

SCHOOL PSYCHOLOGISTS SUPPORTING STUDENTS WITH AUTISM THROUGH
PARTICIPATION IN SCHOOL BASED TEAMS

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ABSTRACT

SCHOOL PSYCHOLOGISTS SUPPORTING STUDENTS WITH AUTISM THROUGH PARTICIPATION IN SCHOOL BASED TEAMS

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Autism Spectrum Disorder (ASD) is one of the most common neurodevelopmental disorders in the United States with about 1 in 59 children with an ASD diagnosis (Smith et al., 2020). Autism Spectrum Disorder is characterized by recurring deficits in social communication and interaction; and restricted repetitive patterns of behavior, interests, or activities (Smith et al., 2020). Assessing and providing support for individuals with autism within a school can be a challenge for many reasons including comorbid diagnoses with autism, evaluating and implementing interventions, as well as the practitioner's self-efficacy towards assessing or providing support for students with autism. School professionals may also encounter unique challenges when assessing or supporting a student with autism in an underserved population. Children with low socioeconomic backgrounds, minority groups, or children of parents with less education are most likely to be identified by schools for an evaluation rather than by medical professionals (Zelege et al., 2019). These families are also more likely to receive assessment, diagnosis, and services through the child's school compared to private practices (Harris et al., 2019). Therefore, assessment under Individuals with Disabilities Education Act (IDEA) should be provided through a team of different professionals working together to holistically assess and support the individual with autism. The child's school can be beneficial in evaluating all aspects

of the child's well-being due to engaging in more multidisciplinary team assessment compared to private practice settings (Ward et al., 2016). Based on this information, school-based teams are needed to support students with autism and students with autism in underserved populations. School Psychologists are important members of school-based teams due to being able to assess autism and comorbid diagnoses in students under IDEA. Although school-based teams are beneficial, there is limited research on how school professionals working with students with autism benefit from team-based services and almost no research on school psychologists specifically. This thesis explores four research questions and two exploratory questions to investigate the self-efficacy of school psychologists when serving students with autism, and students with autism in underserved populations, through team-based services.

CHAPTER ONE: REVIEW OF LITERATURE

Autism Spectrum Disorder Overview

Autism Spectrum Disorder (ASD) is characterized by recurring deficits in social communication and interaction; and restricted repetitive patterns of behavior, interests, or activities (American Psychiatric Association, 2013, as cited in Smith et al., 2020). The Diagnostic and Statistical Manual of Mental Disorders, 5th Edition: DSM-5, is used as a guide by clinicians to determine whether a child meets criteria in those areas. Within schools, the Individuals with Disabilities Education Act (IDEA) is used to protect the education of children with disabilities, including those with ASD, and provides guidelines for determining eligibility and appropriate services for those students in schools. In this paper, the term client and student will be used interchangeably to represent an individual with ASD.

In addition to the diagnostic criteria for ASD provided in the DSM-5 and in IDEA, individuals with autism are at risk for comorbid psychological diagnoses such as depression, anxiety, and bipolar disorder as well as increased risk for health complications in medical, speech, or physical domains. These comorbid diagnoses may further exacerbate co-occurring mental and emotional symptoms for those with autism (Fodstad, 2019; Kirsch et al., 2020). Research has indicated that comorbidity rates may increase as the individual develops; additionally, the co-occurring rates remain constantly higher compared to typically developing individuals throughout the lifespan (Knost & Matson, 2014; Mannion & Leader, 2013). Comorbid diagnoses associated with autism are common indicating a continued need for assessments that target comorbidity symptoms. This can be more thoroughly provided using

teams of different professionals working together in completing assessments and developing interventions.

Limitations in Assessment, Diagnosis, and Treatment

The use of teams of professionals may help with other ongoing limitations in assessment, diagnosis, and treatment of ASD. Donnelly and colleagues (2018) noted that one ASD assessment limitation is the discrepancies that occur between parent and teacher rating scales, especially when assessing high-functioning individuals for ASD. The article suggests that the parents may provide higher ratings on surveys compared to teachers which may have implications in outcome assessments and treatment. It is suggested that practitioners should include a range of assessments and involve the insight of other practitioners to decrease this limitation.

Another limitation in the assessment and diagnosis process may be related to the validity of the assessment instruments resulting in the need for a more comprehensive assessment with multiple professionals. For instance, limitations in treating areas related to motor skills in individuals with autism may not be present due to assessment instruments that have lower validity in detecting subtle or specific motor difficulties (Wilson et al., 2018). Kasari et al., (2013) also noted instrument limitations in assessing communication, language, and cognitive and behavioral abilities. Instruments assessing minimally verbal children with autism may not accurately represent the child's strengths and areas of need due to lower reliability and validity (Kasari et al., 2013). Similarly, instruments used to evaluate anxiety have less reliability and validity when used on individuals with autism due to anxiety manifesting differently for people in this population (Lecavalier et al., 2014). Research conducted in 2016 by Ward et al. surveyed psychologists, pediatricians, and psychiatrists to gain their perception on the assessment and

diagnosis process for ASD. The study found that practitioners noted the challenges of not being able to assess clients earlier, the difficulty of diagnosing ASD, and limitations in assessment instruments, and diagnostic criteria. However, practitioners who follow the “gold standard” for ASD assessment practices and consult with other practitioners tend to more accurately diagnose ASD and have low false-positive accounts (“How accurate are diagnostic tools for autism spectrum disorder in preschool children?”, 2018).

Autism Services in Schools

While both private and public assessment clinics can effectively assess, diagnose, and provide treatment recommendations; services through public centers, especially the child’s school, can be beneficial in evaluating all aspects of the child’s well-being. This is due to public practice settings, like a school, being more likely to engage in multidisciplinary assessment compared to private practice settings (Ward et al., 2016). Within the school, assessments, observations, and interviews can be conducted through multiple professionals who are in close proximity to the child including school psychologists, the school’s speech pathologists, and special and regular education teachers. Not only do schools engage in more multidisciplinary assessments, but students with autism are also more likely to receive school-based services in comparison to students with other psychiatric disorders like ADHD and oppositional defiant disorder (Kang-Yi et al., 2016).

In addition to school-based assessment, interventions can be provided to students with autism through school personnel. These interventions can focus on the wide variety of factors contributing to the academic difficulties experienced by students with autism. This can include the ASD diagnosis criteria as well as criteria related to different comorbid diagnoses. For example, a study by Simpson et al. (2019) examined current literature on school personnel

working to provide cognitive behavioral therapy (CBT) to students with comorbid anxiety and ASD. This study found that a range of school personnel including teachers, special educators, and counselors was beneficial when implementing an intervention for students. The students were able to apply skills learned through CBT in school settings resulting in reduced behavior problems throughout the school day. Additionally, Simpson and colleagues (2019) found that collaboration in implementing the intervention occurred more frequently when clear roles were established between school personnel. Self-monitoring interventions for students with autism in a general education classroom was also noted to be effective with behavior regulation; and interventions targeted towards improving social communication used in schools (Davis et al., 2016; Sutton et al., 2019). Due to the range of practitioners within the school, there is greater opportunity for holistic team-based assessment, diagnosis, and intervention implementation, and collaborative practices among school psychologists and classroom teachers to further ensure intervention fidelity.

School systems may also play a vital role in underserved populations with ASD. Children with low socioeconomic backgrounds, minority groups, or children of parents with less education are most likely to be identified by schools for an evaluation rather than by medical professionals (Zelege et al., 2019). These families are also more likely to receive assessment, diagnosis, and services through the child's school compared to private practices (Harris et al., 2019). Therefore, school practitioners, especially those that often work in a team with other professionals, are valid resources when assessing and supporting students with ASD.

Types of Teams

Through teamwork, school practitioners can work together to solve problems (Boyer & Thompson, 2014). School personnel across disciplines can assess, diagnose, and provide

interventions for students with autism. As mentioned, team-based practices are more likely to occur in public settings, including schools, compared to private (Ward et al., 2016). Schools are required to work in teams under the IDEA (2004). IDEA is a special education law protecting the educational needs and rights of students with disabilities. The law states that a school team, including the child's parents, should work together to develop the Individualized Education Program (IEP) for the child. Therefore, school-based teams are a legislated requirement through IDEA (Blackwell & Rossetti, 2014; Coufal & Woods, 2018). School-based teams should not be limited to IEP teams, but can be used for consultation, improving classroom interventions, and other student or school-based needs. There are three distinct types of teams that occur in schools: transdisciplinary, multidisciplinary, and interdisciplinary. Although often used synonymously, these three types of teams vary in their structure and team members' role.

