Stakeholders' Perceptions of Available Services in a Rural Community to Effectively Educate Individuals With Autism Spectrum Disorder

Candice Walker
Brigham Young University

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Stakeholders’ Perceptions of Available Services in a Rural Community to Effectively Educate Individuals With Autism Spectrum Disorder

Candice Walker

A thesis submitted to the faculty of Brigham Young University in partial fulfillment of the requirements for the degree of Educational Specialist

Terisa P. Gabrielsen, Chair
Ryan O. Kellems
Mikle D. South

Department of Counseling Psychology and Special Education Brigham Young University

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ABSTRACT

Stakeholders’ Perceptions of Available Services in a Rural Community to Effectively Educate Individuals With Autism Spectrum Disorder

Candice Walker
Department of Counseling Psychology and Special Education, BYU
Educational Specialist

Prevalence of autism spectrum disorder (ASD) has increased 150% over the last 20 years, affecting all communities, with future projections of further rise. This is a particular concern for the public education system, where laws mandate that schools provide meaningful education to all students. Resources must be in place to provide the level of support children with ASD require for a successful educational experience. These resources are often expensive and require specialized training to secure. Rural schools face unique barriers meeting the standards set forth through federal law. To determine the most productive use of available resources as well as to identify critical needs, a study was conducted in a rural community to assess stakeholder perceptions of students with ASD.

We provided an online needs assessment questionnaire to stakeholders involved with children who have ASD in a rural school district. These stakeholders included parents, caregivers, educators, and community care providers of children with ASD. Also included were individuals 12 years and older with an ASD educational classification. In addition to the online assessment, we invited participants who wished to elaborate further on their responses for an in-person interview.

We used mixed methods for analysis of the data. To determine response patterns among groups, descriptive statistics were used. Further analysis included consensual qualitative research methods to analyze open-ended questions in the survey and the in-person interviews.

Results show that stakeholders perceive needs for better training, resources, and peer relationships as a focus for improvement within the rural community. The results will have greatest implications for the school district as it allocates resources to better meet the needs of students with ASD within the community. Key points of feedback to the local school district will focus on training and support resources, primarily for educators, but also for families. Accessible (e.g., free, online) training options will be the first recommendation for immediate implementation.

Keywords: autism, rural, education, evidence-based practice
ACKNOWLEDGMENTS

Thanks to the XXXX school district and community for their willingness to explore this important research topic and to the many administrators, teachers, and staff of the school district who supported the crazy schedule of this graduate student. I am grateful to an important gatekeeper to my path, Chalyece. Thanks to her support, data collection during the COVID 19 pandemic was possible. She is my role model of steadily trudging through the hard, both professionally and personally. Her constancy and vision have given me wings.

I also wish to express appreciation for the many who have aided this journey through their time, expertise, and guidance. To Mikle South, Ryan Kellems, and the many fine faculty and staff at the Counseling Psychology and Special Education Department at Brigham Young University—I sincerely say, thank you. An important piece of gratitude I express to Terisa Gabrielsen. Her vision consistently expanded my mind, challenged my capacities, and cheered me through it all. Though her “easy” and “fun” is not how I would define the challenges, she has been a trusted source of how to do things right while keeping important things first.

Most importantly, I express deep appreciation to my husband, Matt. His unwavering support has made my chosen career path possible. Though it’s “nothing about deserve” he reminds me that it is about “the fruit of one’s labors.” His support has not only assured the path of my labors but also the fruit from the struggle. In addition, my children, Josh, Abby, and Jamie have been ever-patient cheerleaders, always reminding me that, “you got this, Mom.” And though I embarked on this journey with a late start, these children remind me of the eternal principle that finishing strong is the goal.
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DESCRIPTION OF THESIS STRUCTURE AND CONTENT

This thesis, *Stakeholders’ Perceptions of Available Services in a Rural Community to Effectively Educate Individuals With Autism Spectrum Disorder* is written in a hybrid format. This format combines the traditional thesis requirement with journal publication formats.

The preliminary pages of the thesis reflect requirements for submission to the university. The thesis report is presented in journal article format and conforms to length and style requirements for submitting research reports to psychology and education journals. Additionally, the report will be shared with the local school district and community.

The extended literature review is included in Appendix A. This thesis document contains two reference lists. The first reference list contains references included in the journal-ready article. The second list includes all citations in the Appendix entitled “Review of the Literature.”

Other Appendices include the following: Appendix B, The XXXX County Autism Needs Assessment; Appendix C, The Student Version of the XXXX County Autism Needs Assessment; Appendix D, Instruments; Appendix E, Interview Script; Appendix F, Flyer; Appendix G, Training Options for Autism in Children and Adolescence; and Appendix H, Executive Summary.
Introduction

Autism spectrum disorder (ASD) is a disability that affects communication and social interaction. Additional markers include repetitive movements and aversion to changes in environment and routines. Over the last 20 years, the prevalence of children with ASD has increased 150%. The Centers for Disease Control and Prevention (CDC) considers this an urgent public health concern and recommends enhanced strategies in early identification and early intervention, particularly for children of color (Maenner et al., 2020).

Caregivers of children with ASD face significant challenges in accessing resources and disruption of family life. Due to the meltdowns commonly displayed by many children with ASD, families may need to avoid activities that typically bond them together such as vacations, outings, and reunions, and thus experience feelings of isolation, heightened stress, depression, and marital problems (DeGrace, 2004; White et al., 2012). Access to essential activities such as education is also problematic. Federal law ensures all children with disabilities a free, appropriate public education with specially designed instruction and related services to meet their unique needs (Individuals with Disabilities Education Act [IDEA], 2004). Even with federal mandates, however, schools may not be equipped to provide the resources to the extent that children with ASD may require, which is an additional source of stress to parents (White et al., 2012). While there are evidence-based treatments available to support children with ASD, if the treatments are unknown or not implemented with fidelity, outcomes are uncertain. Knowledge and correct practice of evidence-based treatments are identified by parents, students, and education professionals as key components in producing positive outcomes for children with ASD (Roberts & Simpson, 2016). Schools serve a primary role for disability services, particularly in rural communities (Merrell et al., 2012). Further conflicts arise, however, with
acquiring services in the schools because teachers in rural school districts report sparse resources and limited access to professional development and behavior management (Mello et al., 2016; Thomas et al., 2007). Whereas children with ASD usually require multiple services and interventions, rural school districts often struggle to meet those needs, even though they are mandated to do so. Due to differences in social skills in many students with ASD, social communication supports and behavior services are among the most sought after but least accessible interventions (Mello et al., 2016; Murphy & Ruble, 2012). Other barriers to provision of appropriate services may include cost of private evaluations and delayed diagnosis (Elder et al., 2016). These challenges are magnified for families living in rural areas resulting in inadequate care (Elder et al., 2016; Mello et al., 2016).

Additional concerns in rural areas include the availability of early intervention which is proven to have positive outcomes (Barrow, 2017). Evidence-based early intervention practices can alter the course of brain activity and development in young children, influencing long-term positive behavior development (Dawson et al., 2012).

Early intervention is dependent on early identification. The CDC’s *Learn the Signs Act* Early campaign focuses efforts on early identification and early intervention (CDC, 2020). In addition, the CDC recommends the implementation of evidence-based standardized tools as early as nine months to track milestones for early detection (CDC, 2020). While the CDC has thorough recommendations for how to secure early classification and early intervention, many families living in rural communities lack the resources to acquire a medical diagnosis that may be required to access some specialized services. Thus, rural communities often rely on the school system for autism identification (educational classification) and services. Early intervention services should be available prior to age three from agencies (including school systems in some
areas), with the school district special education services taking over at age three (IDEA, 2004). It is possible, however, that some children with ASD might not be identified until they encounter the school system at age five, meaning they may have lost years of crucial early intervention (Merrell et al., 2012).

Limited funding is a primary barrier to universal access to specialized treatment for the child with ASD. Though IDEA (2004) includes provisions of up to 40% of federal per pupil funding, such funding has never exceeded 18%. Further, it has not been higher than 16% since 2010, despite a growing special education population (National Council on Disability, 2018). Yet, under provisions of IDEA law, districts are still required to provide services. Consequences of inadequate funding are manifested through inadequate resources and undertrained faculty and staff (Roberts & Simpson, 2016). For rural communities, with limited resources and staff, these deficiencies are exacerbated (Mello et al. et al., 2016).

Additional barriers to treatment of children with ASD include delayed diagnosis due to lack of knowledge among the medical community and caregivers of children with ASD (Elder et. al., 2016). Parents report their concerns to pediatricians but may or may not receive information concerning diagnosis and available services (Elder et al., 2016). In addition, parents feel there is a lack of training among physicians about treatments for children with ASD (Murphy & Ruble, 2012). Oftentimes, public schools carry the burden of providing services (Merrell et al., 2012), yet rural teachers feel a lack of professional development and resources concerning ASD (Thomas et al., 2007). In addition to medical personnel and educational professionals, caregivers also need training on how to manage the behavioral and social-emotional challenges that come with raising a child with ASD. Without proper training, families may react to these challenges in
an uninformed way, potentially exacerbating problem behaviors, resulting in further delay or substantially reduced positive outcomes (Merrell et al., 2012; White et al., 2012).

In conclusion, ASD is a disability that afflicts a growing population of children. Its effects are substantial among families, schools, and other stakeholders of the children with ASD. While federal law protects the rights of these individuals and ensures appropriate education for them, persistent under-funding influences the quality of resources available. These concerns are heightened among rural communities with the additional barrier of geographic isolation. With abundant studies demonstrating that ASD outcomes can be improved with treatment, it would be prudent for stakeholders of children with ASD to focus their efforts and available resources on evidence-based practices (Barrow, 2017; Hurth et al., 1999; Lei & Ventola, 2017; Merrell et al., 2012; Thomas et al., 2007; White et al., 2012). To inform efforts for improvement of services, this study is intended to ascertain existing resources for children with ASD in a specific rural school district and ask about the perceptions of stakeholders regarding availability of those resources, as well as their effectiveness.

Statement of the Problem

Under IDEA, public schools must serve the educational needs of students with disabilities. This federal law mandates all public schools to provide specialized services that ensure a free appropriate public education (FAPE) in the least restrictive environment (LRE) to all students with a disability (IDEA, 2004). In rural school districts, shortages and constraints exist in specialized services required for students with ASD. Given federal mandates, a way must be provided for stakeholders of children with ASD in all public schools to access the required services despite existing barriers.
Statement of Purpose

The purpose of this study is to conduct a needs assessment in a rural school district to gather data regarding perceptions of interventions among school-aged individuals with ASD within the district. We analyzed perceptions of stakeholders related to individuals with ASD to determine the services received, the perceived importance of services, and effectiveness of services received within the schools.

Research Questions

This study addressed the following research questions:

1. What do educators of students with autism spectrum disorder perceive to be important and effective in terms of educational services and supports for the students?

2. What do families of students with autism spectrum disorder perceive to be important and effective in terms of educational services and supports for the students?

3. What do students with autism spectrum disorder perceive to be important and effective in terms of educational services and supports for the student?

Method

This study is one of three coordinated studies conducted in different rural areas in Utah. The research was approved by the Institutional Review Board (IRB) at Brigham Young University. Participants were invited to participate by responding to a needs assessment questionnaire with an opt-in interview. Also, participants were informed that they were able to end their participation in the research at any time, without consequence. Procedures and settings for research will be described in more detail in this section.
Participants

Of the two school districts existing in the rural county of interest for this study, participants were selected according to their current or past residency of the smaller and more rural of the two, as well as their interest in or experience with ASD. As of September 14, 2018, the population estimate of the county was 11,749 residents (Statistical Atlas, n.d.). According to the CDC, the prevalence of Autism is one in 54 people (Maenner et al., 2020), suggesting at least the possibility of approximately 217 individuals with ASD (of all ages) living within the county.

The number of students enrolled in the rural school district with an educational classification of autism during the 2019-2020 school year was 44.

The local school district special education personnel believe there are likely far more students with ASD in the district’s geographical area (C. Shelley, personal communication, October 2019). This may be because families have not reported a medical diagnosis, may not have a diagnosis, or have not sought special education services for their student through an autism educational classification. Additionally, some students may have autism characteristics and symptoms but have other disabilities that qualify them for a different educational classification. For example, a student with autism spectrum disorder may have considerable strengths and weaknesses within their academic profile, qualifying them for a specific learning disability classification to access services for that particular need. Another consideration is the resistance of parents, particularly parents of preschool-aged children, to have their child served in special education under the classification of autism. In such cases, a parent may elect to have an educational classification of developmental delay, which may be applied to qualifying students through age seven (these would not be included in the district’s report of students with
an autism classification). Finally, there is a faith-based cultural group within the county in which children often do not typically attend public schools.

Male and female participants aged 12 years and older were included (the young age was to include students with ASD as stakeholders). Participants included males, females, individuals with ASD, parents/caregivers, and educators. All respondents were residents within the designated school district boundaries or have resided within the school district boundaries in the past five years.

Participants were invited through a variety of methods, including the following: flyers posted throughout the county, social media advertisements (i.e., local community Facebook groups), the rural school district webpage, and a flyer mailed by post with an email sent on two occasions to the homes of the rural school district families enrolled in special education services under an educational classification of autism. It is challenging to estimate the exact number of individuals who may have been exposed to invitations to participate during the advertisement of the needs assessment, due to the variety of methods involved. However, we are aware that the homes of 44 students with ASD were sent invitations to participate by email and/or mailers.

**Settings**

**Online Survey**

Participants were invited to complete an anonymous online survey. The link to the questionnaire was provided on all electronic announcements. Paper flyers mailed out or posted in the community included a link to the school district website and additional information to complete the online questionnaire.
In-Person Interview

At the conclusion of the online questionnaire, participants were also invited to participate in an optional in-person, teleconference or telephone interview, if they wished to provide more information. Contact information was given in a separate questionnaire to maintain confidentiality of survey responses.

Measures

A unique needs assessment was developed, including nine questions regarding demographic information about the respondent. The remainder of the online survey included questions regarding the educational needs of students with ASD. Question response types included the following: multiple choice answers, rankings, and open-ended responses about services available in the district, and perceptions of importance and effectiveness of services on a Likert-type scale. The questionnaire was evaluated by a Microsoft Word Flesch-Kincaid Reading Ease algorithm to determine ease of reading for participants, ensuring that participants with at least a fifth-grade reading level or above would be able to access the questionnaire and respond effectively.

During the development of the needs assessment questionnaire, 15 individuals previewed the needs assessment and made suggestions regarding the wording and the questions included. Needs assessment previewers included the following: three parents and/or caregivers of students with ASD, two classroom special education educators, one general education teacher, one school principal, one school social worker, two special education directors of rural school districts, three of the principal researchers on the coordinated studies, and two thesis committee members. Suggestions for improvement were taken into consideration and the questionnaire was revised in an effort to make it more user friendly and informative.
At the conclusion of the needs assessment questionnaire, respondents were redirected to a separate Qualtrics webpage detailing an opportunity to discuss responses in person with the researchers if they wished, thus protecting the confidentiality of their responses. There was no obligation to meet further, but if participants opted in, they were invited to leave their name and phone number for follow-up discussions about their responses. If they chose to complete the follow-up interview with researchers, signatures on an additional informed consent document were obtained. These participants were given the opportunity to discuss their answers to the needs assessment questions in more detail, as well as respond to additional questions and volunteer information that may have not been asked on the questionnaire. The responses were recorded by the researchers by means of video recordings. Interviews took place in the participant’s home or workplace via teleconference, with interviewers who were not employed by the rural district. Transcripts were created of each interview for analysis. Analysis was conducted by trained researchers not employed by the rural district and audited by one of the committee members.

**Procedure**

A web-based needs assessment survey was utilized as the main data collection method, beginning with an invitation to complete the form and the purpose of the study. Following a consent disclosure statement in the questionnaire, implied consent was assumed by completion of the anonymous online assessment. The online format of the needs assessment questionnaire protected the anonymity of the respondents, as no identifying information was asked. To the best of our knowledge there is no way to identify respondents by their answers if they chose to remain anonymous.
Under the direction of the rural school district special education director, flyers with invitations for participation were mailed to the homes of families with students with the educational classification of autism. Flyers were also posted in local businesses, schools, and other high traffic areas within the county. Information was also posted on social media (i.e., local community Facebook groups) and emailed to educators and families under the direction of the special education director. The rural school district website also provided a link to the needs assessment. The web address to access the needs assessment questionnaire was posted on the flyers, as well as an electronic link on electronic versions of the flyers.

For participants who may not have had access to the Internet or those who preferred a hard copy of the questionnaire, a phone number (the first author’s work phone) was provided on all flyers posted in the community. Paper needs assessment questionnaires could be mailed to those who contacted the researcher (by phone) with their mailing addresses. None of the participants used the mail option for their needs assessment responses, however.

**Administration One - Questionnaire**

Participants were directed to the online Qualtrics survey. Results were anonymous, thereby protecting the confidentiality of the respondents. Data were collected on the Qualtrics website for download and analysis.

