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Professional Perspectives on Bilingualism in Persons with Autism Spectrum Disorder: A Pilot Study

Abstract

Purpose: The present study examined the perspectives of professionals regarding bilingualism and ASD. **Methods:** A total of 27 professionals participated in this study. Data was collected via an online survey. The survey was designed based on a literature review and consultation with a team of experts in the field of ASD. Information relating to demographic information, professional practice information, and perspectives of bilingualism and ASD was collected. **Results:** Professionals participating in the present study were most likely to agree with the statement, "A child with ASD from a bilingual household is able to understand both languages" and least likely to agree with the statement, "There are enough bilingual service providers and resources." Responses to 5 of the 8 statements related to professional perspectives on bilingualism in children with ASD were near the scale midpoint indicating the participants did not strongly agree nor disagree with the perceptions. When asked what language parents should speak to their children with ASD from a bilingual household, 44% of participants recommended a bilingual approach, and 30% indicated a monolingual approach. Participants reported professional experience and the ability to communicate with caregivers/others in the environment/parent language use as influences for these recommendations. Furthermore, sex, level of education, and bilingual caseload were found to be significantly related to perspectives on bilingualism and ASD. **Conclusion:** The results of this study support previous literature which has identified a disconnect between research and clinical practice regarding bilingualism and ASD. Furthermore, the relationship between specific demographic and professional variables found in this study can now be used by future research studies and programs targeting bilingualism and ASD. These findings are of particular importance when considering that research has supported bilingualism in children with ASD, yet many professionals continue to implement a monolingual approach. A better understanding of professional perspectives of bilingualism in ASD provides insight into the discrepancy between research and clinical practice and paves the way for future studies and programs targeting improved services for bilingual children with ASD.

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ABSTRACT

Purpose: The present study examined the perspectives of professionals regarding bilingualism and ASD. **Methods:** A total of 27 professionals participated in this study. Data was collected via an online survey. The survey was designed based on a literature review and consultation with a team of experts in the field of ASD. Information relating to demographic information, professional practice information, and perspectives of bilingualism and ASD was collected. **Results:** Professionals participating in the present study were most likely to agree with the statement, "A child with ASD from a bilingual household is able to understand both languages" and least likely to agree with the statement, "There are enough bilingual service providers and resources." Responses to 5 of the 8 statements related to professional perspectives on bilingualism in children with ASD were near the scale midpoint indicating the participants did not strongly agree nor disagree with the perceptions. When asked what language parents should speak to their children with ASD from a bilingual household, 44% of participants recommended a bilingual approach, and 30% indicated a monolingual approach. Participants reported professional experience and the ability to communicate with caregivers/others in the environment/parent language use as influences for these recommendations. Furthermore, sex, level of education, and bilingual caseload were found to be significantly related to perspectives on bilingualism and ASD. **Conclusion:** The results of this study support previous literature which has identified a disconnect between research and clinical practice regarding bilingualism and ASD. Furthermore, the relationship between specific demographic and professional variables found in this study can now be used by future research studies and programs targeting bilingualism and ASD. These findings are of particular importance when considering that research has supported bilingualism in children with ASD, yet many professionals continue to implement a monolingual approach. A better understanding of professional perspectives of bilingualism in ASD provides insight into the discrepancy between research and clinical practice and paves the way for future studies and programs targeting improved services for bilingual children with ASD.

Keywords: autism spectrum disorder, perspectives, professionals, bilingual, English, Spanish.

INTRODUCTION

Bilingual Populations

Bilingualism has been defined as the use of two or more languages.^{1,2,3} Bilingualism is a multidimensional characteristic influenced by many factors including, but not limited to, sociolinguistic context, age of acquisition, amount of exposure, and usage (for children) or proficiency (for older children and adults).⁴ For many bilingual speakers, language use is closely linked to the culture.⁵

According to the United States (U.S.) Census Bureau, 66.6 million U.S. residents (native-born, legal immigrants, and illegal immigrants) speak a language other than English at home.⁶ This number has more than doubled since 1990 and almost tripled since 1980. There are now more people who speak Spanish at home in the U.S. than in any country in Latin America, except for Mexico, Colombia, and Argentina.⁷ The number of individuals speaking Spanish in the U.S. is expected to continue rising and it is estimated that by 2050, the U.S. will have 138 million Spanish speakers.⁸

In the U.S., the largest minority population is the Hispanic population accounting for 18.3% of the nation's total population. Forty-six percent (46%) of the Hispanic population in the U.S. speaks both English and Spanish.^{9,10} The number of bilingual households in the U.S. is growing, and therefore, so is the demand to provide educational and healthcare services to increasingly diverse populations. This demand not only applies to the neurotypical population but the neurodiverse population as well. It is imperative that our research, educational, and clinical practices continue to grow with the bilingual population so we can provide the best services possible to bilingual individuals.