Transdisciplinary

Transdisciplinary teams are composed of professionals from different disciplines collaborating to meet the needs of a client. It involves a case coordinator who is a member of the team and is responsible for relaying information to the family or client. In addition to being a case coordinator, the concept of role release is foundational on transdisciplinary teams. Boyer and Thompson (2014) state that professionals on the transdisciplinary team share or "release" intervention strategies, that are specific to their discipline, to other professionals or to the family, to best aid in the services of the client. Role release may be beneficial if a family member, or another professional, engages with the child more often; thereby, they are more readily able to implement an activity or intervention from another discipline. A literature review by Campagna and Nelson (2019) noted that in transdisciplinary teams, each member understands the value of what the other discipline can bring to the team; however, participants in these studies noted that

understanding the role of other disciplines on the team may be a challenge. By first becoming familiar with the role of other disciplines on the team, having a clear understanding of the team's goals, and practicing role release, transdisciplinary teams can be efficient in serving clients with autism.

Multidisciplinary

Multidisciplinary teams are common within the school setting especially in the form of an IEP team (Beck & DeSutter, 2020). Within multidisciplinary teams each professional has a clearly defined role that is specific to their discipline. Since each member has a specific contribution to the team, there are limited collaborative opportunities due to each professional independently covering their own area of expertise. Therefore, this type of team is efficient in meeting the needs of the client but may result in less integrated outcomes due to the discipline specific nature of multidisciplinary teams. Also, multidisciplinary teams have a leader which may cause disproportionate authority among the professionals. A study by Sinai-Gavrilov and colleagues (2019) examined practitioner's perception when working in multidisciplinary teams. Twenty-one participants who worked in an ASD based preschool were interviewed about their experiences working on multidisciplinary teams. An occupational therapist noted during the interview that it is easier for the child to learn when the team members on multidisciplinary teams were "attuned" and have a "similar way of handling things." ... "When there is no teamwork, the child is confused, frustrated..." Most participants in the study noted that multidisciplinary teams can be a challenge when there is not an understanding of one's role, the role of other team members, and when stereotyping of other disciplines was prevalent on the team. Therefore, like transdisciplinary teams, for multidisciplinary teams to be effective in creating team unity and supporting the needs of the client, there must be explicit roles of the

team members and the team should have a clear understanding of the role of the other members of their team.

Interdisciplinary

Finally, interdisciplinary teams have become more prevalent within private and public settings (Paradis & Reeves, 2013). Within interdisciplinary teams there is a case coordinator who serves as the facilitating role. In contrast to the other teams, interdisciplinary team members have equal authority in supporting the client and family – who are viewed as a member of the team. Due to the equal authority and contribution across members, interdisciplinary teams produced more integrated services for the client (Schot et al., 2019). Integration occurs when team roles are clearly maintained amongst team members. Clear roles further optimize collaborative opportunities (Ulrich et al., 2019). Equal authority can also negatively impact the efficiency of interdisciplinary teams. It may take longer for this style of team to collaborate due to integrating each team member's viewpoint and services equally. Yet, due to this, more inclusion across the team occurs compared to multidisciplinary teams. For inclusion to occur, the interdisciplinary team must encompass a variety of essential principles. A systematic review of quantitative studies by Nancarrow et al. (2013) identified essential components of interdisciplinary teams. This study found that when the team model included leadership, communication, a variety of disciplines, climate, clarity of vision, and other variables, the team worked best together to support the needs and goals of the client. Additionally, Ulrich et al. (2019) interviewed graduate level participants ($n = 387$) and found that participants identified having positive and neutral attitudes towards working on interdisciplinary teams. The neutral attitudes reported resulted from participants encountering stereotypes from other disciplines, lack of communication within the team, and unequal roles among the team members. Ulrich et al. (2019) further emphasized how

the key elements of interdisciplinary practice suggested by Nancarrow et al. (2013) are essential in having an effective team, increasing participant's positive team experience, and increasing participant's willingness to engage in more interdisciplinary teams.

Benefits of Teams

The students and families. Transdisciplinary, multidisciplinary, and interdisciplinary teams vary in structure, yet all three types of teams provide optimal benefits for clients and families that receive team-based services (Ogletree et al., 2017). Some insight into the benefits that students may gain can be illustrated through teams in other settings. A literature review by Rosen et al. (2018) found that teamwork in a healthcare setting improved client outcomes, client safety, and client satisfaction aligning with additional research on client benefits (Ndibu Muntu Keba Kebe et al., 2019). Yet, it cannot be concluded that students receive similar benefits as clients in other settings due to limited quantitative research. However, qualitative research through case studies may offer insight into the benefits students receive from effective school professional teams.

Through case vignettes, Ogletree et al. (2017) and Prelock et al. (2017) illustrate the benefits for clients and families for team-based practices in schools. For example, Ogletree et al. (2017) describes the case of Mary. At birth, Mary was diagnosed with a developmental delay through a neonatal team. Mary did not receive team-based services during her early and preschool years. Mary's Speech Language Pathologists (SLP) and Physical Therapist (PT) worked separately, did not share notes about Mary between each other or other professionals, and did not involve the family in treatment, but met independently to discuss her progress. Mary did not make considerable progress during her early treatment years. In elementary school, a school-based team utilizing interprofessional collaboration was established for Mary and her

family. Mary's team consisted of six professionals. Assessment findings from the team were integrated and led to a collaborative IEP and Mary received integrated services within the school. The team was able to collaborate in providing service options that Mary did not receive prior to having team-based support.

The case of Mary parallels the case of Maulik, a boy with an autism diagnosis, who also received team-based services within the school (Prelock et al., 2017). Due to Maulik's decline in language, his pediatrician recommended early intervention services through a SLP. During the SLP evaluation the family stated that Maulik had a limited diet and did not engage in age-appropriate play. The SLP recommended an Occupational Therapist (OT) evaluation and support from an early educational teacher to address these concerns. The SLP, OT, and early education teacher completed evaluation and interventions through an interprofessional team-based approach to support the family's goal of communication, eating, and play skills. When Maulik transitioned into elementary school, his early intervention team was able to meet with school-based professionals to ensure easy transition for the family and for Maulik. Maulik's interdisciplinary school-based team included a Physical Therapist (PT), SPED teacher, general education teacher, and SLP. Through communication between teams, an IEP was established based on the goals of the early intervention team and additional school goals. The interdisciplinary school-based team worked with the family on using an augmentative and alternative communication (AAC) device and integrated interventions so that Maulik and his family's needs and goals would be met in Maulik's school. Compared to the Mary case, Maulik received team-based services both before and during his school years. Both cases illustrate how effective team-based services within a school can aid in meeting the needs and goals of students and their families and allow for holistic services (Prelock et al., 2017).

The case vignettes qualitatively illustrate how effective team-based practices within the school can aid in supporting a student's IEP goals, overall services, and goals and needs of the family. Sylvester et al. (2017) also noted that without team-based practices, the child is not able to fully benefit from services. A literature review by Bruce and Bashinski (2017) found that clients receiving team services are benefited because teams ensure that the client's cognitive, physical, visual, auditory, mental, and tactual strengths and needs are comprehensively considered when supporting the client. Teamwork across professionals is optimal for students with autism because it involves a range of techniques that target different skills across different contexts as illustrated in the cases (Molteni et al., 2013). The case of Mary and Maulik illustrate the optimal outcomes that team-based services provide; additionally, clients tend to report higher service satisfaction rates compared to clients who did not receive team-based services (Marcussen et al., 2020).

The student with autism also benefits when at least one of their parents is involved with the team. Under IDEA, it is required that the parent of the child be involved in the IEP team (Blackwell & Rossetti, 2014). Teams are more likely to meet the needs of the client when the professionals on the team actively listen and include the family in the decision-making process. Cooper-Duffy and Eaker (2017, p.191) note that "many families will not participate on educational teams when they do not feel listened to by professionals, and this will affect the quality of their child's services." Coufal and Woods (2018) note that each team professional is responsible for efficiently and effectively collaborating and communicating with the family. This allows for family involvement and aids in addressing family needs with their child (Cooper-Duffy & Eaker, 2017). Therefore, teams are most effective when the members value the input of

the child's parent. The parents know their child the best, and when team members value their input, the child can receive quality team-based services in the school.