**Administration Two - Interview**

Participants choosing to participate in a follow-up interview were able to choose to meet with a researcher by phone or by Zoom teleconferencing. Participants were given a consent document to read and sign prior to the interview. Upon their consent to participate, they were given the opportunity to give more details about their perceptions of education for students with ASD in the designated rural district in Utah. This interview was guided by a selection of
interview questions related to the original questionnaire. It was also an opportunity for
participants to explain their responses in more depth if they wished with someone who was not
an employee of the school district but rather another BYU graduate researcher.

Research Design

The research design for this study used mixed methods to include both qualitative and
quantitative data. The main data collection (the questionnaire) included some open-ended
responses as well as multiple choice questions, Likert-type scales and rankings. The interview
included open-ended responses only. Independent variables included the various stakeholders in
the study (e.g., parents/caregivers, educators, and individuals with ASD). The stakeholders’
perceptions of educational interventions and effectiveness served as the dependent variables of
interest in this study.

Data Analysis

Stakeholder groups were evaluated using quantitative analysis, with descriptive statistical
methods to characterize responses between the respondent groups. Similar analysis was also
conducted on the group as a whole. Because the groups were very uneven in size, attempts at
inferential statistical analysis of differences between groups were deemed to be not meaningful.

Open-ended questions and responses recorded in the interviews were coded and analyzed
by trained undergraduate and graduate research assistants. These responses were analyzed using
consensual qualitative research methods (CQR: C. E. Hill et al., 1997). Four independent
researchers reviewed all qualitative data (i.e., open-ended responses and interviews). All
researchers had prior experience with autism. None had ever been employed by the school
district, nor did they have any contact with the school district. Analysis of open-ended questions
included determining prevailing themes across responses and reporting direct quotes that
represent the significance of statements. Domains were easily established by the wording of the open-ended questions. Core ideas were generated by consensus of all researchers. Cross-analysis was then performed and audited by an expert with extensive autism clinical experience. The auditor had been employed by a school district for one year in the past, but not the school district of interest. The first author was not directly involved in analysis of the qualitative data, as she is an employee of the school district and may not be as free of bias as unrelated researchers may be.

Results

There were 103 participants who began the needs assessment. Of those 103 participants, 93 (90%) completed at least 70% of the questionnaire, providing enough to gain useful data from their responses. The stakeholders completing the questionnaire included one individual with ASD (1% of total respondents), 79 educators (85%), and 13 parent/caregivers (14%). Four health care professionals began the questionnaire, but none completed enough to provide usable data. The individual with ASD did not respond beyond affirming familiarity with all of the interventions the study referenced. Therefore, analysis focused on perceptions of both educator and parent/caregiver respondents. The majority of participants were Caucasian (99%) and female (74%). Many participants had a bachelor’s (34%) or a graduate degree (26%), see Table 1.

Educator Participants by Role

Educator responses were first analyzed by roles (Figure 1). General education teachers made up the highest percentage of educator participants (43%) followed by educators in support roles (34%).
Table 1

Demographic Characteristics of Respondents

<table>
<thead>
<tr>
<th></th>
<th>Individual with ASD</th>
<th>Parent/ Caregiver</th>
<th>Educator</th>
<th>Total</th>
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<tbody>
<tr>
<td></td>
<td>$n=1$</td>
<td>$n=13$</td>
<td>$n=79$</td>
<td>$n=93$</td>
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<tr>
<td>Gender, $n$ ($%$ of subgroup)</td>
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<tr>
<td>Male</td>
<td>1(100)</td>
<td>4(31)</td>
<td>12(15)</td>
<td>17(18)</td>
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<tr>
<td>Female</td>
<td>9(69)</td>
<td>60(76)</td>
<td>69(74)</td>
<td></td>
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<tr>
<td>Race, $n$ ($%$ of subgroup)</td>
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<tr>
<td>Caucasian</td>
<td>1(100)</td>
<td>13(100)</td>
<td>72(91)</td>
<td>86(92)</td>
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<tr>
<td>American Indian</td>
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<td>1(1)</td>
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<td>1(1)</td>
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<td>Insurance, $n$ ($%$ of subgroup)</td>
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<tr>
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<td>8(62)</td>
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<td>Medicaid/CHIP</td>
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<td>4(31)</td>
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<td>4(31)</td>
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<tr>
<td>No Insurance</td>
<td>--</td>
<td>1(8)</td>
<td>--</td>
<td>1(8)</td>
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<tr>
<td>Education Level, $n$ ($%$ of subgroup)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>High School Graduate</td>
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<td>1(8)</td>
<td>2(3)</td>
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<td>Some College</td>
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<td>3(23)</td>
<td>6(8)</td>
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<tr>
<td>Associates</td>
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<td>1(8)</td>
<td>23(29)</td>
<td>24(26)</td>
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<tr>
<td>Years involved with ASD, $n$ ($%$ of subgroup)</td>
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<tr>
<td>Less than 5 years</td>
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<td>6-10 years</td>
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<td>3(23)</td>
<td>19(24)</td>
<td>22(24)</td>
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<tr>
<td>21+ years</td>
<td>--</td>
<td>1(8)</td>
<td>14(18)</td>
<td>15(16)</td>
</tr>
</tbody>
</table>

Note. Percentages in columns are based on respondent subgroup by column. Dash (--) = not Reported.

Parents and Educators Compared

Perceptions of Priority for Services Across Age Groups

According to each stakeholder groups’ perception of educational interventions at each age level, parents and educators ranked Early Intervention as the number one priority on a
Likert-type scale with 6 = most important priority to 1= least important (see Figure 2) for educational services and interventions for children with ASD.

Priorities were further analyzed between common areas of priority according to the roles of each educator respondent (e.g., general educator, special educator, administrator, support). The majority of educators consistently ranked Early Intervention/Preschool and High School/Transition as top priorities, with administrators ranking High School/Transition needs highest (see Figure 3).

**Figure 1**

*Educator Participants Broken Into Roles Indicating Percentage of Educator Respondents*

Note. Support=paraprofessionals, librarians, lunchroom workers, secretaries, bus drivers, etc.
Figure 2

Priority for ASD Services as Perceived by Educators and Parents/Caregivers

Figure 3

Level of Priority for ASD Top-Rated Resources – Educator Perceptions by Role
**Perceptions of Effectiveness of Interventions, Parents vs. Educators**

Perceived effectiveness of ASD-specific interventions was also compared, with educators generally rating each intervention as effective, whereas the parent/caregiver group generally rated interventions as less effective (see Figure 4). Interventions offered within the school district included the following: discrete trial training; applied behavior analysis; speech/language therapy; assistive communication devices; sensory intervention services; social skills training; video modeling, and wellness center (a calming down area with supervisory staff).

**Figure 4**

*Perceived Effectiveness of ASD Interventions*

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Parent/Caretaker</th>
<th>Educator</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTT</td>
<td>P n=0, E n=17</td>
<td></td>
</tr>
<tr>
<td>ABA</td>
<td>P n=2, E n=49</td>
<td></td>
</tr>
<tr>
<td>SLT</td>
<td>P n=7, E n=44</td>
<td></td>
</tr>
<tr>
<td>ACD</td>
<td>P n=1, E n=16</td>
<td></td>
</tr>
<tr>
<td>Sensory</td>
<td>P n=1, E n=16</td>
<td></td>
</tr>
<tr>
<td>Social Skills</td>
<td>P n=7, E n=54</td>
<td></td>
</tr>
<tr>
<td>V. Modeling</td>
<td>P n=1, E n=20</td>
<td></td>
</tr>
<tr>
<td>Wellness Ctr</td>
<td>P n=3, E n=41</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* P=Parent/caregiver, E=Educator, DTT=Discrete trial training; ABA=Applied behavior analysis; SLT=Speech/language therapy; ACD=Assistive communication device; Sensory=Sensory Intervention Services; Social Skills = Social Skills Training; V Modeling = Video Modeling, Wellness Ctr = Wellness Center.
Educator participation on this question fluctuated between 16 and 54 respondents, parent/caregiver participation ranged from 0 to 7 participants. These fluctuations are likely because participants were not asked to answer questions about effectiveness unless they indicated they had awareness or experience with that particular intervention in the schools. Given this restriction, none of the parents (n=2) who experienced or were aware of ABA rated it as effective, but 71% (n=49) of educators responding rated applied behavior analysis (ABA) as somewhat or very effective.

**Perceptions About Parent Communication**

Educators were asked to rate how well informed they feel parents are regarding the services provided for students with ASD. On a scale of 5 =Very well informed to 1 = No information. A majority of educators felt that parents were very well informed and 42% felt that they were well informed. Overall, in terms of how well-informed parents of students with ASD seem to be, the educators had a mean score of 3.44 (SD 0.94; see Table 2). When asked how well-informed parents feel regarding the services for their students with ASD, most parents feel that they are not well informed. On a scale of 5=Very well informed to 1=No information, parents mean score was 2.92 with a standard deviation of 1.32.

**Table 2**

*How Well Informed Parents Feel Regarding Autism Services Provided, n(%)*

<table>
<thead>
<tr>
<th></th>
<th>Educator Perception</th>
<th>Parent/Caregiver Perception</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=59</td>
<td>n=12</td>
</tr>
<tr>
<td>5- Very well informed</td>
<td>6 (10)</td>
<td>3 (25)</td>
</tr>
<tr>
<td>4- Well informed</td>
<td>25 (42)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>3- Neutral</td>
<td>19 (32)</td>
<td>3 (25)</td>
</tr>
<tr>
<td>2- Not well informed</td>
<td>7 (12)</td>
<td>5 (42)</td>
</tr>
<tr>
<td>1- No information</td>
<td>2 (3)</td>
<td>1 (8)</td>
</tr>
<tr>
<td><em>M (SD)</em></td>
<td>3.44 (.94)</td>
<td>2.92 (1.32)</td>
</tr>
</tbody>
</table>
Educators’ Perceptions in Detail

**Educators’ Perceptions of Educational Needs by Age**

Educators’ perceptions of the importance and effectiveness of autism educational services at varying ages resulted in highest priority to early intervention, followed by elementary then preschool. See Figures 5 and 6.

**Figure 5**

Educators’ Perceptions of Importance of Educational Interventions, n=53

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**Educators’ Perceptions of Educational Needs by Intervention Type**

All educators had some knowledge of each of the interventions, but they were most familiar with social skills training (73%), ABA (61%), and speech language therapy (61%; see Figure 7). Educators rated perceptions of discrete trial training (DTT), ABA, speech language therapy (speech, or SLT), assistive communication devices (ACD), sensory intervention services,
social skills training, video modeling, and wellness center attendance. Ratings were on Likert-type scale where 1 = not at all effective and 5 = very effective.

**Figure 6**

*Educators’ Perceived Effectiveness of Interventions by Grade Range, n=69*

Speech services were perceived as most effective with a mean score of 4.55 ($SD=.72$), (with 5 being most effective), followed closely by DTT ($m=4.29$), sensory training ($m=4.19$), and wellness center attendance ($m=4.17$), see Figure 8. ACD was ranked least effective ($m=3.63$). Data on educators’ perceptions of effectiveness were taken only from those indicating familiarity with the individual interventions. Though DTT was ranked higher in terms of effectiveness ($m=4.29$), only 24% of respondents indicated familiarity with the intervention. This would indicate that most of those with experience in the intervention found it to be effective. This was also true for the sensory training where only 23% indicated familiarity with the intervention but gave it high ratings ($m=4.19$). While general education teachers may implement some interventions, often it is the special education teachers (18%) who are most familiar with
ASD interventions and their effectiveness. In this study, special education teachers had more experience with most of the ASD interventions (Figure 9). Administrators, though a small percentage (5%), had the most experience with social skills and wellness center attendance. Less than 20% of general education teachers had experience with discrete trial training (DTT, aka discrete trial teaching), assistive communication devices (ACD), sensory integration therapies (Sensory), and video modeling.

**Figure 7**

*Educators’ With Experience in ASD Interventions, 74 Respondents*

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Yes</th>
<th>No</th>
<th>Yes, but not in NSSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTT</td>
<td>70%</td>
<td>30%</td>
<td>0%</td>
</tr>
<tr>
<td>ABA</td>
<td>60%</td>
<td>40%</td>
<td>0%</td>
</tr>
<tr>
<td>SLT</td>
<td>55%</td>
<td>45%</td>
<td>0%</td>
</tr>
<tr>
<td>ACD</td>
<td>50%</td>
<td>50%</td>
<td>0%</td>
</tr>
<tr>
<td>Sensory</td>
<td>45%</td>
<td>55%</td>
<td>0%</td>
</tr>
<tr>
<td>Social skills</td>
<td>40%</td>
<td>60%</td>
<td>0%</td>
</tr>
<tr>
<td>V. Modeling</td>
<td>35%</td>
<td>65%</td>
<td>0%</td>
</tr>
<tr>
<td>Wellness Cntr</td>
<td>30%</td>
<td>70%</td>
<td>0%</td>
</tr>
</tbody>
</table>

*Note. DTT=Discrete Trial training; ABA=Applied Behavior Analysis; SLT=Speech/Language Therapy; ACD=Assistive Communication Device; Sensory=Sensory Intervention Services; Social Skills = Social Skills Training; V. Modeling = Video Modeling, Wellness Cntr = Wellness Center.*

**Educator Perceptions of Roadblocks to Communication With Families**

Educators provided possible reasons for roadblocks to communication with families, including limited resources and remote location, busy schedules, lack of parent involvement and awareness in the process, and lack of school involvement in an open-ended question.
Figure 8

Perceived Effectiveness of ASD Interventions as Rated by Educators

Note. DTT=Discrete Trial training; ABA=Applied Behavior Analysis; SLT=Speech/Language Therapy; ACD=Assistive Communication Device; Sensory=Sensory Intervention Services; Social Skills = Social Skills Training; V Modeling = Video Modeling, Wellness Ctr = Wellness Center.
Figure 9

**Educator Experience With Interventions Defined by Roles**

<table>
<thead>
<tr>
<th>Roles</th>
<th>DDT</th>
<th>ABA</th>
<th>SLT</th>
<th>ACD</th>
<th>Sensory</th>
<th>Social Skills</th>
<th>V. Modeling</th>
<th>Wellness Ctr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher - SPED, n=15</td>
<td>20%</td>
<td>30%</td>
<td>40%</td>
<td>50%</td>
<td>60%</td>
<td>70%</td>
<td>80%</td>
<td>90%</td>
</tr>
<tr>
<td>Teacher - Gen. Ed., n=35</td>
<td>10%</td>
<td>20%</td>
<td>30%</td>
<td>40%</td>
<td>50%</td>
<td>60%</td>
<td>70%</td>
<td>80%</td>
</tr>
<tr>
<td>Admin., n=4</td>
<td>5%</td>
<td>10%</td>
<td>15%</td>
<td>20%</td>
<td>25%</td>
<td>30%</td>
<td>35%</td>
<td>40%</td>
</tr>
<tr>
<td>Support, n=28</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Note. DTT=Discrete Trial training; ABA=Applied Behavior Analysis; SLT=Speech/Language Therapy; ACD=Assistive Communication Device; Sensory=Sensory Intervention Services; Social Skills = Social Skills Training; V Modeling = Video Modeling, Wellness Ctr = Wellness Center.

**Remote Locations.** Due to the geographic isolation of rural schools, some residents may not benefit from Internet and phone access. Some participants identified the lack of Internet and remote locations as a concern for communication gaps. One educator summed it up this way, “In my school, texting and calling parents is a daily practice. If the parent lives in a remote location without phone service, that would prevent good communication.” Rural living can also be associated with lower socioeconomic status (SES). All schools in this district qualify as Title I schools, which means the location is marked by the state as economically and educationally disadvantaged (Utah State Board of Education [USBE], 2019). One educator said it this way, “I think low economic status is definitely a barrier. We rely heavily on Internet services and there are many who may not have Internet in their homes.”
**Busy Schedules.** Another participant attributed the lack of communication to both remote location and busy schedules: “Parents are busy, we are a rural area…services are provided at school and sometimes it’s hard to get to school.” While busy schedules may be a common theme for any district, rural communities have the added burden of longer commutes to employment and services. It is common for parents’ work locations to require an hour or more commute time. When this is the case, it may not be an option for parents to meet teachers during, before, or after school. A common theme included, “parent schedules made meeting difficult.” One participant explained, “Many students with autism require intensive help and that takes a lot of time to work through and plan for. Parents and teachers are often unable to meet as often as needed for continual planning and implementation.”

**Educator Time Constraints.** In addition to parent schedules listed as a cause for communication roadblocks, some comments targeted time constraints for educators as well: “IEPs are too rushed,” and “specialists and other trainers too busy.” One educator lamented concerns,

Sometimes it is time and the sheer number of students to help. I know that in our school, the case load for one special ed coordinator/teacher is almost impossible. As the largest elementary school [in the district], our case load is also large and the time it takes to connect with parents, instruct students, and create IEPs for our students is almost an impossible task. (Participant 40)

**Lack of Parent Involvement.** Another common theme among educators was lack of parent involvement, “[Parents are] overwhelmed and not sure who to contact. If they have received items in the mail from the district, maybe they don’t read them fully or understand what is being offered.” One teacher responded with, “If there is not good communication, then it is
probably parent involvement. Getting the parent to respond and message or call back is difficult sometimes because of work or lack of desire.”