Bilingualism and Language Development in Children with ASD

The most current and fifth version of the Diagnostic and Statistical Manual of Mental Disorders (DSM) was published in 2013.¹¹ In the DSM-V, autism spectrum disorder (ASD) is defined as a neurodevelopmental disorder identified by impairments in social communication and social interaction, with the presence of restricted, repetitive patterns of behavior, interests, or activities.¹⁰ The Center for Disease Control and Prevention estimates that about 1 in 54 eight-year-old children have been identified with autism spectrum disorder.¹² ASD occurs in all racial, ethnic, and socioeconomic groups, but is approximately 4 times more common among boys than girls, and non-Hispanic white and non-Hispanic black children are more likely to receive a diagnosis of ASD than Hispanic children.¹² The continued discrepancy between racial/ethnic groups could be due to stigma, lack of access to healthcare services, and language barriers.¹³

There is no evidence to support that learning two or more languages (bilingualism) will result in additional language delays for children with primary language impairments, down syndrome, or ASD.¹⁴⁻²² In children with ASD, bilingualism has been found to have neither a positive nor a negative effect on language abilities, and caregivers should not be discouraged from speaking two languages to their children nor be afraid of introducing a new language.^{19,23}

Bilingual children with ASD have been found to reach language milestones, such as first words and onset of first sentences, at a similar age as their monolingual peers with ASD.²² More specifically, bilingual children with ASD develop their expressive and receptive vocabularies and language, pragmatic abilities, and cognitive functioning at a similar rates as children with ASD exposed to only one language.^{19,21-27} Moreover, recent research has found that bilingual individuals with ASD report being more satisfied with their social life and their social quality of life.²⁸

Research has found that bilingualism does not pose a disadvantage, nor does it hinder the language development of children with ASD. Additionally, bilingual individuals with ASD are just as satisfied, if not more satisfied, with their social life and social quality of life as monolingual peers. There is absolutely no evidence to suggest that children with ASD are unable to successfully become bilingual.^{20,27,29}

Bilingual Language Intervention for Children with ASD

Research has supported bilingual intervention for bilingual individuals with ASD.³⁰ When comparing bilingual treatment to monolingual treatment for bilingual children with ASD, research has found that bilingual treatment is just as effective at improving language outcomes and in some cases bilingual intervention has been found to be more effective than monolingual interventions.^{21,29,31,32,33}

Although bilingual service delivery has been supported in the literature, a clear consensus has not been established among professionals about the selection of appropriate language(s) use in intervention when working with children with ASD.³⁴ In fact, many professionals fear that dual-language exposure could contribute to additional challenges and delays in language development, and they often advise bilingual families of children with ASD to focus on the language of schooling and to refrain

from using the family's native language to avoid language confusion or further language delays.^{20,30,34,35,36} Typically, the recommended language is English, as it is the dominant language of education and treatment services in the United States.²⁰

Bilingual parents of children with ASD often report that most, if not all, of their educational and interventional services are provided in English, and that primary language alternatives are not available.^{34,37,35} By providing monolingual services to bilingual children with ASD, professionals might be reducing the opportunities for the child to learn how to coexist within their cultural communities since languages are often closely linked to cultural identities.³⁶ This recommendation can also hinder the development of multicultural perception and identity, which is very important for children with ASD.³⁸

While research has supported bilingualism and bilingual language intervention for bilingual children with ASD, there appears to be discontinuity between research and clinical practice. More research is needed exploring why this discrepancy exists and how to best align research and clinical practice for bilingual children with ASD. This is of particular importance when considering that limiting a bilingual child to only one language can lead to an invisible disconnection from society, and the child's family may find it difficult to communicate with him or her. Additionally, deficits in social interaction are one of the diagnostic criteria for individuals with ASD, and bilingual individuals with ASD are just as satisfied, if not more satisfied, with their social life and social quality of life when compared to monolingual peers with ASD. To begin to address the incoherence between research and clinical practice regarding bilingualism and to improve the quality of care for bilingual individuals with ASD, this study will explore professional perceptions of bilingualism in children with ASD. More specifically, the following research questions were addressed:

1. What are the perceptions of professionals regarding bilingualism in individuals with ASD?
2. What variables are related to the perceptions of professional regarding bilingualism in individuals with ASD?