The professionals. In addition to the benefits experienced by students and their families, team-based practices are also beneficial for the professionals working in the teams. Green & Johnson (2015) identified the beneficial gains of professionals when working on a team, specifically on an interdisciplinary team. The benefits include more opportunities to go beyond their traditional methods of working with a client, greater access to underserved populations, ability to gain knowledge from other professionals, opportunity to develop relationships with other professionals, strengthen one's professional skills, increase productivity, and learn how to respect and communicate with other professionals. Professionals who receive interprofessional training report less burn out rates, are better able to manage conflict with other professionals, are more supportive of innovative practices, and have higher self-efficacy (Deneckere et al., 2012; Watters et al., 2015). Professionals who benefit from teams can provide more benefits to the clients and their families due to improved services (Green & Johnson, 2015; Molteni et al., 2013). Sinai-Gavrilov and colleagues (2019) interviewed psychologists, creative-art therapists, occupational therapists, speech-language pathologists, behavioral analysts, and physical therapists who work in an ASD preschool on their perception of working on multidisciplinary teams within the school. This research found that the members viewed the team as an opportunity for learning and as a support system. A teacher may encounter fewer barriers when student recommendations are completed through teams. Whiting & Muirhead (2019) explain that OTs, and behavior analysts in schools can independently address the needs of students with autism. However, when these professionals work independently, it results in two sets of recommendations for one type of concern in one student. This can create a barrier for the teacher

when trying to implement two independent recommendations. Therefore, working in teams creates one comprehensive recommendation to help decrease the barrier of the teacher and provide additional benefits to team members (Whiting & Muirhead, 2019).

Due to the professional benefits of teams, universities are now training students on how to enhance teamwork. University students who receive interdisciplinary teamwork training compared to those who received disciplinary-specific training show improvements on a self-reported scale for interprofessional learning, team collaboration, and professional identity as a team member (Marcussen et al., 2019). Interprofessional education also improved university students' collaboration skills and their view of other professionals became more positive (Marcussen et al., 2020). A similar study by Self and Parham (2016) evaluated university student's readiness in engaging in teamwork when evaluating children for ASD after receiving an ASD-focused interprofessional training. The results indicate that, after the training, the participants reported positive perceptions towards team collaboration, increased professional identity, and improved ability to work with other disciplines, all when working on an ASD centered team. However, interprofessional training is not always available. Pfeiffer and colleagues (2019) found that a low percentage of school based SLPs were involved in interprofessional teams. The low percentage, less than 15% of SLPs involved in team interventions and evaluations, was due to a lack of previous training in team collaboration (Pfeiffer et al., 2019). Professionals who receive team-based training may benefit from future teams and better assist families and clients with autism (Pfeiffer, 2019; Self & Parham, 2016).

For both professionals and clients to gain benefits, the team must also establish core principles. Sinai-Gavrilov and colleagues (2019) noted that professionals on the team may feel a lack of communication, collaboration, and value related to their role. These challenges amongst

professionals may be common on teams (Ogletree, 2017). Cox (2012) notes core elements that aid in strengthening teams and ensuring benefits. The foundation of the team must include elements such as beneficence, nonmaleficence, respect for autonomy, professional competence, shared responsibility, communication, and non-judgmental regard. Teams will be “sub-par” without the elements that make a beneficial team (Cox, 2012). Therefore, professionals who have prior team training and teams that have these core principles may benefit the most from team practices.

Self-Efficacy

The self-efficacy of professionals impacts how they assess, diagnose, and implement interventions for a student with autism. Therefore, whether the professional is working on a team or independently, self-efficacy is an important concept to consider in professionals working with students with autism. Self-efficacy is based on Bandura’s social cognitive theory (Bandura, 1977, Love et al., 2020). Self-efficacy is defined as one’s belief that they can produce a given outcome; thus, one’s belief regarding their abilities can impact their behavior (Love et al., 2020). One area of self-efficacy study has been that of teachers and their beliefs in their abilities to work with different students (Tschannen-Moran & Woolfolk Hoy, 2001). This difference in beliefs is important to note when considering students with autism. Bandura (1986, 1997) emphasized that humans often act on events or circumstances based on their own perception of their ability to warrant action. Therefore, one’s behavior is influenced by their perceived capabilities (Bandura, 1977). For example, if a teacher perceives their abilities to teach a student with autism as being poor or incapable of helping the student, then that teacher’s belief may come to fruition. Reflecting on Bandura’s theory (1986), one’s personal beliefs is the foundational cause of one’s behavior. One’s self-efficacy can affect their actions as well as their thoughts and feelings.

Hence, the teacher's belief is impacting how they teach the student with autism and possibly how they think and feel about that student (Bandura, 1986; Zee & Koomen, 2016). Therefore, the self-efficacy of school professionals, including that of school psychologists, should be considered in the context of improving the well-being of students with autism as well as the school professionals' ability to better assess, diagnose, teach, or provide interventions for those students.

Benefits for the Student

Can students benefit from professionals who have high self-efficacy? One benefit is that students can be identified with autism sooner which can allow for early intervention. If preschool teachers have high self-efficacy regarding early autism identification, then they are more likely to identify students who are expressing early symptoms of autism (Taresh et al., 2020). Early identification can lead to diagnosis and provision of early interventions for the student (Taresh et al., 2020). In addition, students are more likely to make progress on their IEP goals. For example, Love and colleagues (2020), studied the relationship between special education teachers' self-efficacy and IEP outcomes for students with autism. The results indicate that special education teacher self-efficacy was both significant and positively correlated to higher IEP goal attainment for students with autism. Finally, students benefit when their teachers seek insight from other professionals in areas where they lack confidence. Wangsgard and Cardon (2018) noted that general education teachers reported higher self-efficacy related to their instructional skills, such as clear lesson plans and positive reinforcement, when teaching students with autism. These teachers reported lower self-efficacy in their ability to help students with autism with specific needs such as making friends, conversational skills, class participation, and adapting to routine changes. They also reported lower self-efficacy in trying to engage a student

with autism in an academic activity or during group work. Several participants in this study indicated a need for more support to assist students with autism. For teachers, support could be available through engaging with other professionals including school psychologists or special educator teachers who have more knowledge of autism, and more awareness of practices and useful strategies for students with autism (Segall & Campbell, 2012). Teachers can receive support through engaging in teams with other professionals. The professionals that the teacher engages with may have higher self-efficacy in the areas where the teacher needs more support and in turn can better assist the needs of the student.

Benefits for the Professional

Professionals with high self-efficacy not only better support their students, but they can personally benefit from their own high self-efficacy. These benefits are like those identified for working on a team. Benefits include positive behaviors toward work, reduced work stress, improved management techniques, decreased feelings of burnout, increased job satisfaction, and more supportive of students (Corona et al., 2017; Love et al., 2020; Love et al., 2019). Stress can be generalized towards work and towards specific students. Teachers tend to have more stress towards students with autism than students with emotional or behavioral concerns (Ruble & McGrew, 2013). Yet, teachers with high self-efficacy can manage their stress; in turn, to better support students with autism (Boujut et al., 2017). Bandura (1997) also notes that higher self-efficacy can improve one's well-being and feelings of personal accomplishment. Hence, school personnel with high self-efficacy can benefit the students and themselves.

Improving Self-Efficacy

Given the benefits of self-efficacy, research has been done to note how professionals can improve self-efficacy. School professionals who work with students with autism showed

improved self-efficacy when they received training on evidence-based practices (EBPs) that can be applied when working with students with autism (Corona et al., 2017). This study involved special education teachers, general education teachers, school psychologists, SLPs, school administrators, school counselors and other school personnel who work with students with autism. Findings suggested that prior training in autism was the highest predictor of one's self-efficacy. Preschool teachers' self-efficacy regarding early autism identification also improved after receiving autism training and education (Taresh et al., 2020). Physical therapists, who serve as a vital part of the team, also improved their self-efficacy for helping the team identify early signs of autism after receiving ASD specific training (Ben-Sasson et al., 2018). Interestingly, team-based training including interprofessional and multidisciplinary training may also improve professional's self-efficacy (Deemer et al., 2020; Polloni et al., 2020; Watters et al., 2015; Yoon & Kayes, 2016). Therefore, receiving team training or autism training may improve a professional's self-efficacy in supporting the needs of students with autism. No research has been done to suggest that both ASD training and team training together improve self-efficacy; yet professionals who receive both may have higher self-efficacy regarding ASD compared to professionals who received only one type of training.

