

Examining Factors Related to the Autism Spectrum Disorder Training of Graduate Programs Approved By the National Association of School Psychologists

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Research Article

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Abstract

More and more students are being identified with autism spectrum disorders (ASD), and they often require evidence-based practices for assessments and interventions in the school setting. However, many school psychologists do not have extensive graduate training in ASD, even though they are often required to provide these services. This study explored the websites of programs approved by the National Association of School Psychologists to examine the relationship between ASD-specific course requirements with program faculty experience and program level. NASP-approved graduate programs were gathered and coded for program level, the number of faculty with ASD-related experience, and the number of ASD-specific courses. Multiple linear regression was used to analyze the results of the data collected from the 192 NASP-approved programs. Results from the regression show that faculty with ASD-related experience and training program level account for 9.4% of the variance in ASD-specific courses. There was a significant and positive correlation between ASD-specific courses and faculty with ASD-related experience, as well as between ASD-specific courses and training programs with both specialist- and doctoral-levels. These findings align with previous literature on the lack of graduate training in ASD, as well as the impact of faculty on this training availability. It is suggested that programs incorporate more ASD training in their curriculum to better support school psychology practitioners while working with students on the spectrum in schools.

Introduction

The number of people diagnosed with autism spectrum disorders (ASD) has appeared to continuously rise. The Centers for Disease Control and Prevention (CDC) currently estimates that ASD impacts approximately 1 in 54 children (CDC, 2020). The diagnostic criterion for ASD is based on the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5; American Psychiatric Association, 2013). It is defined by restricted repetitive patterns of behavior and deficits in social communication and interactions that persist across multiple contexts, which includes social reciprocity, symbolic play, nonverbal communicative behaviors used for social interaction, and the development, maintenance, and understanding of relationships (American Psychiatric Association, 2013). The severity of ASD is often based on these impairments and how they impact the individual in everyday functioning.

The diagnosis of children on the autism spectrum is likely to occur in a clinical setting. However, a student can receive an educational identification of autism, which is similar to the criteria described by the DSM-5. Educational identification may also occur after reviewing evaluations completed by clinical professionals. In addition to this identification, an adverse educational impact within the academic, behavioral, or social functioning must also be present. This identification and adverse educational impact are both needed for students to be eligible for school-based special education services (Harris et al., 2020). The category of autism is one of the fastest-growing special education eligibility categories (U.S. Department of Education, National Center for Education Statistics, 2016).

The American Psychological Association (APA) has requested that psychologists use evidence-based practices for assessment and intervention services in schools (APA: Task Force on Evidence-Based Practice with Children and Adolescents, 2008). APA has also provided best-practice guidelines for school psychologists conducting assessments (Campbell et al., 2014). It is recommended that practitioners have knowledge of ASD characteristics and criteria, understand the strengths and weaknesses of assessment measures, and know how to implement evidence-based interventions (APA: Task Force on Evidence-Based Practice with Children and Adolescents, 2008). Within the National Association of School Psychologists (NASP) practice model domains, data-based decisions include knowledge and skills of assessment (2010). In a position statement, NASP also discussed the use of evidence-based assessments (EBA; 2016). These evidence-based practices extend to working with students on the autism spectrum.

School psychologists are commonly called upon to be involved in the assessment and intervention services for students with ASD. Having the knowledge and training to do so is often vital when fulfilling these roles. Children are being diagnosed with ASD and receiving an educational identification of autism as early as their preschool years (Harris et al., 2020). Appropriate identification and evaluation are usually the first steps that school psychologists take in this process, which includes the use of reliable and valid measures for school-based autism assessment (Wilkinson, 2013). Understanding the assessment and intervention needs of students on the autism spectrum can help provide appropriate recommendations to teachers and educational teams (Harris et al., 2020). This knowledge and expertise when providing support and appropriate resources can also benefit the abilities of school psychologists to build trust with families of children with ASD (Tucker & Schwartz, 2013). Preparation to work with the ASD community is likely to improve the collaboration and involvement of school psychologists on multidisciplinary teams. ASD-specific training positively affects practitioner's knowledge about autism, their level of involvement with students on the spectrum, and their perceived abilities to work with this population (Wilkinson, 2013). School psychologists are often required to assist students with autism throughout their educational journeys, so they need to have the skills necessary to competently fulfill these roles.