Another educator offered,

I think many of the parents who are not well informed just don’t pay attention to what their teachers and SPED teachers are telling them. Then they don’t do the follow through at home. Those who do seem to do better. (Participant 10).

Though there were many remarks on the prevalence of lack of parent involvement, some educators saw the flip side, “One of the biggest helps was the parent buy in. The parents worked with the students at home and the parents and staff supported each other.” Another educator remarked, “I believe that [name of district] works very hard to try to help parents understand the student’s education.”

**Lack of School Involvement.** The combination of previously mentioned roadblocks to communication were echoed as some educators felt deficiencies in school involvement. One educator explained,

I would love to see all school districts have a time where parents can meet and discuss with other parents, counselors, teachers, school nurse, etc. things that might be happening in their life so that they know they have support and they are not alone. (Participant 80).

**Need for More Training**

Some remarks included perceptions of deficiencies in educator training and resources for servicing students with ASD. “As a teacher I don’t even know what all is available, so I think more training would be good.” However, another participant remarked, “Our teacher of the self-contained classroom has earned her MS in autism education. This has opened doors for the rest
of the staff to help our students better.” This suggests that while one teacher may have been a support to staff in working with students with ASD, more may be needed.

**Educators’ Perceptions of What is Working Well**

Educators expressed what is working well in servicing students with ASD in the district. One transportation worker reported, “I work in transportation, riding the bus presents some different challenges for these students. The district staff has been pretty good about helping us and working through the challenges.” One educator gave particular praise to the special education team: “I believe your SpEd teachers do a fabulous job.” Among the most addressed topics regarding what is working well included caring staff; tailored services; and coordinated services.

**Caring Staff.** Many educator participants emphasized the staff as caring and perceived this quality conveyed through learning the likes and dislikes as well as triggers of students with ASD and using this knowledge to take care as to not provoke the student. Educators also perceived listening to the students with ASD as working well in the district.

Several comments echoed what one educator explained, “One-on-one work with teachers and TAs [teacher’s assistants] who model appropriate behaviors” as an indicator of caring staff. Participants linked one-on-one services as demonstrated through peer tutoring, support staff, and student autonomy.

**Peer Tutoring.** The district has a formal peer tutoring class in a high school where students without disabilities can attend the self-contained classroom and support a student with disabilities for high school credit. This model is carried out in some of the other schools in the district, though not as a formal class for credit. Peer tutoring in general was praised by several
educators, “In general, the other students have rallied around autistic [students] and helped them out in whatever ways we ask.” Another educator continued,

In my opinion, the most effective is when a skill is introduced, there is an adult or peer there to reinforce the skill besides the teacher. The student can see how to do things correctly while they have support from someone besides the teacher. (Participant 5).

**Support Staff (Paraprofessionals).** Teachers’ aides are available in classrooms and are particularly helpful in supporting students with ASD succeed with academics and school culture. Whereas every classroom has one teacher, every classroom can also have multiple teachers’ aides (TAs). An educator explained,

The best servicing [sic] I have seen is a trained TA in the classroom with the ASD students. The TA I worked with worked in the classroom helping the autistic students integrate with the class and she also helped teach the other students how to properly interact with the autistic students. The TA also taught the ASD students basic life skills, how to communicate their feelings with words and pictures, and basic academics on their level. (Participant 40).

**Student Autonomy.** Some participants praised the way the district includes students by listening to their needs and including their input in school decisions that concern them. One educator explained, “The genuine concern for students shows through. Every student is different and we individualize to that student.” Another explained, “[what is working well is] the acceptance of the staff to realize that every student who is on the spectrum is different and that what worked for one will most likely not work for another student.”

**Tailored (Individualized) Services.** In addition to one-on-one work, participants listed other tailored services that they perceived as working well including picture schedules, social
skills, sensory training, discrete trail teaching, Bears’ Den (the wellness center), job skills, small group therapy, and behavior interventions. Though ABA was rated by educators as somewhat neutral in terms of effectiveness (see Figure 6), some statements praised the implementation of functional behavior assessments (FBAs) and behavior intervention plans (BIPs):

The students that have made the most progress in our district have a complete functional behavioral assessment with a behavior implementation plan in place that is explicit and is being followed consistently. I have seen a variety of strategies presented in different BIPs and it seems like in each case that the BIP is followed, students are more successful, regardless of the strategy. I know of one that is discreet [sic] trial and video modeling, another that is schedule based with breaks and rewards, another that is using precision commands and prompting for self-regulation and self-advocacy. All of these work well because of the consistency of implementation. (Participant 12).

Positive Reinforcement. Some educators commented on the value of using rewards as an intervention. One educator responded to what is working well with, “The rewards they earn if they do what they are asked to do.” Another behavior intervention that was perceived as working well was the wellness center. The district has integrated a wellness center in three of the eight schools in the district. The wellness center is a location where students can go when they need a break to manage anxiety. “I think the Bears Den [wellness center] has been a good incentive.” Another educator, referred to the wellness center when explaining what has worked well in servicing students with ASD in the district, “letting the student go where they need to, to collect their thoughts and to cool down.”

Coordinated Services. Some educators praised the effectiveness of overall district collaboration, teamwork, and outreach. One educator remarked on how teamwork is working this
way: “Working with the special education teachers, parents, and grade level teams to provide feedback and advice when needed. For instance, [discussing] what has and has not worked for them in the past in similar circumstances.”

**Parent Communication.** Coordinating with parents was also mentioned as working well in the district: “working with the child with parents helps.” In addition to coordinating with student peers, teachers, and parents, family outreach was mentioned as working well:

. . . strengthening relationships with families through a social worker’s role, or other employees like this who are willing to provide services outside of school and visit homes will help bridge gaps where mistrust exists, or misguided, untrue beliefs that our district simply doesn’t care, which we know is false. (Participant 21).

*Educators’ Perceptions of What is Not Working Well*

Educators’ responses to what has not worked well centered mostly around disrupted environment; poor coordination of services; insufficient training; and low student expectations.

**Disrupted Environment.** Some educators discussed frustration at disrupted environments that amounted to daily inconsistencies including changing schedules, such as, “changing the schedule and moving things around in different orders. They do not like surprises and loud noises.” One educator explained the inconsistency this way, “letting them [students] do this one day and another the next.” Another educator equated disruption through inconsistent services: “Social skills training works best if provided on a daily basis and generalized into the student's daily life.” Another educator expressed concerns regarding inconsistent roles: “working with a child then being removed, having to go back to work with them after an interruption” Some inconsistencies centered around unintended reinforcers: “[being sent out of class] often [means the student is] getting rewarded (time out of class, avoidance, given treats, etc.) so this
ends up reinforcing the unwanted behavior rather than motivating them to change.” Rewards were also addressed in the vein of overindulgence: “Sometimes, too many rewards are offered,” and even inconsistencies were addressed as student disruptions: “Violent outbursts to other children and adults have become ‘part of being in school.’”

**Poor Collaboration and Coordination of Services.** Some educators felt that collaboration was missing. One respondent addressed what is not working well this way, “Having one person (an educator or parent) driving the decisions of the whole team rather than collaborating for the good of the student.” Many comments centered around the need for more coordinated efforts. One educator wrote, “There could be more and improved communication among all teachers/administrators who work with the student.” Deficits in service coordination amounted to wasted effort as one educator described: “Continually recording behavior but no service after the behavior has been recorded.” While some educator respondents perceived lack of parent involvement as due to busy schedules and remote living, one educator referred to the deficiencies of parent involvement as “[parents] expecting the teacher to do all the support, and lack of parent buy in.” However, the opposite perception existed as well under what is not working in the district as one educator described, “parents calling the shots at school.” Both sentiments reflect a sense of poorly coordinated services and lack of collaboration.

**Insufficient Training.** In addition to statements regarding inadequately trained staff, other comments centered around isolation, and overindulgence of rewards in lieu of evidence-based intervention: “Sometimes, too many rewards are offered,” as evidence of insufficient training. Regarding isolation as a response to poor behavior, one educator wrote, “isolation and being put into a room only causes the violence to escalate.” However, several respondents referenced the need for a quiet space for students. One educator wrote that the school has a “lack
of a suitable calm room.” Because only three of the eight schools have been implementing a wellness center, this comment reflects a school without that resource.

**Low Student Expectations.** Some participant comments included perceptions that educators are “expecting less than the child is capable of doing.” One participant expanded with: “not expecting them to follow class procedures; not expecting any work or progress; not expecting good behavior even though the student has ASD.” Some comments centered around the prevalence of making excuses for the behavior, “Doing nothing, making excuses for behavior, holding them to a lesser standard,” “Letting them act up in class because of autism; not having a consequence.”

Some participants referenced concerns regarding limited student involvement. Referring to what has not worked in the district, one educator wrote, “Trying to fit them in the box with all students.” While another saw it this way, “Forcing a certain learning style on a child that is going to send them over the edge.”

**Educators’ Recommendations on What Would Better Serve Students With ASD**

Participants were asked what they perceived would better serve students with ASD. Recommendations centered around better training, individualize services, and adequate resources to the student.

**Better Training.** The most common recommendation was for better training. Educator participants emphasized the need for better training for teachers and staff. One example of an educator’s recommendation was, “I am responsible for that [peer relationships, and social skills training], and I have never been specifically trained. I do my best but feel like what I am doing could be more effective.” General education teacher training was also a common theme. One participant explained, “Continued training to general ed. teachers on serving SpEd students in
their classes is always helpful … their expertise as a teacher is valued in supporting SpEd students.” One example provided by an educator regarding the need for more training amongst the general educator population was, “I have noticed a lot of the teachers or paraprofessionals get upset when the student doesn’t answer them right away or won’t look them in the face when they are talking to them. The teachers and paraprofessionals think the child is being rude. If you try to tell them to talk in three- or four-word sentences, they think we are babying the student.” One participant explained the deficit as a need for a culture change:

This is a cultural shift, but I would like general education teachers to take a more active role in serving students with autism in their classroom. I believe we have studied good evidence-based strategies (LRBI) and have support from sped teachers, SLTs [speech and language technicians], and OT [occupational therapist] (we use for sensory help) but general education teachers and most paraprofessionals still resist using these strategies with consistency. This is confusing to the students. (Participant 12). [LRBI is Least Restrictive Behavior Interventions, a technical assistance manual available from the State Board of Education (Utah State Board of Education [USBE], 2015)]

In addition to the perception that general education educators need more training, there was also a sentiment for peer training: “Non-ASD students should be taught some skills for how to interact with ASD students.” This is referred to in the literature as the “double empathy” problem, or the need for increased understanding of autism within the neurotypical population (Milton, 2012).

**Tailored (Individualized) Services.** Participant comments included sentiments concerning the importance of the student feeling loved and supported and individualizing to the student by finding what works for each specific child. One participant explained, “...
children are capable of success—it’s just finding what works for each specific child. The more successful they are in school, the more confident they are in their abilities elsewhere.” Another educator expressed their recommendation this way,

Each student is different and has to be dealt with differently. They each seem to have their specialties that you can use as a reward for doing what you need them to do. The change would be to look at each student and create a plan that works for them. It can't be the same for all ASD students. (Participant 56).

**More Resources (Personnel).** In addition to several recommendations for the need of a cool-down/sensory room, “having more people to work with the kids” was a common theme. Some comments reflected sensitivity to funding issues: “If funding were available, more paraprofessionals in the classroom to help these students” wrote one participant. Educators also included the need for in-home services: “Maintain and increase services in the homes through social worker or school psychologist, or whatever role is appropriate to send an employee into those homes.” One educator talked about access issues:

Very few students in our community have access to a trained behavior specialist, ABA or otherwise, for help with the student at home. We seldom see anyone from an outside agency come to our schools and help bridge the gap between school and home. That resource is just rare in a rural area.” (Participant 12).

Another educator summarized the need for adequate resources this way: “Be realistic in your expectations of the SPED instructor, supply adequate resources (including human resources) for the case load and provide adequate and applicable training to staff, especially those providing the instruction and support for the student.”
Educators’ Perceptions of Areas They Need Most Help

Educators addressed areas they felt they needed help with. While themes such as the need for training, community acceptance, and team collaboration were common, the most prevalent description of needs surrounded peer relationships and managing behaviors, particularly aggression. One educator explained, “I see compliance, aggression and peer relationships as the biggest deficits in our students in the school setting. We would benefit from any training that would help us support our students in learning how to manage their behaviors and relationships.” The next most common need was around community acceptance. One educator explained, “the biggest struggle is for the community to accept them [students with ASD].”

Educator Interview

Participants were given the option for an interview for anyone wishing to discuss their responses. One educator consented to be contacted and was interviewed. The participant suggested recommendations that were in the same vein as the other educator participants including better training, more parent involvement, and better coordination of services. The interviewee further included a perspective of the need for better communication to the staff members who work with the students with ASD. The participant reported that though some educators may have information about what works best in managing the students with ASD, that information doesn’t necessarily get passed to those who work directly with that student. The participant explained, “When they [students with ASD] come into you, there are some things that work well with the student. But most of the time I’m blind to it all.” The participant explained with this example:
I had one case one time. I was just so frustrated with this student. I could not get him to listen, to sit down, to do whatever, and I complained to the teacher and the teacher says, ‘Well, he has autism.’ It changed the whole perspective for me so then I wasn’t quite so strict with the child. (Participant 99)

The interview participant included perspectives of what is working: “Our school really cares. And they work one-on-one with these children. They have their set things that they do with them every day. I’ve just been really impressed.” These sentiments echo what many participants included in the educator survey section regarding what is working well in the district.

Parent/Caregivers’ Perceptions

Parent Perspectives by Age Ranges

Parents and caregivers of individuals with ASD were asked to share their perceptions of importance and effectiveness of interventions for their children. The majority of the parents and caregivers (combined with the educators who were also caregivers) perceived early intervention services (EI) to be the most important level of intervention (M=3.62) with 1 being “least important” and 5 being “most important” (see Figure 10). In regard to the perceived effectiveness of EI for parents and caregivers, the mean score was 4.08 or “effective” (see Figure 11), using the same 5-point scale.

Elementary and preschool services, respectively, were the next highest ranked educational interventions of importance for parents/caregivers (elementary services M=3.62, preschool M=2.87; see Figure 10). Of these three top-rated services for students with ASD, parents/caregivers felt that preschool services were the most effective with a mean of 4.15 (SD=1.46), followed by EI services with a mean of 4.08, and elementary with a mean of 3.54.
Although parent and caregivers rated transition to adulthood services as less important, parents also scored it as the highest for effectiveness.

**Parent Perspectives by Intervention**

Parent/caregivers were the most familiar with speech (57%), and social skills training (50%; see Figure 12). Video modeling and DTT were lowest with only one respondent indicating awareness for each. As far as perceived effectiveness of the interventions, Video modeling received the highest score ($M=5.00$), though only one respondent rated its effectiveness. Wellness center attendance ($M=4.67$) and social skills training ($M=4$) were rated next highest. ABA is currently viewed as a highly effective intervention for students with ASD (Rosenblatt & Carbone, 2019).

With that being said, it is interesting to note that perceptions of effectiveness by parent/caregivers were rated as neutral ($M=2.5$; see Figure 12). Parents/caregivers did not appear to be well informed about the available interventions in the school district (Figure 12). Effectiveness of interventions were rated by seven or fewer respondents (Figure 13).
Figure 10

*Parent/Caregiver Perceptions of Importance of Education Interventions, n=8*

Note. DTT=Discrete Trial training; ABA=Applied Behavior Analysis; SLT=Speech/Language Therapy; ACD=Assistive Communication Device; Sensory=Sensory Intervention Services; Social Skills = Social Skills Training; V Modeling = Video Modeling, Wellness Ctr = Wellness Center.
Figure 11

*Parent/Caregiver Perceptions of Effectiveness of Interventions by Grade Range, n=13*

*Note. DTT=Discrete Trial training; ABA=Applied Behavior Analysis; SLT=Speech/Language Therapy; ACD=Assistive Communication Device; Sensory=Sensory Intervention Services; Social Skills = Social Skills Training; V Modeling = Video Modeling, Wellness Ctr = Wellness Center.*
Parent/Caregiver Experience With Interventions, n=14

Note. DTT=Discrete Trial training; ABA=Applied Behavior Analysis; SLT=Speech/Language Therapy; ACD=Assistive Communication Device; Sensory=Sensory Intervention Services; Social Skills = Social Skills Training; V Modeling = Video Modeling, Wellness Ctr = Wellness Center.