Autism: Underserved Populations

In providing services to students with autism, of specific concern are those students from underserved populations. Underserved populations are described as individuals from cultural and ethnic minority groups, low-income families, single parent homes, or who live in rural communities (Elder et al., 2016; Harris et al., 2019; La Roche et al., 2018; Zeleke et al., 2019). Students from underserved populations may encounter more problems when receiving assessments, diagnoses, and interventions compared to their peers who are receiving the same

services (La Roche et al., 2018). This section will include how school-based teams can best support this underserved group with autism.

A critical problem encountered by underserved populations is that they are often diagnosed with ASD at a later age compared to other populations. Receiving an ASD diagnosis at a later age means that this population is not able to receive early intervention (Jo et al., 2015). Gallagher et al. (2018) studied the phenomenon behind why young children from parents with low income and low-literacy skills receive a later ASD or a developmental disability diagnosis instead of an ASD diagnosis. Parents were interviewed on how they access information on child development and parenting resources. Most participants acquired information from doctors (38%) and government agencies including schools (25%). Zeleke et al. (2019) found that families in this population may acquire more information from doctors, but they prolong scheduling an ASD evaluation with a private clinic for years compared to non-minoritized families who tend to wait only months. Difficulties expressing their concerns in their nonprimary language or having cultural fears of condemnation due to having a disability are reasons why prolongation of evaluation can occur (La Roche et al., 2018; Tait et al., 2016). These factors contribute to ASD diagnoses occurring later in the underserved population.

As the child begins school, school personnel may notice the needs of the child, leading to school based assessment, diagnosis, and services for autism. When interviewing parents of underserved populations, Zeleke et al. (2019) found that this population receives more autism services from public schools compared to private organizations. Despite school practitioners encountering more underserved children with autism compared to private clinics, these children and their families continue to encounter challenges. A study by Harris et al. (2019) surveyed school psychologists on their perceived confidence in conducting ASD assessments with

culturally and linguistically diverse students. Participants felt confident in choosing assessments and recommendations for ASD, but less confident in choosing culturally responsive assessments or practices for ASD. Participants who had previously completed a school-based ASD evaluation with a culturally and linguistically diverse student were asked to discuss any challenges or barriers that they might have encountered. Some of these barriers included communication challenges when explaining assessment procedures or diagnosis to the student and family, understanding cultural differences in behavior, difficulty finding interpreters or translators, and poor relationships between the family and the school system which made building rapport more difficult. A similar study by Guiberson and Atkins (2010) surveyed SLPs assessing cultural and linguistic populations. The participants in this study also reported less confidence when assessing or treating this population. Similarly, the SLPs noted challenges in obtaining interpreters and appropriate assessment tools. These barriers faced by school personnel can also prolong ASD diagnosis and cause students to be misidentified as not having ASD which leads to no interventions for the student and less support for the family (Harris et al., 2013).

As mentioned in the study by Zeleke et al. (2019), underserved populations were more likely to receive school-based services and the school-based services were more responsive to their needs compared to other agencies. One probable reason for responsiveness may be that schools are more likely to have collaborative teams responding to the needs of the student. Team based services within schools can aid in decreasing barriers that underserved families and school practitioners encounter when trying to help students with autism. Due to underserved populations receiving more school-based services and because schools already encompass teams, the student and family can receive more well-rounded support (Harris et. al., 2019). Professionals in school-based teams can support parents in advocating for their child compared to private settings where

parents may feel as if they are not receiving support (Elder et al., 2016). Harris et al. (2019) notes that interdisciplinary teams in schools can decrease the barriers that practitioners working independently encounter. Teams offer multiple perspectives and awareness on how to best support all ASD populations including underserved populations. In addition, teams can decrease the rate of misdiagnosis and allow for earlier diagnosis and intervention for students. This further indicates the importance of team-based autism services for students.

CHAPTER TWO: PURPOSE OF THE STUDY

Autism Spectrum Disorder (ASD) is one of the most common neurodevelopmental disorders in the United States and students in this category will need additional support and services from their school. How can schools (specifically school psychologists) support these students? One feasible way is through involvement in effective professional teams. IEP teams are required in schools through IDEA and school psychologists should be part of those teams. Effective teams can provide benefits to the professionals on the team and to the students that the team is serving. However, although teams are beneficial, there is limited research on how school psychologists working with students with autism benefit from team-based services. Especially, whether the professional's self-efficacy is improved through working with teams. Therefore, this study investigates school psychologists' self-efficacy for serving students with autism, and students with autism in underserved populations, through team-based services.

Research Questions and Exploratory Questions

Based on the review of the literature four research questions and two exploratory questions were developed.

Research Question 1

Is there a correlation between the self-efficacy of school psychologists related to the assessment or provision of services to students with autism and the perceived effectiveness of the teams that the school psychologist is working on?

Research Question 2

Is there a correlation between the self-efficacy of school psychologists related to the assessment or provision of services to students with autism and the school psychologist's experience with collaborating with other disciplines on school-based teams?

Research Question 3

Is there a correlation between the self-efficacy of school psychologists related to the assessment of or provision of service to students with autism and the quality of the cross-disciplinary team training that the school psychologists received?

Research Question 4

Is there a correlation between the amount of parent involvement experienced by the school psychologist, and perceived effectiveness of the team?

Exploratory Question 1

What do school psychologists think are the advantages to the student who is receiving team-based services?

Exploratory Question 2

What challenges do school psychologists experience when working with a student with autism in an underserved population?

Methods

Participants

School psychologists ($N = 266$) working in school systems within the United States participated in this study. Recruitment of participants occurred through state school psychology professional associations and school psychology relevant social media Facebook groups (see Appendix A). State-level school psychology associations were contacted to request that they provide information regarding the research study to their membership. Due to state associations

having varying processes for the distribution of research information, only states that agreed to distribute the research information were used for recruitment purposes. A total of 17 state associations agreed to distribute the survey. Of the eight social media groups, six were open forum groups which allow members to post and repost surveys without restrictions. The remaining two Facebook groups required posting permission from the individual who maintains the social media group.

Materials

Materials consisted of an electronic consent form and survey (see Appendix B) administered through Qualtrics. A total of 27 questions were presented in either a multiple choice, slider, or matrix table format.

After completing the consent form, participants were presented with a qualifying question about whether they were engaged in school psychology work. The survey ended if the participant was not a school psychologist.

Next, the participants were presented with questions (Items #2-#4) related to their school-based team experience. The first question in this section asked about the level of experience that they had on school-based teams. If they responded “none” then they were not presented with additional team related questions. Those with experience were asked questions regarding who has served on those teams and the effectiveness of those teams.

Item #5 regarded whether the participant received cross-disciplinary team-based training. This included pre-service training at the undergraduate or graduate level, professional in-service training within the school district, or other professional workshops. If participants responded “yes,” they were asked to rate the quality of the cross-disciplinary team training that they received (Item #6). If participants indicated “no” the next section was presented.

After responding to questions about teams, the participants responded to a series of questions (Items #7-#15) regarding their experiences in working with students with autism. The first question in this section asked if they have worked with students with autism. No further questions regarding this work were presented if participants' response was "No." If they said "yes" they were asked to select which activities (assessment, diagnosis, intervention services) they have been involved in and which of those involved school-based teams. They were then asked about their same experiences for students with autism in underserved populations.

Next, participants received five questions (Items #16-#20) regarding their self-efficacy for assessing, diagnosing, or providing services for students with autism through school-based teams. Questions on this section of the survey were derived from two self-efficacy scales and modeled from Bandura's (1997) research to establish a theoretical foundation. First, items were developed based on Tschannen-Moran and Woolfolk Hoy (2001) Teacher Sense of Efficacy Scale due to its use and research on measuring teacher self-efficacy in education. The second self-efficacy scale in which items were derived, was the Leadership/Teamwork Self-Efficacy Scale due to this measure being used to measure one's self-efficacy when working on a team (Deemer et al., 2020). Items for this survey were worded in a manner so that school psychologists can consider their self-efficacy for assessing, diagnosing, or providing services for students with autism through school-based teams. For these questions, the participant selected from five Likert scale responses. The responses were coded as strongly disagree (1), somewhat disagree (2), neither agree nor disagree (3), somewhat agree (4), strongly agree (5). The response points for these five items were totaled to obtain the participant's total self-efficacy score.