METHODS

Participants

Potential participants were identified via public records, organizations, and social media. If an individual was interested in participation, he/she was sent an E-mail containing a Qualtrics link to complete consent to participate in the study and a survey. The following professionals were recruited for participation in this study: Board Certified Behavior Analysts, Medical Doctors, Occupational Therapists, Speech-Language Pathologists, Special Education Teachers, and Regular Education Teachers. The decision to include these specific professionals was made because these professionals often diagnose and provide services to individuals diagnosed with ASD and their families. The inclusion criteria for participation in this study was as follows:

1. Licensed professional in one of the following fields: general medicine, pediatrics, neurology, psychiatry, neuropsychology, psychology, early childhood, education, counseling, speech and language pathology, occupational therapy, physical therapy, and/or behavior analysis.
2. Current practice.
3. Had/have a caseload of individuals with the diagnosis of autism spectrum disorder, aged 0-22 years, who are from a bilingual household or that have been exposed to more than one language.

A total of 27 health care professionals currently working with children diagnosed with ASD participated in this study. Many participants were white, between the ages of 21-40 years of age, female, speech-language pathologists, and bilingual, speaking both English and Spanish. Participant demographic information is presented in Table 1 and participant professional practice information is presented in Table 2.

Table 1. Participant demographic information.

	n	%
Age		
21-30	11	40.7
31-40	12	44.4
41+	3	11.1
Not reported	1	3.7
Race		
White	20	74.1
Asian	1	3.7
Black/African American	0	0

	Native Hawaiian/Pacific Islander	0	0
	Other	6	22.2
Gender			
	Male	3	11.1
	Female	22	81.5
	Not reported	2	7.4
Education			
	Highschool	1	3.7
	Bachelors	2	7.4
	Masters	21	77.8
	Doctoral or Professional degree	3	11.1

Note. n=27.

Table 2. Participant professional practice information.

	n	%
Profession		
	Speech-language pathologist	14 51.9
	Occupational therapist	4 14.8
	Medical doctor	2 7.4
	Teacher	5 18.5
	Other: school counselor, SLP-BCBA	2 7.4
Employment Setting		
	Clinic	12 44.4
	Private practice	1 3.7
	School district	9 33.3
	Hospital	1 3.7
	Home health	1 3.7
	Other: SNF, outpatient	3 11.1
Language spoken at work		
	English only	3 11.1
	Spanish only	0 0.0
	English and Spanish	20 74.1
	American sign language, English, and Spanish	4 14.8
English fluency		
	Very fluent	26 96.3
	Somewhat fluent	0 0.0
	Not fluent	0 0.0
	No response	1 3.7
Spanish fluency		
	Very fluent	18 66.7
	Somewhat fluent	6 22.2
	Not fluent	3 11.1
Current ASD caseload		
	1-5	11 40.7
	6-10	6 22.2
	11-15	1 3.7
	15+	9 33.3
Bilingual caseload		
	1-5	7 25.9
	6-10	1 3.7
	11-15	4 14.8
	15+	15 55.6

Note. n=27.

Procedures

Survey

To gain an understanding of the perceptions of professionals, a survey was created using Qualtrics Software. The questions included in this survey were based on a search of existing surveys and literature review. Once the survey was completed, a panel of experts in autism spectrum disorder were asked to review and revise the survey as necessary. Once the survey was approved by the panel of experts, the survey was then emailed to and completed by professionals working with children diagnosed with ASD. Both English and Spanish versions of the survey were available.

The first portion of the survey provided instructions and the consent form. The following sections of the survey were related to the following: *Demographics, Professional Practice, and Perspectives on Bilingualism and ASD*.

Demographic Information

The demographics section of the survey consisted of five questions. This portion of the survey collected information relating to the following: age, race, sex, and level of education. See Table 1.