Despite the need for school psychologists to support children with ASD in the school setting, there is often a discrepancy in their preparation for these positions. There is an apparent shortage of ASD training in school psychology graduate programs (Olley and Rosenthal, 1985; Wilkinson, 2013). The limited instruction and experience with ASD neglect the National Association of School Psychologist's (2010) *Standards for Graduate Preparation of School Psychologists*. Less than half of school psychologists have reported receiving formal coursework in autism while in their training programs (Wilkinson, 2013). Fewer than 25% of school psychologists reported using evidence-based assessment practices when assessing for ASD while in the workforce (Aiello et al. 2017). Graduate coursework may briefly cover concepts related to autism within many school psychology programs. However, there is often a lack of depth to this autism-related content. This may be due to the absence of faculty trained to guide students through courses that cover evidence-based practices for autism.

To become more competent in their work with this population, graduate students in school psychology training programs should develop relationships with and learn from ASD service providers and experts, such as faculty and affiliated staff (Wilkinson, 2013). Graduate training specifically focused on ASD may help to adequately prepare school psychologists to fulfill the roles they are often required to do. School psychologist trainees should consider attending training programs that are designed to increase their understanding and knowledge of ASD, as well as utilize best practice assessments and intervention approaches to help ensure that students on the spectrum will receive effective educational programming (Wilkinson, 2013).

Purpose of the study

The purpose of this study is to explore the program websites of school psychology programs approved by NASP for their training and preparation of autism spectrum disorders for graduate students, as well as their program training level and faculty with ASD-related experience. The connections between the experiences of these faculty members, program level, and ASD-related courses offered will be examined. It is hypothesized that school program level and faculty with experience in ASD will predict the availability of autism-related courses within a program.

Methods

Participants

Graduate programs in school psychology were utilized for this study. A list was gathered from the NASP website of approved training programs. This list consisted of programs with specialist-level training, doctoral-level training, and training in both levels. In total, 192 school psychology graduate programs were examined for coding.

Measures

The variables gathered for this study include the following: school psychology graduate training program level, the number of faculty with autism-related experience within the program, and the number of program courses solely focused on ASD.

Program Level. Program level was coded as “1” for programs that have specialist- and doctoral-level programs, “2” for doctoral-level programs, and “3” for special-level programs approved by NASP. Specialist-level training was used as the reference category when dummy coding was utilized.

Faculty with ASD-related Experience. The number of faculty with ASD-related experience within each NASP-approved program was recorded. This information about faculty members was gathered from their Curriculum Vitae and personal biographies on the program websites. The faculty was included if any mention of “autism,” “autistic,” “autism spectrum,” and “autism spectrum disorder” was included in the descriptions of their professional experiences.

ASD-specific Courses. Each course that focused on ASD from each NASP-approved graduate training program website was recorded. These courses had to include “autism,” “autistic,” “autism spectrum,” and “autism spectrum disorder” within their names. The number of courses required at each university was noted.

Procedures

The program websites were coded by a school psychology doctoral student based on program level, faculty with ASD-related experience, and ASD-specific courses from the list of NASP-approved training programs. Data was analyzed using IBM SPSS version 25.0 (IBM Corp, 2017). After descriptive statistics and assumptions assessments were conducted, analyses were utilized to examine the determined variables.

