of the special education administrators held a master’s degree ($n = 79$), and approximately one-fourth of the participants held a doctoral degree ($n = 24$). Additional administrator certification was held by most participants. More than half of the participants held certification as an educational diagnostician, and 13% ($n = 13$) held licensure as a licensed specialist in school psychology. Another 9% ($n = 9$) were speech/language pathologists, one respondent was a board certified behavior analyst. Total years of experience as a special education administrator was fairly evenly distributed among the sample. The majority of the participants also reported special education teaching experience. Of those with special education teaching experience, 65% ($n = 68$) of the sample had taught students with ASDs. In spite of the small sample size, diversity among respondents was evident. Specifically, all 20 regions across the State of Texas were represented. Demographic data also captured districts and shared service arrangements with varied student population size.

General Knowledge of Special Education Administrators

Results indicated that special education administrators varied in their general knowledge of ASDs eligibility criteria, characteristics, myths, instructional strategies, evidence-based practices, and false claims surrounding issues of ASDs. Although impairment in social interaction is a required feature for eligibility, 20% ($n = 21$) of the participants did not agree. Similarly, stereotyped and repetitive behaviors are required for eligibility, yet 60% ($n = 64$) of participants reported these diagnostic features were not necessary for meeting autism eligibility. Impairment of communication skills is another critical feature required for autism eligibility, and 20% ($n = 21$) of respondents disagreed with this statement. In contrast, all of the participants understood that self-injurious behaviors were not required for eligibility.

Knowledge of Educational Programming

Section IV of the survey investigated special education administrators’ knowledge of educational programming for learners with ASDs. Responses to the questions posed in this section revealed that most special education administrators knew that for a student with autism who is eligible for special education and related services, all eleven strategies should be included in the Individualized Education Program. Most special education administrators also knew that peer-reviewed, research-based practices for students with autism include Applied Behavior Analysis (ABA). In contrast, special education administrators appeared to have less knowledge that determining the need for Extended School Year (ESY)
Table 1: District and respondent background information, N = 103

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<tr>
<th>District</th>
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Table 1—Continued.

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<th>Professional certificates/licensures</th>
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<tr>
<td>Licensed Specialist in School Psychology (LSSP)</td>
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<td>56</td>
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<tr>
<td>Educational Diagnostician</td>
<td>58</td>
<td>9</td>
</tr>
<tr>
<td>Speech/Language Pathologist (SLP)</td>
<td>9</td>
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</tr>
</tbody>
</table>

Note: Three participants did not respond to the demographic section of the instrument.

services for students with autism should be based upon student need, as reported by 63% (n = 67) of the respondents.

**Professional Development Needs**

Special education administrators were asked to rate their individual need for professional development in ten areas related to educating learners with ASDs using a 3-point Likert scale. Professional development for school staff serving learners with ASD was the area for professional development perceived by administrators as the greatest need. Increasing access to the general curriculum for learners with ASDs was another topic of perceived significant need. Topics for which professional development was perceived as less critical were Assessing learners with ASDs and eligibility determination and Characteristics of ASDs. Moderate to significant needs were reported by at least one-third of the participants across all professional development topics.

**Discussion**

The purpose of this study was to investigate general ASDs knowledge, ASDs programming knowledge, and training and experiences of special education administrators, and to determine if any of these factors predicted litigation. This section discusses the interpretations of these findings in relation to the specific research questions: (1) What general knowledge do special education administrators have concerning ASDs, and what is their knowledge...
of program components? (2) What educational training and professional development experiences do special education administrators receive in ASDs? and (3) What are the training needs of special education administrators in ASDs? This section also addresses the extent to which findings can impact current practices and ASDs litigation and includes recommendations for future research.

Contributions of the Study to the Current Literature

Previous studies investigating preparation and professional development of special education administrators are limited to but a few (Arick & Krug, 1993; Crockett, Becker, & Quinn, 2009; Stile & Pettibone, 1980). Researchers also have explored knowledge and training in ASDs among professional groups other than special education administrators (Chown, 2009; Preece & Jordan, 2007). This study was conducted to fill the gap in existing research specifically examining knowledge and training in ASDs among special education administrators. The following discussion addresses the knowledge and training in ASDs among special education administrators.

General Knowledge in ASDs

The first objective of this study was to examine general ASDs knowledge among special education administrators and knowledge of educational programming. Administrators must ensure appropriate instruction, plan for the provision of services, and allocate the resources necessary to deliver a free, appropriate public education (Thompson & O’Brien, 2007). Because the educational needs of learners with ASDs are complex, knowledge in these domains is relevant for informed decision making to occur (NAC, 2009; NRC, 2001; Simpson, 2005; Volkmar, Lord, Bailey, Schultz, & Klin, 2004).