Professional Practice Information

The professional practice portion of the survey consisted of 6 questions. This portion of the survey collected information relating to profession, employment setting, language(s) spoken at work, English fluency, Spanish fluency, number of individuals on caseload diagnosed with ASD, and number of individuals on caseload that are bilingual. See Table 2.

Perspectives on Bilingualism and ASD

This portion of the survey consisted of 12 questions and statements. The first eight were statements and the professionals were asked to respond on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Below are the statements presented:

1. A person with ASD benefits from a simplified linguistic input (one language only), which facilitates language learning and use.
2. A monolingual approach is the best fit for a person with ASD from a bilingual household.
3. A bilingual approach is the best fit for a person with ASD from a bilingual household.
4. Bilingualism can cause more delays for a person with ASD.
5. Bilingualism can cause confusion for a child with ASD.
6. A child with ASD from a bilingual household is able to speak both languages.
7. A child with ASD from a bilingual household is able to understand both languages
8. There are enough bilingual service providers and resources.

The subsequent four questions required a multiple choice or fill in the blank response. These questions were as follows:

1. I have recommended a monolingual approach for a person with ASD from a bilingual household (yes, no, never).
2. I have recommended a bilingual approach for a person with ASD from a bilingual household (yes, no, never).
3. What is your professional opinion as to the language parents should speak to their child with ASD from a bilingual household?
4. What influences your opinion when making these decisions?

RESULTS

Professional Perceptions

Descriptive statistics were used to explore the professional perceptions of bilingualism and ASD. Overall, professionals were most likely to agree with perspective 7 (a child with ASD from a bilingual household is able to understand both languages; mean=4.41, SD=0.84) and least likely to agree with perspective 8 (there are enough bilingual service providers and resources; mean=2.11, SD=1.28). Additionally, the scale midpoint was 2.5. Professional responses were near this value for perceptions 1, 2, 4, 5, and 7 indicating that the professionals did not strongly agree or strongly disagree. See Table 3.

Table 3. Professional perceptions ASD and bilingualism

Perspective	Mean (SD) n=27
1) A person with ASD benefits from a simplified linguistic input (one language only), which facilitates language learning and use.	2.93 (1.27)
2) A monolingual approach is the best fit for a person with ASD from a bilingual household.	2.56 (1.63)
3) A bilingual approach is the best fit for a person with ASD from a bilingual household.	4.07 (0.96)
4) Bilingualism can cause more delays for a person with ASD.	2.22 (1.25)
5) Bilingualism can cause confusion for a child with ASD.	2.30 (1.27)
6) A child with ASD from a bilingual household is able to speak both languages.	3.92 (1.11)
7) A child with ASD from a bilingual household is able to understand both languages	4.41 (0.84)
8) There are enough bilingual service providers and resources.	2.11 (1.28)

Variables Related to Perceptions

A series of between-subjects analysis of variance (ANOVA) were utilized to determine which independent variables were related to the perceptions of ASD and bilingualism. The following independent variables were examined for their effect on perception of ASD and bilingualism: 1) demographic information (age, race, sex, and level of education) and 2) variables related to professional practice (profession, employment setting, language(s) spoken at work, English fluency, Spanish fluency, number of children on caseload with ASD, and number of bilingual children on caseload). The eight-perception related to ASD and bilingualism were the dependent variables. See Table 3 for the eight perceptions and associated descriptive statistics.

Demographic Information and Perception

Age and race did not have a significant effect on any of the perspectives.

Gender was found to have a significant effect on perspective 2 (a monolingual approach is the best fit for a person with ASD from a bilingual household; $F(2,24)=4.62, p<.05$), perspective 4 (bilingualism can cause confusion for a child with ASD; $F(2,24)=4.57, p<.05$), and perspective 5 (bilingualism can cause confusion for a child with ASD; $F(2,24)=4.12, p<.05$). Males ($M=2.00, SD=1.00$) were less likely to agree with perspective 2 than females ($M=2.36, SD=1.50$); males ($M=2.00, SD=1.00$) were less likely to agree with perspective 4 than females ($M=2.05, SD=1.05$); and males ($M=2.33, SD=1.53$) were more likely to agree with perspective 5 than females ($M=2.09, SD=1.02$).