Next, participants received questions (Items #21-#25) related to demographic information. The demographic information consisted of questions pertaining to the participant's

time in their profession, and the students that they serve. The demographic questions were based on the *Status of School Psychology in 2020: Part 1, Demographics of the NASP Membership Survey* to compare the demographics of participants on this survey to those who are members of the National Association of School Psychologists (NASP; Goforth et al., 2021).

Finally, the last two questions of the survey (Items #26-27) related to the survey incentive. If the participant provided consent to participate in the incentive lottery, they were asked to provide their email address in which they would receive the incentive, if selected.

Procedures

Research approval was received by the Institutional Review Board, IRB, at Western Carolina University. Links to the survey were provided at the different school psychology social media sites and through participating state associations (Appendix A). Posting on social media occurred at various times from May 2022 through June 2022. State associations distributed study and survey information once during that period. Participants accessed the survey electronically through Qualtrics. They were first asked to complete a consent form. After reviewing the consent form and indicating consent for participation, the Qualtrics survey was presented to the participant. Survey data was saved and downloaded through the Qualtrics platform. The data were then organized based on the different variables included in this study.

Perceived effectiveness of school-based teams. A score was calculated regarding the perceived effectiveness of school-based teams by adding the scores from Item #4 which has six response items (4.1 - 4.6, $\alpha = 0.87$). Participants who indicated they had not participated in school-based teams did not respond to Item #4 ($n = 1$). Possible survey response and scoring were Poor (1), Good (2), Excellent (3). Responses for each of the six items were added with the

highest possible total being 18 for each participant. Scores ranged from 6 to 18 ($M = 13.17$, $SD = 2.65$).

Self-efficacy. A total self-efficacy score was calculated by adding the score from the five self-efficacy items (Items#16-#20, $\alpha = 0.84$). Possible survey responses and scoring were: Strongly disagree (1), Somewhat disagree (2), Neither agree nor disagree (3), Somewhat agree (4), Strongly agree (5). Scores ranged from 5 to 25 ($M = 22.83$, $SD = 2.79$).

Experience on school-based teams. The experience of participants in collaborating with other disciplines on school-based teams was derived from one item in the survey (Item #2). This was coded so that higher scores reflected more experience on school-based teams. Possible survey responses and scoring were: None at all (1), A little (2), A moderate amount (3), A lot (4), A great deal (5). All participants ($N = 266$) responded to the item in which this variable derives ($M = 4.24$, $SD = 0.90$).

Quality of the cross-disciplinary team training. This variable was assessed with survey Item #6. Item #5 was a screening item due to participants responding “Yes” or “No” as to whether they received cross-disciplinary team training. Participants that responded “Yes” were presented with Item #6 ($n = 163$). Responses to this item were coded so that higher scores reflected a higher quality of the cross-disciplinary team training. Possible survey responses and scoring were: Very Poor (1), Poor (2), Average (3), Good (4), Excellent (5) ($M = 3.60$, $SD = 0.77$).

Parent involvement. A score for parent involvement on a school-based team for all students with autism (Item #10), and a score for parent involvement on a school-based team for a student with autism in an underserved population (Item#15) was calculated. All participants

($N=266$) indicated working with students with autism (Item #7); therefore, all participants responded to Item #10. Possible survey responses and scoring were: Not involved (1), Somewhat involved (2), Adequately involved (3), Very involved (4) ($M = 2.88$, $SD = 0.66$).

Fewer participants ($n = 247$) indicated working with students with autism in underserved populations. Therefore 247 participants responded to Item #15. Possible survey responses and scoring were: Yes (1), No (2). Possible survey responses and scoring were: Not involved (1), Somewhat involved (2), Adequately involved (3), Very involved (4) ($M = 2.38$, $SD = 0.62$).

Analysis

Before completing the analysis of the data, participants characteristics were reviewed to ensure they met participation requirements, i.e., working as a school psychologist within the United States. Surveys that were not finished were not included in the data set. Only the surveys completed by participants who met the requirements were included in the data analysis ($N = 266$).

Demographics and Exploratory Questions

Demographics. Most of the sample were White, not of Arab, Middle Eastern, North African (AMENA), or Hispanic/Latinx origin and working in suburban school districts. Complete demographic information of the sample is presented in Tables 1 - 4. Participant demographics were compared to that of the *Status of School Psychology in 2020: Part I, Demographics of the NASP Membership Survey* (Goforth et al., 2021) to ensure that the sample for this survey reflected the members of the National Association of School Psychologists (NASP). A NASP Membership Survey is completed every five years through the National Association of School Psychologists to gain data on the demographics and professional practices of school psychologists. For the 2020 survey, “30% of NASP’s regular and early career members

were randomly selected by state of residence; 1,308 participants ultimately completed the survey” (Goforth et al., 2021). The comparison indicates that this survey was representative of school psychologists in the United States. A two sample t-test was performed to compare the years of experience in the participants of this study and that of the participants in the NASP survey. There was not a significant difference in years of experience between participants in this study ($M = 11.23, SD = 9.95$) and the NASP participants ($M = 12.40, SD = 9.57$); $t(1572) = -1.81, p = 0.07$.

Table 1

Years of Experience as a School Psychologists: Demographic Characteristics (N = 266)

	Years of Experience	
	Mean(<i>SD</i>)	Range
Participant Demographics (<i>N</i> = 266)	11.23(9.95)	0 to 51
NASP Demographics (<i>N</i> = 1,308)	12.40(9.57)	0 to 52

*Not including graduate preparation and internship.

Table 2

Geographic Location: Demographic Characteristics

	Participant Demographics	NASP Demographics
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Geographic location of the school(s) served	<i>n</i> (%)	<i>n</i> (%)
Urban	43(16.17%)	224(24.70%)
Suburban	140(52.63%)	475(52.40%)
Rural	76(28.57%)	188(20.80%)
Frontier (i.e., sparsely settled, and remote areas)	1(0.38%)	1(0.10%)
Other (please specify):	6(2.26%)	-

Table 3

Race and Ethnicity: Demographic Characteristic

	Participant Demographics	NASP Demographics
Race	<i>n</i> (%)	<i>n</i> (%)
American Indian or Alaska Native	2(0.75%)	7(0.70%)
Asian	3(1.13%)	24(2.40%)
Black or African American	5(1.88%)	39(3.90%)

Native Hawaiian or Other Pacific Islander	1(0.38%)	1(0.10%)
White	239(89.85%)	851(85.70%)
More than one race	8(3.01%)	27(2.70%)
Prefer not to answer	5(1.88%)	26(2.60%)
Prefer to self-describe	3(1.13%)	18(1.80%)
<hr/>		
Ethnicity	<i>n</i> (%)	<i>n</i> (%)
<hr/>		
Arab, Middle Eastern, or North African (AMENA) origin	1(0.38%)	7(0.70%)
Hispanic or Latinx origin	19(7.14%)	77(7.70%)
Not of AMENA or Hispanic/Latinx origin	226(84.96%)	741(79.17%)
Prefer not to answer	13(4.89%)	13(4.89%)
Prefer to self-describe		7(2.63%)

Note. *NASP is the National Association of School Psychologists

Table 4

Grade Level of Students Served: Demographic Characteristics

Grade Level	<i>n</i> (%)
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Preschool	141(53.01%)
Elementary School	229(86.09%)
Middle School	163(61.28%)
High School	138(51.88%)

Note. *Participants could respond to more than one grade level

Exploratory question one. Exploratory question one regards participants’ perception of the benefits that students receive through team-based services. A list of benefits was presented in the survey and the participants responded either “Yes” they have experienced that benefit for students with autism, or “No” they have not experienced that benefit for these students. The benefits included: (1) Improved rate of progress towards IEP goals, (2) More parent(s) involvement in supporting the child, (3) Holistic support/services for the child, and (4) Better long-term academic, behavioral, and emotional outcomes for the child. All participants indicated working with students with autism (Item #7); therefore, the complete sample ($N = 266$) was used in the analysis. The experienced benefits were analyzed through a rank order process.