Parent/Caregiver Perceptions of Roadblocks to Communication With Families

Parents/caregivers conveyed their perceptions of lack of communication based on teachers and service providers being too busy. One parent wrote, “SLTs are so busy that trying to engage with parents each week --they just don't have time. The problem is, without parents having a sound knowledge of what is happening, it is really hard to generalize skills.” One parent wrote specifically about special education teachers, “Special education teachers with too many students assigned to them--some of the teachers seem to be constantly overwhelmed.” Other responses generalized around educators in the district lacking education and training of ASD. One parent/caregiver wrote, “Lack of autism education on the part of the district.”
**Figure 13**

*Parent/Caregiver Perceptions of Effectiveness of Autism Specific Interventions, n=14*

![Graph showing the effectiveness of various interventions](image)

*Note.* DTT=Discrete Trial training; ABA=Applied Behavior Analysis; SLT=Speech/Language Therapy; ACD=Assistive Communication Device; Sensory=Sensory Intervention Services; Social Skills = Social Skills Training; V Modeling = Video Modeling, Wellness Ctr = Wellness Center.

**Parent/Caregiver Perceptions of What Has Worked Well in the District**

On a positive note, parents responded to what has worked well with comments that praised, “The highly trained SPED teachers” as well as, “Having a great team in place, keeping good records.” Some comments were specific to programs such as preschool, wellness center, and transition to adulthood. One parent/caregiver explained, “The preschool program was fantastic with trying different methods to help learn.” Other remarks praised the tailored services such as one-on-one learning, occupational therapist, and speech language pathologists. One parent/caregiver praised the general educator population as, “Patient, well-informed and educated teachers.”
Parent/Caregiver Perceptions of What is Not Working Well

Lack of educator training was the most addressed topic for parents/caregivers. There was an overall concern of educators unfamiliar with how to manage students with autism, how to teach to the different skill levels, and a general lack of understanding of the complexities of ASD. One participant explained the particular deficits among the general education teachers with regards to children with ASD, “General ed teachers need more training on how to help students to work through sensory and other melt downs.” One parent/caregiver addressed what is not working well this way, “Having students work on skills at school without parents knowing what they are learning.”

Parent/Caregiver Recommendations on What Would Better Serve Students With ASD

Just as parents/caregivers perceived parent involvement and training as deficits in the district, participants recommended these same themes as areas to focus on for improvement.

Parent Involvement. One educator recommended the following advice:
Listen to parents more. For the school district to inform parents more about what to expect in different grades. Give more choices for them to choose from classes in middle and high school. Letting parents know how the school district will handle [it] if your child is not potty trained by the time they leave elementary school. (Participant 65).

Better Parent Training. “More education about autism for those teaching” was a common recommendation among parent/caregiver respondents. Some participants included a request for parent training as well as educator training. One parents/caregiver added the following concern:
I feel like my child is not a problem child and because they are not causing problems they are put in a corner of the classroom and, at the risk of sounding rude, they are ignored.
Perhaps ignored is not the correct word, but they aren’t given any individual attention which sometimes they really need. (Participant 53).

One parent/caregiver added, “Treat them as you would other students, not medicating and not isolating them.” Other comments included comments about both special and general education teachers:

The special ed teachers at the ground level and also regular teachers need a better basic understanding of what life is like for a child with ASD. The years that were the best were the ones when I was allowed to do a presentation to the class about my son at the beginning of the year. We had misconceptions of my son’s being transferred from one teacher to the next year’s teacher. More training needs to be done for the teachers who have high-functioning kids. Because my child looked ‘normal’ they assumed he could function. They saw behaviors as manipulative. (Participant 96).

What Parents/Caregivers Would Like in Terms of Help

Many parent/caregiver respondents expressed a need for help with peer relationships, including community acceptance and social skills training. Some parents/caregivers added a need for help with their child’s aggression, self-care, and preparation for adulthood. One parent/caregiver seemed to sum up many replies with “toilet training, aggression, peer relationships, community acceptance, how to self-regulate. Taking turns.”

Parents/caregivers were also asked how likely they would be to take advantage of services brought into their home. Three options were offered: behavior management services, living skills services, and childcare services. Of the 13 respondents to this inquiry, living skills services was rated as being most preferred (54%), followed by behavior management services (46%). Childcare services were rated by 38% as being of interest.
Parents/Caregiver Interview

Participants were given the option for an interview for anyone wishing to discuss their responses. One parent/caregiver consented to be contacted and was interviewed. The participant expressed concerns that were in the same vein as the other parent/caregiver participants including the need for better training and coordination of services, as well as a perception of insufficient resources. The participant also included a perception of bullying that was not mentioned by the survey respondents. The interviewee perceived a problem with bullying from teachers as well as other students. As a result, she withdrew both children from the district. The participant offered a suggestion to the bullying: “The schools have this no bullying policy and everything, but they need to start teaching kindness.”

Perceptions of Individual With ASD

The individual with ASD did not respond beyond affirming familiarity with all of the interventions the study referenced. The participant acknowledged having experience with each intervention listed but indicated experiencing sensory diet and social skills training interventions in a different district.

Discussion

The purpose of this study was to conduct a needs assessment in a rural school district to gather data regarding perceptions of interventions among school-aged individuals with ASD within the district. We analyzed perceptions of stakeholders related to individuals with ASD to determine the services received, the perceived importance of services, and effectiveness of services received within the schools. In rural school districts, shortages and constraints exist in specialized services required for students with ASD. Given federal mandates, a way must be
provided for stakeholders of children with ASD in all public schools to access the required services despite their barriers.

Summary of Perceptions of Most Needed Improvements

The most commonly expressed area in need of improvement across all groups was better training. Individuals with ASD often require explicit teaching in managing emotions and social behavior (Roberts & Simpson, 2016). When individuals with ASD are not taught social emotional management, problem behaviors often occur. Educators experience better outcomes when they receive training on how to deliver explicit teaching to prevent problem behaviors (Bergstrom et al., 2012; Pas et al., 2016). Some educators acknowledged their lack of knowledge in managing students with ASD. General education educators in particular expressed need for more training, which was echoed by parents. One participant explained, “We’re there to empower these kids and to help them reach their potential and sometimes we’re just going at it blind.” Previous research by Roberts and Simpson (2016) confirm that lack of knowledge and understanding of autism among educators is a key factor impacting the success of inclusivity in the classroom. Because federal law mandates a least restrictive environment (LRE) for all students with disabilities, general education educators must have training in inclusive practices (IDEA, 2004). Roberts and Simpson’s research indicate that the level of knowledge and understanding of autism is generally higher among principals, special education teachers, and school psychologists while the majority of the general education teachers and paraprofessionals were limited in their knowledge, which resulted in more reactive rather than proactive approaches. One participant explained, “If we promote LRE, we need general education teachers to understand that this happens best from their classroom, and their expertise as a teacher is valued in supporting SPED [special education] students.”
With perceived deficits in educator training concerning ASD, it would follow that managing problem behaviors would be a concern. Not surprisingly, managing emotions/behaviors was another commonly perceived deficit among the stakeholders surveyed. Both parents/caregivers and educators acknowledged the difficulty of behavior management. Problem behavior is often manifest due to communication deficits (Boonen et al., 2014). As indicated in the DSM-5, difficulties in communication are common among children with ASD (American Psychiatric Association [APA], 2013). Boonen et al.’s (2014) research indicate that pragmatic language difficulties predict the frequency of poor behavior among individuals with ASD. Further, pragmatic language contributes to the level of positive relationships with peers, especially during the school age period. Boonen’s research also suggests that discipline and harsh punishment may significantly impact the prevalence of negative behavior in children with ASD. The bullying reported in the parent interview may be ameliorated with better faculty, staff, and peer training in strategies to understand and improve communication in students with ASD.

Participants listed peer relationships as the most common skill lacking among students with ASD. ASD is a developmental disability that hinders successful social communication and social interaction. Restricted, repetitive patterns of behavior, interests, or activities also persist throughout the individual’s life (APA, 2013). This definition helps us understand that with such restricted behaviors and social impairments, social isolation is predictable, and these individuals will most likely need skills training support. Educators and parents/caregivers agree, as peer relationships and social skills was the most frequently mentioned area needing intervention among the population of individuals with ASD.

Another area of concern amongst stakeholders was lack of parent involvement and communication. Although some sentiments conveyed a lack of concern by parents, the majority
referenced remote locations and socioeconomic factors as barriers to parent participation. Of the 29 counties in the state, this district is located in a county that is listed 26th on statewide poverty ratings (Welfare Info, 2019). Some families do not have Internet or even phone access, which may impact ability of parents to participate in communication with the school. For some parents, daily commute to work is an hour or more, thus attendance at school meetings is difficult to arrange, so other methods of communication need to be explored.

**Implications for Practice**

In addressing the needed improvements in training, social skills and behavior management interventions and strategies must be at the forefront. It is important to understand that proactive rather than reactive approaches produce better outcomes in managing behavior (Roberts & Simpson, 2016). Families and educators may benefit from behavior management training that emphasizes positive reinforcement and proactive approaches as taught by applied behavior analysis (ABA) theories (Foxx, 2008). Foxx’s research indicates that interventions based on principles of ABA are the only methods that have been shown to produce comprehensive, lasting positive outcomes (Foxx, 2008). There are many autism specialty centers that have created online training modules for ABA-based strategies and other techniques to reduce barriers to learning in students with ASD. They are typically free and available on demand online to anyone for self-paced or in-service learning.

Some respondents emphasized a need to address aggressive behaviors. A. P. Hill et al. (2014) studied common modifiable factors that if addressed may improve aggressive behaviors among children with ASD. They report sleep, internalizing conditions such as anxiety and depression, attention problems, and addressing comorbid health problems as primary modifiable factors (A. P. Hill et al., 2014). Collaboration with parents/caregivers is paramount in obtaining
information regarding these modifiable factors. Whereas parent participation may be difficult due to remote locations and socioeconomical factors, educators may best support these families through home visits. A home/school note system is also an effective communication tool when Internet and phone service may be intermittent or not available (Miller et al., 2019). Ensuring that the home/school notebook is transferred each day can sometimes be a challenge, however. Email or texting may be options for some families.

Though perceptions of the importance of early intervention were ranked highest by stakeholders in this study, effectiveness rankings were slightly lower than other interventions. Attention to improved early interventions may be of particular consideration for the district. Early diagnosis has been proven to have positive outcomes primarily because it promotes early access to intervention (Barrow, 2017; Eikeseth et al., 2012).

There is a clear link between early diagnosis and positive development outcomes because of the potential for quality early intervention services over a greater period of time (Murphy & Ruble, 2012). Children with ASD do not need to wait until school age to begin services. By federal mandate, infants and toddlers with disabilities can receive evaluations, services, and interventions (IDEA, 2004). However, as Barrow (2017) explained, though these services are mandated, it does not guarantee the quality of the services. As demonstrated in this study, there may exist a gap between understanding the importance of early childhood interventions and the efficacy of services due to lack of knowledge of evidence-based interventions and/or the delivery. With the current climate of qualified provider shortages, rural areas can consider alternative methods for services through avenues such as partnerships, care networks, and telehealth opportunities.
Limitations

This study is limited in its scope because it is confined to the residents of a single rural school district. As such, some factors of the district may not generalize to other rural districts. Additionally, English language learner populations may have been overlooked because all advertising was in English. Another limitation was sampling procedures which may have produced selection bias due to participation recruitment based on self-selection. Of the respondents, none of the parent/caregivers completed a bachelor’s degree; among the educator participants, 47% completed a bachelor’s degree and 32% graduate degrees. Census reports for the county indicate residents with a bachelor’s or higher at 18% (U.S. Census Bureau, 2018), so parent participants may not represent all county residents (statistics are not available for the general population specific to the school district). It is unknown to what extent the findings will generalize to other rural school districts. However, the results may prove informative for this school district. The purpose of the study is to improve training and implementation of evidence-based interventions for individuals with ASD in the school district. Other school districts may use these results to perform their own needs assessment. Finally, the combination of these data with data from other rural school districts as part of a coordinated study may illuminate patterns in responses that may generalize to other rural districts in the region.

Implications for Future Research

This study addresses a topic that has not been publicly addressed in the rural community. One participant reached out to the researcher to express sentiments, “Thank you so much for including me and giving me a voice in something so important. I’m grateful that you have made this a focus for [school district].” This study has provided data to guide planning for ongoing improvements in services for students with ASD. The logical next step would be to implement
changes and research the effects of the changes across the same groups. Further research could potentially guide ongoing improvement for services to benefit individuals with ASD.

**Implications for Practitioners**

The results of this research will be disseminated among administrators and educators in the school district. With these data, key stakeholders will be provided with justification for certain funding allocations. For example, research suggests and stakeholders across groups agree that early childhood should be the highest priority age group for early intervention to increase readiness for learning (Hyman et al., 2020). In this vein, preschool in this district is often the first place where parents receive the autism classification for their child. By allocating funding to provide rigorous training on ASD services and implementation to the preschool educators, effectiveness of interventions provided may improve.

Another recommendation for the school district is an increase in educator ASD training district wide, with an emphasis on general education educators and paraprofessionals. Additional training should involve behavior management and social skills training to enhance access to learning in general education and special education classrooms. Online training options are readily available, including many self-paced and free options. Several notable autism treatment centers have created freely available training to deliver basic education to teachers for students with autism. High quality training options often include some combination of continuing education credit, pre- and post-training quizzes, references to substantiate the evidence for interventions suggested, and depth or breadth of autism training. Programs from nationally known autism centers meet some or all of these criteria and many have been funded by grants that allow for dissemination of training without fees. Some intensive training programs require a fee for training, e.g., TEACCH (Univ. of North Carolina). University-based training strongly
emphasizes evidence-based intervention, e.g., National Professional Development Center at University of North Carolina – Autism Focused Intervention and Resource Modules (AFIRM), as do medical centers, e.g., University of Missouri. State education departments have also offered this type of training, e.g., Ohio Center for Autism and Low Incidence (OCALI) Autism Internet Modules (AIM). Federal agencies also offer training, e.g., The Centers for Disease Control (CDC).

A third recommendation is to increase communication with parents. Recognizing that there may be many barriers to parent participation is an important acknowledgement, but it should be a motivating factor to explore other opportunities for consistent contact such as daily texting, weekly emails, home/school notes, monthly newsletters and even home visits.

Conclusion

This study resulted in both strengths and weaknesses of the school district’s performance in supporting students with ASD. The goal is to provide data to the district to position them to effectively celebrate the strengths and acknowledge the weaknesses within the district concerning ASD. Participants reported many strengths with particular emphasis on caring staff and individualized services. The implications of a caring staff signify that the educators want what is best for the students they serve. This factor is of great benefit to the district because of the potential of educators accepting the needed training that will better serve the students with ASD.

The perceived weaknesses include a need for more training among educators with particular emphasis addressing social skills and behavior support. Stakeholders also addressed the need for better parent involvement. Parents need to be included in what is being implemented at school to expect best outcomes for children with ASD. Research by Burrell and Borrego
(2012) suggests that generalization of skills is increased with parental involvement. In addition, parent-child relationship is improved where parents are implementing the same skills practiced at school (Burrell & Borrego, 2012). Parent involvement needs to be improved not only for better outcomes for the child but also because parent participation is a hallmark of IDEA. Public schools are mandated to ensure parent participation (IDEA, 2004).

A final recommendation is to ensure effective early childhood programs. Educators and parents/caregivers agreed that early intervention should be the most important for children, however they both agreed that the school district’s early intervention programs do not reflect the same. Efforts to improve the effectiveness of early interventions ought to be implemented.

Students with ASD may be among the most intensive group of students to serve, however, these students can exhibit tremendous growth and progress over the course of the years of schooling. Success is based on the quality and quantity of appropriate, evidence-based interventions that are implemented by trained staff (McKenney, 2017).
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APPENDIX A

Review of the Literature

History and Diagnosis of ASD

In 1943 Leo Kanner, an American psychiatrist, introduced “early infantile autism” as a new condition into the scientific literature. He described 11 children with characteristics that included profound aloneness, strict observance of patterns and rituals, precisional rote memory, and a general regard of people as nuisances (Kanner, 1943). In 1944, an Austrian medical student, Hans Asperger, described similar characteristics from his own findings. Asperger called the condition childhood autistic psychopathy. His observations were similar to Kanner with further detail on motor clumsiness, all-absorbing narrow interests, large vocabularies, and high intellect (Boucher, 2017). Asperger’s observed symptoms were later identified as Asperger’s Syndrome (Wing, 1981).

Following the publications of Kanner and Asperger, psychoanalysts and psychotherapists concluded that autism is a result of a dysfunctional mother-child relationship. Because of the expense associated with psychotherapy, the documented cases were primarily among the wealthy. As a result, for a time, autism was believed to be a condition among the affluent. The other profession to claim authority in treating autism was child psychologists and psychiatrists who titled the condition childhood schizophrenia (Boucher, 2017).

In 1979, Wing and Gould studied children in London, England with a variety of abnormalities including those similar to the findings of Kanner and Asperger. These studies described the core features as severe impairments of social interaction, language abnormalities, and repetitive stereotyped behaviors (Wing & Gould, 1979). A year later, autism was officially recognized in the third edition of the Diagnostic and Statistical Manual of Mental Disorders
(DSM-III) as “infantile autism” (American Psychiatric Association [APA], 1980). The diagnostic criteria included lack of responsiveness, impaired language and communication skills, and bizarre responses to aspects of the environment.

