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Exploring Barriers to the Generalization of Social Skills Interventions for Children Diagnosed with ASD: A Qualitative Analysis of 'Youth Engagement Through Intervention'

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ABSTRACT

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Abstract Title: Exploring Barriers to the Generalization of Social Skills Interventions for Children Diagnosed with ASD: A Qualitative Analysis of 'Youth Engagement Through Intervention'

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Many children who are diagnosed with Autism Spectrum Disorder (ASD) have difficulty with social skills and maintaining friendships. In turn, many social skills interventions have been developed to aid in the treatment of children diagnosed with ASD. Children with ASD, however, have difficulty generalizing the skills learned in social skills interventions to more natural settings like the home and school. This study, therefore, explored the barriers to the generalization of a social skills intervention, *Youth Engagement Through Intervention* (YETI) for children with ASD. Barriers to the generalization of YETI were explored through the qualitative examination of parents' acceptability of the evidence-based strategies used in YETI and how these strategies played a role in generalization of social skills in the home setting. The qualitative analysis analyzed data collected from parent rating scales and semi-structured interviews designed specifically for YETI.

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Chapter I: Introduction

There has been an increase in the diagnosis of children with Autism Spectrum Disorder (ASD; Center for Disease Control and Prevention, 2014), with prevalence rates of autism estimated to be 1 in 68 births (Center for Disease Control and Prevention, 2012). ASD is an umbrella term that characterizes a group of complex disorders of brain development that include impairments in the areas of social interaction, communication and stereotyped patterns of behavior, interests and activities (American Psychiatric Association, 2014). Approximately 1 in every 42 boys and 1 in every 189 girls are being diagnosed with ASD (Center for Disease Control and Prevention, 2014). These prevalence rates have led to concerns about the academic and overall well-being of children with ASD.

Developing and using social skills are often difficult for children diagnosed with ASD. The term *social skills* encompass elements of communication, behavior, and understanding, which are essential for social interaction (Cook et al., 2008; White, Keonig & Scahill, 2006). It is important to acknowledge that social skills are extremely complex, and even individuals diagnosed with ASD who are considered high functioning continue to have difficulty with social situations (Maione & Mirenda, 2006), and have pronounced deficits in social comprehension (Carter et al., 2005). Individuals with ASD experience difficulty with communicating in social situations, which is often associated with feelings of loneliness, fewer friendships, and less satisfaction with friendships (Stichter et. al., 2010). Thus, maintaining relationships with peers, family, and teachers is often a challenge.

Social skills interventions have been developed to address these deficits. Because social skills are complex, there are several different interventions designed to focus on specific components of social skills. For example, the *Social Communication Intervention Project* (SCIP)

has been shown to improve conversational competence, pragmatic functioning and social communication, and learning skills (Adams et al., 2012). The *Emotional-Based Social Skills Training* (EBSST) has shown to improve emotional competence with lasting effects (Ratcliffe et. al., 2014), and the *Social Competence Intervention* (SCI) has shown to significantly improve theory of mind and problem solving, overall social abilities, and the executive functioning for children with ASD (Stichter et. al., 2012).

Moreover, some interventions, like group-based social skills training (SST), take a framework approach to treatment (Dekker et al., 2014). A framework approach to treatment incorporates several theoretical perspectives and strategies to provide treatment. The well-known intervention, *Social Thinking* by Garcia Winner (2009) uses several theoretical perspectives to provide treatment instead of utilizing one inflexible curriculum (Winner & Crooke, 2009). Moreover, *Youth Engagement Through Intervention* (YETI) designed by Anisa Goforth and Jennifer Schoffer Closson, also takes a framework approach to treatment and was examined in this study.

Furthermore, there has been a push in recent years to use evidence-based practices in psychology (EBPP) due to research producing varied results when it comes to the effectiveness of different social skills interventions. Specifically, the generalization of skills taught in social skills interventions have shown to be difficult for children diagnosed with ASD (Ostmeyer & Scarpa, 2012). Therefore, a child with ASD has difficulty using learned social skills in more natural environments like the school and home. Individuals with ASD often have comorbid diagnoses like a language disorder (Laugeson et al., 2012) or social anxiety (Chang, Quan & Wood, 2012), which may account for some of the difficulty in generalizing social skills.

However, there may be additional barriers to the generalization of skills that may not be contributed to individual characteristics.

Parent acceptability of a social skills intervention may also influence the generalization of learned social skills. That is, parent involvement in social skills interventions such as goal development and fostering opportunities at home to practice skills has shown to improve the social skills of children diagnosed with ASD (DeRosier et al., 2011). Therefore, if parents implement the social skills intervention in the home environment and practice learned skills, generalization of those social skills may improve. If parents do not believe that the intervention is effective, then the skills are less likely to be practiced in the home environment (Lane & Beebe-Frankenberger, 2004).

Although a number of research studies have examined the effectiveness of group social skills interventions, there have been few studies that have examined parent's perspectives or acceptability of those interventions. Furthermore, few studies have used in-depth qualitative approaches to understand parent acceptability of the intervention and generalizability of a group social skills intervention. Consequently, the purpose of this study was to explore the barriers to the generalization of a group social skills intervention, *Youth Engagement Through Intervention* (YETI) for children with ASD. Barriers to the generalization of YETI was explored through the qualitative examination of parents' acceptability of the evidence-based strategies used in YETI and how these strategies may play a role in generalization of social skills in the home setting.

Chapter II: Literature Review

The purpose of this study was to identify barriers to the generalization of a group social skills program (i.e., YETI) to the home setting. In this chapter, I will first review the definition of social skills and explain the complexity of social skills by describing the three primary components of social skills that are most often described by researchers. Second, I will describe social skills interventions and the research-base of these social skills interventions. I will specifically introduce *Youth Engagement Through Intervention (*YETI), and discuss why YETI differs from other social skills interventions. Finally, I will discuss the generalization and maintenance of social skills interventions, and the role of parent acceptability and barriers to the generalization of YETI.

Social Skills

Social skills are characterized by elements of communication and behavior that are essential for social interaction (Cook et al., 2008). Children with ASD encounter challenges with social interaction not because of a lack of social interest; rather, these difficulties are due to the lack of social skills and the ability to know when to use such skills (White, Keonig & Scahill, 2006). Indeed, improving the social skills of individuals with ASD is a challenge in treatment—a challenge that is strengthened by the complexity of social skills themselves (Weiss & Harris, 2001). Specifically, the complexity and diversity of social skills aids in the difficulty clinicians encounter when determining what aspect of social skills should be treated. For example, a child may have several difficulties regarding social skills (e.g., initiating conversation, making eye contact), but the clinician must be able to identify specific deficits to intervene accordingly. Therefore, the characterization and definition of social skills is challenging for researchers and

clinicians. Nonetheless, social skills have been studied in the domains of social communication, social-emotional skills, and social competence.

Social Communication

Children with ASD often have difficulty communicating with their peers, particularly as a result of deficits in social communication. Social communication is considered to be complex and involve concepts such as the pragmatics of language and language expression, social interaction, and social cognition (Thiemann, Goldstein & Howard, 2001). For example, one type of social communication is pragmatics of language, which encompasses the study of verbal and nonverbal communication (Tager-Flusberg, 2003). Verbal communication includes speech acts (i.e., requests, comments, responses, etc.) and social reciprocity (i.e., taking turns, initiating and responding to interactions, etc.). Furthermore, nonverbal communication involves body language, eye contact, and gaze. Language expression is more technical because there is a large focus on how a person can verbalize or write their expressions through appropriate means like semantics, syntax, and morphology (Hurford, 2001).

Another form of social communication is social interaction, which refers to how an individual acts and behaves during social exchanges (White et al., 2007). Social interaction could include several variables like a person's speech style and context, cultural influences, conflict resolution, and social reasoning. Furthermore, the component of social cognition refers to concepts such as Theory of Mind (ToM; Baron-Cohen, 2000), joint attention (Murray, et al., 2008), and executive functioning (Fisher & Happe, 2005). ToM refers to a child's ability to recognize and understand his/her own mental states (beliefs, desires, knowledge, etc.) and the mental states of others (Baron-Cohen, 2000). Furthermore, ToM emphasizes that a person's mind is not directly observable, therefore, people must use their ToM to make predictions about

a person to better understand their behaviors and reactions. Joint attention, on the other hand, helps children make predictions and understand behaviors. Joint attention is achieved when one child alerts the other child with verbal and non-verbal cues (pointing, eye gaze, etc.), both children then share focus on an object, and return their focus to one another (Murray, et al., 2008). Lastly, executive functioning refers to the broader mental processes that allow children to focus attention, multi-task, plan and remember instructions (Fisher & Happe, 2005).

These components of social communication affect a child's ability to initiate and maintain friendships (Lord & Magill-Evans, 1995). Because children have deficits in these areas, it becomes more difficult to communicate because social communication involves the transaction of verbal and nonverbal information. If a child has difficulty expressing himself/herself, then communication becomes strained and more difficult to understand. Furthermore, if a child has difficulties with social cognition and executive functioning, then the child's ability to understand social cues is inhibited.

Social-Emotional Skills

Another aspect of social skills is social-emotional skills, which refer to a child's ability to understand emotional situations, express emotions, and the child's ability to self-regulate his/her own emotions (Ratcliffe et al., 2014). Social-emotional skills include self-awareness, self-management, social-awareness, relationship skills, and responsible decision-making (Shah, 2012). Research suggests that practicing and developing social-emotional skills over time is associated with better adjustment and academic performance for all children (Durlak et al., 2011; Greenberg et al., 2003). Moreover, studies suggest that academic performance suffers when students struggle with regulating their emotions (Parkinson, 2011).

Nonetheless, difficulties with social-emotional skills is a trademark of an ASD diagnosis; therefore, it is common for children with ASD to struggle with skills such as self-awareness, social-awareness, and relationship skills (APA, 2013). However, difficulties with social-emotional skills are a struggle faced by children with ASD, but also by many school-aged children. A national survey of 148,189 students in grades 6-12 found that only 29%-45% of students reported that they had social competencies such as empathy, decision-making, and conflict resolution skills (Benson, 2006). Meaning, over 50% of these sampled students may have difficulties with social-emotional skills.

In sum, social-emotional skills are described as one's ability to recognize and comprehend social situations and use that social understanding to navigate social interactions. Many children struggle with social-emotional difficulties, though children with ASD are more likely to have social-emotional deficits because of the characteristics of their diagnosis. Furthermore, there appears to be a link between a child's social-emotional skills and academic performance. Therefore, many schools implement social-emotional interventions to help gain competencies in social-emotional skills in attempt to improve overall school success (Durlak et. al., 2011).

Social Competence

Lastly, social competence refers to a child's ability to adequately use social skills during social situations in various settings (Cook, et al., 2008; Gresham et al., 2001). For a child to be considered socially competent, successful social interactions occur where social skills are appropriately used and social relationships are maintained (Elliott et al., 2008; Vickerstaff et al., 2007). One must understand how and when to use skills in social situations, while also adapting them over multiple environments (Cavanaugh, 2010).

It is important to note that social competence varies according to a person's developmental level (Stichter et. al., 2012). For example, different expectations would need to be met to be considered socially competent for a pre-school aged child versus an adolescent. Moreover, social competence deficits are fairly easy to identify in children with ASD because of the different developmental expectations (Carter et al., 2005). Often, children with ASD struggle in the areas of social communication and/or social-emotional skills, which makes it difficult to use such skills appropriately and gain appropriate social competence.