General ASDs Knowledge. As illustrated by the results, special education administrators were most knowledgeable regarding the general characteristics of ASDs. Some participants continued to endorse current myths regarding ASDs such as, “Most children with ASDs have an intellectual disability.” This is relevant because misperceptions of this nature could limit learner access to the general curriculum. Special education administrators demonstrated the greatest variability on questions related to ASDs eligibility. These results are consistent with prior research that ambiguity and diagnostic uncertainty exist regarding ASDs eligibility (Fombonne, 2001; Tidmarsh & Volkmar, 2003). One could surmise that administrators should have knowledge of eligibility criteria for ASDs, given the propensity for litigation (Etscheidt, 2003; Zirkel, 2002). A possible explanation is that special education administrators are not directly involved in the assessment process, and therefore possess more general than explicit knowledge. Even though more than half of the participants in this survey were also educational diagnosticians or Licensed Specialists in School Psychology, formal training programs for these specializations do not require coursework specific to ASDs assessment or eligibility. Training and experience in ASDs assessment is a separate pursuit rather than a standard component of formal certification and licensure in Texas.

Knowledge of Educational Programming. Questions investigating knowledge in this domain were relevant because issues related to ASDs programming represent the largest and most expensive area of litigation (Etscheidt, 2003; Yell, Katsiyannis, Ryan, & McDuffie, 2008; Zirkel & Gisclhar, 2006). Results in this area indicated that in general, special education administrators are knowledgeable regarding most of the strategies that must be considered as part of the IEP (TAC 89.1055(e), Content of the IEP). Few participants demonstrated knowledge for all of the strategies inclusively. Less knowledge was demonstrated on items related to communication strategies, the “gold standard” for research-based practices, and understanding of considerations for extended educational programming. Results may suggest continued research-to-practice gaps, and highlight the need for continued efforts to address this challenge.

Training Needs

Another objective of this research was to identify the training needs in ASDs as reported by special
education administrators. Professional development topics derived from CEC knowledge domains were the basis for these topics (CEC, 2008). Special education administrators perceived the most significant professional development needs related to Best practices for learners with ASDs followed by Educational programming for learners with ASDs. Other areas of need were Increasing access to the general curriculum for learners with ASDs, and Professional development for school staff serving learners with ASDs. These results are consistent with current research identifying professional development needs in ASDs (NAC, 2009; NRC, 2001; Simpson, 2005).

**Implications for Practice**

The findings of this study can be utilized to support activities in several areas. First, there is a need to examine the professional development needs identified by special education administrators related to ASDs. Although recent research has explored training experiences of special education directors (Crockett et al., 2009), topic-specific training tailored to meet administrator needs is lacking. Engineering professional development experiences to meet the perceived needs of the special education administrator may increase capacity for decision making and potentially reduce the research-to-practice gap that currently exists, such as knowledge and implementation of research-based interventions. Current literature has focused on the training needs of school personnel other than special education administrators (NAC, 2009; NRC, 2001; Simpson, 2005). The Council for Administrators of Special Education (CASE), the leading authority for professional development in special education, could use findings from this research to design training for many school leaders or feature sessions at future conferences.

It is unrealistic to expect special education administrators to possess comprehensive knowledge in all areas of disability; however, as these results indicate, there is a need for special education administrators to gain access to training topics related to ASDs. This can be accomplished through a variety of venues, such as on-line learning modules, university coursework, and state and national conferences. The most recent annual conference of the Council for Exceptional Children included strands of over 80 sessions and workshops related to ASDs and developmental disabilities.

**Limitations of the Study**

Several limitations exist within the design of the current study and must be considered when interpreting these results. The most significant limitation of the study was the use of convenience sampling to recruit participants. Convenience sampling was utilized because of the availability of the sample. This sampling technique was useful for the purpose of obtaining general information and for examining particular qualities of the participants consistent with the research questions (Castillo, 2009).

Sampling by this technique, however, may result in sampling bias because some members of the population have no chance of being sampled. Consequently, the extent to which the convenience sample actually represents the entire population cannot be known. In fact, respondents completing the survey all held advanced degrees and reported extensive special education training. Such a high level of formal training may not be a true representation of all school leaders. Additionally, level of training may be a characteristic that affects participation in survey research. It is possible that individuals with extensive training are more willing to demonstrate perceived knowledge than those with less training and experience.

In spite of the small sample size, diversity was evident. Specifically, all 20 regions across the State of Texas were represented. Demographic data also captured districts and shared service arrangements with varied student population size. This study only surveyed special education administrators in Texas. Credentialing and training avenues in one state may not be comparable to others so generalization of findings to states or regions outside of Texas is limited. Finally, several studies have examined ASDs knowledge among professionals; however knowledge of ASDs has not been quantified. Research has yet to identify how much training or experience an individual must possess in order to be considered “knowledgeable.”

**Recommendations for Future Research**

- Extending this line of research to include participants across the region and country would provide a broader view of professional development needs specific to special education administrators and ASDs.
• Future research to refine the survey instrument for cross-disciplinary use would increase its utility for exploring ASDs knowledge and training needs among professionals across settings.
• Another area for further inquiry would be investigating the professional development preferences of special education administrators on perceived topics of need by exploring various training avenues, such as webinars, online courses, distance learning, web-based modules, and on-site training.

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References
Individuals with Disabilities Education Improvement Act of 2004. 20 U.S.C. § 1400 et seq.


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