Level of education was found to have a significant effect on perspective 5 (Bilingualism can cause confusion for a child with ASD; $F(3,23)=3.36, p<.05$) and perspective 7 (a child with ASD from a bilingual household is able to understand both languages; $F(3,23)=3.14, p<.05$). For perspective 5, professionals with master's level education ($M=1.95, SD=.97$) were least likely to agree with this perspective and professionals with doctoral or professional degrees ($M=4.00, SD=2.00$) were most likely to agree with this perspective. For perspective 7, professionals with a bachelor's level education ($M=3.00, SD=1.41$) were least likely to agree with this perspective and professionals with a master's level education ($M=5.00, SD=1.00$) were most likely to agree with this perspective. See Appendix A.

Professional Information and Perspectives

Profession, employment setting, languages spoken at work, English fluency, Spanish fluency, and ASD caseload did not have a significant effect on any of the perspectives.

Bilingual caseload had a significant effect on perspective 6 (a child with ASD from a bilingual household is able to speak both languages; $F(3,23)=2.97, p<.05$) and perspective 7 (a child with ASD from a bilingual household is able to understand both languages; $F(3,23)=3.74, p<.05$). For perspective 6, professionals with 6-10 bilingual individuals on their caseload were least likely to agree ($M=1.00, SD=0.00$) and professionals with 11-15 bilingual individuals on their caseload were most likely to agree with this perspective ($M=4.25, SD=.50$). For perspective 7, professionals with 6-10 bilingual individuals on their caseload were least likely to agree with this perspective ($M=2.00, SD=0.00$) and professionals with 1-5 bilingual individuals on their caseload were most likely to agree with this perspective ($M=4.57, SD=0.98$).

DISCUSSION

From the offset, the authors would like to acknowledge the pilot study nature of this study. This study had a relatively small sample size and participants primarily identified as white, between the ages of 21-40 years of age, female, speech-language pathologists, and bilingual, speaking both English and Spanish. The findings of this study should be interpreted within these contexts. While this

study does present with limitations, the findings of this study add to the existing literature in a significant way and are intended to be used to guide future research studies and programs targeting bilingualism and ASD.

Research has supported bilingualism and bilingual language intervention for bilingual children with ASD; however, there appears to be discontinuity between research and clinical practice with many professionals continuing recommendation and use of monolingual approaches for this population^{20,30,34-36}. The purpose of this study was to explore professional perceptions regarding bilingualism and ASD to begin to address this discrepancy. An understanding of this information is of particular importance when considering that limiting a bilingual child to only one language can lead to an invisible disconnection from society and the child's family may find it difficult to communicate with him or her. Additionally, deficits in social interaction are one of the diagnostic criteria for individuals with ASD, and bilingual individuals with ASD are just as satisfied, if not more satisfied, with their social life and social quality of life when compared to monolingual peers with ASD²⁸.

Professional Perspectives

Professionals participating in the present study were most likely to agree with the statement "a child with ASD from a bilingual household is able to understand both languages." These findings are consistent with previous findings that bilingual children with ASD have similar language abilities when compared to monolingual children with ASD and add to the literature that professionals agree that bilingual children with ASD can understand both languages.¹⁸⁻²²

Professionals participating in the present study were least likely to agree with the statement "there are enough bilingual service providers and resources." This finding indicates a need in the society for more bilingual service providers. According to the American Speech-Language Hearing Association (ASHA), only 8% of ASHA members identify as bilingual service providers.³⁹ When considering 18.5% of the U.S.'s total population is Hispanic and 54% of Hispanic adults in the U.S. cannot speak English, the need for more bilingual service providers is clear.^{9,10} If we can increase the number of bilingual service providers in the U.S., we can potentially begin to provide more bilingual services to bilingual individuals with ASD.

Five of the eight professional perceptions explored in this survey were near the Likert scale midpoint of 2.5 indicating that the professionals did not strongly agree or strongly disagree with the perception statements presented. These perceptions were: 1) A person with ASD benefits from a simplified linguistic input (one language only), which facilitates language learning and use, 2) A monolingual approach is the best fit for a person with ASD from a bilingual household, 3) Bilingualism can cause more delays for a person with ASD, 4) Bilingualism can cause confusion for a child with ASD, and 5) there are enough bilingual service providers and resources. Due to the small sample size of the present study, these results should be interpreted with caution; however, these findings do support the disconnect between research and clinical practice. While research has supported bilingual intervention for children with ASD, the literature has found that a clear consensus has not been established among working professionals and many professionals report fear that dual-language exposure can contribute to additional challenges^{20,30,34-36}. There is a great need for future studies and programs investigating bilingualism in children with ASD and how to bridge the gap between research and clinical practice.