Overall, social skills consist of a variety of components, including social communication, social-emotional skills, and social competence. Though researchers can describe social skills in these three components, the complexity of social skills can make it difficult to parse apart specific social skill deficits. This is a challenge for clinicians when implementing treatments because these components naturally coincide with one another. Therefore, social skill interventions are developed as an attempt to improve the social skills of children with ASD.

Furthermore, it is important to recognize the essential role social skills play in a child's future success. For example, when a child enters adulthood, it may be more difficult to retain a job if a job requires frequent social interactions with customers. Unfortunately, the rate of college attendance is low for individuals with ASD, and employment rates tend to be around 24% (Howlin, 2005; Shea & Mesibov, 2005). Therefore, it is important for social skills interventions to be effective so children can improve their social skills and increase their likelihood of appropriately functioning in future social situations and become successful in adulthood (Howlin, 2005; Shea & Mesibov, 2005). The importance of effective intervention is not limited to social skills, but intervention effectiveness is a concern in several different fields;

therefore, there has been a movement toward the use of evidence-based practices in more recent years (APA, 2006).

Evidenced-Based Practices in Social Skills Interventions

Evidenced-based practices in psychology (EBPP) require clinicians to incorporate the best available research with their expertise and provide quality treatment that involves the context, characteristics, culture, and preferences of the patient (APA, 2006). The theoretical framework of evidenced-based practices was originally designed for health service research (Ubbink, Guyatt & Vermeulen, 2013). Therefore, to adapt a theoretical model for the use of evidenced-based practices in psychology, multiple types of research evidence are considered to determine if a practice is considered evidence-based (Michie et al., 2005). These types of research evidence include: a) clinical observations; b) qualitative research; c) systematic case studies; d) single-case experimental designs; e) public health and ethnographic research; f) process-outcome studies; g) effectiveness research concerning interventions; h) efficacy research; and i) meta-analysis (Greenberg & Newman, 1996; APA, 2006).

Moreover, meta-analyses of social skills interventions suggest that social narratives, peer mediation and video-modeling meet criteria to be considered evidence-based practices for children and adolescents with ASD. Wang and Spillane (2009) examined thirty-eight studies, of which 36 were single-subject designs and 2 were group experimental studies. Results varied greatly based on intervention type and the different interventions within each intervention type. Though this study found social narratives, peer mediation, and video-modeling to meet criteria to be considered evidenced-based practices, only video-modeling showed to be effective consistently across intervention type and with the different interventions within each intervention type.

However, it is important to note that this study only examined research from 1997 to 2008. Therefore, examining research over a longer period of time may discover more interventions that meet criteria to be considered evidenced-based practices, while the effectiveness of interventions could also be better explored. Furthermore, in their study, 36 of the 38 interventions were single-subject designs making multiple baselines available to evaluate as a control in the studies. However, single-subject designs are limited because it does not allow the researcher to compare different interventions. Lastly, the majority of these studies in this meta-analysis were implemented within the school setting and only served children 5-12 years. Therefore, including different treatment settings and examining studies designed for pre-school aged children and older adolescents may better reflect for whom and in what setting different interventions are considered evidence-based and effective for individuals with ASD (Wang & Spillane, 2009).

Nevertheless, the outlined criteria set by APA for a strategy to be considered an EBPP involves rigorous research support and quality treatment that involves the context, characteristics, culture, and preferences of the patient. Therefore, this paper considers the use of EBPP for children with ASD as best practice. Though there are various EBPP discussed in the literature, the strategies known as visual schedules, video modeling, social narratives, differential reinforcement, and positive behavior supports will be discussed for the purposes of this project.

Visual Schedule

A visual schedule is a visual support commonly used as a tool to help guide clients through various activities, therapy sessions, and classroom transitions (AFIRM Team, 2015). Visual schedules are often used to help individuals diagnosed with ASD transition between activities by visually displaying an order of events. For example, a clinician can list the order of

events that will occur during a session. Once an activity has been completed, the client can cross off the completed activity and be ready to transition and partake in the next activity. Therefore, children with ASD learn to use visual schedule as a tool to help them process information (AFIRM Team, 2015).

Other visual supports have also shown to be an effective strategy for preschool children (e.g., Dauphin, Kinney, & Stromer, 2004; Johnston et. al., 2003; Morrison et. al., 2002), as well as elementary and middle school-aged children diagnosed with ASD (Bryan & Gast, 2000; Dettmer et. al., 2000; O'Reilly et. al., 2005), and meet the necessary criteria to be considered an EBPP. Specifically, research has found that visual schedules help organize the learning environment and set expectations for children with ASD (Hume et al., 2014). For example, Johnson et al. (2003) found that using the visual support of a graphic symbol representing "Can I play" increased preschoolers' play with peers. Similarly, Vaughn and Horner (1995) conducted a study that was intended to help individuals with ASD make choices. These researchers presented choices in a verbal and visual fashion. When participants were presented food choices through a verbal prompt, food rejection and aggressive behaviors were observed more often than when the choices were presented in a combined verbal and visual fashion (Vaughn &Horner, 1995). Therefore, using visual schedules is useful to visually organize events to help with transitions between activities and further navigate social situations.

Video Modeling

Video modeling is a tool used in therapy that allows the clinician to teach a specific skill or targeted behavior using video recording and display equipment (Franzone & Collet-Klingenberg, 2008). For example, the client may be working on body matching when walking in a room. Therefore, the behavior recorded may include a person modeling how to scan a room

and notice how other people are behaving in the classroom. If the person notices his or her peers sitting in their chairs and facing the teacher's chalkboard, then the client can use these body matching clues and partake in the same behavior.

There are two types of video-modeling: self-modeling and peer-modeling. Self-modeling involves the participant to view himself/herself displaying an appropriate behavior and the recorded video is used to teach the behavior later on; this strategy has shown to improve behaviors and the improvement in behavior has shown to be maintained over time (Victor, Little & Akin-Little, 2011). Furthermore, peer-modeling involves a participant viewing his or her peers modeling targeted behaviors or skills to teach the specific behavior or strategy later on in therapy. Importantly, peer modeling has shown to improve social skill deficits of children diagnosed with ASD (Kourassanis, Jones & Fienup, 2015).

Researchers suggest that video modeling is an effective strategy that can be used to teach a variety of skills to children either in an individual or within a group setting (Nikopoulos & Nikopulou-Smyrni, 2008) and has been shown to be effective in teaching social skills to children diagnosed with ASD (Alzyoudi, Sartawi & Almuhiri, 2015). Video modeling is considered to be an EBPP and has been shown to be effective in at least 8 single subject design studies (Franzone & Collet-Klingenberg, 2008). Alzyoudi, Sartawi, and Almuhiri found that through the use of a video-modeling intervention, children with ASD can improve social initiation, conversations skills, appropriate non-verbal communication, and asking/answering informational questions.

Social Narratives

Social narratives help individuals engage in social situations. These social narratives provide descriptive guidelines and directive sentences that aid in the individual's navigation through a social interaction (Winner & Crooke, 2009). Social narratives as an intervention on its

own have shown to improve the social skills of children with ASD initially, but the trend of improvement slows down overtime (Scattone, Tingstrom & Wilczynski, 2006). Moreover, researchers argue that social narratives can cultivate more improvement if used in accordance with other strategies such as visual schedules and video-modeling (Schneider & Goldstein, 2010). Research also suggests that if social narratives are written for an individual's specific difficulties with social interaction, then improvements in seeking attention, initiating comments, initiating requests, and making contingent responses can be observed; furthermore, such improvements have shown to generalize in the classroom setting (Delano & Snell, 2006).

Reinforcements

Differential reinforcement is the implementation of reinforcing appropriate behaviors, and the discontinuation of reinforcing any inappropriate behavior (Bogin & Sullivan, 2009). Clinicians, teachers, and parents can mold or shape a child's behavior by using differential reinforcement (Alberto & Troutman, 2013). Often, inappropriate behaviors have been reinforced over periods of time. For example, 'Jonny' may learn that if he whines and cries while at the grocery store, his parents will buy him the piece of candy so that he stops making a scene in the store. Differential reinforcement operates on the assumption that if an appropriate behavior is reinforced and the inappropriate behavior is ignored, then the appropriate behavior will increase while the inappropriate behavior will decrease (Bogin & Sullivan, 2009). Therefore, if 'Jonny's' parents were to use differential reinforcement, they would ignore Jonny's scene in the grocery store, not give Jonny the candy that he wants, and praise Jonny if he asked for a piece of candy. According to differential reinforcement principles, Jonny will make less of a scene to get what he wants in the grocery store and eventually ask for his desired piece of candy over time.

Furthermore, there are many different strategies that can be utilized to reinforce appropriate behaviors. A token economy is systematic tool that uses immediate reinforcement by recognizing desired behaviors by providing a 'token' (i.e., a ticket, sticker, etc.). Such immediate reinforcement has shown to be effective in improving behavior by decreasing undesired behaviors and increasing desired behaviors portrayed by children diagnosed with ASD (Carnett et. al., 2014). Specifically, token economies have shown to improve on-task and attending behavior (Gilley & Ringdahl, 2014), as well as independent sharing of children diagnosed with ASD (Tarbox, Ghezzi & Wilson, 2006).

Positive Behavior Supports

Positive Behavior Supports (PBS) is a strategy used to understand and manage behavior. Within the school setting, positive behavior supports are often used in a Multi-Tiered System of Supports (MTSS) model, and can often be referred to as Positive Behavioral Interventions and Supports (PBIS) or School-wide Positive Behavioral Supports (SWPBS). PBS are theoretically driven by the behavioral perspective and operates on the assumption that behaviors, appropriate and inappropriate, are supported by reinforcements found within a person's environment (McCurdy et al., 2016). Furthermore, PBS is a strategy that can be used on a systematic, group, and individual level (Brandi, Simonsen & George Sugai, 2013; McCurdy et. al., 2016; U.S. Department of Education, 2014).

PBS within a MTSS model refers to a proportion of the population that requires a certain level of intervention. Tier 1 is often referred to as the universal tier because it focuses on serving all individuals within the multi-tiered system (Fosco, et al., 2013). Tier 2 is often referred as the strategic group because these individuals require more intervention when compared to other individual in Tier 1 (Fosco et al., 2013). Lastly, Tier 3 is considered to be the most intensive

group because individuals in this tier receive the highest level of intervention. These individuals often receive services at individual and group levels. This model does not take a rigid approach and permanently place an individual in a specific tier, but rather, uses a fluid approach where individuals can move between each tier based on their current level of need (Brandi, Simonsen & George Sugai, 2013; U.S. Department of Education, 2014).

Studies that use positive behavior supports to treat individuals with social skills deficits support the use of a multi-tiered system of support. Specifically, Moote, Smyth, and Wodarski (1999) conducted a critical review of studies that examined social skills training (SST) with adolescents and pre-adolescents within the educational setting. This review examined 24 different studies and found that 23 of the 25 studies showed positive outcomes, while the other two studies showed no change. The positive outcomes included significant changes in absenteeism and tardiness, disciplinary referrals, grade point average, and maturity of socio-moral reasoning. Improvements in social and relaxation skills were also reported (Moote, Smyth & Wodarski, 1999).