Today, the World Health Organization Classification of Diseases (ICD-11) focuses on three main characteristics concerning autism: deficits in social interaction and communication; manifestation during early childhood; occurrence fluctuating along a full range of intellectual functioning and language abilities (World Health Organization, 2018). In 2013, the American Psychiatric Association released the most current edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). DSM-5 is the standard reference for medical providers in diagnosing mental and behavior conditions. The manual refers to the condition as autism spectrum disorder (ASD) and describes the manifestation as persistent deficits in social communication and social interaction across multiple contexts and restricted, repetitive patterns of behavior, interests, or activities (DSM-5; American Psychiatric Association, 2013). The DSM-5 discusses further that symptoms exist in the early development of the child but may not reach full manifestation until the child is older, when social demands exceed the child’s social abilities. Additionally, symptoms limit quality of life due to significant impairment in social, occupational, or other areas of functioning (APA, 2013). Though a medical diagnosis is not required in most states for a student to be eligible for services, deficits in social and communication must exist for Individuals with Disabilities Education Act (IDEA) benefits to be activated on behalf of a child with ASD. Under IDEA, Part B, ASD is defined as,

A developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three, that adversely affects a child’s educational performance. Other characteristics often associated with autism are
engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences. (IDEA, 2004).

These authoritative references assert that ASD can be marked by disabilities in communication and social interaction in addition to repetitive movements and aversions to change.

**Prevalence**

In 2007, the Centers for Disease Control and Prevention (CDC) reported ASD prevalence in the United States at 1 in 150 children. Since then, the amount has increased to the current prevalence recorded at 1 in 54 children (Maenner et al., 2020). Prevalence has increased 2.5 times overall over time and is now reaching near 3% in some communities. The CDC considers this an urgent public health concern. In response to the rising prevalence, the CDC recommends enhanced strategies in early identification and early intervention; more thorough analysis of possible risk factors; and to address the growing behavioral, educational, residential, and occupational needs of the population with ASD (Baio et al., 2018, Maenner et al., 2020).

**Effects on Families and Schools**

Because a great deal of care and support is required for children with ASD, families experience higher levels of stress and inadequate family functioning (White et al., 2012). Pervasive behavior problems among children with ASD are the biggest challenge and often cause families to avoid social situations to prevent triggers that induce problem behavior in their child with ASD. Thus, families who care for these children often feel a heightened sense of isolation. DeGrace (2004) reports that because these behaviors are unpredictable and difficult to manage, families often feel robbed of activities that typically bond them together such as vacations, outings, and reunions. Parents are often overwhelmed and exhausted in daily family
management due to the effort required to care for their child with ASD. They find that not only is their day dictated by the child, but childcare for their child with ASD is challenging, preventing adequate parent alone time (DeGrace, 2004). White et al. (2012) discusses the increased marital problems, parenting stress, and mental health challenges for parents dealing with a child with ASD. There is an accumulation of demands placed upon families requiring constant analysis of family resources which often undervalue the family members who do not have ASD. Parents often feel their families to be on hold because of the significant needs of their child with autism. Because of this perceived halt in family progress, other children within the family are less likely to feel like a priority, regardless of their needs or occasions, such as birthdays or holidays (DeGrace, 2004). Additional conflicts exist with opposing parent perceptions and adverse coping styles. The exhaustive care required of these families can lead to crisis situations when accumulated stressors exceed parent skills in management.

With current legislation, parents can have access to specialized support through the public school system. Schools are mandated by law to provide these supports but may not be provided to the extent children with ASD require and thus cause additional stress to parents (White et al., 2012). While there are evidence-based treatments available to support families with children with ASD, if the treatments are unknown or not performed with fidelity, the outcomes can be negligible or negative. Knowledge and correct practice of evidence-based treatments are identified by parents, students, and education professionals as key components in producing positive outcomes for children with ASD (Roberts & Simpson, 2016). However, services may be unreliable due to unqualified or unavailable staff. Though these evidence-based interventions exist, ignorance within the school can prevent proper treatment and support. Furthermore, parents often struggle to feel like they are a contributing member of their child’s educational
team, perhaps because of the school’s lack of knowledge or insufficient communication (Barrow, 2017). Barrow’s study documented feelings of vulnerability with parents of children with ASD. Parents admitted to feeling frustration while searching for direction and support. Dissatisfaction was common where services were not reliable or nonexistent. In terms of learning to navigate the system within the school system, these parents conveyed their feeling of pioneering the way to help their child receive appropriate interventions. Parents proved to be sources of encouragement and support for other parents in the same situation (Barrow, 2017). But taking on responsibility to learn educational law, advocate for the child by insisting on appropriate interventions, and follow up can be exhausting, further adding to the struggling family’s daily living.

**Education Law**

*IDEA (Individuals With Disabilities Act) Pub. L. No. 101-476*

This law guarantees all qualifying children and youth, ages birth-21, special education services. An individual can qualify under IDEA if they meet the classification criteria under IDEA. Autism is one of the 13 classifications detailed in the law (IDEA, 2004). With its beginnings in 1975, this law was then called the Education for All Handicapped Children Act, 1975. It was the first statute concerning the education of children with disabilities that guaranteed a free appropriate education with an emphasis on specialized education and related services designed to meet the unique needs of disabled students. Now known as Individuals with Disabilities Education Act (IDEA), this law was amended in 1990 and again in 1997 to update terms and focus on improving education for students with disabilities. With this 2004 reauthorization, Congress added several changes: stating that children with disabilities should have high achievement expectations placed upon them; placing emphasis on general education curriculum access; changing special education to a service rather than a place; and announcing
funding for evidence-based early reading programs, positive behavioral interventions, and early intervention services (IDEA, 2004). In addition, the 2004 IDEA amendments include the addition of 4 parts: Part A, General Provisions; Part B, Assistance for Education of All Children with Disabilities; Part C, Infants and Toddlers with Disabilities, and Part D, National Activities to Improve Education of Children with Disabilities (IDEA, 2004). Of particular interest to this research study are Part B and C of IDEA. Part B defines ASD as one of the 13 disability categories honored under IDEA. Additionally, it ensures all children with a disability receive the following: (a) a free and appropriate public education (FAPE) in a least restrictive environment (LRE), including special education and related services geared to meet unique needs; (b) protected rights to children with disabilities and their parents; (c) assistance of local, state, and federal agencies in the education of children with disabilities; (d) monitoring of the effectiveness of efforts to educate children with disabilities (IDEA, 2004).

All states are required to enforce these changes. Part C targets children under age three with disabilities, including infants and toddlers. With value placed on early intervention and abundant research verifying its importance, through IDEA Part C, federal statute now mandates this focus through a comprehensive statewide program of early intervention services for infants and toddlers with disabilities and their families (IDEA, 2004).

It is important to note that though the 2004 amendments to IDEA include provisions for funding, it is not a fully funded federal statute, and there is no guarantee that Congress will fund it in the future (New America Foundation, 2015). Funding is potentially allocated based on the total population of children in each state and the percentage of children living in poverty. Under current IDEA law, funding can equal up to a maximum authorization of 40% of the national average per pupil expenditure. However, the National Council on Disability reports that the
amount of funds appropriated by Congress has never matched the authorized amount. Funding has never exceeded 18%. Furthermore, since 2010, Congress has funded only 16%, compared to the 40% allowable (National Council on Disability, 2018).

The most recent revisions of IDEA occurred in June 2017 and were spurred by Every Student Succeeds Act (ESSA) of December 2015 (National Center for Learning Disabilities, 2021). Because some ESSA provisions concern special education, IDEA needed updating to ensure consistency. Changes include removing or revising definitions, clarifying requirements, and technical corrections. Currently, through IDEA and ESSA regulation, Congress emphasizes the national policy of ensuring equality of education and opportunity for individuals with disabilities.

Presently, IDEA is a federally mandated statute that ensures all children with disabilities a free appropriate public education (FAPE) with specially designed instruction and related services to meet their unique needs. It is designed to prepare children with disabilities for further education, employment, and independent living (IDEA, 2004). However, in rural communities, resources are generally not accessible to the level at which urban communities can access such benefits. Federal law mandates the existence of necessary tools and supports for children with disability, but rural communities are at a disadvantage to fulfill the requirements.


ESSA replaced the No Child Left Behind Act of 2001 (NCLB) and included additional provisions. Among these includes the requirement that the Department of Education must increase the involvement of rural schools in the development and execution of the processes, procedural developments, policies, and regulations of the Department of Education. In response to this Act, U.S. Department of Education created a Rural Education Resource Center that
provides current news and programs concerning activities affecting education among rural school districts as well as grants available to rural school districts (U.S. Department of Education [USDE], n.d.). Though these grants are specifically designed for rural school districts, due to small staffs and frequent turnover in rural districts, there is often a lack of personnel with the knowledge and experience to complete complex grant applications (U.S. Department of Education [USDE], Office of Communications and Outreach, 2018).

In summary, IDEA current regulations mandate schools to provide FAPE in a least restrictive environment to all students with disabilities. Funding is not guaranteed to cover the required costs to fulfill this federal regulation and rural schools are mandated to comply just as urban and all other schools in the United States. Congress recognizes the disadvantage rural districts have in complying with IDEA and have taken measures through the ESSA to provide support for rural communities. Though additional funding is available through the ESSA, rural districts may have challenges accessing the funding. ESSA does give rural districts more of a voice, however, in the development and execution of the processes, procedural developments, policies, and regulations of the Department of Education.

**Endrew F. v. Douglas County School District, March 2017**

As an example of IDEA legislation in action, Endrew F. is a student with ASD. He attended Douglas County School district through fourth grade and was supported with an Individualized Education Plan (IEP). Unhappy with Endrew’s progress, his parents withdrew him and enrolled him in a private school where he was given a behavior intervention plan and made substantial progress. Douglas County School District later presented Endrew with another IEP which Endrew’s parents felt was no more adequate than the previous IEPs. Endrew’s parents then sought reimbursement for the private school tuition by filing a complaint with the Colorado
Department of Education. Their claim was denied. It was affirmed by a Federal District Court, and then again by the Tenth Circuit Court. The case then went onto the Supreme Court of the United States which held a different ruling, namely that under IDEA, a school must offer an individualized educational plan (IEP) to a child with educational disabilities that will enable appropriate progress in light of the child's circumstances. The Supreme Court substantiated their ruling from the IDEA mandate, reminding the public that focus on a particular child is central to IDEA, and that any review of an IEP must take into consideration whether the IEP enables reasonable progress in light of the child’s circumstances and work to meet the unique needs of the individual.

**Interventions**

Individuals with autism often require multiple services for optimum progress. Interventions are most successful when implemented at school and home. Therefore, additional staff may be required for the child with ASD to ensure continuity of services both at school and home (Roberts & Simpson, 2016). Based on the complexity of the ASD disability, basic principles of applied behavioral analysis research suggest that interventions need to be implemented with fidelity in order to be effective (Barrow, 2017). For the most consistent success, training in a variety of evidence-based interventions is most effective. Because there is no one-size-fits-all for interventions, stakeholders working with children who have ASD may face challenges in choosing and providing interventions. However, ASD is based on predictable disabilities that include persistent deficits in social communication in addition to restricted, repetitive patterns of behavior, interests, or activities (American Psychiatric Association, 2013). Based on the DSM-5 definition, the most effective services include social communication and behavior support (Mello et al., 2016).
**Social Communication**

Social communication is perceived to have a significant impact on teacher-student and student-peer relationships. All aspects of the school experience from learning in class to peer interaction are affected by social communication. However, without proper training for individuals with ASD, social communication is impaired and classroom performance suffers. Roberts and Simpson (2016) document the frustration teachers experience in ensuring classroom instructions to be delivered clearly and without ambiguity to the student with ASD. The excessive time spent in clarifying expectations to support the student with ASD is time-consuming. Additional teacher frustration stems from the student’s lack of ability to generalize social behaviors across activities resulting in additional time spent in reteaching social skills in each activity. Social communication skills must be practiced frequently and include many diverse situations in order to be successful. Because the purpose for special education is to support the student in furthering education, employment, and independent living, a concentrated focus on the student with ASD’s social skills is a key concern. Fengfeng et al. (2018) report the prevalence of dependence, unemployment, or underemployment for adults with ASD is due to lack of social competence. This bleak reality should spur social communication interventions to be a primary consideration among the services provided to the child with ASD.

**Problem Behaviors**

Behaviors identified as unacceptable and prevalent among children with ASD include self-injury, severe tantrums, and physical aggression (Roberts & Simpson, 2016). Typical maladaptive behavior leads to isolation, further impacting the inability to practice social communication. Often problem behavior is triggered because of sensory sensitivities. McKenney (2017) indicated that children with ASD are uniquely sensitive to their environment. Care must
be taken to support the child during sensory overactivity. This requires training in manipulation of the environment and may include reduced class size, adequate one-on-one support time, expert consultants for staff, environmental supports that could include sanctuary spaces and sound reduction equipment (Roberts & Simpson, 2016).

*Early Intervention*

Additional concerns include the implementation of early intervention which has proven to have positive outcomes (Barrow, 2017). Early intervention follows early classification. The Centers for Disease Control and Prevention campaigns focused efforts on early classification and early intervention. In addition to guidance on how to obtain an evaluation for a child who is suspected to have ASD, the CDC promotes early classification and recommends the use of evidence-based standardized, validated tools as early as 9 months to track milestones for early detection (Centers for Disease Control and Prevention [CDC], 2018).

Students with ASD may be among the most intensive students to serve, however, these students can exhibit tremendous growth and progress over the course of the years of schooling. Success is based on the quality and quantity of appropriate, evidence-based interventions that are implemented by trained staff (McKenney, 2017).

*Barriers to Treatment for Rural Communities*

Barriers to treatment in rural areas may include lack of funding and resources, lack of continuity of services, including inconsistency with interventions between school and home, and lack of access to professional training (Roberts & Simpson, 2016). Roberts and Simpson discuss further the impact of under-trained faculty and staff in ASD. They found that when learners are not trained by professionals who see through the lens of specialized autistic training, the learners feel frustration and isolation while the teachers experience stressful feelings of frustration.
because of poor outcomes (2016). Though rural families of children with ASD rely more upon the public education system than on medical care providers, rural teachers are feeling a lack of professional development and resources concerning ASD (Thomas et al., 2007). This creates an obvious gap for stakeholders of children with ASD. These concerns, coupled with CDC’s recommendations of early intervention, further validate the crisis situation that rural communities experience and substantiates the importance of crucial services made available at an early age for the success of the ASD child (Hurth et al., 1999; Thomas et al., 2007).

Additional challenges exist for families living in rural areas resulting in improper care. Merrell et al. (2012) assert that many dysfunctional behaviors are created and perpetuated by maladaptive parent-child interactions. Families need training on how to manage the behavior and social-emotional challenges that come with raising a child with ASD. Without proper training, families are more prone to react to these challenges inappropriately that may potentially exacerbate the problem behaviors (Merrell et al., 2012; White et al., 2012).

Elder et al. (2016) found that additional barriers within rural communities of families with children with ASD include cost and delayed diagnosis due to complicated referral process for treatment. Services in general are more difficult to access for rural communities, and that the most needed, yet least accessible service is behavior support and parent support (Mello et al., 2016). Other needed services often include speech and language therapy, social skills training, and occupational therapy (Mello et al., 2016; Murphy & Ruble, 2012). A contributing factor of the significant difficulties and delays in receiving adequate services for children with ASD is the scarcity of services within rural communities (Antezana et al., 2017). Families living in rural communities have increased reliance on local school systems to address autism concerns. The Centers for Disease Control and Prevention found that 40% of rural participants chose to address
the concerns of their children with ASD with the school rather than a doctor, compared to 28% of urban participants (Antezana et al., 2017). A common barrier among rural stakeholders of children with ASD is lack of education about the disability. Not only do parents feel ignorant of ASD, they report their concerns to pediatricians, but may or may not receive information concerning the diagnosis and available services (Elder et al., 2016). In addition, parents feel a lack of training among physicians in treating children with ASD (Murphy & Ruble, 2012). Thus, public schools carry the burden of providing services.

**Defining Rural Schools**

The Utah Rural Schools Association (URSA) reports the factors that determine rurality to include the number of students in the district, the size of the district, and the distance of urban centers. Of the 41 school districts in Utah, 18 are considered rural with 5.9% of total Utah student population belonging to rural schools (Teigen et al., 2012).

The Utah State Board of Education (2019) explains that districts where academic challenges are increased due to economically and educationally disadvantaged populations are identified as Title I schools. These schools do not benefit from the amount of property taxes that urban communities have, thus under the Every Student Succeeds Act (ESSA, 2015), Title I schools receive supplementary funding based on U.S. Census Bureau counts of school-age children of low-income families who reside in each geographical school district (Utah State Board of Education [USBE], 2019).