Participants indicated “Better long-term academic, behavioral, and emotional outcomes for the child” as being the top ranked benefit (Yes = 92.11%, No = 7.89%) that students receive through team-based services. “Improved rate of progress towards IEP goals” was the second highest reported benefit (Yes = 91.73%, No = 8.27%). The third greatest benefit (Yes = 78.95%, No = 21.05%) was “More parent(s) involvement in supporting the child.” The least experienced benefit for students receiving team-based services according to school psychologists was

“Holistic support/services for the child” with 65.04% indicating “Yes” and 34.96% indicating “No.”

Table 5

School Psychologists’ Report Benefits for Students Due to Team-Based Services (N = 266)

Benefits	n(%)	
	Yes	No
Better long-term academic, behavioral, and emotional outcomes for the child	245(92.11%)	21(7.89%)
Improved rate of progress towards IEP goals	244(91.73%)	22(8.27%)
More parent(s) involvement in supporting the child	210(78.95%)	56(21.05%)
Holistic support/services for the child	173(65.04%)	93(34.96%)

Exploratory question two. Exploratory question two provides information regarding the challenges that survey participants’ experience when working with a student with autism in an underserved population. A list of challenges was presented in the survey and the participants responded either “yes” they have experienced that challenge for students with autism, or “no” they have not experienced that challenge for these students. The challenges included: (1) Communicating with parents who speak a different language (2) Communicating with the child whether or not the child speaks a different language (3) Finding a translator (4) Finding appropriate resources for the child and family, (5) Dealing with stigmas or lack of awareness

regarding Autism, (6) Families who have prolonged or are resistant to receiving services, (7) Difficulty choosing or conducting culturally responsive assessments, (8) Understanding cultural differences in behavior, (9) Poor relationships between the family and the school. The participants that indicated working with students with autism in underserved population (Item #11) was used in the analysis ($N = 247$). The experienced challenges were analyzed through a rank order process.

The challenge most frequently experienced was “Dealing with stigmas or lack of awareness regarding autism” with 88.26% indicating “yes” and 11.74% indicating “no.” The challenge of “Families who have prolonged or are resistant to receiving services” was also rated highly as a challenge that school psychologists experienced (Yes = 87.45%, No = 12.55%). Participants indicated “Finding a translator” as being the least experienced challenge; yet this was roughly split between participants with 51.01% indicating “Yes” and 48.99% indicating “No.” Table 6 provides challenges in rank order from challenge most frequently reported as experienced to the challenge least frequently reported as experienced.

Table 6

Challenges of Working with Students with Autism in Underserved Populations

Challenge	n(%)	
	Yes	No
Dealing with stigmas or lack of awareness regarding autism	218(88.26%)	29(11.74%)
Families who have prolonged or are resistant to	216(87.45%)	31(12.55%)

receiving services		
Finding appropriate resources for the child and family	204(82.59%)	43(17.41%)
Poor relationships between the family and the school	190(76.92%)	57(23.08%)
Communicating with parents who speak a different language	186(75.30%)	61(24.70%)
Communicating with the child whether or not the child speaks a different language	184(74.49%)	63(25.51%)
Understanding cultural difference in behavior	163(65.99%)	84(34.01%)
Difficulty choosing or conducting culturally responsive assessments	149(60.32%)	98(39.68%)
Finding a translator	126(51.01%)	121(48.99%)

Research Questions: Data

Research question one. Is there a correlation between the self-efficacy of school psychologists related to the assessment or provision of services to students with autism and the perceived effectiveness of the teams that the school psychologist is working on? This correlation was conducted by first calculating the total perceived effectiveness of school-based teams score and total self-efficacy score for each participant.

Spearman’s rho correlation coefficient was used to assess relationships between the self-efficacy of school psychologists related to the assessment or provision of services to students with autism and the perceived effectiveness of school-based teams. There was a significant moderate positive correlation between the two variables, $r_s = .41, p = <.001$. See Table 7.

Table 7

Research Question 1

Variables	Mean	SD	r_s	p
Self-Efficacy	22.83	2.79		
Perceived Effectiveness of School-Based Teams	13.17	2.65	.41	<.001

Research question two. Is there a correlation between the self-efficacy of school psychologists related to the assessment or provision of services to students with autism and the amount of experience the school psychologist has with collaborating with other disciplines on school-based teams? This correlation was conducted with the score obtained on the experience on school-based teams variable and by calculating a total self-efficacy score.

Spearman’s rho correlation coefficient was used to assess relationships between the self-efficacy of school psychologists related to the assessment or provision of services to students with autism and the amount of experience the school psychologist has with collaborating with other disciplines on school-based teams. The variables were correlated $r_s = .36, p = <.001$ indicating a weak correlation between one’s self-efficacy and the amount of experience on a school-based team. See Table 8.

Table 8*Research Question 2*

Variables	Mean	SD	r_s	p
Self-Efficacy	22.83	2.79		
Experience on School-Based Teams	4.24	0.90	.36	<.001

Research question three. Is there a correlation between the self-efficacy of school psychologists related to the assessment of or provision of service to students with autism and the quality of the cross-disciplinary team training that the school psychologists received? This correlation was conducted by using the score obtained on the variable “quality of the cross-disciplinary team training” and by calculating the total self-efficacy score.

Spearman’s rho correlation coefficient was used to assess relationships between the self-efficacy of school psychologists related to the assessment or provision of services to students with autism and the quality of the cross-disciplinary team training that the school psychologists received. The relation was correlated $r_s = .20$, $p = .011$ indicating a weak correlation between one’s self-efficacy and the quality of the cross-disciplinary team. See Table 9.

Table 9*Research Question 3*

Variables	Mean	SD	r_s	p
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Self-Efficacy	22.83	2.79		
Quality of the Cross-Disciplinary Team Training	3.60	0.77	.20	.011

Research question four. Is there a correlation between the amount of parent involvement experienced by the school psychologist, and perceived effectiveness of the team? This correlation was conducted by first calculating the amount of parent involvement experienced by the school psychologist. A score for parent involvement on a school based-team for student with autism (Item#10) and a score for parent involvement on a school based-team for a student in autism in an underserved population (Item#15) was used. As indicated, participants that indicated “None at all” to Item #2 ($n=1$) did not respond to Item #4. This allowed for only the participants who indicated “A little” through “A great deal” of experience on school-based teams (Item #2) to respond to Item #4. The perceived effectiveness of school-based teams score was calculated by adding the scores from Item #4 which has six response items (4_1 - 4_6).

A Spearman Rho correlation coefficient was used to assess the relationship between the amount of parent involvement for all students with autism, and the perceived effectiveness of the team. There was a very weak negative correlation between the two variables, $r(263) = .148$, $p = .016$. See Table 10.

Table 10

Research Question 4

Variables	Mean	SD	<i>r</i>	<i>p</i>
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Perceived Effectiveness of School-Based Teams	13.17	2.65		
Parent Involvement	2.88	0.66	.148	.016

A Spearman Rho correlation coefficient was also used to assess the linear relationship between the amount of parent involvement for students with autism in underserved populations, and the perceived effectiveness of the team. There was a weak correlation between the two variables, $r(244) = .231$, $p = <.001$. See Table 11.

Table 11

Research Question 4: Underserved Populations

Variables	Mean	SD	<i>r</i>	<i>p</i>
Perceived Effectiveness of School-Based Teams	13.17	2.65		
Parent Involvement	2.38	0.62	.231	<.001

Discussion

This study investigates the self-efficacy of school psychologists when serving students with autism, and students with autism in underserved populations, through team-based services. This study specifically examines how school psychologists working with students with autism benefit from team-based services. Team-based services are important for providing support for students and are a major component of a school psychologist’s career. Only one participant in the survey indicated not having had experience on teams. All participants indicated having worked

with a student with autism and 93% of participants indicated working with a student with autism in an underserved population.

Participants consistently indicated that the students with autism that they had worked with had benefited from team-based services by having better long-term academic, behavioral, and emotional outcomes, and improved rate of progress towards IEP goals. Surprisingly, fewer participants indicated that they had experienced the benefit of holistic support/services for the child. School-based teams tend to work together to identify the primary need of the child through the assessment process. However, the identified needs of the child may be served by only one provider, like a speech pathologist, counselor, or special education teacher. This would indicate that the team experience is seen as being most important at the assessment level and less important at the service provision level.