This research highlights the utility of using behavioral expectations at the individual, group, and universal level (Turnbull et al., 2002). Research also suggests that using other strategies, like social narratives, in conjunction with positive behavioral supports is very effective in improving a child's behavior (Sileo, 2005; Lorimer et al., 2002). Specifically, a study by Powers (2003) examined the effects of social skills interventions in schools with and without school-wide systems of PBS. Results indicated that SST combined with other behavior supports like differential reinforcement, positive language, visual cues, and clear expectations was effective and efficient in decreasing problem behaviors. Furthermore, the generalization of social skills was higher in schools with PBS than schools without PBS. Lastly, the supportive

environment created by a positive support plan implemented by parents has been associated with children's improvement in behavior in longitudinal studies (Lucyshyn et al., 2007).

Regardless of the tier a child may be within the multi-tiered system, the core purpose of MTSS is to provide a positive and supportive environment for all individuals. Therefore, positive language, including people first language, is used in all interactions. Furthermore, behavioral expectations are developed and taught to all individuals within the multi-tiered system, so a positive environment can be fostered through the modeling of desired behaviors by all individuals. Therefore, using positive language and believing that a child can be taught how to appropriately behave are foundations to positive behavior supports (U.S. Department of Education, 2014).

Moreover, outlining clear behavioral expectations and providing positive attention and language when the desired behavior is being displayed is a way to reinforce the use of appropriate behaviors and discourage the use of inappropriate behaviors in a positive way (Powers, 2003). For example, a group of children may have difficulty raising their hand before they speak. Therefore, when a teacher compliments students for raising their hand before speaking and calls on them to speak, that appropriate behavior is being reinforced. Positive language and attention is provided and children are taught to partake in appropriate behaviors because of how they are being positively reinforced.

Social Skills Interventions

Social skills interventions are designed to be child-specific and teach children useful skills that help improve social interactions through the use of various behavioral and learning strategies (Cooper, Griffith & Filer, 1999; McConnell, 2002). Individuals that have social skills deficits often struggle with social interaction and maintaining friendships (Lord & Magill-Evans,

1995). Thus, children with ASD with specific social skills deficits benefit from interventions that improve their behavior, communication, and cognitive skills (Gresham, 1998). Therefore, interventions are often designed to address the different components of social skills using various approaches.

Social skills interventions can focus on one or more of the core components of social skills—social communication, social-emotional skills, and social competence—and use a variety of strategies as described earlier. Given the number and complexity of social skills deficits, there is not a 'one size fits all' approach for implementing social skills interventions. Meaning, some interventions may be most effective in improving social skill deficits if provided in a group setting versus individual treatment. Furthermore, some professionals may feel most comfortable conducting an intervention if they have a specific curriculum to follow, while some professionals may prefer to take a framework approach to treatment.

A number of social skills interventions address social communication. As noted earlier, social communication is composed of elements such as the pragmatics of language and language expression, social interaction, and social cognition (Thiemann, Goldstein, Howard, 2001). An example of a social skills intervention that focuses on the component of social communication is the *Social Communication Intervention Project* (SCIP; Adams et. al., 2011). SCIP is designed for school-aged children within the school setting and helps improve their pragmatics and semantics of language, social interactions, and social cue interpretation (Adams & Gaile, 2012). SCIP develops individual intervention plans for each child and uses several different strategies to address the child's specific needs. Randomized controlled trials of this intervention suggest that this intervention is effective in improving conversational competence, parent-reported pragmatic functioning and social communication, and teacher-ratings of classroom learning skills (Adams

et al., 2012). Similar to SCIP, other interventions such as *Prelinguistic Milieu Teaching* (PMT) are designed to address social communication and use a variety of strategies (Warren et al., 1993). The use of a variety of strategies may be due to the complexity of the construct known as social communication. Nevertheless, strategies such as social narratives (Thiemann & Goldstein, 2001), video modeling (Sansosti, 2005), and skills training (Maddox, 2010) are frequently used to improve social communication deficits.

Social skill interventions also focus on social-emotional learning, and often take a cognitive-behavioral approach. Cognitive Behavior Therapy (CBT; Beck, 1998) is a collaborative treatment between the clinician and clients through the establishment of goals (Rothbaum et. al., 2000). These goals are often accomplished by examining how one's thoughts, feelings, and behaviors work and affect each other. Therefore, many social-emotional interventions use short-term goals that involve children learning to identify, regulate, and understand their own emotions in attempt to improve a child's attitudes toward themselves, others, and school (Shah, 2012). As it was previously discussed, children with ASD often have difficulty with social-emotional skills. Therefore, interventions that are designed to improve the social-emotional skills of children with ASD often use a cognitive-behavioral approach to teach children with ASD how to identify, regulate, and understand emotions.

Specifically, manualized social-emotional interventions like *Emotional-Based Social Skills Training* (EBSST) have taken the cognitive-behavioral approach to improve the social-emotional skills of children with ASD (Ratcliffe et. al., 2014). Based on emotional development and emotional intelligence theories (Mayer, Salovey, & Caruso, 2000), EBSST emphasizes the teaching of how a child's understand emotions, emotion problem-solving, and emotion regulation skills (Ratcliffe et. al., 2014). Research has shown this intervention to be effective in

improving teacher-rated emotional competence with large effect sizes that have maintained over a 6-month period (Ratcliffe et. al., 2014). Furthermore, other social-emotional interventions have shown general positive outcomes for typically developing children and children with ASD. Such outcomes include an increase in positive social behavior, fewer conduct problems, less emotional distress, and academic success (Shah, 2012; Durlak et al., 2011; Greenberg et al., 2003).

Finally, social skills interventions also focus on social competence. These interventions, such as the *Social Competence Intervention* (SCI), take a cognitive-behavior approach to improve social competence in school-aged children and adolescents (Stichter et. al., 2010). SCI specifically focuses on the underlying constructs of Theory of Mind (ToM), emotion recognition, and executive functioning to define social competence (Stichter et. al., 2010). SCI integrates a number of strategies within the intervention, such as applied behavior analysis, providing strategies to shift thinking patterns, and teaching replacement behaviors to achieve appropriate social expectations (Stichter et. al., 2012). Research shows that this intervention significantly improves direct measurings of ToM and problem solving, while parent perceptions of overall social abilities and executive functioning were also reported for children with ASD (Stichter et. al., 2012).

Other interventions have also integrated a combined-strategy approach to improving social-competence due to the varying components that can contribute to the construct of social competence (Sotelo, 2009). SCI defined social competence through the constructs of ToM, emotion recognition, and executive functioning (Stichter et. al., 2010). However, because social competence refers to a child's ability to adequately use social skills during social situations in various settings (Cook, et al., 2008; Gresham et al., 2001), interventions can focus on differing

skills and define social competence differently. Therefore, different strategies have been used to improve the social competence of varying social skills. Strategies like video modeling, social narratives, and cognitive-behavior techniques (Sotelo, 2009) have been used in interventions focused on improving social competence.

The *Skills Streaming* (McGinnis & Goldstein, 1997) intervention is another, research-based prosocial skills training program that takes a developmental approach to teaching skills through the use of social narratives and modeling. This intervention also promotes social competence by having participants complete specific homework tasks that review when and how a social skill should be used. Lastly, some interventions have used a peer-mediation strategy with *Applied Behavior Analysis and Treatment and Education of Autistic and Communication Handicapped Children (TEACCH)* to improve a child's social competence (Cunningham, 2009).

Group-based Social Skills Training

Until this point, social skills interventions have been discussed based on the different components (i.e., social communication, social-emotional skills, and social competence) that contribute to social skill development. When interventions focus on a specific component of social skills, manualized treatments and specific theoretical perspectives are often used in treatment. However, group-based social skills training (SST; Decker et al., 2014) is one treatment method that is frequently used in the clinic and school settings that is not manualized and uses several theoretical perspectives, and is intended to improve the social deficits of children diagnosed with ASD. Group-based SST is dedicated to learning and practicing specific skills (Winner & Crooke, 2009). For example, if a child with ASD has difficulty with nonverbal communication because he struggles with eye contact, then SST would focus on that skill of eye contact instead of following a curriculum designed to address social-emotional difficulties.

Furthermore, SST is not a set curriculum; rather, SST is a collection of strategies that are primarily grounded in, but not limited to, the theoretical foundations of behavioral and social learning (Dekker et al., 2014). SST may involve strategies like video-modeling, differential reinforcement, and social narratives. Clinicians make individualized treatment plans and use certain strategies based on the specific social skills deficits. For example, if a child has difficulty interpreting social cues, then the clinician may have a primary treatment goal that focuses on social communication but may also use other strategies to improve other skills within the same intervention.

SST therefore uses a framework approach to treatment in that several theoretical perspectives and strategies are used to provide treatment. For example, Garcia Winner's well-known *Social Thinking* intervention was developed using a similar philosophy where several theoretical perspectives are used to provide treatment instead of utilizing one inflexible curriculum (Winner & Crooke, 2009). In this intervention, there is an emphasis on who the intervention is designed for and what are the needs of that individual. The clinician does not use *Social Thinking* as a standalone tool, but rather gathers several concepts and strategies to better understand a person's social experience and uses cognitive-behavioral techniques to appropriately address the individual needs of the client (Winner & Crooke, 2009). Similarly, the *Social Communication Intervention Project* that was previously discussed uses a manualized curriculum within a specific framework approach to treatment (Adams et. al., 2011). This intervention sets individual goals and uses several different strategies in attempts to achieve those goals.

Since group-based SST interventions often take a framework approach to treatment, they are flexible and focus on different skills to work on during the intervention. For example, skills

such as turn-taking during a conversation, eye contact, and staying on topic can be taught, learned and practiced in a group setting. Furthermore, the framework approach can easily incorporate parents into the intervention to aid in their child's improvements (DeRosier, Swick, Davis, McMillen, & Matthews, 2011; White, Koenig, & Scahill, 2010). Moreover, because of the flexibility of group-based SST interventions, elements such as music (LaGasse, 2014), drama (Andersen-Warren, 2013), video modeling (Kroeger, 2007), and peer mediation (Wang, Cui & Parrila, 2011) have been incorporated to address the interests of clients and pair them with the intervention. Therefore, many interventions teach social skills within a group setting using a variety of strategies and themes.

Efficacy and Effectiveness of Social Skills Interventions

Outcome research studies refer to either efficacy or effectiveness. That is, efficacy research is done in a primary research setting where environmental variables are controlled and the best implementation of an intervention can occur—the research is focused on measurable effects (Goldberg, 2013). Effectiveness research, on the other hand, explores how useful the intervention is to the participant when used in real-life situations (Goldberg, 2013). Efficacy and effectiveness are often used interchangeably, however, there is a difference. Therefore, when examining social skills interventions, efficacy primarily refers to if an intervention improves social skills in a clinic setting, while effectiveness refers more to the generalization and maintenance of social skills interventions in more natural settings.

Nevertheless, there are discrepancies between studies when considering the efficacy and effectiveness of social skills interventions. Bellini and colleagues (2007) conducted a meta-analysis using a quantitative approach to analyze the efficacy, maintenance, and generalization of social skills interventions for children with ASD. This study examined 55 single-subject designs

using the percentage of non-overlapping data for each study. Unfortunately, this quantitative meta-analysis determined social skills interventions to show low effectiveness and generalizability, while moderate maintenance was reported (Bellini et al., 2007). However, a major limitation of this study is that the interventions were only implemented within a school setting. Therefore, the results of this meta-analysis should only be reflective of social skill interventions within the school setting and not necessarily extend to all social skill interventions implemented within multiple or different settings.