Even with funding from Title I grants, rural school districts face stretched budgets that are inadequate (Teigen et al., 2012). Coupled with the specialized needs of children with ASD and the lack of medical provider involvement, it is easy to see why stakeholders of children with ASD face complex challenges above those in urban communities.
Demographics of a Rural County in the Mountain West

For XXXX county in which this research is conducted, the United States Census Bureau reports a coverage of 1,590.15 square miles with a population at 30,623 with 25.5% being children under 18 years old (U.S. Census Bureau, 2018). Situated in the Intermountain West region, the focused county is approximately 30 minutes from an Interstate highway and two hours away from an International airport. While the community does have local businesses that contribute to the local economy, the largest industry in the area is educational services. Additional employment is construction, mining, health care, and agriculture (Data USA, 2018). Median property value is .778 times smaller than the national average; homeownership is higher than the national average; and the most common method of travel for workers is to commute alone (72.6%) followed next by carpooling at 13.6%. Veterans make up an unusually high amount of the population, with Vietnam War Veterans and Gulf War Veterans accounting for higher than the national average (Data USA, 2018). The largest share of households (51.9%) pay property taxes in the $800-$1499 bracket. The national average for the same tax bracket is significantly lower at 17.8% (Data USA, 2018).

Home to a large live animal food processing operation, as well as other ranches and farms, the rural county is a hard-working community with many intergenerational agricultural businesses. The population cares about education for the youth and the culture values independence, physical labor, and a conservative lifestyle.

Of the 29 counties in Utah, welfareinfo.org lists the focus county as 26th (very low on the scale) on the poverty ratings. The poverty rate is 16.9% compared to the State’s average of 11% (Welfare Info, n.d.). Two public school districts reside in the rural county. The public school that hosted the research has a student population of 2,650 and a resident population of 11,749 (U.S.
Census Bureau, 2018). The Public School Review ranks the district’s combined math and reading proficiency test scores within the bottom 50 percentile rankings among Utah school districts (Public School Review, n.d.). However, graduation rates have increased over the last 5 years from 55-59% to 75-79%. Of the 41 school districts that make up the state’s public schools, URSA places the focus county among the 18 that are considered rural (Teigen et al., 2012). Socioeconomic status is typically lower among the rural communities and is often measured by the percentage of free and reduced lunch among the students. The State’s rural average of free and reduced lunch is at 48.2% compared to 37.7% non-rural (Teigen et al., 2012). For the 2019-2020 school year, the district recorded free and reduced lunch to be at 59%, nearly 11% higher than the State’s average. The teacher: student ratio is 1:20.21 compared to state average ratio of 1:21.74 (USDE, Office of Communications and Outreach, 2018). According to the district’s special education department, 7.47% students receive specialized services that requires an Individualized Education Program (IEP). To qualify for an IEP, a student must have a disability that falls under one of 13 disabilities as prescribed under IDEA. ASD is among these classifications. Of these qualifying students in the target school district, 44 are classified with ASD (13% of the special education population in the district).

Summary and Critique

Stakeholders working with children who have ASD have significant challenges in supporting children who experience ASD. Because of the pervasive symptoms that a child with ASD manifests, families and educators are left with frustrating outcomes unless evidence-based interventions are implemented consistently and with fidelity (White et al., 2012). Research supports the importance of early detection and early intervention. Though the CDC considers this an urgent public health concern, stakeholders of children with autism may be too slow in
responding (Baio et al., 2018; Maenner et al., 2020). Much of the delay stems from lack of knowledge and inadequate resources in dealing with the disability. Congress has taken strides to improve the gap by passing legislation that mandates appropriate support for the children with autism. While these progressive strides have revolutionized outcomes for both the children with ASD and their caregivers, rural school districts efforts are often insufficient due to lack of resources, unqualified professionals, and insufficient professional development.

**Statement of the Problem**

Though federal law mandates appropriate services for students with ASD, rural schools often fall behind in compliance (Antezana et al., 2017). Researchers on this topic have urged further research regarding resources and services for families and children in rural areas (Antezana et al., 2017; Murphy & Ruble, 2012). In an effort to determine the educational needs of students with ASD in rural communities, researchers conducted a needs assessment via questionnaire and selected interviews among all stakeholders who could be considered to be part of an individual’s care and education team, including the individual, to determine perceived strengths and weakness in a rural school district according to their various perspectives. From these findings, recommendations were made to the school district for improvements to current services for students with ASD.
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APPENDIX B

XXXX County Autism Needs Assessment

Start of Block: Default Question Block

Q My name is Kami Walker. I am a graduate student at Brigham Young University, and I am conducting this research under the supervision of Dr. Terisa Gabrielsen. You are invited to participate in the xxxx School District Autism Needs Assessment in association with Brigham Young University. This research has been approved by Xxxx School District and the BYU Institutional Review Board. The needs assessment will begin with questions regarding your background and your relationship to individual(s) with autism spectrum disorder (ASD). Responses will be kept anonymous and used for the purpose of improving the educational needs of students with ASD. By checking the following circle, you indicate your consent to participate in this research project. (You may stop participating at any point, but only questionnaires that are more than 50% completed will be included in research) IF YOU ARE ON A SMARTPHONE, USE THE FORWARD AND BACK ARROWS AT THE BOTTOM OF EACH PAGE TO NAVIGATE.

☐ I give my consent to complete this questionnaire. (1)

Q1a Do you currently live within the boundaries of Xxxx School District? You do not need to have family members who attended school in the district, necessarily. (Research intends
to include current residents or those who have resided in Xxxx School District in the past 5 years)

- Yes (1)
- No, but I have lived in Xxxx School District within the past 5 years (2)
- No (Research intends to include current residents or those who have resided in Xxxx School District in the past 5 years) (3)

---

Q33 If you are a parent of an individual with ASD, does your child attend Xxxx School District?

- Yes, my child attends XXXX (1)
- I do live in Xxxx County and have a child with ASD that is age 18 or younger, but my child does not attend XXXX. (2)
- I do live in Xxxx County and have a child with ASD that is over age 18 and does not attend XXXX. (3)
- Not applicable (4)
Q1b How long have you been a resident of Xxxx School District? (Even if you don't live in Xxxx School District currently)

- Less than 5 years (1)
- 6 - 10 years (2)
- 11 - 15 years (3)
- 16 - 20 years (4)
- 21+ years (5)

Q2a What is your relationship to person(s) with autism spectrum disorder (ASD)? (Check all that apply)

- Parent/Guardian (1)
- Other Caregiver (2)
- Educator - teaching role - special education (3)
- Educator - teaching role - general education (4)
- Educator -- administrative role (5)
- Educator - support role (e.g. paraprofessional, secretary, counselor, psychologist, therapist, librarian) (6)
- Community care providers (e.g. Medical Care providers, Community Health, Mental Health) (7)
- I have an autism spectrum disorder (8)
- Other (comment): (9) ____________________________________________________________
Q2b If you are an individual with autism spectrum disorder, how would you like to answer this questionnaire?

- As a parent, I have a child with ASD (1)
- As an individual, I am/was a student in XXXX with ASD (4)
- I am both (individual with ASD & have a child with ASD) (5)

Q28 If you are an individual with ASD and have a child with ASD, please complete this survey as a parent and if you wish to take the survey again as an individual, please return to email and click on link again.

During your second time through survey click on "as an individual, I am/was a student in Xxxx School District with ASD"
Q3 What is the age group of person(s) with autism spectrum disorder that you interact with? (Check all that apply)

☐ Birth to 2 years (1)
☐ Preschool (2)
☐ Elementary (K-6th Grade) (3)
☐ Middle/Junior (7th-8th Grade) (4)
☐ High School (9th-12th Grade) (5)
☐ 18-21 year olds (still in High School) (6)
☐ Adults (out of High School) (7)

Q4 What is your gender?

☐ Male (1)
☐ Female (2)
☐ Other response (3) ____________________________
Q5 What is your Race (you may check more than one):

- [ ] White (1)
- [ ] Black or African American (2)
- [ ] American Indian or Alaska Native (3)
- [ ] Asian (4)
- [ ] Native Hawaiian or Pacific Islander (5)
- [ ] Other (6)

Q6 Ethnicity:

- [ ] Hispanic (1)
- [ ] Non-Hispanic (2)

Q7 Marital Status:

- [ ] Single (1)
- [ ] Married (2)
- [ ] Widowed (3)
- [ ] Divorced (4)
- [ ] Separated (5)
- [ ] Cohabitating (6)
Q8 How many years have you been involved with autism spectrum disorder? (caregiving or educating)

- Less than 5 years (1)
- 6 - 10 years (2)
- 11 - 15 years (3)
- 16 - 20 years (4)
- 21+ years (5)

Q9 What is your educational background:

- Some High School (1)
- High School Completion (2)
- Some College (3)
- Technical School (4)
- Associate's Degree (5)
- Bachelor's Degree (6)
- Graduate Degree (7)
Q10 What is your current health care/insurance coverage:

- No Insurance Coverage (1)
- Public Health Coverage (CHIP, Medicaid, Medicare) (2)
- Private Health Coverage (PEHP, BLUE CROSS/BLUE SHIELD, Select Health, etc.) (3)
- Other (4) ____________________________

Q32 If you are a parent of a child with ASD, how many total number of children are in your family (please include children with ASD and children without).

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 or more (6)
- Not applicable (7)
Q31 If you are a parent of a child with ASD, how many children in your family have ASD?

- 1 (1)
- 2 (2)
- 3 or more (3)
- Not applicable (4)

Q29 If you are a caregiver of a loved one with ASD, how often do you receive support from a medical provider for your loved one with ASD?

- More than twice per year (1)
- Annual Checkups (2)
- Only for emergency needs (3)
- Excepting birth, my loved one with ASD has never been seen by a medical provider (4)
- Not applicable (5)

Q11a In general, when thinking about all individuals with autism in our community, what age group would you rank as the highest priority for Xxxx School District to support with additional resources? 1- Most Important to 7- Least Important in terms of the following services?
(click and drag the following items to reflect your ranking, they will automatically change numbers)

_____ Early Intervention services (1)
_____ Preschool services (2)
_____ Elementary School services (4)
_____ Middle School services (5)
_____ High School services (6)
_____ Transition to adulthood services (7)

Q11b In your experience, rank the effectiveness of educational services at each level.

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Q34 Do you have any experience in the school district with Discrete Trial Training (Learning one on one through fast paced, multiple chances to answer questions or perform actions)?

- [ ] Yes (1)
- [ ] No (2)
- [ ] Yes, but not in the school district (3)
Q35 How effective do you think Discrete Trial Training is/has been in the school district as far as you know?

- Not Effective (1)
- Somewhat Not Effective (2)
- Neutral (3)
- Somewhat Effective (4)
- Very Effective (5)

Q36 Do you have any experience in the school district with Applied Behavior Analysis (Changing behavior through rewards and consequences)

- Yes (1)
- No (2)
- Yes, but not in the school district (3)
Q38 How effective do you think Applied Behavior Analysis (Changing behavior through rewards and consequences) is/has been in the school district as far as you know?

- Not Effective (1)
- Somewhat Not Effective (2)
- Neutral (3)
- Somewhat Effective (4)
- Very Effective (5)

Q40 Do you have any experience in the school district with Speech/Language Therapy (Working with a speech and language pathologist or teacher)?

- Yes (1)
- No (2)
- Yes, but not in the school district (3)

Display This Question:
If Do you have any experience in the school district with Speech/Language Therapy (Working with a sp... = Yes
Q41 How effective do you think Speech/Language Therapy (Working with a speech and language pathologist or teacher) is/has been in the school district as far as you know?

- Not Effective (1)
- Somewhat Not Effective (2)
- Neutral (3)
- Somewhat Effective (4)
- Very Effective (5)

Q42 Do you have any experience in the school district with Assistive Communication (Communication Devices)?

- Yes (1)
- No (2)
- Yes, but not in the school district (3)

Display This Question:
If Do you have any experience in the school district with Assistive Communication (Communication Dev... = Yes
Q39 How effective do you think Communication Devices (Assistive Communication) is/has been in the school district as far as you know?

○ Not Effective (1)
○ Somewhat Not Effective (2)
○ Neutral (3)
○ Somewhat Effective (4)
○ Very Effective (5)

Q43 Do you have any experience in the school district with Sensory Diet (Improving sensory sensitivities with activities)?

○ Yes (1)
○ No (2)
○ Yes, but not in the school district (3)
Q44 How effective do you think Sensory Diet (Improving sensory sensitivities with activities) is/has been in the school district as far as you know?

- Not Effective (1)
- Somewhat Not Effective (2)
- Neutral (3)
- Somewhat Effective (4)
- Very Effective (5)

Q45 Do you have any experience in the school district with Social Skills Training (Lessons and experiences to improve social interactions with peers)?

- Yes (1)
- No (2)
- Yes, but not in the school district (3)

Display This Question:
If Do you have any experience in the school district with Social Skills Training (Lessons and experiences to improve social interactions with peers)? = Yes
Q46 How effective do you think Social Skills Training (Lessons and experiences to improve social interactions with peers) is/has been in the school district as far as you know?

- Not Effective (1)
- Somewhat Not Effective (2)
- Neutral (3)
- Somewhat Effective (4)
- Very Effective (5)

Q47 Do you have any experience in the school district with Video Modeling (Learning a new skill through watching video of that skill)?

- Yes (1)
- No (2)
- Yes, but not in the school district (3)

Display This Question:
If Do you have any experience in the school district with Video Modeling (Learning a new skill through watching video of that skill)? = Yes
Q48 How effective do you think Video Modeling (Learning a new skill through watching video of that skill) is/has been in the school district as far as you know?

- Not Effective (1)
- Somewhat Not Effective (2)
- Neutral (3)
- Somewhat Effective (4)
- Very Effective (5)

---

Q49 Do you have any experience with students with ASD in the school district attending the Wellness Center (choosing to go to the Bear's Den or a quiet place to cool down or get help)?

- Yes (1)
- No (2)
- Yes, but not in the school district (3)

Display This Question:

*If you have any experience with students with ASD in the school district attending the Wellness Center (choosing to go to the Bear's Den or a quiet place to cool down or get help)?* = Yes
Q50 How effective do you think attending the Wellness Center (choosing to go to the XXXX or a quiet place to cool down or get help) is/has been in the school district as far as you know?

- Not Effective (1)
- Somewhat Not Effective (2)
- Neutral (3)
- Somewhat Effective (4)
- Very Effective (5)

Q51 Do you have any experience in the school district with any other Intervention(s) that you feel have been helpful?

- Yes (1)
- No (2)
- Yes, but not in the district (3)

Display This Question:
If Do you have any experience in the school district with any other Intervention(s) that you feel ha... = Yes
Or Do you have any experience in the school district with any other Intervention(s) that you feel ha... = Yes, but not in the district

Q52 Please describe other intervention(s) that you feel have been helpful.

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
Q13 In your experience, how well informed did/do parents feel in regards to autism services provided in XXXX?

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Q14 What do you think may prevent good communication with XXXX regarding the autism services provided (e.g. too busy, lacking internet, remote location, no responses from XXXX, etc.)?
Q15 What do you need the most help with in terms of your student with ASD (e.g. toilet training, aggression, peer relationships, community acceptance, etc.)?

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

Q16 In your opinion, what has worked well in servicing students with ASD in XXXX?
Q17 In your opinion, what has NOT worked well in servicing students with autism spectrum disorder in XXXX?

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

Q18 If any, what changes should be made to better serve students with ASD?

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

Q30 How likely would you be to take advantage of services outside of XXXX in your area if they were offered? (For example, some communities provide specialists to come into the home to train family members on dealing with behavior problems or other concerns regarding their loved one(s) with autism.)
<table>
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<th>1 Not Likely to 3 Very Likely</th>
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<td>Behavior management services (Providers who come into the home to teach the child with ASD and caregivers behavior management skills.) (1) 〇 〇 〇</td>
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<td>Living skills services (Providers who come into the home to teach personal care and daily living skills.) (2) 〇 〇 〇</td>
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<td>Child care services (Provider who come into your home to provide childcare allowing the caregiver a break.) (3) 〇 〇 〇</td>
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Q19 Thank you for completing this needs assessment. WHEN YOU CLICK ON THE ARROW BELOW, You will be automatically redirected to a separate place. If you want to talk to the researchers more about your experiences with autism, you can give us your contact information in that place, which is not connected to these answers.

This is completely optional, YOU DON'T HAVE TO GIVE ANY INFORMATION if you don't wish to. PLEASE CLICK ON THE ARROW TO SUBMIT YOUR ANSWERS TO THIS QUESTIONNAIRE even if you don't want to talk with us further.

Display This Question:
If If you are an individual with autism spectrum disorder, how would you like to answer this question... = As an individual, I am/was a student in XXXX with ASD

Q27
If you have autism, click on this link to go to a new survey.

Click here for new survey for individuals with ASD

End of Block: Default Question Block
Start of Block: Default Question Block

Q11 Just as a reminder, you have agreed to answer these questions when you started this survey. If you still want to answer more questions, please click here

☐ Yes, I want to answer more questions (4)

______________________________

Q1 What kind of school do you go to now?