While indications were given that students are receiving benefits through team-based services, there were also indications of some unique challenges encountered by school psychologists when serving students with autism, especially those in underserved populations. The most encountered challenge was identified as dealing with stigmas or lack of awareness regarding autism. Participants also reported that it was common to encounter families who have prolonged resistance to their child receiving services possibly due to the existing stigma of autism and to have limited resources available for the families. In addition, roughly half of participants indicated that finding a translator was a challenge. This indicates the need for schools to have more translators available. However, while having someone speak in the parent's language is a challenge, a greater challenge involves addressing cultural stigmas. Families need more resources or tools, readily available in multiple languages, that would help explain autism in a way that families would understand, reducing the amount of resistance experienced. Not

only do school psychologists work with underserved populations, but other school personnel and outside providers work closely with this population. Therefore, all practitioners should continue to review the research on addressing stigma and barriers within this population.

A practitioner's self-efficacy and their perceived effectiveness of the team are crucial factors when providing services for students. The participants of this study generally indicated high self-efficacy related to the assessment or provision of services to students with autism with 244 participants scoring a total between 19-25. This study found a moderate correlation between the self-efficacy of school psychologists, and the perceived effectiveness of school-based teams. It may be that when a school psychologist has high self-efficacy, they view their school-based team as being more effective as well. However, this could also indicate that being on an effective team leads to greater self-efficacy. They may feel more confident in their individual team role when working alongside team members to provide services for the student. Interestingly, there is a weaker correlation between the amount of experience one has on teams and their self-efficacy. This may indicate that it isn't just being on a team that leads to higher self-efficacy but being on a team that is perceived as being effective. When school psychologists perceive their teams as being effective, they may have higher self-efficacy for working with students with autism. Additionally, all team members should consider how their own self-efficacy impacts the student they are serving and the team they are serving on.

Finally, the weakest correlation is between the school psychologist's self-efficacy and their team-based training. It should be noted that this study did not specifically focus on team-based training with an emphasis on providing services for students with autism, but teams in general. Although school psychologists spend much of their time working in teams, only 58.92% percent of the respondents in this study indicated having received any team-based training. In

addition, this study indicated that having prior team-based training may not have a significant relationship to self-efficacy for providing services for students with autism. Therefore, as this study suggests, school psychologists' self-efficacy is built more through experience, especially experience with strong teams, and less through training.

On IEP teams, both school practitioners and parents serve as team members. Due to the unique challenges that practitioners encounter when working with students with autism in underserved populations, parents in this population were compared separately to all parents with a student with autism. A very weak and a weak correlation was indicated for the sets of parents. Therefore, while less parent involvement is correlated with higher team effectiveness for both groups the significance of this finding is not clear, and more research would need to be done to explore this further. For example, there is limited research on school-based teams, especially the parent's role on these teams. In addition, current research, which is predominantly on private practice teams, may not be applicable due to the unique nature of school-based teams. More research should be done in this area to provide data on how school practitioners should interact with and incorporate parents in teams to make the team a more effective unit.

There was a slightly stronger correlation between team effectiveness and involvement from the parents in underserved populations. Compared to all parents with students with autism, school psychologists encounter unique challenges when working with underserved populations. As indicated, stigma and resistance to their child receiving services was the most encountered challenge. These challenges may result in parents from underserved populations being less involved on the team or their values not aligning with that of the school team. Teams are most effective when members work together. Therefore, schools may need to address the unique

challenge with these parents so that they can be involved in team discussion and team decisions for their child.

The results of this study demonstrate areas where professional development or training can occur for school psychologists, school psychology graduate students, and other professions that serve students. First, graduate programs can evaluate how self-efficacy, students with autism, underserved populations, working with teams, and parental involvement are being addressed throughout the program. Targeting how one's self-efficacy can impact one's professional career is important for students and practicing school psychologists to learn. In school districts, IEP team members could complete a self-reflection of their team experience. This may allow team members to gain awareness of how they can continue to make teams more effective for all members, especially for the students' parents. This study brings awareness to how research on school-based teams, self-efficacy, and working with underserved populations is needed to improve teams. Districts and States can address challenges that are specific to underserved populations so that better services can be provided for those families. Topics pertaining to home-school partnership and addressing mental health stigma with families should be included in professional development training.

Limitations

Although the sample, being primarily White, is representative of members of the National Association of School Psychologists, it may indicate a lack of diversity that can impact interactions with families of underserved populations. The heterogeneous study populations serve as a limitation. Additionally, participants with an interest in autism may have been more likely to participate. Furthermore, this study took a broad approach towards teams and the type of team training received. Teams within this study included transdisciplinary, multidisciplinary,

and interdisciplinary. IEP teams are multidisciplinary teams which is the most common type of team school psychologists serve on. Collecting data on the specific type of team may provide further research on how school psychologist self-efficacy is impacted and how parents are involved on those teams. Additionally, questions regarding team-based training did not have a focus on working with students with autism or underserved populations. Narrowing the type of team training may provide additional data. These limitations and the limited literature on the combination of school psychologist's self-efficacy, students with autism, and underserved populations should be taken into consideration when considering the results. Future research should take these results into consideration when continuing to explore this issue.

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APPENDICES

Appendix A: Table A1. School Psychology State Associations and Facebook Groups

School Psychology State Associations and Facebook Groups
School Psychology State Association
Arkansas
Arizona
Connecticut
Delaware
Idaho
Kansas
Maine
Maryland
Minnesota
Missouri
Montana
New Jersey
North Carolina
Vermont
Virginia
Washington State
West Virginia
Facebook Groups
Early Career School Psych Support Group
Notes from the School Psychologist
Said No School Psychologist Ever
School Psychologists: God be WISC You
School Psych Lounge
School Psych to School Psych
School Psyched, Your School Psychologist

Sincerely, School Psychologist

Appendix B: Table B1. Consent and Survey

Western Carolina University

Consent Form to Participate in a Research Study

SCHOOL PSYCHOLOGISTS SUPPORTING STUDENTS WITH AUTISM THROUGH PARTICIPATION IN SCHOOL BASED TEAMS

Project Title: School Psychologists Supporting Students with Autism Through Participation in School Based Teams

This study is being conducted by: Jennie Morton, School Psychology Graduate Student, Western Carolina University; Dr. Lori Unruh, Ph.D., Faculty Advisor, Department of Psychology, Western Carolina University.

Description and Purpose of the Research: You are invited to participate in a research study about the impact of school-based teams for students with autism. By doing this study we hope to learn how school-based teams can impact the self-efficacy of school psychologists, and whether school-based team services have a positive impact on students with autism.

What you will be asked to do: You will be presented with questions related to your school-based team experience. Next, questions will be presented on your experience with assessing, diagnosing, or providing services for students with autism. If you have experience with assessing, diagnosing, or providing services for students with autism, you will then be asked about your experiences for students with autism in underserved populations. Next, you will receive questions on your self-efficacy for assessing, diagnosing, or providing services for students with autism through school-based teams. Finally, you will provide demographic information which will include questions pertaining to your professional role, and the students that you serve. It will take approximately 25 minutes. No identifying information will be collected.

Risks and Discomforts: There are no anticipated risks from participating in this research. We anticipate that your participation in this survey presents no greater risk than everyday use of the Internet.

Benefits: There are no direct benefits to you for participating in this research study. This study may help us better understand how school-based teams can impact the self-efficacy of school psychologists and the services for students with autism. Research findings will be shared at either the North Carolina School Psychology Association (NCSPA) conference or the National Association of School Psychologists (NASP) convention. Therefore, school psychologists, school personnel working on teams, and school personnel working with students with autism can learn about the data collected through this survey.

Privacy/Confidentiality/Data Security: The data collected in this study is confidential. This means that the researcher can directly or indirectly match the data, only to the participant that consents to provide their email for incentive purposes, but participant identity is not disclosed. We will collect your information through a survey, using the Qualtrics platform. This information will be stored in the Qualtrics secured cloud. The research team will work to protect your data to the extent permitted by technology. It is possible, although unlikely, that an unauthorized individual could gain access to your responses because you are responding online. This risk is similar to your everyday use of the internet.

Voluntary Participation: Participation is voluntary, and you have the right to withdraw your consent or discontinue participation at any time without penalty. If you choose not to participate or decide to withdraw, there will be no impact on your employment.

Compensation for Participation: After completing the survey, you will be asked if you would like to be entered in a drawing to win one of five \$20 Amazon eGift cards. Please provide the email address that you would like to use if you are selected for the drawing.