In contrast, multiple studies suggest higher rates of efficacy and effectiveness. Hwang and Hughes (2000) reviewed 16 empirical studies that examined the effectiveness of interaction interventions designed to improve early social communication skills of children with ASD. Hwang and Hughes defined interactive interventions as interventions that focused on social and communication skills such as imitative play, joint attention, and reciprocal interaction. All of the reviewed studies used direct observation as a way to measure the interventions' effectiveness and many studies considered social validity by measuring the acceptability of treatment goals and outcomes. In sum, this review suggests that social interactive interventions show to improve social communication of children with ASD. The effectiveness of each intervention was analyzed in relation to participant characteristics, treatment setting, target behaviors, training methods, and results. Across the 16 different studies, positive changes were observed for social and affective behaviors, nonverbal and verbal communication, eye contact, joint attention, and motor imitation (Hwang & Hughes, 2000).

Furthermore, Rodgers (2000) reviewed peer-reviewed journals and identified interventions that provided empirical support for the improvements of social functioning of children with ASD. Strategies used in interventions such as video modeling, self-management,

social narratives, direct instruction, and social skills groups improved the social functioning of children and adolescents with ASD (Rodgers, 2000). Additionally, many studies showed improvements in other areas that were not the direct focus of the intervention. There were improvements in the frequency of language use and inappropriate behaviors decreased during active social engagement (Rodger, 2000).

Indeed, there are discrepancies between studies when examining the efficacy and effectiveness of social skills interventions. Regardless, the social skills literature suggests that there needs to be more improvement in the effectiveness and generalization of social skills interventions and several studies provide recommendations in attempt to foster such improvement (Bellini et al., 2007; McConnell, 2002). For example, Bellini et al. (2007) and Gresham et al. (2001) recommended increasing the amount of social skills intervention a child receives, providing instruction in the child's natural environment, and adapting the intervention with the type of social skill deficit. Specifically, it is suggested that 30 hours of instruction over 10 to 12 weeks is insufficient, therefore the intensity and frequency of intervention should increase. Furthermore, when a child receives intervention within a contrived setting such as a pull-out or resource room, little maintenance or generalization is achieved (Greshman et al., 2001). Therefore, incorporating the social skills intervention in a more natural setting like the general education classroom is assumed to improve maintenance and generalizability. Moreover, Greshman et al. (2001) and Quinn et al. (1999) agree that social skills interventions are often ineffective when there is a mismatch between strategy and skill deficit. Therefore, the intervention strategy should be designed around the specific need of the child instead of the child needing to fit within the selected strategy that does not appropriately address the need of the child (Bellini et al., 2007).

Youth Engagement Through Intervention

Unlike several programs designed to improve the social skills of children with ASD, *Youth Engagement Through Intervention* (YETI) is considered to take a modular or framework approach to treatment while also using evidence-based practices. Developed by Anisa Goforth and Jennifer Schoffer Closson, YETI utilizes elements of several evidence-based practices to provide treatment that address the individual needs of children with ASD and related disorders within a group setting. Therefore, YETI provides treatment for children diagnosed with ASD and comorbid disorders, as well as, diagnoses similar to ASD like Social Pragmatic Communication Disorder.

Moreover, YETI is currently designed for school-aged children 6 to 13 years old. YETI has been implemented in a clinic, school, as well as, a week-long, 6-hour day treatment setting. Other social skill interventions have delivered services in clinic, school, and day treatment settings. Specifically, a social skills intervention that offered treatment in a clinic and day treatment setting found that individuals who attended the social skills intervention in the clinic or day treatment settings showed improvement in their social skills deficits (Mathai, 2012). However, individuals who attended the social skills intervention in both the clinic and day treatment setting showed the most improvement in their social skill deficits (Mathai, 2012). Therefore, individuals who receive social skill interventions in multiple settings appear to improve in their social skills deficits more so than those who attend social skill interventions in a single setting.

Furthermore, YETI clinicians consist of graduate students pursuing degrees in speech-language pathology, school psychology, and child-focused clinical psychology. The YETI intervention allows clinicians to learn how to incorporate several different evidenced-based

practices in one session and provide the most effective treatment for their participants. Moreover, after observations and consultations with parents and caregivers, group and individual goals are developed and used in YETI so the intervention can be tailored to the needs of the group as well as the individual (Gofoth et. al., 2015).

The YETI Framework. Intervention strategies such as visual schedules, video modeling, social narratives, differential reinforcement, and positive behavior supports are evidenced-based strategies that have shown to improve the social skills of individuals with ASD when used separately in various interventions. However, YETI combines these strategies and adapts to the specific needs of the child with ASD and related disorders. Preliminary research suggests that the combined approach YETI has taken has shown to be effective. Shindorf and colleagues (2015) conducted two single subject design studies using the YETI framework and found general trends of improvement in behavior. The inappropriate behaviors that were improved upon were defined as verbal and/or physical outburst. Therefore, behaviors like yelling, screaming, kicking, and hitting all decreased over time. Moreover, Thomas and colleagues (2016) also conducted two single subject designs that showed the decrease of undesired behaviors after using the YETI framework. Nonetheless, it is assumed that YETI can be even more effective if the intervention is implemented in multiple settings. Therefore, Schoffer Closson and Goforth (2014) have started to promote the use of YETI in the school setting and have presented on how to incorporate YETI into the school day by using block scheduling to provide treatment.

YETI uses visual schedules for the entire group by displaying a large schedule that lists all of the activities that will occur throughout the session. This large schedule can be easily viewed by the participants. Moreover, participants partake in crossing off the activities listed on

the schedule once they have been fulfilled. Additionally, some children have their own individual visual schedule if it is a part of the child's individualized treatment plan.

Self- and peer- video modeling is used frequently in YETI and is a strategy that is well liked by the children in treatment. Videos are recorded using an IPAD. These videos display appropriate behaviors and skills that are taught in YETI by having the children act out and practice the skills they were previously taught in treatment. These videos are then viewed and children in YETI watch themselves and their peers partake in appropriate behaviors.

Social narratives are used in the YETI intervention in conjunction with other evidenced-based practices. Typically, these social narratives are designed for the group and simulate a social situation that the children are likely to experience in their daily lives. These social narratives guide the children through social situations using skills taught in the intervention.

Furthermore, YETI uses reinforcements, primarily in the form of a token-economy system, to achieve desired behaviors and the expectations of the group setting. Moreover, YETI uses these underlying principles of fostering a positive environment by using positive language and behavioral expectations, and adapts them to the clinical setting. Therefore, using positive language and behavioral expectations are important elements used within YETI.

As a social skill intervention, YETI uses positive behavior supports within the group through the use of a behavior matrix and positive language. Within the YETI group setting, the behavior matrix states that all participants are to: Be Respectful, Be Responsible, and Be Safe. Clinicians and group members develop how children in the group can display appropriate behavior. The group reviews these behavioral expectations, displayed by a behavioral matrix, each session. Clinicians use the strategy of reinforcement to maintain appropriate behaviors outlined by the behavioral expectations. All of these strategies are used based on the

developmental level of the individual clients within the YETI group. YETI groups individuals based on their developmental levels and primarily consists of children who are considered to be high-functioning on the ASD continuum.

It is through these EBPP that children are taught social skills that are used in daily living at home and school. YETI accomplishes this by proposing stimulating activities, projects, and scenarios that may occur in the children's daily lives to practice using the learned skills. Specific activities might include using the phone to leave a message or staying on topic in a conversation the children may not be interested in. Therefore, understanding YETI and the evidence-based strategies utilized in the intervention provides insight on how researchers can make YETI easily generalized to the home setting.

Generalizability and Maintenance of Social Skills

The use of evidenced-based practices to improve social skills shows to be a promising and effective approach to treatment of children with autism in the clinical setting; however, the majority of social skills interventions do not show that skills taught in the intervention generalize to the natural settings of home and school (Ostmeyer & Scarpa, 2012). *Generalizability* is the ability for a child to use a particular skill outside of the clinic setting. The traditional definition of generalizability states that the relevant trained behavior can be used with ease under different conditions across subjects, settings, people, and/or time without the scheduling of specific events portrayed in the training (Stokes & Baer, 1977). Therefore, for the purposes of this paper, generalizability is defined as how social skills learned in the clinic can be translated and used in the child's natural settings.

Within the clinic, clinicians can structure or control the environment to ensure the opportunity to use a specific skill. For example, the skill of turn-taking can be taught and

practiced while playing a card game. However, the clinic can only simulate a natural setting and social situation to a partial degree. When participants of the intervention encounter spontaneous social interactions in the uncontrolled and natural environment, the learned skill or strategy may be difficult to recall and be used appropriately. For example, it may be more difficult for a child with ASD to practice the skill of turn-taking during an unstructured interaction involving the discussion of a topic like *Minecraft* in the hallway at school, than in a structured environment where the child receives prompts and guidance from a clinician.

Furthermore, the generalization of skills across settings is unlikely if maintenance of such skills is not present. *Maintenance* refers to the extent to which behavior change continues over time after the given intervention has concluded (Lane et al., 2001). Therefore, the appropriate use of the trained skills should be practiced and reinforced in other settings to maintain and increase the improvements of social skills overtime. For example, if an individual works on eye contact after the intervention has concluded, then the skill is continuously practiced and improvements can continue.

Unfortunately, there are very few studies that directly examine whether or not skills learned in social skills interventions are actually generalized and maintained in "real life" situations (Autism Ontario, 2011). Research in this area may be more difficult and time consuming because these studies would need to examine whether or not these skills are being used in real-life situations. Specifically, the concern of logistics, potential biases, and possible measurement error all contribute to the difficulty of conducting generalizability studies (Gao & Harris, 2014; Kukull & Ganguli, 2012). The logistics of scheduling appointments and gaining permission to research within the home and/or school can be very time consuming. Moreover, parents and/or teachers may want to see improvement when a child with ASD is undergoing

treatment (Durbin & Wilson, 2012), resulting in them reporting more improvements than what actually exists. These biases then contribute to potential measurement error, which complicates the interpretation of such results.

Furthermore, few studies actually incorporate follow-up assessments more than a couple of months following the intervention to examine the maintenance of social skills interventions and determine if there needs to be a change in the intervention (Autism Ontario, 2011). Again, follow-up studies require more time and resources from the researchers to appropriately examine these concerns. Therefore, there is less focus on the generalization of interventions and is often addressed as a second thought in the discussion and future study sections of research articles.

Addressing Generalizability and Maintenance for Children with ASD

The present literature on the generalization of social skills suggests that children with ASD have difficulty using these skills in their natural settings (DiSalvo & Oswald, 2002; Krasny et al., 2003; Weiss & Harris, 2001). In response, researchers emphasize the need for social skill interventions that focus on the generalization of social skills in the more natural settings of home and school (Rao, Beidel, & Murray, 2008). Thus, investigating whether or not social skills are generalized after a child with ASD participated in a social skills intervention is important and needed. Consequently, this project will attempt to further examine why or why not YETI is being generalized to other settings and if maintenance of the intervention actually occurs.

To better understand the extent to which a skill is generalizable, it is essential to examine those potential barriers that prevent such skills from being used across settings. That is, understanding the barriers that are contributing to the performance gap between the use of learned social skills in the clinic and other settings. One of the biggest barriers is related to the clinician's implementation of the intervention. Specifically, typical practice involves clinicians

teaching individuals skills during the intervention and simply hoping that they will use the learned skills and strategies outside of the clinical setting (Strokes & Baer, 1977). This "train-and-hope" approach is, in itself, a barrier to the generalization of a social skills intervention. The primary purpose of generalization is to use skills beyond the clinic, yet clinicians rarely teach the skills in other setting (Autism Ontario, 2011). Therefore, this approach is undermining generalizability.