Correlations between program level, faculty with ASD-related experience, and ASD-specific courses were explored. Multiple linear regression was utilized to predict ASD-specific courses/*ASDCourses* within NASP-approved programs from the following predictor variables: specialist- and doctoral-level training program /*BothLevels*, doctoral-level training program /*Doctoral*, and faculty with ASD-related experience/*Faculty*. Training program level variables were dummy coded, and the variable for specialist-level training programs was utilized as the reference variable.

The model equation can be represented as:

$$ASDCourses = A + \beta_1(BothLevels) + \beta_2(Doctoral) + \beta_3(Faculty) + e$$

Results

Analyses focused on associations between training programs that require courses specifically focused on ASD with training level of those programs and faculty with ASD-related experience. The data was analyzed for the assumption of normality, linearity, homoscedasticity, independence of errors, multicollinearity, and outliers.

The assumptions of independence of errors, homoscedasticity, and multicollinearity were found tenable, while linearity, normality, and outliers were not tenable. It is difficult to assume bivariate linearity for categorical variables. The residuals showed to be unimodal, but the distribution is not symmetric. This may be due to the presence of outliers. There are three cases with markedly large, standardized residuals: case 2, case 66, and case 174. These cases are considered outliers due to being the only programs that have two ASD-specific courses, while the other programs have one or less. Since this study focused on examining the number of ASD-specific courses within graduate training programs, analyses proceeded without deleting these outliers.

Descriptive Statistics are presented in Table 1. The number of ASD-specific courses within each NASP-approved training programs ranged from 0–2 with a mean of 0.1 (SD = 0.4). Faculty with ASD-related

experience from these training programs ranged from 0–10 with a mean of 1.6 (SD = 1.9).

Table 1 *Variable Descriptive Statistics*

	ASDCourses	Faculty
Mean	0.12	1.58
Maximum	2	10
Minimum	0	0
Standard Deviation	0.37	1.85

Table 2 provides the frequencies of the different NASP-approved program levels. Specialist-level programs consisted of 63% of NASP-approved programs (N=121), while doctoral-level programs comprised of 13% (N=25). NASP-approved programs with both specialist- and doctoral-levels contained 24% of the sample (N=46).

Table 2 *Program Level Frequencies Statistics*

	Specialist	Doctoral	BothLevels	Total
Frequency	121	25	46	192
Percent	63	13	24	100

Results of the Pearson product moment correlation co-efficient between ASD-specific courses with the predictor variables of program level and faculty with ASD-related experience is presented in Table 3. There was a significant and positive correlation between ASD-specific courses and faculty with ASD-related experience ($r = 0.29, p < .001$). There was also a significant and positive correlation between ASD-specific courses and training programs with both specialist- and doctoral-levels ($r = 0.15, p = .04$).

Table 3 *Pearson's Correlation Table*

	ASDCourses	Faculty	Specialist	Doctoral	BothLevels
ASDCourses	1	0.29*	-0.10	-0.42	0.15*
Faculty		1	-0.41*	0.21*	0.30*
Specialist			1	-0.51*	-0.73*
Doctoral				1	-0.22*
BothLevels					1

The results of the linear regression model are provided in Table 4. The results indicate that for each faculty member with ASD-related experience, there was a 0.06 increase in *ASDCourses* ($p < .001$). Training

program levels were not significant predictors of programs with ASD-specific courses. The overall model fit indicated that faculty with ASD-related experience and training program level accounted for 9.4% of the variance in *ASDCourses* ($R^2 = 0.094$, $F_{3,188}=6.53$, $p < .001$).

Table 4 *Linear Regression Coefficients*

Predictor Variables	Unstandardized Coefficients		Standardized Coefficients	
	B	Std. Error	B	p value
Faculty	0.06	0.02	0.29	0.00
Doctoral	-0.10	0.08	-0.09	0.21
Both Levels	0.03	0.07	0.04	0.60

Discussion

This study explored the relationship between courses focused on autism spectrum disorders (ASD) from training programs approved by the National Association of School Psychologists (NASP) with several predictor variables, which include training program levels and faculty with ASD-related experience. Of these variables, faculty with ASD-related experience was found to significantly predict training programs with ASD-specific courses. However, only programs with both specialist and doctoral levels were associated with ASD-specific courses.