Contact Information: For questions about this study, please contact Jennie Morton at jmorton2@catamount.wcu.edu. You may also contact Dr. Lori Unruh, the principal investigator and faculty advisor for this project, at lunruh@email.wcu.edu.

If you have questions or concerns about your treatment as a participant in this study, you may contact the Western Carolina University Institutional Review Board through the Office of Research Administration by calling 828-227-7212 or emailing irb@wcu.edu. All reports or correspondence will be kept confidential to the extent possible.

- Yes, I agree
- No, I do not agree

School-Based Teams and Autism Survey

Q1 What is your school-based profession?

- School Psychologist
- Other (please describe) _____

Q2 How much experience have you had working with school-based teams defined as "professionals from different disciplines collaborating to meet the needs of a student"?

- None at all
- A little
- A moderate amount
- A lot
- A great deal

Q3 Select the individual(s) who you have worked with on these school-based teams.

1. School Psychologist
2. General Education Teacher
3. Special Education Teacher
4. Parent(s)
5. Nurse
6. Speech Language Pathologists
7. Occupational Therapists (OT)
8. Physical Therapists (PT)
9. Social Workers
10. Principal or other administration staff
11. Other; please state: _____

Q4 Rank the effectiveness of the school-based teams you have been on based on the following criteria.

	Poor	Good	Excellent
Team communication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Valuing other team members' insight	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Team collaboration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clear roles and responsibilities of team members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clear purpose and goal of the team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encouragement of diverse thinking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q5 Have you previously received training in working with cross-disciplinary teams? This could include pre-service training at the undergraduate or graduate level, professional in-service training within the school district, or other professional workshops.

- Yes
- No

Q6 Rate the quality of the cross-disciplinary team training that you received.

- Very Poor

- Poor
- Average
- Good
- Excellent

Q7 Have you worked with students with autism?

- Yes
- No

Q8 Which of the following activities have you engaged in for students with autism? For each activity that you have engaged in, indicate whether that activity was done as part of a team of school-based personnel.

	Have you engaged in this activity?		If yes, did this activity involve a school-based team? Do not respond if you have not engaged in this activity.	
	Yes	No	Yes	No
Autism Assessment & Diagnosis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Autism Special Education Eligibility & Placement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Autism Intervention or Treatment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q9 Have you experienced students with autism receiving any of the following benefits due to team-based services?

	Yes	No
Improved rate of progress towards IEP goals	<input type="radio"/>	<input type="radio"/>
More parent(s) involvement in supporting the child	<input type="radio"/>	<input type="radio"/>

Holistic support/services for the child (3)	<input type="radio"/>	<input type="radio"/>
Better long-term academic, behavioral, and emotional, outcomes for the child (4)	<input type="radio"/>	<input type="radio"/>

Q10 On average, how would you rate the involvement of parents with a student with autism in the IEP process? Involvement includes their engagement or participation in the IEP development or meetings and/or implementation of home-based interventions.

- Not involved
- Somewhat involved
- Adequately involved
- Very involved

Q11 Have you worked with a student with autism who was in an underserved population? Underserved populations include cultural or ethnic minority groups, low-income families, single parent homes, or living in a rural community.

- Yes
- No

Q12 Which of the following challenges have you experienced when working with a student with autism in an underserved population?

	Yes	No
Communicating with parents who speak a different language	<input type="radio"/>	<input type="radio"/>
Communicating with the child whether or not the child speaks a different language	<input type="radio"/>	<input type="radio"/>
Finding a translator	<input type="radio"/>	<input type="radio"/>
Finding appropriate resources for the child and family	<input type="radio"/>	<input type="radio"/>
Dealing with stigmas or lack of awareness regarding Autism	<input type="radio"/>	<input type="radio"/>

Families who have prolonged or are resistant to receiving services	<input type="radio"/>	<input type="radio"/>
Difficulty choosing or conducting culturally responsive assessments	<input type="radio"/>	<input type="radio"/>
Understanding cultural differences in behavior	<input type="radio"/>	<input type="radio"/>
Poor relationships between the family and the school	<input type="radio"/>	<input type="radio"/>

Q13 Which of the following activities have you engaged in for a student with autism who is in an underserved population? For each activity that you have engaged in, indicate whether that activity was done as part of a team of school-based personnel.

	Have you engaged in this activity?		If yes, did this activity involve a school-based team? Do not respond if you have not engaged in this activity.	
	Yes	No	Yes	No
Autism Assessment & Diagnosis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Autism Special Education Eligibility & Placement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Autism Intervention or Treatment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q14 Have you experienced students with autism who are in an undeserved population receiving the following benefits due to team-based services?

	Yes	No
Improved rate of progress towards IEP goals	<input type="radio"/>	<input type="radio"/>
More parent(s) involvement in supporting the child	<input type="radio"/>	<input type="radio"/>
Holistic support/services for the child	<input type="radio"/>	<input type="radio"/>
Better long-term academic, behavioral, and emotional outcomes for the child	<input type="radio"/>	<input type="radio"/>

Q15 On average, how would you rate the involvement of parents with a student with autism, who is in an underserved population, in the IEP process? Involvement includes their engagement or participation in the IEP planning or meetings and/or implementation of home-based interventions.

- Not involved
- Somewhat involved
- Adequately involved
- Very involved

Q16 Working effectively with others on school-based teams is important when providing supports for students with autism.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q17 I have the skills needed to work effectively with others on a school-based team when providing supports for students with autism.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree

- Strongly agree

Q18 I am able to support students with autism through school-based teams.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q19 I know how to be a good school-based team member when providing supports for students with autism.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q20 I know what it takes to help a school-based team accomplish its task of providing supports for students with autism.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q21 How many years of experience do you have in school psychology, not including graduate preparation and internship?

- _____

Q22 What is your race?

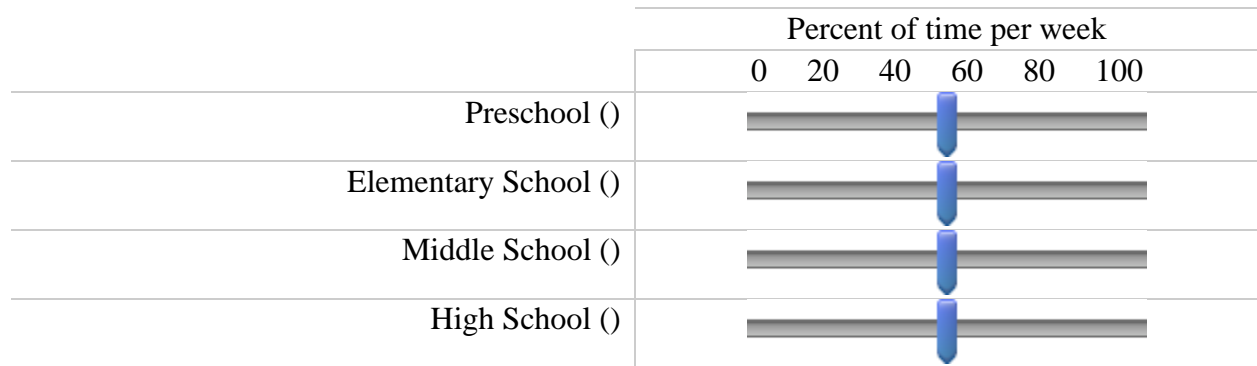
- American Indian or Alaska Native
- Asian
- Black or African America
- Native Hawaiian or Other Pacific Islander
- White
- More than one race
- Prefer not to answer

- Prefer to self-describe
-

Q23 What is your ethnicity?

- Arab, Middle Eastern, or North African (AMENA) origin
- Hispanic or Latinx origin
- Not of AMENA or Hispanic/Latinx origin
- Prefer not to answer
- Prefer to self-describe

Q24 What age range are the students that you serve? If you serve multiple groups, indicate the percentage of time you spend with each group during one work week. If you only work with one group, indicate 100% for that group.



Q25 Which best characterizes the geographic location of the school(s) you serve?

- Urban
 - Suburban
 - Rural
 - Frontier (i.e., sparsely settled, and remote areas)
 - Other (please specify):
-

Q26 Are you interested in being entered to win one of five \$20 Amazon eGift Card? If yes, you are consenting to provide your contact information to be entered in the lottery. The winner(s) will be contacted via email and their Amazon eGift Card will be provided through that same email.

- No
- Yes

Q27 Please provide your email address to be entered in the lottery.

- Email Address: (2) _____