Perhaps, this "train-and-hope" philosophy is why the generalization of skills taught in group-based SST interventions is such a challenge for individuals diagnosed with ASD. The train-and-hope approach may be successful with specific populations because generalization is often effortless for typically developing individuals (Ghezzi & Rogers, 2011). Generalization of skills may be more natural for typically developing individuals because they are more likely to showcase social competence in the natural settings of home and school. However, this approach is not appropriate for children with ASD because of the perceived difficulty they experience with generalizing learned skills. Therefore, to accomplish generalizability and maintenance, clinicians and interventions must abandon the 'train and hope' model and develop elements to address the continuation of skills in multiple settings.

There are several reasons as to why children with ASD may experience difficulty generalizing learned social skills to settings outside of the clinic. Studies that have examined the generalizability and maintenance of social skills suggest several other barriers that may contribute to the difficulty in using learned social skills to different settings. For instance, research suggests the nature of an ASD diagnosis itself provides a natural barrier to the generalization of social skills. For example, many individuals diagnosed with ASD encounter difficulty with social communication because of a language impairment (McCann et. al., 2007).

Furthermore, children with ASD tend to have difficulty learning in more than one environment (Lovaas & Smith, 1989); therefore, it is important for children to practice the skills taught in their intervention and broaden the scope or settings in which they use such skills. For example, if children master the skill of using an appropriate greeting in the clinic, then they are more prepared to use that skill in other settings more effectively. Consequently, taking an approach that emphasizes generalizability and the maintenance of social skills interventions will aid in the mastery and use of skills in multiple settings. Yet, there is still sparse research that examines the maintenance and generalization of group-based SST interventions (Laugeson et al., 2012).

In addition to the characteristics of ASD, comorbid diagnoses may also strengthen barriers to the generalization and maintenance of social skills. Studies suggest that comorbid diagnoses can make generalization of learned social skills more difficult. For example, Chang, Quan, and Wood (2012) studied the effects of anxiety disorders on the social functioning of children diagnosed with ASD. Results indicated that a greater severity of social anxiety disorder was associated with a higher level of social skill deficits. Specifically, higher anxiety predicted lower assertive and responsible social skills. Thus, comorbid disorders such as anxiety disorder may be a barrier to developing socials skills among children with ASD. Additionally, research also suggests that affective disorders and conduct disorders are common secondary diagnoses to ASD (Tantam, 2000).

Furthermore, barriers to the generalization and maintenance of social skills can exist even when the intervention is within a more natural setting. For example, an intervention designed to teach children with ASD social skills was examined in a school (Ostemeyer & Scarpa, 2012). Although the intervention was intended for these social skills to be implemented and generalized

in the school setting, there continued to be barriers to those skills being used beyond the intervention setting. For example, focus group interviews with parents, teachers, and the school board identified barriers to the implementation of the program. They discovered barriers that included lack of time, a lack of commitment to a social skills program, and a lack of desire to keep a full inclusion model (Ostemeyer & Scarpa, 2012). Therefore barriers that prevent the implementation of an intervention make the generalization and maintenance of skills difficult.

To address some of these outlined barriers, research suggests strategies to help promote generalizability. Such recommendations involve incorporating video feedback to promote the mastery of skills (Deitchman, et. al., 2010), and the development of peer-mediated interventions so individuals interact with typically developing individuals and experience more authentic social interactions (Leinert, 2013; Schmidt & Stichter, 2012). Furthermore, strategies such as script fading, should be used so verbal initiations to peers, social interactions, and general conversation skills can be mastered and broadened to be used in multiple situations (Wichnick, 2013). Lastly, parent and teacher training are recommended to help the generalization of skills across multiple settings (Dekker, et. al., 2014; Miyashiro, 2001).

It is also important to note that parents have an important role in the generalization and maintenance of learned social skills. Generalizability involves the translation and use of skills that have been taught at school or clinic and implemented in the home setting. Research indicates that there is an increase in the maintenance and generalization of an intervention when parents are invested and have an active involvement in the intervention (DeRosier et al., 2011). Specifically, parents help with the maintenance and generalization of an intervention by providing direct instruction and supervision, while also aiding in the development of a peer network (Mandelberg et. al., 2014). In attempts to foster further generalizability and maintenance

of social skills, parent-implemented interventions are even being developed so children diagnosed with ASD can continue to improve their social deficits (Drew et. al., 2002; Nietfeld, 2000; Jones & Feeley, 2009; Kaiser, Hancock &; Meadan et. al., 2009).

Parent Acceptability

Another aspect of social skills interventions is that parents must accept or "buy into" the intervention to fulfill such an important role involving the generalization of social skills. For the purposes of this study, the term *parent acceptability* is interchangeable with the term *social validity*, which refer to the social significance of the intervention (Lane & Beebe-Frankenberger, 2004). That is, the goals of the intervention, the social acceptability of the intervention procedures, and the social belief in the results are all considered when determining social validity. If parents do not accept the goals, procedures, and results of an intervention, it is unlikely that the intervention will be generalized and maintained in other settings.

Furthermore, researchers often study parent acceptability to help determine the effectiveness of an intervention (Carter, 2007). In doing so, many methods are used to collect data. Studies that have investigated parent acceptability of interventions often utilize methods such as case descriptions, audiotapes, written summaries, and video presentation (Carter, 2007). Therefore, measures of parent acceptability often involve questions that explore parent perception of outcomes and improvements of an intervention.

With studies that explore the effectiveness of an intervention, parent views are assumed to be somewhat biased because parents often want to see improvements (Durbin & Wilson, 2012). Furthermore, these biases are often observed when one compares teacher and parent ratings on standardized rating forms (Dollinger & DiLalla, 1997). Therefore, researchers often use standardized measures in attempts to account for such biases. For example, the *Behavior*

Assessment Systems for Children, Second Edition (BASC-2) gathers information from multiple perspectives (Parent, Teacher, and Self-reports) so the results of the different reports can be compared to one another to accurately identify behavioral concerns (Tan, 2007). Therefore, standardized measures that gather information from multiple perspectives can better account for parent bias.

Nevertheless, the majority of research studies on parents' acceptability of interventions for children with ASD use parent rating scales specifically designed for the intervention (Hutchins & Prelock, 2013; Wilson, 2013). In these studies, a standardized tool is not used to measure parent acceptability; rather, researchers use unstandardized tools that are more specific and sensitive to the intervention. For example, a study by Whittingham, Sofronoff, & Sheffield (2006) was designed to investigate parent acceptability of parenting strategies from Stepping Stone, which is a new branch of the Triple P program. Forty-two parents of children with autism were instructed to rate each strategy for acceptability, usability, and likelihood of using the strategy, and a focus group gathered more detailed responses to the program. Parent responses were generally positive, and researchers found that parents were more likely to use strategies if their child's behavior was attributed to "uncontrollable factors." This approach to collecting parent acceptability data surpassed general information that could be collected from a standardized treatment acceptability measure, and uncovered rich data that may have been overlooked if an intervention specific measure was not used.

Current Study

The current study used qualitative methodology to explore parent acceptability and parent's perceptions of skills used in YETI and if these skills are used in the home setting. Specifically, the purpose of this study is to understand how parent acceptability influenced the

generalization and maintenance of social skills. This study assumed that the parent's acceptability of YETI will contribute to the use of the intervention in the home setting. Therefore, this study is more interested in the usefulness and acceptability of an intervention used in the home setting, than the perceived effectiveness of the intervention.

Overall, social skills intervention efficacy and effectiveness have been investigated using both quantitative and qualitative methodologies. As indicated earlier, there are varied results in previous research studies as to the efficacy and effectiveness of social skills interventions for children with ASD. Social skills are complex, there are different measurement approaches, and inherent biases, and thus may contribute in these varied results. Quantitative studies examining the efficacy and effectiveness of social skills interventions tend to report lower effectiveness of social skills interventions (e.g., Bellini et al., 2007; Gresham, Sugai, & Horner, 2001; Quinn, Kavale, Mathur, Rutherford & Forness, 1999). These studies, however, use techniques to gather and analyze data that may not be completely reflective of the intervention. That is, quantitative research is based on precise measurements using structured and validated data-collection instruments. The results are then displayed using statistical reports with correlations, comparisons of means, and statistical significant findings (Johnson & Christensen, 2008).

Therefore, it may be difficult to measure the improvement of social skills in children with ASD using a quantitative approach. For example, measures such as the *Social Skills Improvement System Rating Scales* (SSIS) are designed to identify potential social skill deficits for typically developing individuals (Cordier et al., 2015). Indeed, the measure is a great tool to identify social skill deficits by using multiple raters (parent, teacher, and self-reports); however, children with ASD are likely to already have profound social deficits. Therefore, this measure is likely to identify a child with ASD to have social deficits, but would have difficulty tracking

improvements in social skill deficits for children with ASD. The SSIS can be used as a progress monitoring tool, but only for children within the general education classroom (Cordier et al., 2015). Therefore, a social skills intervention may improve the social skills of a child with ASD, but it is less likely to improve social skills to the degree where deficits no longer exist making screening and progress monitoring measures like the SSIS inappropriate to measure social skill effectiveness for children with ASD.

Qualitative studies of social skills interventions, on the other hand, appear to lend support for the use of such interventions (Hwang & Hughes, 2000; McConnell, 2002; Rogers, 2000) because of the qualitative techniques used to collect data. According to Lichtman (2006), the purpose of qualitative research is to understand and interpret social interactions by exploring the data to generate new hypotheses and theories. Qualitative data may be collected through the use of open-ended responses, interviews, participant observations, field notes, and reflections. The results are then reported with contextual description and direct quotation from research participants (Lichtman, 2006). Therefore, the qualitative approach to research does not rely on numbers and significance testing to determine effectiveness, but rather, relies on the input of participants. Thus, qualitative research methodology can allow for better understanding of parent perceptions and acceptability of social skills interventions.

Therefore, I argue that a qualitative approach provides a strong methodology for this study because it allows for more in-depth analyses of parents' perceptions of the effectiveness, maintenance, and generalizability of social skills interventions. This in-depth analysis includes parent rating scales and semi-structured interviews designed specifically for YETI to gather information related to the generalizability of YETI. Furthermore, because this study assumes that social skill interventions are most effective when the intervention is used in multiple settings, the

parent rating scales and semi-structured interviews will also explore the barriers that could be preventing the generalization and maintenance of YETI to the home setting.

Consequently, this study contributes to the existing research on parent acceptability and the generalizability of social skills interventions because the study took a more in-depth approach to examining parent acceptability by using qualitative inquiry. Through this in-depth exploration, the specific difficulties of generalizing social skills to the home setting will be identified instead of just acknowledging that the generalization of social skills is difficult. Therefore, this study identified considerations for future research and highlight components of social skills interventions that can be improved upon to foster further generalization of social skills in the home setting.

Research Questions

The current research had three primary research questions regarding parents of children with ASD:

Research Question 1: What are parents' perceptions and beliefs about the group-based social skills intervention? In what ways do they perceive that the social skills intervention is or is not acceptable?

Research Question 2: What are parents' perceptions of the evidence-based practices used within the group-based social skills intervention? Are parents using these evidence-based practices in the home setting?

Research Question 3: What are parents' suggestions or ideas about ways to implement the evidence-based practices from YETI in the home setting? What are some barriers to implementing these evidence-based practices?