When asked what language parents should speak to their children with ASD from a bilingual household, most responses fell into the themes of a bilingual approach (44%) or a monolingual approach (30%). Furthermore, when asked about the influences when making recommendation decisions, many professionals provided responses that fell into the following themes: 1) professional experience and 2) the ability to communicate with caregivers/others in the environment/parent language use. These findings indicate that there is a level of knowledge that a bilingual approach should be taken for bilingual individuals with ASD yet monolingual approaches and bilingual approaches are both being recommended to parents and caregivers. Again, these findings support the disconnect between research and clinical practice and more research is needed to explore these findings.

Variables Related to Perspectives

For the demographic variables explored (age, race, sex, and level of education) sex and level of education were found to be related to perspectives regarding bilingualism in ASD. For the professional variables explored (profession, employment setting, language(s) spoken at work, English fluency, Spanish fluency, ASD caseload, and bilingual caseload), bilingual caseload was the only variable found to be related to perspectives regarding bilingualism in ASD. There is a scarcity of studies exploring the relationship between these independent variables and professional perspectives regarding bilingualism and ASD. These findings add to the literature that sex, level of education, and bilingual caseload are significantly related to perspectives regarding bilingualism in ASD. Future studies and programs targeting bilingualism and ASD can use the findings of this study to begin to bridge the gap between research and clinical practice.

Limitations and Implications for Future Research

Major limitations of the present study were the small sample size and the unbalanced and small sample sizes of the groups being compared. Because of this, there was a risk of type one and type two errors in statistical analysis and interpretation. Future research should include reduplication of the study with larger number of participants and more diverse participant sample so results can be more conclusive. Additionally, future research and programs should focus on improving professional knowledge about bilingualism and ASD.

CONCLUSIONS

Overall, the findings of this study support a disconnect between research and clinical practice for the topic of bilingualism in individuals with ASD. This disconnect has been previously established in the literature with research supporting a bilingual approach for individuals with ASD but many professionals continuing to implement a monolingual approach^{20,30,34-36}. Furthermore, demographic, and professional variables were found to be related to perspectives on bilingualism in children with ASD. A better understanding of professional perspectives of bilingualism in ASD provides insight into the discrepancy between research and clinical practice and paves the way for future studies and programs aimed at improving the services for bilingual children with ASD.

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APPENDIX A. Relationship between demographic information and perspectives.

	<u>Age</u>			<u>Race</u>			<u>Sex</u>			<u>Level of Education</u>		
	SS	MS	F	SS	MS	F	SS	MS	F	SS	MS	F
P1	3.97	1.32	.80	4.47	2.23	.26	3.37	1.68	1.05	2.61	.87	.51
Within groups	43.89	1.67		37.38	1.56		38.48	1.60		39.24	1.71	
Total	41.85			41.85			41.85			41.85		
P2	11.51	3.84	1.54	3.67	1.83	.68	19.08	9.54	4.62*	11.33	3.78	1.52
Within groups	57.16	2.49		65.00	2.71		49.59	2.07		57.33	2.49	
Total	68.67			68.67			68.67			68.67		
P3	3.34	1.11	1.25	.90	.45	.47	.40	.20	.20	2.61	.87	.94
Within groups	20.52	.89		22.95	.96		26.45	.98		21.24	.92	
Total	23.85			23.85			23.85			23.85		
P4	6.54	2.18	1.47	2.78	1.39	.88	11.21	5.61	4.57*	8.55	2.85	2.04
Within groups	34.13	1.48		37.88	1.58		29.45	1.23		32.12	1.40	
Total	40.67			40.67			40.67			40.67		
P5	11.32	3.77	2.86	3.60	1.80	1.14	10.65	5.32	4.12*	12.68	4.23	3.36*
Within groups	30.31	1.32		38.03	1.59		30.99	1.29		28.95	1.26	
Total	41.63			41.63			41.63			41.63		
P6	4.50	1.17	.94	1.87	.94	.75	1.21	.61	.47	5.67	1.89	1.65
Within groups	28.58	1.24		30.20	1.26		30.86	1.29		26.41	1.15	
Total	32.07			32.07			32.07			32.07		
P7	.88	.29	.38	.99	.49	.67	.26	.13	.17	5.38	1.79	3.14*
Within groups	17.64	.77		17.53	.73		18.26	.76		13.14	.57	
Total	18.52			18.52			18.52			18.52		
P8	6.79	2.26	1.45	4.38	2.19	1.37	8.00	4.00	2.77	4.19	1.40	.84
Within groups	35.88	1.56		38.28	1.60		34.67	1.44		38.48	1.67	
Total	42.67			42.67			42.67			42.67		

Note. * $p < .05$; ** $p < .01$; $n = 27$. P=perspective.