☐ Elementary School (3)
☐ Middle School (4)
☐ High School School (5)
☐ Adult (out of school) (6)

Q2 Are you a?

☐ Boy (1)
☐ Girl (2)
☐ Other response (3) ______________________________________________
Q3 Is your family (you can mark more than one).

☐ White (1)
☐ Hispanic (7)
☐ Black or African American (2)
☐ American Indian or Alaska Native (3)
☐ Asian (4)
☐ Native Hawaiian or Pacific Islander (5)
☐ Other (6)

Q13 Have you had experience in the school district with Discrete Trial Training (learning one on one through fast paced, multiple chances to answer questions or perform actions)?

☐ Yes (1)
☐ No (2)
☐ Yes, but not in the school district (3)
Q14 How effective do you think Discrete Trial Training is/has been in the school district as far as you know?

- Not Effective (1)
- Neutral (2)
- Somewhat Effective (3)
- Very Effective (4)

Q15 Have you had experience in the school district with Applied Behavior Analysis (changing behavior through rewards and consequences)?

- Yes (1)
- No (2)
- Yes, but not in the school district (3)

Display This Question:
If Have you had experience in the school district with Applied Behavior Analysis (changing behavior... = Yes

Q16 How effective do you think Applied Behavior Analysis is/has been in the school district as far as you know?

- Not Effective (1)
- Neutral (2)
- Somewhat Effective (3)
- Very Effective (4)
Q17 Have you had experience in the school district with Self-Regulation Training (Learning how to calm myself down)?

- Yes (1)
- No (2)
- Yes, but not in the district (3)

Display This Question:
If Have you had experience in the school district with Self-Regulation Training (Learning how to cal... = Yes

Q18 How effective do you think Self-Regulation Training is/has been in the school district as far as you know?

- Not Effective (1)
- Neutral (2)
- Somewhat Effective (3)
- Very Effective (4)

Q19 Have you had experience in the school district with Speech/Language Therapy?

- Yes (1)
- No (2)
- Yes, but not in the school district (3)
Q20 How effective do you think Speech/Language Therapy is/has been in the school district as far as you know?

- Not Effective (1)
- Neutral (2)
- Somewhat Effective (3)
- Very Effective (4)

Q21 Have you had experience in the school district with Assistive Communication (Communication Devices)?

- Yes (1)
- No (2)
- Yes, but not in the school district (3)
Q22 How effective do you think Assistive Communication (Communication Devices) is/has been in the school district as far as you know?

- Not Effective (1)
- Neutral (2)
- Somewhat Effective (3)
- Very Effective (4)

Q23 Have you had experience in the school district with Sensory Diet (training in improving sensory sensitivities)?

- Yes (1)
- No (2)
- Yes, but not in the school district (3)

Display This Question:

If Have you had experience in the school district with Sensory Diet (training in improving sensory s... = Yes

Q24 How effective do you think Sensory Diet (training in improving sensory sensitivities) is/has been in the school district as far as you know?

- Not Effective (1)
- Neutral (2)
- Somewhat Effective (3)
- Very Effective (4)
Q25 Have you had experience in the school district with Social Skills Training?

- Yes (1)
- No (2)
- Yes, but not in the district (3)

*Display This Question:*

*If Have you had experience in the school district with Social Skills Training? = Yes*

Q26 How effective do you think Social Skills Training is/has been in the school district as far as you know?

- Not Effective (1)
- Neutral (2)
- Somewhat Effective (3)
- Very Effective (4)

Q27 Have you had experience in the school district with Video Modeling (Learning a new skill through watching video of that skill)?

- Yes (1)
- No (2)
- Yes, but not in the school district (3)
Q28 How effective do you think Video Modeling is/has been in the school district as far as you know?

- Not Effective (1)
- Neutral (2)
- Somewhat Effective (3)
- Very Effective (4)

Q29 Do you have any experience with students with ASD in the school district attending the Wellness Center (choosing to go to a quiet place to cool down or get help)?

- Yes (1)
- No (2)
- Yes, but not in the school district (3)
Q30 How effective do you think attending the Wellness Center (choosing to go to a quiet place to cool down or get help) is/has been in the school district as far as you know?

- Not Effective (1)
- Neutral (2)
- Somewhat Effective (3)
- Very Effective (4)

Q31 Have you had experience in the school district with other helpful intervention(s)?

- Yes (1)
- No (2)
- Yes, but not in the school district (3)

Display This Question:
If Have you had experience in the school district with other helpful intervention(s)? = Yes
Or Have you had experience in the school district with other helpful intervention(s)? = Yes, but not in the school district

Q32 Please describe other intervention(s) you have found helpful.

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
Q7 What works/worked well in helping you learn in school?

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

Q8 What has/did NOT help you learn in school?

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

Q9 If you could change something about the way teachers teach/taught you at school, what would it be?

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
Q12 What would you want people to understand about you?

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

Q10 Thank you for completing this needs assessment.

WHEN YOU CLICK ON THE ARROW BELOW, You will go to a new survey.

YOU DON'T HAVE TO answer the new survey if you don't want to.

PLEASE CLICK ON THE ARROW TO FINISH.

End of Block: Default Question Block
APPENDIX D

Instruments

CONSENT FORM
BRIGHAM YOUNG UNIVERSITY -- Provo, Utah

Consent Form for Research Participation

Study Title: Educational Needs of Students with Autism Spectrum Disorder

Principal Investigator: Terisa Gabrielsen, PhD.

Student Researcher: Candice Walker, MS student

IRB Study Number: X2020-136

My name is Candice Walker, I am a student at Brigham Young University and I am conducting this research under the supervision of Professor Terisa Gabrielsen, PhD. You are invited to participate in the research study of the educational needs of students with autism spectrum disorder (ASD). This form contains important information about the study and what we will ask you to do if you decide to be in this study.

The purpose of the study is to determine the educational needs as perceived by parents, educators, community care providers, and individuals on the Autism spectrum. The responses will be de-identified and shared with educational leaders of Sanpete School District to celebrate successes and make plans for any potential improvements that need to be made.
Your participation in this interview will require approximately one hour or less during one session. Your participation will be anonymous and you will not be contacted again in the future. You will not be paid for this study.

**Study Location:** Interviews will take place by phone interviews. **Interviews will be audio recorded, de-identified, and analyzed by BYU students who are not associated with San Juan School District for coding.**

**Possible risks/discomforts:** To the best of our knowledge, this activity will have no more risk of harm than you would experience in everyday life. We will take steps to minimize the risk of confidentiality being breached, to the extent possible.

**Possible benefits for participation:** Participants are not likely to have any direct benefit from being in this research study. The study is designed to learn more about educational needs of students with ASD. The study results may be used to help other people in the future.

**How will information collected be protected, and how will that information be shared:** Results of the study may be used in publications and/or presentations. Your study data will be handled as confidentially as possible. If results of the study are published, names and identifiable information will not be used.

To minimize the risks to confidentiality, we will store data and interview information in a locked cabinet, within a locked office.
**Rights of participant:** Participation in the research study is voluntary. You are not compelled to answer any question you choose not to answer. If at any time and for any reason, you would prefer to end your participation, please tell me. We may take a break or stop all together. You may withdraw from this study at any time and will not be penalized for withdrawing.

**Any questions or concerns you may have regarding this research study:** You do not have to be in this study if you do not want to be. You do not have to answer any questions that you do not want to answer for any reason. We will be happy to answer any questions you have about this study; you are free to ask them now. If you have questions later, you may contact the researchers by means of email at terisa_gabrielsen@byu.edu.

If you have any questions about your rights as a research participant you may contact the IRB administration at A-285 ASB, BRIGHAM YOUNG UNIVERSITY, Provo, Utah 84602; IRB@BYU.EDU; (801) 422-1461. The IRB is a group of people who review research studies to protect the rights and welfare of research participants.

As part of this research, I will be making an audio or video recording of you during your participation. Please indicate that you permit audio and/or video recording, by initialing next to the use of recording and sign at the end. The choice is completely up to you. I will only use the audio in the ways you agree to. In any use of the audio, you will not be identified by name.

______ Audio can be studied by the research team for use in the research project.
Video recordings can be studied by the research team for use in the research project.

(Initial)

*I give consent for audio and/or video recording of this interview as specified above

(initials)

_______________________________
PARTICIPANT SIGNATURE

*I do not consent for recording of this interview, I understand that the interview could take longer, as all comments will need to be transcribed verbatim by the interviewer

_______________________________
PARTICIPANT SIGNATURE

CONSENT:

I have read this form and the research study has been explained to me. I have been given the opportunity to ask questions and my questions have been answered. If I have additional questions, I have been told whom to contact. I agree to participate in the research study described above, including audio and/or video recording of my participation, and will receive a copy of this consent form.
APPENDIX E

Interview Script

XXXXX Autism Needs – Interview Script:

Thank you for being willing to meet with me today. I have provided you with a consent form. Please feel free to read through the consent form and let me know if you have any questions before you sign the form giving your consent to participate in this interview. (Participant read consent form)

This interview will be recorded (audio only). I want to assure you that your responses will be de-identified and reviewed by a team of students at Brigham Young University. Their goal will be to find common themes and concerns in regards to education for students with autism in Sanpete County among interviewees. There findings will be returned to me without attached names or identifying information to help participants maintain confidentiality. If at any point during the interview, you feel you would prefer to leave a question unanswered or you need to discontinue the interview all together, please let me know.

The purpose of this interview and the previous online questionnaire is to obtain perspectives on the educational experiences of students with ASD and create a summary of concerns and needs for XXXXX School District.

Any questions?

As we proceed, you are encouraged to avoid using your/the child with autism’s name, as well as your own name and/or educators’ names. To retain confidentiality and privacy of individuals. Let’s begin…

(1) Please clarify any concerns you were unable to share on the online questionnaire.
(2) What services do you feel that your child/student needs, include services that aren’t currently being offered?
(3) What services are you being provided or were provided previously?
(4) How effective do you feel the services being provided or that were provided were?
(5) Any final concerns/thoughts regarding effective education services for students with ASD?

Thank you for your time.
APPENDIX F

Flyer

Do you have a child with Autism?
Do you work with a child with Autism?
Do you have Autism?

To participate, please go to [School District website:](https://www."

Or take it directly at: [https://bit.ly/33cakvd](https://bit.ly/33cakvd)

The survey runs
May 2020

Participants must have lived in [County sometime in the last 5 years.]("

This research study is being conducted in association with Brigham Young University aimed to support individuals with ASD. We need participants who are stakeholders of individuals with ASD to fill out an online survey. Stakeholders include parents, educators, service providers, or any individual who supports an individual with ASD.

APPENDIX G

Training Options for Autism in Children and Adolescents

Available guidebooks for developing, implementing, and maintaining evidence-based intervention programs:
- Evidence-Based Practice and Autism in the Schools - National Autism Center - May Institute
- An Educator’s Manual to Evidence-based Practice and Autism, 2nd Edition - National Autism Center, the May Institute
- National Clearinghouse on Autism & Evidence-Based Practice - National Professional Development Center, Univ. of North Carolina, Chapel Hill

<table>
<thead>
<tr>
<th>Website</th>
<th>Cost</th>
<th>Modules</th>
<th>Audience</th>
<th>Certificate?</th>
</tr>
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<tbody>
<tr>
<td>Help is in Your Hand (based on Early Start Denver Model) [Link]</td>
<td>Free</td>
<td>4 Modules with 16 lessons. Coaching model with extensive provider resources &amp; webinars</td>
<td>Parents, Clinicians, Early Childhood Professionals</td>
<td>No</td>
</tr>
<tr>
<td>ADEPT: Autism Distance Education Parent Training [Link]</td>
<td>Free</td>
<td></td>
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</tr>
<tr>
<td>Autism Navigator [Link]</td>
<td>Free</td>
<td>ASD Video Glossary (explore symptoms and treatment options) <em>Autism in Toddlers</em> (3 hr course) 16 by 16 <em>Look Book</em></td>
<td>Parents, Clinicians, Early Childhood Professionals</td>
<td></td>
</tr>
<tr>
<td>Autism Navigator [Link]</td>
<td>Fee-based</td>
<td>Professional course for primary care (includes EI) 8 hours</td>
<td>Parents, Clinicians, Early Childhood Professionals</td>
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<tr>
<td>CDC – Learn the Signs Act Early [Link]</td>
<td>Free</td>
<td><em>Watch Me! Training</em> 1 hour course, also available in Spanish</td>
<td>Early Care and education providers</td>
<td>Available</td>
</tr>
<tr>
<td>CDC Autism Case Training [Link]</td>
<td>Free</td>
<td>Classroom version Web-based CE version Case training video library</td>
<td>Health care, inc. school psychologists</td>
<td>Available</td>
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<tr>
<td>OCALI Autism Internet Modules [Link]</td>
<td>Free</td>
<td>Recognizing Autism 1–15 hrs. (avg. 1.5 hrs) Infants and Toddlers 2 – 4 hrs (avg. 2 hr) Autism at Home 1 – 56.5 hrs (avg. 1.5 hrs)</td>
<td>Clinicians (psychologists ) and parents</td>
<td>PD, CE, and Colleg e avail for fee</td>
</tr>
<tr>
<td>Thompson Center for Autism &amp; Neurodevelopmental Disorders, Univ. of Missouri [Link]</td>
<td>Free</td>
<td>Understanding Autism in Young Children Screening and Referral Family and Professional Partnerships</td>
<td>Parents Clinicians Early Childhood Professionals</td>
<td>Yes</td>
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<tr>
<td>Program</td>
<td>Cost</td>
<td>Description</td>
<td>Target Audience</td>
<td>Fee</td>
</tr>
<tr>
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<td>-----------------------------------------------------------------------------</td>
<td>------------------------------------------------------</td>
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<td>TEACCH online training</td>
<td>Free</td>
<td>Family Implemented TEACCH for Toddlers Study (FITT)</td>
<td>EI providers</td>
<td></td>
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<tr>
<td>TEACCH online training</td>
<td>$500</td>
<td>Early Learners Foundations of Structured TEACCHING 18 hours</td>
<td>Educators, Psychologists, SLPs who serve 3-5 yrs olds</td>
<td>1.8 CE hrs</td>
</tr>
<tr>
<td>ECHO for Rural Health Care Providers U. of Wyo. (URLEND)</td>
<td>Free</td>
<td>Topics Vary by Interest (Autism 101 ECHO next year) Last Friday of month 12 – 1:30 Mountain Time</td>
<td>Any professional serving families with ASD</td>
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</tr>
<tr>
<td>JFK Center, University of Colorado Contact <a href="mailto:dina.johnson@ucdenver.edu">dina.johnson@ucdenver.edu</a> or 302-724-7673</td>
<td>Free</td>
<td>Colorado Parent Mentoring Systems Navigations Modules</td>
<td>Parents and EI providers</td>
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<tr>
<td>OCALI Autism Internet Modules</td>
<td>Free</td>
<td>NEW! Autism in Girls module 1.5 - 2 hours</td>
<td>Educators, Clinicians, Parents</td>
<td>PD, CE, and College avail for fee</td>
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### School Age:

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<th>Program</th>
<th>Cost</th>
<th>Description</th>
<th>Target Audience</th>
<th>Fee</th>
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<tr>
<td>OCALI Autism Internet Modules</td>
<td>Free</td>
<td>Autism in the Classroom 3 – 60 hours, topics avg. 1.5 hours NEW! Autism in Girls Module</td>
<td>Educators</td>
<td></td>
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<tr>
<td>National Professional Development Center, Autism Focused Intervention Resources &amp; Modules</td>
<td>Free</td>
<td>Introduction to ASD 2-3 hrs</td>
<td>Everyone</td>
<td>Available for fee</td>
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<tr>
<td>NPDC AFIRM</td>
<td>Free</td>
<td>Selecting an Evidence Based Practice (COIVD-19 toolkit also available in 10 languages)</td>
<td>Website, not a formal course</td>
<td>No</td>
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<tr>
<td>NPDC AFIRM for paraprofessionals</td>
<td>Free</td>
<td>Simulated E-Learning (3 courses) 4.5 – 6 hrs total</td>
<td>Paraprofessionals</td>
<td>Available for fee</td>
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<tr>
<td>NPDC AFIRM Evidence-Based Practice Modules</td>
<td>Free</td>
<td>27 modules by topic 1.5 – 2 hrs each</td>
<td>Educators</td>
<td>Available for fee</td>
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<tr>
<td>May Institute training events (zoom)</td>
<td>Free</td>
<td>Various, targeted topics</td>
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<td>Program</td>
<td>Cost</td>
<td>Description</td>
<td>Target Audience</td>
<td>Availability</td>
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<tr>
<td>Thompson Center for Autism &amp; Neurodevelopmental Disorders, Univ. of Missouri</td>
<td>Free</td>
<td>Evidence-Based Practice and Interventions</td>
<td>Clinicians, Parents, Educators</td>
<td>Yes</td>
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<tr>
<td>TEACCH Online Training</td>
<td>Free</td>
<td>Dual Diagnosis and Other Complex Issues in Autism Identification and Treatment</td>
<td>Clinician, Educators</td>
<td>No</td>
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<tr>
<td>TEACCH online training</td>
<td>$10</td>
<td>Structured TEACCHing: Individualized Schedules 1 hour</td>
<td>Everyone</td>
<td>1.25 Contact hours</td>
</tr>
<tr>
<td>TEACCH online training</td>
<td>$500</td>
<td>Fundamentals of Structured TEACCHing 18 hours</td>
<td>Educators, psychologists, speech language pathologists</td>
<td>1.8 CE</td>
</tr>
<tr>
<td>ECHO for autism in schools</td>
<td>Free</td>
<td>Every other Thursday 3:45 – 5 pm Mountain Time</td>
<td>Educators</td>
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<tr>
<td>Social Thinking Webinars</td>
<td>Free</td>
<td>On demand, varying content - Social Thinking is not an evidence-based curriculum per se, but includes some lessons and strategies using EBP</td>
<td>Educators, speech language pathologists, parents</td>
<td>Certificates only</td>
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**Adolescents:**