Chapter III: Method

The purpose of this qualitative study was to investigate 1) parent's perceptions of YETI and its use in the home setting and 2) parent acceptability of YETI. Specifically, this study examined parent's perceptions and beliefs associated with whether the evidence-based strategies taught in YETI are being used in the home setting, what barriers are preventing parents from implementing YETI in the home setting, and how YETI can be improved so that the intervention can be used in the home setting.

Existing data was used in the current study. Data have already been collected in previous research studies that investigated the effectiveness and parent perceptions and acceptability of YETI. Previous research studies examining YETI did not specifically explored the potential barriers to the generalization of YETI in the home setting; therefore, existing data as well as the additional data collection will further our understanding of parents' perceptions of YETI.

Researchers and Researcher Biases

Primary Investigator. Currently, I am a clinician training to become a school psychologist and I have worked in both the school and clinic settings, including being a clinician for YETI in both the clinic and camp settings. These clinical experiences shape my own perceptions and biases associated with working with children with autism, which may also shape my analyses of the qualitative data. Moreover, as a clinician, I take an interdisciplinary approach when providing treatment for my clients because it allows me the flexibility to adapt treatment to my client's specific needs.

Research Assistants. In addition to the primary investigator, there were three research assistants that composed the research team for this study. The research team allowed for reduction of researcher biases by contributing to the analyses and theme development. The

research team refers to the individuals that aided in the collection and data analysis of data for this study. The individuals of the research team took the CITI research training and passed all requirements to conduct human subjects research. One research assistants transcribed the collected data verbatim into the Nvivo software, while the remaining two research assistants coded the qualitative data, developed themes, and selected direct quotes when analyzing the qualitative data of this study with the primary investigator.

The research assistants were divided into two groups. The research assistant who is currently working on his Bachelor of Arts (B.A.) degree in psychology and is a member of the CRESP Lab transcribed the data verbatim into the Nvivo software. The other two research assistants have their B.A. in psychology from a university and have been active members in YETI research in past years. Specifically, these research assistants have contributed to previous studies on YETI that involved the coding of qualitative data and development of themes. Therefore, they have been trained in how to conduct and analyze qualitative data through their training received from the CRESP Lab.

Participants

This study included participants who are parents of children (6 to 13 years of age) with a diagnosis of Autism Spectrum Disorder, the Montana special education eligibility category of Autism, or a related disorder. Parents provided informed consent. Inclusion criteria for participation in the study included children who currently participate in YETI or have attended YETI at least once in the past. If the primary caregiver was not considered the biological parent of the child diagnosed with ASD, than the primary caregiver was permitted to participate in this study. If eligible participants agreed to participate in this current study and have already participated in previous research involving YETI where they have completed similar measures to

the semi-structured interview proposed in this study, then they were given an abbreviated version of this interview and were only asked three questions.

Existing data were partially used in the current study. Fourteen parents of children ages 6 to 13 already completed questionnaires and four parents also completed an individual interview that was recorded and transcribed. In addition to these existing data, additional data was collected from 10 more participants who did not already participate in previous research regarding YETI. Specifically, parents were invited to participate, resulting in a total of 28 eligible participants for the current study.

YETI Clinic and YETI Intensive Integrative Interventions

Youth Engagement Through Intervention (YETI) is a group-based social skills intervention designed to improve social and communication skills of children with autism and related disorders. YETI uses a variety of evidence-based practices including: Video modeling, social narratives, differential reinforcement, positive behavior supports, and visual schedules. The YETI Clinic intervention is implemented over 8-weeks for 1.5 hours per week during the academic semester. The intensive day treatment, titled YETI Intensive Integrative Intervention (YETI III), is implemented in one intensive week of treatment for approximately 6 hours a day. Lastly, children can participate in both the clinic and YETI III settings throughout the calendar year.

YETI is implemented within a clinic in a university located in the Rocky Mountain region of the United States. YETI is facilitated by Speech-Language Pathology, School and Clinical Psychology graduate students with training in evidence-based practices in treatment and assessment of children with autism. Parents typically access treatment through advertising at the clinic in the form of fliers or through the university website and search engine. A $20 non-

refundable deposit is needed to secure a spot in either the YETI Clinic or YETI III intervention. YETI can be billable to certain insurance providers (i.e., medicaid), paid out of pocket, or individuals can be awarded a scholarship to participate in the YETI programs. YETI costs approximately $56 per person.

The Speech-Language Pathology graduate clinicians were primarily students who entered the Speech-Language Pathology program or are within their first year of training. Speech-Language Pathology graduate clinicians were required to attend a class prior to their involvement in YETI to learn about children with ASD, behavior management techniques, data collection, and treatment goal development. This class also required the graduate clinicians to complete online training modules provided through Ohio Center for Autism and Low Incidence (OCALI).

Graduate clinicians within the school and child psychology programs are all students who are working toward their PhD in psychology. Typically, first year to fourth year psychology graduate students are YETI clinicians. The graduate-level psychology students are required to take multiple classes regarding behavior management techniques, data collection, and treatment goal development within their training program. Furthermore, psychology graduate clinicians were required to participate in at least two online OCALI modules to ensure their knowledge about children with ASD and that their use of EBPP are up-to-date and current.

At least one clinician is assigned to one client in both the YETI Clinic and YETI III sessions. At times, if a client requires more individual attention than one clinician can provide, a second clinician is assigned to provide complimentary support. Within the YETI Clinic sessions, groups typically include 4-6 clients. Within the YETI III sessions, groups typically include 9-13 clients.

Measures

Parent Acceptability Questionnaire (PAQ). Parents of children participating in YETI completed a PAQ (Appendix A), which measured their perceptions and opinions about the effectiveness of YETI. The PAQ was designed specifically for the YETI intervention and created by Dr. Goforth's CRESP Lab and further developed by Professor Jennifer Schoffer Closson. The development of the PAQ originally started by examining examples provide by the Lane and Beebe-Frankenberger text, *School-Based Interventions: The Tools You Need To Succeed* (2004). After considering several examples of parent acceptability and social validity measures, several lab meetings were dedicated to developing this measure specifically for YETI. Rating scales referring to the use of specific EBPP within YETI were added. Furthermore, the developers of YETI reviewed and critiqued the PAQ to ensure the appropriateness for YETI and added questions.

The PAQ was administered using a pen and paper and consists of 12 items that is composed of rating scales and closed- and open-ended questions. Items 3-8 use a Likert scale to gage parent responses. The Likert scales range from 1 (*Not at all acceptable)* and 5 *(Very acceptable)*. A sample item of the PAQ is *How acceptable do you find the intervention to be regarding your concerns about your child*? YETI. Along with the use of Likert scales, the PAQ used open-ended questions to further explore the perceived effectiveness and acceptability of YETI. Open-ended questions allowed parents to freely share information and further explain their thoughts regarding the posed questions. Items 9-12 on the PAQ are open-ended questions. A sample item on the PAQ is an open-ended question was, *Overall, how successful do you think this intervention was for your child? Why?*

Parent Acceptability and Improvement (PAI) Interview. The PAI Interview was specifically designed for YETI to obtain a more comprehensive understanding of parents' views of YETI and how the intervention is used in the home setting. The PAI Interview (Appendix B) was developed by the CRESP Lab and consists of 6 items. The PAI was modeled after the PAQ. Specifically, items 1-4 on the PAI are the exact open-ended questions from the PAQ (items 9-12). Items 5 and 6 on the PAI explore similar topics that items 1-8 explore on the PAQ. However, items 5 and 6 on the PAI address these topics through open-ended questions presented in an interview format and focus more on the generalization of YETI to the home setting. A sample item of the PAI was, *If you used any intervention strategies at home when did you use them? How often did you use them**?***

Parent Acceptability and Barrier Identification (PABI) Interview. The PABI semi-structured interview (Appendix C) was developed by the Primary Investigator of this study in collaboration with the CRESP Lab, and was modeled after the PAI interview. This measure was specifically designed for YETI and developed to obtain a more comprehensive understanding of parents' acceptability of YETI and the intervention's ability to be generalized to the home setting.

The PABI consists of 8 items. Items 1-6 are identical to the items of the PAI. However, to directly explore the potential barriers to the generalization of YETI in the home setting, 2 additional item were added. A sample item from the PABI directly explores the barriers to generalization, *What barriers or difficulties do you have when trying to use the strategies taught in YETI at home?*

Procedure

This study examined existing data collected in previous studies that examined the effectiveness and acceptability of YETI. Furthermore, this study also collected data to further explore parent acceptability, generalization, and potential barriers to the generalization of YETI within the home setting. Consequently, this section will be organized into two separate sections. First, I will describe the procedures of the previous research studies and how existing data were collected. Then, I will describe the procedures of the current study.

Procedure of previous studies. Parents of children in YETI Clinic (Fall 2015) and YETI Camp (Summer 2016) were invited to participate in a study examining the effectiveness and parent acceptability of YETI. The Institutional Review Board (IRB) for the Protection of Human Subjects in Research approved this project. The parents were recruited at the clinic through fliers advertising YETI or through advertisements on the university website and search engine. A total of 14 participants volunteered, gave their informed consent to participate in the study, and completed the PAQ.

The PAQs were administered using hard copies of the measure. All participants were invited to volunteer their participation in the completion of the PAQ. PAQ's were administered individually and completed in the waiting area of the DeWitt Rite Care Clinic or at the participant's home.

Moreover, the PAI Interviews were conducted during YETI Camp in the Summer 2016. All participants were invited to volunteer their participation in the completion of the PAIs. Four participants out of nine volunteered and provided their consent to participate in the study and have their interviews recorded. The PAI interview was conducted through either in-person or phone interview by research assistants from the CRESP lab. The research assistants followed the

PAI interview script that included an introduction, the interview questions, and a closing statement. Two of the PAIs were administered in person, while the other two PAIs were conducted over the phone. All interviews were conducted within a private room at the DeWitt Rite Care Clinic. The closing statement in the PAI script also served as the debriefing of participants. Due to the similarities between the PAQ and the PAI, participants that completed the PAI did not complete the PAQ.

Current Study. The Institutional Review Board (IRB) for the Protection of Human Subjects in Research approved this study, and recruitment of parents began in June, 2016. The primary investigator contacted parents whose children attended Summer 2016 YETI Camp. The primary investigator informed eligible parents about the study and if parents chose to participate, they were provided with an informed consent form to complete (Appendix D). After they gave their informed consent, individual appointments were made to conduct interviews. Previous studies did not collect demographic information from the participants. Demographic information from participants in the current study was not collected to ensure confidentiality. After the informed consent form, interviews took placed in a private room at the DeWitt Rite Care Clinic or the Clinical Psychology Center at the University of Montana. The setting of the interview was determined by the participants' preference and room availability.

The PABI Interview was able to be administered either in a face-to-face or a phone-interview format. Nine of the ten PABI interviews were administered via a phone interview format. Regardless of the format in which the PABI interview was administered, the interviews still took place in a private room at the DeWitt Rite Care Clinic or the Clinical Psychology Center at the University of Montana to ensure confidentiality. A welcoming statement, the

interview questions, and the debriefing information were scripted for the interviewer so the PABI could be administered with fidelity and standardization.

Furthermore, the interviews were recorded using digital audio recording equipment. Two audio-recording devices were used to record the face-to-face and phone interviews. Two audio-recording devices were used as a precautionary measure to ensure that there was no loss of data in case of a malfunction of one of the audio-recording devices. Once the interviews were recorded, a member of the research team transcribed the interview verbatim into a password protected document located on a password protected computer in the CRESP Lab. Identification numbers were used for each participant and informed consent forms were placed in a locked cabinet in the lab. Once the interview was transcribed, it was permanently deleted from the audio recording device. All names that are spoken during the interview were replaced with pseudonyms.