This significant finding reiterates previous research on the impact that school psychology faculty have on the ASD training for graduate students. Graduate training would benefit from coursework specifically focused on ASD, as well as interactions with ASD faculty experts and service providers (Wilkinson, 2013). However, there is a noticeable lack of training focused on autism spectrum disorders within school psychology graduate programs (Olley and Rosenthal, 1985; Wilkinson, 2013). This ASD training deficiency in school psychology graduate programs does not align with NASP's (2010) *Standards for Graduate Preparation of School Psychologists*. School psychologists are likely to work with students on the spectrum on a regular basis. APA recommended that they have knowledge of ASD characteristics, understand assessment measures, and implement evidence-based interventions, since they interact with this population so often (APA: Task Force on Evidence-Based Practice with Children and Adolescents, 2008). Understanding the assessment and interventions needs of students with autism not only help provides appropriate recommendations and support while working with multidisciplinary teams but also helps build trust with the families of students on the autism spectrum (Harris et al., 2020; Tucker & Schwartz, 2013).

Limitations

It is important to note that causation cannot be concluded from the results of this study. While gathering information from NASP-approved program websites, it is important to consider the amount of information provided on these sites. Some programs detailed extensive information regarding requirements and faculty information, while others only presented the course lists and faculty names. Also, courses were only coded in the analysis if they included ASD-related terminology. Some courses may extensively cover ASD content, but they were not included in the analysis since they did not have the required terminology in their names. Faculty were also included in the analysis if their program biographies or Curriculum Vitae contained the same ASD-related terminology. Some of the faculty may have minimal ASD-related experience and do not consider it an area of expertise, but they were still included in this examination. Lastly, the program status, such as conditional status, and years of approval by NASP may have an impact on the availability of ASD-specific courses, as well as availability of faculty with ASD-related expertise.

Conclusions

More and more children have been identified with ASD in recent years. With this rise in autism diagnoses for children, there is likely to be more demand for educational services for these students in schools. School psychologists play a vital role in understanding and identifying the needs, as well as providing resources and recommendations for students on the autism spectrum. For these practitioners to fully support students with ASD, they need to receive adequate training during their graduate program studies. This training in ASD should not only involve coursework specifically focused on autism but also cultivating relationships with experts in the field, including program faculty. Despite guidelines set forth by APA and NASP for practitioners to attain this comprehensive knowledge, many graduate programs in school psychology do not offer extensive training in the field of ASD. Students exploring graduate programs in school psychology should consider the depth of ASD-specific training in these programs since there is such a high demand for practitioners to utilize this training while in the field.

Future Research

Future research may want to examine other factors that contribute to the availability of ASD-specific courses in school psychology training programs. These factors may include the program status, number of program faculty, and years of NASP-approval. Gaining a fuller understanding of the potential factors that can impact this course availability may lead to earlier identification and greater utilization of evidence-based assessments for students with ASD by early-career practitioners. Additionally, reviewing the syllabi of program courses for ASD-specific content may also provide a deeper insight of the training school psychology graduate students receive. Furthermore, researchers are encouraged to gather the perspectives from program directors, graduate students, and recent school psychology graduate about the autism training within their programs and the preparedness to conduct evidence-based assessment for these students while working in schools.

On behalf of all authors, the corresponding author states that there is no conflict of interest.

Declarations

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Conflicts of interest/Competing interests: The author declares they have no conflicts of interest/competing interests to disclose.

Availability of data and material: The data that support the findings of this study are openly available on the website for the National Association of School Psychologists at <https://www.nasponline.org/standards-and-certification/graduate-program-approval-and-accreditation/program-approval/approved-programs>.

Code availability: Not applicable.

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