<table>
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<tr>
<th>Program</th>
<th>Cost</th>
<th>Description</th>
<th>Target Audience</th>
<th>Availability</th>
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<tr>
<td>OCALI Autism Internet Modules</td>
<td>Free</td>
<td>Autism in the Classroom 3 – 60 hours, topics avg. 1.5 hours</td>
<td>Educators</td>
<td>PD, CE, and College avail for fee</td>
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<tr>
<td>Center on Secondary Education for Students with Autism (CSESA)</td>
<td>Free</td>
<td>High School Case Studies IEP friendly case examples of supports for skill development, including technical briefs</td>
<td>Educators</td>
<td>N/A</td>
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<tr>
<td>Frank Porter Graham Center, University of North Carolina</td>
<td>Free</td>
<td>Wide range of support resources and curriculum helps</td>
<td>Educators</td>
<td>N/A</td>
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<tr>
<td>CSESA Professional Supports</td>
<td>Free</td>
<td>Wide range of support resources and handouts</td>
<td>Educators</td>
<td>N/A</td>
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<tr>
<td>CSESA Family Supports</td>
<td>Free</td>
<td>Resources for body changes: self-care and hygiene: Public vs. private rules; Staying safe: strangers, secrets, and touch: Elopement</td>
<td>Parents</td>
<td>N/A</td>
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<tr>
<td>Puberty and Adolescence Toolkits Autism Speaks</td>
<td>Free</td>
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<td>Parents</td>
<td>N/A</td>
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<td>Be Safe Curriculum <a href="https://besafethemovie.com/curriculum">link</a></td>
<td>Optio ns ranging from free to 74.95</td>
<td>Safety planning for increased aggression; Internet safety</td>
<td>Educators</td>
<td>N/A</td>
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<tr>
<td>Organization for Autism Research <a href="https://understandingautism.com">link</a></td>
<td>Free</td>
<td>Video Modeling, Instruction &amp; Curriculum for safe interactions with emergency personnel, emphasis on police Free sample video available</td>
<td>Educators</td>
<td>N/A</td>
</tr>
<tr>
<td>JFK Center, University of Colorado Contact <a href="mailto:dina.johnson@ucdenver.edu">dina.johnson@ucdenver.edu</a> or 303-724-7673</td>
<td>Free</td>
<td>Developmental Disability Training for First Responders</td>
<td>N/A</td>
<td></td>
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<tr>
<td>Association of University Centers on Disabilities (AUCD) Webinar: Managing the Anxious Behaviors of Children and Adolescents with Autism Spectrum Disorder</td>
<td>Free</td>
<td>90 min. webinar by Judy Reaven and Audrey Blakely-Smith, Univ of Colorado</td>
<td>Educators, Parents</td>
<td>N/A</td>
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**Transition Age:**

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<tr>
<th>OCALI Autism Internet Modules <a href="https://autisminternetmodules.org/">link</a> Many modules overlap across sections</th>
<th>Free</th>
<th><em>Autism in the Workplace</em> 1 – 44 hrs (avg. 1.5)</th>
<th>Educators Employment Coaches Employers</th>
<th>Avail. for a fee</th>
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<tbody>
<tr>
<td>NPDC AFIRM Evidence-Based Practice Modules <a href="https://afirm.fpg.unc.edu/">link</a></td>
<td>Free</td>
<td><em>COVID-19 Toolkit</em> Supporting Adults</td>
<td>Family Educators Employment Coaches Employers</td>
<td>No</td>
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<tr>
<td>Thompson Center for Autism &amp; Neurodevelopmental Disorders, Univ. of Missouri <a href="https://thompsoncenter.missouri.edu/autism-training/online-training-modules/">link</a></td>
<td>Free</td>
<td><em>Transition to adulthood</em></td>
<td>Yes</td>
<td></td>
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</table>
Executive Summary

Autism spectrum disorder (ASD) is a disability that affects communication and social interaction. Additional markers include repetitive movements and aversion to change. Over the last 20 years, the prevalence of children with ASD has increased 150%. The Centers for Disease Control (CDC) considers this an urgent public health concern and recommends enhanced strategies in early identification and early intervention.

- Federal mandates, a way must be provided for stakeholders of children with ASD in all public schools to access the required services despite their barriers.

- We conducted a needs assessment to inform efforts for improvement of services, this study is intended to ascertain existing resources for children with ASD in [specific rural school district] and ask about the perceptions of stakeholders regarding availability of those resources, as well as their effectiveness.

- 93 (90%) completed questionnaires, stakeholders were primarily broken into two categories, caregivers and educators.

Need for More Training and Communication are the Most-Mentioned Issues

- Peer relationships/social skills was the most common skill lacking, with little or no training for parents, teachers, or peers on how to help improve social skills and relationships.

- Managing emotions and behavior problems were frequently mentioned by general education teachers or support staff who are not trained in evidence-based practices.

- Lack of communication between educators and parents was mentioned as a barrier to student progress by all participants.

- Most parents (75%) reported feeling neutral or not being well informed, with 52% of Educators indicating perceptions of good communication (well informed) with parents. Parents indicated that educators do not have enough time, educators indicated parents do not have time or access to communication (i.e., phone or e-mail).

Perceptions of Effectiveness of Interventions, Parents vs. Educators

- Interventions offered within the school district included discrete trial training; applied behavior analysis; speech/language therapy; assistive communication devices; sensory intervention services; social skills training; video modeling, and wellness center (a calming down area with supervisory staff).
Educators generally rated each intervention as effective, whereas the caregiver group generally rated interventions as less effective.

Caregiver Perspectives by Age Range

- Most caregivers perceived early intervention services (EI) to be the most important level of intervention. Elementary and preschool services, respectively, were the next highest ranked educational interventions of importance for both educators and caregivers.

- Of these three top-rated services for students with ASD, parents and caregivers felt that preschool services were the most effective, followed by EI services and elementary.

- Caregivers rated transition to adulthood services as less important, but also scored it as the highest for effectiveness.

Caregiver Perceptions of What Has Worked Well in the District

- Both educators and caregivers indicated strengths are tailored services such as one on one learning, occupational therapist, and speech language pathologists.

- Caregivers praised, “the highly trained SPED teachers,” “having a great team in place, keeping good records.”

- One caregiver explained, “The preschool program was fantastic with trying different methods to help learn.” Another respondent praised the general educator population as, “patient, well-informed and educated teachers.”

- Caring staff and coordinated services were also listed as working well.

Recommendations for Improvements

- Promote involvement in free, online training for both parents and educators.

- Gain access to more intensive training in evidence-based practice for all stakeholders according to their roles. Virtual and in-person training for behavioral management, social skills, early intervention, and transition services are the highest priorities.

- Work with parents to establish reliable communication systems with educators to increase parent involvement (e.g., home/school note).

- Train educators and parents to collaborate in functional behavior assessment and ABA-based intervention techniques to identify modifiable factors that influence aggressive incidents, including sleep, internalizing conditions such as anxiety and depression, attention problems, and addressing comorbid health problems.
• Improve communication between parents and educators about evidence-based interventions for common behavioral issues to create consistency between school and home environments.

• Fortify the Early Intervention/Pre-School programs in terms of training in evidence-based intervention and Child Find to identify children with ASD at younger ages to improve long-term outcomes.

**Figure H1**

*Educator Participants Broken Into Roles Indicating Percentage of Educator Respondents*

![Pie chart](image)

- **Teaching role - special education, n=15**
- **Teaching role - general education, n=35**
- **Administrative, n=4**
- **Support, n=28**

*Note.* Support=paraprofessionals, librarians, lunchroom workers, secretaries, bus drivers, etc.
Figure H2

Priority for ASD Services as Perceived by Educators and Parents/Caregivers

![Chart showing priority for ASD services]

Figure H3

Level of Priority for ASD Top-Rated Resources – Educator Perceptions by Role

![Chart showing level of priority for ASD resources]
Figure H4

Perceived Effectiveness of ASD Interventions

Note. P=Parent/caregiver, E=Educator, DTT=Discrete trial training; ABA=Applied behavior analysis; SLT=Speech/language therapy; ACD=Assistive communication device; Sensory=Sensory Intervention Services; Social Skills = Social Skills Training; V Modeling = Video Modeling, Wellness Ctr = Wellness Center.
Figure H5

Educators’ Perceptions of Importance of Educational Interventions, n=53

Grade (Age) Range

<table>
<thead>
<tr>
<th>Grade (Age) Range</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Intervention</td>
<td>4.72</td>
</tr>
<tr>
<td>Preschool</td>
<td>4.21</td>
</tr>
<tr>
<td>Elementary</td>
<td>4.32</td>
</tr>
<tr>
<td>Middle</td>
<td>3.02</td>
</tr>
<tr>
<td>High School</td>
<td>2.51</td>
</tr>
<tr>
<td>Transition</td>
<td>2.23</td>
</tr>
</tbody>
</table>

Figure H6

Educators’ Perceived Effectiveness of Interventions by Grade Range, n=69

Grade (Age) Range

<table>
<thead>
<tr>
<th>Grade (Age) Range</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Intervention</td>
<td>4.24</td>
</tr>
<tr>
<td>Preschool</td>
<td>4.39</td>
</tr>
<tr>
<td>Elementary</td>
<td>4.16</td>
</tr>
<tr>
<td>Middle</td>
<td>4.31</td>
</tr>
<tr>
<td>High School</td>
<td>4.42</td>
</tr>
<tr>
<td>Transition</td>
<td>4.39</td>
</tr>
</tbody>
</table>
Figure H7

*Educators’ With Experience in ASD Intervention, 74 respondents*

![Bar chart showing the percentage of educators who have experience in various ASD interventions.]

**Note.** DTT=Discrete Trial Training; ABA=Applied Behavior Analysis; SLT=Speech/Language Therapy; ACD=Assistive Communication Device; Sensory=Sensory Intervention Services; Social Skills = Social Skills Training; V. Modeling = Video Modeling, Wellness Cntr = Wellness Center.
Figure H8

Perceived Effectiveness of ASD Interventions as Rated by Educators

Note. DTT=Discrete Trial training; ABA=Applied Behavior Analysis; SLT=Speech/Language Therapy; ACD=Assistive Communication Device; Sensory=Sensory Intervention Services; Social Skills = Social Skills Training; V Modeling = Video Modeling, Wellness Cntr = Wellness Center.
Figure H9

Educator Experience With Interventions Defined by Roles

![Bar chart showing percentage of educator experience by roles and interventions]

Note. DTT=Discrete Trial training; ABA=Applied Behavior Analysis; SLT=Speech/Language Therapy; ACD=Assistive Communication Device; Sensory=Sensory Intervention Services; Social Skills = Social Skills Training; V Modeling = Video Modeling, Wellness Ctr = Wellness Center.
Figure H10

*Parent/Caregiver Perceptions of Importance of Education Interventions, n=8.*

![Figure H10: Parent/Caregiver Perceptions of Importance of Education Interventions, n=8.](image)

Figure H11

*Parent/Caregiver Perceptions of Effectiveness of Interventions by Grade Range, n=13*

![Figure H11: Parent/Caregiver Perceptions of Effectiveness of Interventions by Grade Range, n=13.](image)
Figure H12

*Parent/Caregiver Experience With Interventions, n=14*

Note. DTT=Discrete Trial training; ABA=Applied Behavior Analysis; SLT=Speech/Language Therapy; ACD=Assistive Communication Device; Sensory=Sensory Intervention Services; Social Skills = Social Skills Training; V. Modeling = Video Modeling, Wellness Ctr = Wellness Center.
Figure H13

*Parent/Caregiver Perceptions of Effectiveness of Autism Specific Interventions, n=14*

![Bar chart showing mean scores of perceived effectiveness of different interventions]

**Note.** DTT=Discrete Trial training; ABA=Applied Behavior Analysis; SLT=Speech/Language Therapy; ACD=Assistive Communication Device; Sensory=Sensory Intervention Services; Social Skills = Social Skills Training; V. Modeling = Video Modeling, Wellness Ctr = Wellness Center.

**Table H1**

*How Well Informed Parents Feel Regarding Autism Services Provided, n(%)*

<table>
<thead>
<tr>
<th></th>
<th>Educator Perception</th>
<th>Parent/Caregiver Perception</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=59</td>
<td>n=12</td>
</tr>
<tr>
<td>5- Very well informed</td>
<td>6 (10)</td>
<td>3 (25)</td>
</tr>
<tr>
<td>4- Well informed</td>
<td>25 (42)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>3- Neutral</td>
<td>19 (32)</td>
<td>3 (25)</td>
</tr>
<tr>
<td>2- Not well informed</td>
<td>7 (12)</td>
<td>5 (42)</td>
</tr>
<tr>
<td>1- No information</td>
<td>2 (3)</td>
<td>1 (8)</td>
</tr>
<tr>
<td><strong>M (SD)</strong></td>
<td>3.44 (.94)</td>
<td>2.92 (1.32)</td>
</tr>
</tbody>
</table>
Table H2

Demographic Characteristics of Respondents

<table>
<thead>
<tr>
<th></th>
<th>Individual with ASD n=1</th>
<th>Parent/Caregiver n=13</th>
<th>Educator n=79</th>
<th>Total n=93</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender, n (% of subgroup)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1(100)</td>
<td>4(31)</td>
<td>12(15)</td>
<td>17(18)</td>
</tr>
<tr>
<td>Female</td>
<td>9(69)</td>
<td>60(76)</td>
<td>69(74)</td>
<td></td>
</tr>
<tr>
<td><strong>Race, n (% of subgroup)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>1(100)</td>
<td>13(100)</td>
<td>72(91)</td>
<td>86(92)</td>
</tr>
<tr>
<td>American Indian</td>
<td>1(1)</td>
<td>1(1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Insurance, n (% of subgroup)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Insurance</td>
<td>--</td>
<td>8(62)</td>
<td>--</td>
<td>8(62)</td>
</tr>
<tr>
<td>Medicaid/CHIP</td>
<td>--</td>
<td>4(31)</td>
<td>--</td>
<td>4(31)</td>
</tr>
<tr>
<td>No Insurance</td>
<td>--</td>
<td>1(8)</td>
<td>--</td>
<td>1(8)</td>
</tr>
<tr>
<td><strong>Education Level, n (% of subgroup)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School Graduate</td>
<td>--</td>
<td>1(8)</td>
<td>2(3)</td>
<td>3(3)</td>
</tr>
<tr>
<td>Some College</td>
<td>--</td>
<td>3(23)</td>
<td>6(8)</td>
<td>9(9)</td>
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<tr>
<td>Technical School</td>
<td>--</td>
<td>1(8)</td>
<td>1(1)</td>
<td>2(2)</td>
</tr>
<tr>
<td>Associates</td>
<td>--</td>
<td>7(54)</td>
<td>7(10)</td>
<td>14(14)</td>
</tr>
<tr>
<td>Bachelors</td>
<td>--</td>
<td>--</td>
<td>34(43)</td>
<td>34(37)</td>
</tr>
<tr>
<td>Graduate Degree</td>
<td>--</td>
<td>1(8)</td>
<td>23(29)</td>
<td>24(26)</td>
</tr>
<tr>
<td><strong>Years involved with ASD, n (% of subgroup)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 5 years</td>
<td>--</td>
<td>1(8)</td>
<td>16(20)</td>
<td>17(18)</td>
</tr>
<tr>
<td>6-10 years</td>
<td>--</td>
<td>3(23)</td>
<td>19(24)</td>
<td>22(24)</td>
</tr>
<tr>
<td>11-15 years</td>
<td>--</td>
<td>3(23)</td>
<td>16(18)</td>
<td>16(17)</td>
</tr>
<tr>
<td>16-20 years</td>
<td>--</td>
<td>5(38)</td>
<td>11(14)</td>
<td>16(17)</td>
</tr>
<tr>
<td>21+ years</td>
<td>--</td>
<td>1(8)</td>
<td>14(18)</td>
<td>15(16)</td>
</tr>
</tbody>
</table>

*Note.* Percentages in columns are based on respondent subgroup by column.

Dash (--) = not reported.