For the face-to-face interviews, the audio recording devices were placed on a table between the interviewer and interviewee. If at any time the interviewee was made uncomfortable by the audio recording devices, they were welcomed to dismiss themselves from the study without any possible ramifications. Furthermore, for the phone interviews, the interview was conducted using conference call capabilities. Therefore, one audio-recorder was placed next to the speaker of the communicating device while the second audio-recorder was placed next to the interviewer as a precautionary measure to ensure that there was no loss of data in case of a malfunction in one audio-recording device.

Once the interviews concluded, the participants were debriefed and thanked for their participation in the study. A debriefing statement that included the primary investigator's contact

information was printed and given to the participants in case the participants wished to ask any further questions after the study concluded.

Materials

Two digital audio-recorders, specifically the Sony ICD-PX312 or similar model, were used to record all of the PABI interviews. Hard copies of the guided interview schedule of the PABI were available for the interviewer's use during all of the interviews. Moreover, hard copies of the informed consent forms and debrief information were made available to all of the participants of the study. For face-to-face interviews, a clipboard, pen and pencils, and a private room with a table and chairs were used. For phone-interviews, a communication device with loud speaker capabilities (cell phone or landline) was used in this current study.

Software was used to analyze the qualitative data of this study. Specifically, NVivo software was used because it supports qualitative and mixed methods research. It's designed to organize, analyze, and find insights in unstructured or qualitative data, such as: interviews, open-ended survey responses, articles, social media and web content. Moreover, large amounts of text can be analyzed by multiple coders and strategies can be conducted to account for potential biases (Nvivo Workbook, 2012).

Data Analyses and Researcher Focus

Qualitative methodology was the primary method of data collection and data analyses. Specifically, semi-structured interviews were the primary method of gathering data. There are a number of advantages to this type of methodology. First, interviews provide the opportunity to generate data and the participant's use of language is considered to be essential in gaining insight into the participant's perceptions and values (Dearnley, 2005). Therefore, when participants use their words to describe their experiences and perspectives on subjects, they are not restricted to

the confines of structured questions that only allow them to respond a particular way (i.e., multiple choice and or Likert scales). Moreover, only the opened-ended questions used in the PAQ were analyzed in this study, therefore, an item analysis with Cronbach's Alpha could not be used to gain reliability information because of the type of questions that was used in this project. If the Likert scales used in the PAQ measure were used, then an item analysis with Cronbach's Alpha could be used. However, the information gathered from the Likert scales were not the focus of this study and was not analyzed. Furthermore, the data collected from interviews can be analyzed several different ways (Saldana, 2013).

However, collecting and analyzing data from interviews is often time consuming (Dearnley, 2005) because the researcher must schedule meetings with individuals to administer each interview and gather the data. Questionnaires, on the other hand, can aid in data collection because it allows for collecting information from many participants at one time without the researcher guiding the participant through each question. This study transcribed the semi-structured interviews verbatim into software for analysis. The transcribed data was then coded line by line by multiple coders to ensure consistency for theme development. All of these steps in conducting interviews take a sufficient amount of time to collect and analyze such qualitative data. Moreover, it was determined that the previously collected data that was used in this study does not directly address all of my research questions. Therefore, when I consider the time it requires to conduct interviews and acknowledge the need to address all of my research questions in a more direct fashion, I have determined that collecting data from 10 additional participants was necessary.

Moreover, an interview is a managed verbal exchange (Gillham, 2000; Ritchie & Lewis) that depends on the communication skills of the interviewer. Therefore, the interviewer must

create a safe environment where interviewees can speak openly (Clough & Nutbrown, 2007). That is, in order for the participant to actively participate in the interview the interviewer must establish good rapport and trust with the participant. Thus, the interviewer must have established attentive listening skills (Clough & Nutbrown, 2007), probe and prompt appropriately (Dearnley, 2005), and communicate clear questions (Cohen et al., 2007). As graduate student in school psychology, I have taken a number of courses that have prepared me to provide ethical and effective data collection using interviewing. Specifically, I have taken a clinical interviewing course in which I conducted several interviews and practiced specific skills that were recorded and reviewed by my peers and instructor. I have also utilized these skills with children and adults through my experiences in assessment and treatment of children. To further support the effectiveness of the interview, the PABI is a semi-structured interview and provided a script to follow when administering the interview.

Data analyses. The questionnaires and recorded interviews were transcribed verbatim and imputed into NVivo software by one member of the research team. This information was kept in a locked research lab on the University of Montana campus. No one else outside of the research team saw the collected data. Furthermore, the data imputed into the NVivo software was on a password protected computer within the locked research lab. Therefore, responses from the PAQ, the PAI and the PABI were analyzed using NVivo software.

The research team coded data collected from this study and generated themes from the coded data. A *code* in qualitative inquiry is often a word or short phrase that represents a specific description of collected data (Saldana, 2013). The coded data can then be interpreted and themes are developed. *Themes* are abstract constructs which investigators identify before, during, and after data collection (Ryan & Bernard, 2000). Themes emerge from the phenomena being studied

(Bulmer 1979), already-agreed-upon professional definitions (Strauss 1987), as well as, the researchers' values, theoretical orientation, and personal experience with the subject matter (Maxwell 1996). Furthermore, in the majority of published articles where coding and theme generation is a form of data analysis, the specifics of the coding process are not specifically described (Ryan & Bernard, 2000). Nonetheless, there are several types of coding and techniques that can be used to code data and generate themes.

Coding and theme identification. The theoretical approach known as structural coding was used to analyze the qualitative data of this study. Structural coding is appropriate for most qualitative studies (Saldana, 2013) because it applies a content-based or conceptual phrase representing a topic to a segment of data that relates to the research questions of the study (MacQueen et al., 2008, p. 124). Similarly coded material is then grouped, so further analysis can occur.

Within the structural coding framework, several techniques were used to further code data, and identify themes. Ryan & Bernard (2000) describe different techniques to code and identifying themes. Word-based, scrutiny-based, linguistic-based, and grouping-based techniques can all be used within the structural coding framework. Word-based techniques like 'word repetitions' are probably the least labor intensive. Word-based techniques are commonly used with complex texts such as the complete works of Shakespeare and the Bible (Ryan & Bernard, 2000). Scrutiny-based techniques like 'compare and contrast' and linguistic-based techniques like 'looking for transitions' are most appropriate for rich texts and it is often considered overkill for this technique to be applied to short-answer responses (Ryan & Bernard, 2000). Lastly, grouping-based techniques like 'pawing' and 'cutting and sorting' are often used for both short answer responses and rich text. Furthermore, grouping-based techniques are appropriate for

exploratory studies and are efficient at generating themes and subthemes. *Subthemes* are representative constructs that emerge after general overarching themes have been identified and further analysis has occurred (Saldana, 2013; Ryan & Bernard, 2000).

The grouping-based techniques known as 'pawing' and 'cutting and sorting' were the specific techniques of coding and theme development of this study. This study took an exploratory approach to answer the posed research questions and such questions were addressed through the qualitative examination of short-answer responses and semi-structured interviews. Moreover, these techniques of coding and theme identification were easily used with coding software like Nvivo (Ryan & Bernard, 2000). Therefore, the 'pawing' and 'cutting and sorting' techniques used within the structural coding framework were most appropriate to explore the parent acceptability, generalization, and the barriers to the generalization of YETI.

Pawing refers to the manual method of reviewing text and highlighting key phrases that stand out to the researcher (Sandelowski, 1995). After highlighting has commenced, researchers look through the coded data and patterns eventually become observable to researchers (Ryan & Bernard, 2000). The pawing technique heavily relies on the coders' familiarity with the subject matter to identify themes. Qualitative researchers have identified this approach as a sound research technique because there is no substitute for following hunches and intuitions in looking for themes to code in texts (Dey 1993). Furthermore, because the coders of this study used software to analyze data, the highlighting and grouping of text was done using Nvivo. The software approach of highlighting and gathering segments of data was conducted the same way as the manual pawning. The coded data that relates to a pattern observed by the researcher was then stored in what Nvivo refers to as a *node* (Nvivo Workbook, 2012).

Furthermore, the technique of cutting and sorting is often used in theme identification and

generation. Cutting and sorting is actually a more structured form of the pawning technique (Ryan & Bernard, 2000). The manual approach of the cutting and sorting technique uses the same pawning approach of highlighting key information, but also physically cuts out the key information and sorts the coded data into piles with information informing the researcher where the coded data came from (i.e. specific participant, interview questions, etc.). Again, because the coders are using Nvivo software, this coded data will be stored in nodes that contain identifying information regarding where the coded data came from.

In addition to the physical sorting of coded data, the sorting and cutting technique also takes a more structured approach to theme identification then the pawing technique. As it was discussed, pawing relies on hunches and intuition to identify themes. The cutting and sorting technique, however, starts coding with established but very general themes that directly relate to the research questions or purposes of the study (Ryan & Bernard, 2000). Therefore, coders started with 5 general categories in mind for this study-- acceptability, generalization, barriers, improvements, and miscellaneous. As it was outlined earlier when describing the structural approach of coding, general categories were identified, then more specific analysis occurred. Therefore, the data of this study was first coded with general categories in mind. Then, further data analysis occurred and themes emerged from within the general overarching categories.

Coder bias. There was potential coder bias when analyzing the data of this study because the primary investigator and research assistants that were coding and identifying themes were involved with YETI and have conducted previous studies examining components of YETI. Therefore, steps were taken to prevent coder bias. Literature suggests specific ways to prevent coder bias (Saldana, 2013; Ryan & Bernard, 2000). First, members of the research team code and develop themes independently from each other. Once the initial codes and themes have been

identified, the research team convened to compare and contrast the interpretations of the data. This process is known as analyst triangulation. Analyst triangulation can provide a check on selective perception and illuminate blind spots in an interpretive analysis (Creswell, 1998). The goal is not to seek consensus, but to understand multiple ways of seeing the data (Angen, 2000).

Research also suggests that the work of multiple coders should be compared to one another to avoid coder bias (Namey, et al., 2008). There are several strategies that can be conducted, but a coding comparison query was used to measure the coding consistency across multiple coders. The coding comparison was easily conducted using Nvivo software and produced the percentage of coder agreement and Kappa Coefficients for each identified node in order to interpret coding consistency (Nvivo Workbook, 2012).

The percentage of coder agreement refers to the actual percentage coders agreed or disagreed on how material should have been coded. If coders completely agree on how specific information is coded, then the percentage of agreement (POA) would be 100%. Nvivo also produced a Kappa Coefficient to interpret coder consistency alongside the POA. Theoretically, the Kappa Coefficient is considered to be more robust because it is supposed to not only calculate POA, but also account for the consistency of coded material that exists because of 'chance'. The Kappa Coefficient produced a score within a range of 1 and -1. A Kappa Coefficient closer to 1 refers to more coder consistency, while a Kappa Coefficient of -1 would imply little coder consistency.

Providing a measure of coding consistency is important to appropriately identify themes that truly represent the collected data. Therefore, the research team observed the consistency across coders and determined if themes could be appropriately identified. If consistent coding was not observed, then the research team discussed the differences between their coding and

conduct additional cycles of coding using an agreed upon coding strategy. Once high coding consistency has been achieved, the research team discussed and identified appropriate themes.