APPENDIX B. Relationship between professional information and perspectives.

	Profession			Employment Setting			Language(s) Spoken at Work			English Fluency			Spanish Fluency			ASD Caseload			Bilingual Caseload		
	SS	MS	F	SS	MS	F	SS	MS	F	SS	MS	F	SS	MS	F	SS	MS	F	SS	MS	F
P1	1.45	.36	.20	8.27	1.65	1.03	4.30	2.15	1.38	4.47	4.47	2.99	1.41	.70	.42	5.08	1.70	10.6	2.91	.97	.57
Within groups	40.41	1.84		33.58	1.60		37.55	1.57		.39	1.50		40.44	1.69		36.77	1.60		38.94	1.69	
Total	41.85			41.85			41.85			41.85			41.85			41.85			41.85		
P2	21.04	5.26	2.43	7.08	1.42	.48	1.12	.59	.20	6.21	6.21	2.48	4.22	2.11	.79	4.44	1.48	.53	14.02	4.67	1.97
Within groups	47.63	2.17		61.58	2.93		67.55	2.82		62.46	2.50		64.44	2.69		64.22	2.79		54.65	2.38	
Total	68.67			68.67			68.67			68.67			68.67			68.67			68.67		
P3	2.60	.65	.67	5.60	1.12	1.29	.55	.28	.28	1.20	1.20	1.32	1.91	.95	1.04	.78	.26	.26	3.40	1.14	1.28
Within groups	21.25	.97		18.25	.87		23.30	.97		22.65	.91		21.94	.91		23.07	1.00		20.45	.89	
Total	23.85			23.85			23.85			23.85			23.85			23.85			23.85		
P4	15.81	3.95	3.50*	3.78	.76	.43	3.20	1.60	1.03	.63	.63	.39	3.72	1.86	1.21	4.61	1.54	.98	8.31	2.77	1.97
Within groups	24.86	1.13		36.89	1.76		37.47	1.56		40.04	1.60		36.94	1.54		36.06	1.57		32.36	1.41	
Total	40.67			40.67			40.67			40.67			40.67			40.67			40.67		
P5	13.32	3.33	2.59	2.05	.41	.22	.83	.42	.24	.51	.51	.31	4.02	2.01	1.28	3.85	1.28	.78	6.27	2.09	1.36
Within groups	28.31	1.29		39.58	1.89		40.80	1.70		41.12	1.65		37.61	1.56		37.78	1.64		35.36	1.54	
Total	41.63			41.63			41.63			41.63			41.63			41.63			41.63		
P6	1.27	.32	.23	1.85	.37	.26	2.66	1.33	1.08	.69	.69	.55	.30	.15	.11	6.52	2.17	1.96	8.96	2.99	2.97*
Within groups	30.81	1.40		30.22	1.44		29.42	1.23		31.39	1.26		31.78	1.32		25.56	1.11		21.11	1.01	
Total	32.07			32.07			32.07			32.07			32.07			32.07			32.07		
P7	.71	.18	.22	5.38	1.08	1.72	.30	.15	.20	2.06	2.06	3.12	.24	.12	.16	1.14	.38	.50	6.07	2.02	3.74*
Within groups	17.81	.81		13.14	.63		18.22	.76		16.46	.66		18.28	.76		17.38	.76		12.45	.54	
Total	18.52			18.52			18.52			18.52			18.52			18.52			18.52		
P8	9.36	2.34	1.55	4.86	.97	.54	2.67	1.33	.80	.82	.82	.49	3.56	1.78	1.09	2.61	.87	.50	5.95	1.98	1.24
Within groups	33.31	1.51		37.81	1.80		40.00	1.67		41.85	1.67		39.11	1.63		40.06	1.74		36.71	1.60	
Total	42.67			42.67			42.67			42.67			42.67			42.67			42.67		

Note. *p<.05; **p<.01; n=27. P=perspective.