Analyzing specific research questions. The current study is an exploratory study, therefore, the themes that were discovered were largely unknown. Therefore, knowing what items would answer specific research questions was not pre-determined. All items from the PAQ, PAI, and PABI were coded and themes were generated from such coded material. It is possible that specific items from these measures may address multiple research questions of this study, while some items may not contribute to any of the research questions posed by this study.

Chapter IV: Results

The purpose of this research was to use qualitative methodology to explore parent acceptability and parent's perceptions of skills used in YETI, and to determine whether these skills are used in the home setting. Specifically, the purpose of this study was to understand how parent acceptability influenced the generalization and maintenance of social skills. In turn, potential barriers to the generalization of social skills and suggested improvements were also identified. Through multiple rounds of coding and discussions held by the research team, themes emerged from the qualitative data.

Data Analyses

Analyst triangulation. Following the structural coding framework, the raw data was sorted into five conceptual categories: acceptability, generalization, barriers, improvements, and miscellaneous. Further analysis was then conducted by the research team. To check for selective perception and highlight blind spots in interpretive analysis, the research team used analyst triangulation by coding material separately then convened as a team to discuss discrepancies.

Original codes emerged from each member's interpretation of the data. Two members of the research team started this process, then discussed their discrepancies to determine a more concrete set of codes. The third coder was then introduced into this triangulation process and was given the concrete list of codes developed by the other two members of the research team. The third coder used the set codes to code the data, but also developed new codes as they emerged from his interpretation. The discrepancies between interpretations of data were discussed by the entire research team after the third coder completed the analysis. A final list of codes was then developed by all three members of the research team. Once the final code list was developed, all three members of the research team coded the data again using the set list of codes. After this round of coding, the research team used coding comparisons to aid in theme development and identification.

Coding comparison. Moreover, coding comparisons were conducted to ensure coding consistency across the multiple members of the research team. The coding consistency or inter-rater reliability between coders was represented by percent agreements and alpha coefficients. Percent agreements of 75% or greater is considered to possess high inter-rater reliability, while alpha coefficients closer to 1 also implies high inter-rater reliability (Nvivo Workbook, 2012). Through the multiple rounds of coding, the research team used coding comparisons to guide the formation of themes. The research team was confident in interpreting coded material as a potential theme if there was 75% agreement or higher. Coded material that had less than 75% agreement was further investigated, the discrepancies were discussed, and the research team determined agreement before the material was further investigated. Further, codes that that had less than 75% agreement were largely due to human error. Examples of human error included different members of the research team only coding specific parts of a conversation versus the

entire discussion as a specific code, or forgetting to include punctuation within the coded material. These errors were addressed by the research team before further interpretation of the data concluded. All codes achieved a 75% or greater comparison agreement with the exception of the code *generalizability*, which achieved a 68% comparison agreement. The research team further analyzed the code and discussed the discrepancies. When the research team re-coded for generalizability, a 75% or greater comparison agreement was achieved between coders.

Through this rigorous process, four primary themes emerged from the data analysis related to the generalization and maintenance of social skills for children with ASD who participated in the social skills intervention YETI. The primary themes include (1) Parent Acceptability, (2) Perceived Generalization and Challenges with Maintenance, (3) Identified Barriers to the Generalization of Social Skills, and (4) Parent Suggested Improvements. The following section will provide detail about the identified themes.

Theme 1: Parent Acceptability

For this study, the concept of *parent acceptability* is considered to be interchangeable with the term *social validity*, which refers to the social significance of the intervention (Lane & Beebe-Frankenberger, 2004). Parent acceptability refers to whether or not parents "buy- in" and believe in the intervention's usefulness. High parent acceptability indicates that parents believe in the intervention's usefulness to a great extent, while low parent acceptability would indicate little or no belief. Through this data analysis, the concept of parent acceptability encompasses material coded as *effectiveness of intervention*, *intervention recommendation*, and the *structure of YETI*. Overall, 100% of participants described a component of parent acceptability (e.g., effectiveness, recommendation, structure of YETI) during their interview or within the questionnaire.

Effectiveness of intervention. This code refers to material that directly asks about the intervention's effectiveness or significance of YETI. Coded material included information regarding the improvement of a specific social skill and the perceived usefulness of the intervention as reported by the parents involved in this study. For example, one parent stated that "YETI has saved my child," while another parent stated that, "it [the intervention] was a positive experience for my child and he wanted to go back every day so I consider that successful." Moreover, several parents explained that it was too early to tell if the intervention was effective because the intervention just recently concluded or that the intervention only lasted a short time. The wide range of parent reports indicated varied perceptions when examining the effectiveness of YETI. Thus, the research team determined that these results varied too much to be confident in claiming that parents had either high or low acceptability of the intervention when only examining the effectiveness of YETI. Nonetheless, the research team concluded that there was some level of perceived parent acceptability.

Intervention recommendations. This code encompasses material that refers to whether or not parents would recommend the intervention to other parents or people who work with children who have social skill difficulties. Furthermore, this coded material generally aligned with the interview question that directly asked if parents would recommend YETI to others. Moreover, when the research team examined the material coded as intervention recommendation, 100% of the participants would recommend this intervention to other families that have children with social skill difficulties. For example, one parent elaborated and stated "My gratitude to the program and all of the clinicians. I can't thank you enough", and another parent reported that she was going to let her friend know about YETI "because she [her friend] is having a hard time finding resources for her son". Unlike the varied responses gathered

regarding the effectiveness of YETI, the research team discovered a clear indication that parents accept the intervention enough to recommend YETI to other families who have children with social skill difficulties. Therefore, when solely examining the code referring to recommendation, parents appear to greatly accept the intervention.

Structure of YETI. This code encompasses material that refers to anything regarding the structure of the intervention. This code includes information regarding the client/clinician ratio, size of the social skills group, and the emphasis placed on individual needs. Furthermore, when examining the material coded as "structure of YETI," the majority of parents really liked the client to clinician ratio, the intensity of the intervention, and the emphasis placed on individualized attention and goals. For example, a parent stated, "I think that the group kind of setting helped out because he actually got to practice those kinds of things [social skills]". Another parent explained that "I think the really important thing about YETI is that it's consistent, and it is a long enough period—15 minutes is not enough time to really have an intervention. The intensity and duration of YETI are definitely different." When interpreting the information coded as structure of YETI, the research team therefore concluded that parents had great acceptability when solely examining the code referring to the structure of YETI. Thus, varied results were found when examining the effectiveness of the intervention, but parents clearly accepted the structure of YETI and would recommend the intervention to other families who have children with social skills difficulties.

Theme 2: Perceived Generalization and Challenges with Maintenance of Skills

Generalizability is the ability for a child to use a particular skill outside of the clinic setting (Stokes & Baer, 1977). For this study, generalizability is identified if a social skill learned in the clinic is observed being used in the child's natural settings. Furthermore, generalization of

skills is unlikely if maintenance of such skills is not present. *Maintenance* refers to the continued behavior change over time due to the continued practice of the intervention after the intervention has concluded (Lane et al., 2001). For this study, the maintenance of social skills is determined if YETI, or elements of YETI, are practiced in the home setting in attempts to continue the behavior change observed after the completion of the intervention. Through this data analysis, the concepts of *generalizability* and *maintenance* encompass material coded as *generalization* and *maintenance*. Moreover, 100% of participants reported information that was coded for the generalization or maintenance of social skills.

Generalization. This code explores material that refers to children with ASD using social skills outside of the clinic setting as reported by parent observations. Reports included observations in the home setting, in the waiting area, and other natural settings like the grocery store. It is important to note, however, that parents may have had difficulty identifying whether or not skills were truly generalized to various settings. There were reports of parents observing their children initiating conversations and using language they have learned in YETI to navigate social situations, but the research team found that the coded material appeared less complex (i.e., participants provided short responses with little detail) and such material was often accompanied by statements like "it is hard to say, but 'Bobby' did do much better with his little sister and used words that sounded like something a therapist would say," or "hmm, I'm not sure but I did see him initiate conversations in the waiting room." Nonetheless, despite it being difficult for parents to provide specific examples, parents reported what they perceived as the generalization of social skills.

Maintenance. This code explores material that refers to parents using elements of YETI in the home setting. Material regarding the use of a specific evidenced-based practice or tools

provided by YETI, such as the social narrative booklet, was considered to explore the maintenance of social skills that were taught during YETI sessions. Through this data analysis, the research team determined that there were challenges in the maintenance of social skills as reported by parents.

Several parents indicated that they had yet to try the YETI strategies at home or that it was too difficult to use the strategy at home. For example, "Yeah, we tried the whole ticket system thing but I just need to do a better job at remembering to do it." Moreover, parents explained that they attempted strategies a week or two after the intervention concluded, but reported not attempting the strategies much more after that. However, parents that did attempt to use YETI strategies focused on strategies that their child really enjoyed and parents attempt to replicate it in the home setting. For example, one parent explained that "I've noticed the visual schedule is very important for him. I'm not always good at doing that [at home]. It's been phenomenal, being able for him to stay in a small group setting and for him to participate and follow guidelines." Furthermore, several parents explained how they had several conversations with their children about the strategies they learned in YETI. Therefore, when interpreting the information coded as maintenance, the research team concluded that there is a challenge with maintenance.

Theme 3: Identified Barriers to the Generalization of Social Skills

For this study, data were collected using the PAQ, PAI, and the PABI over a two-year period. Although the PAQ and PAI may have alluded to some form of barriers regarding the generalization of social skills, the primary investigator wanted a direct question dedicated to examining the barriers to the generalization of social skills. Therefore, the PABI was specifically created to better examine specific barriers to the generalization of social skills. Therefore, only

10 participants of the 28 participants completed the PABI. Of those 10 participants, 100% described specific barriers they encountered when working on social skills with their child.

Moreover, when examining specific barriers, this data analysis was conducted by pulling material directly from the source, while in the previous themes, the research team had to do further interpretation and analysis. For this study, therefore, a barrier to the generalization of social skills is considered to be an object, system, or practice that makes the generalization of social skills more difficult or impossible to achieve. The identified barriers were coded as: *communication and continuity with school social skills curriculum*; *children's individual needs*; *lack of resources in the community*; and *lack of YETI knowledge*.

Communication and continuity with school social skills curriculum. This code refers to material that indicated there is a lack of communication and/or continuity between YETI and the public school's social skills curriculum. For example, a parent reported "I think [the intervention] would be more successful if I could get the IEP to you guys…so it would be nice if YETI was working even more with the schools." That is, parents indicated that more collaboration and communication across multiple settings (e.g., clinic, school) may be worthwhile. Specifically, psychological reports, individual education plans (IEPs), and 504 plans can all be better shared with YETI clinicians, while the strategies used in YETI and the progress made by the clients can be better communicated to the public schools that the children attend. Furthermore, YETI does not exactly align with some social skills curriculum used in schools which can make it difficult for children to know how to improve their social skills. For example, one parent explained how the school district uses a different system to identify feelings when compared to YETI's "Five-Point Scale" (a Likert-scale of emotions).

Children's individual needs. This code refers to material that indicated there are specific individual needs or difficulties a child encounters that is not easily addressed by using YETI. This code encompasses difficulties like comorbid diagnoses (i.e., social anxiety), motivation, and physical disabilities. Moreover, parents stated that although YETI addresses many of their children's individual needs, they do not address all of their needs within the group setting. For example, a participant commented, "[Bobby] gets really nervous making friends and sometimes has difficulty getting motivated to ask friends to play…". Thus, the parent believes that the child's needs may not be adequately met within the group setting because the child's anxiety symptoms are severe enough that a group social skills treatment may be insufficient without a specific social anxiety curriculum included in treatment. Therefore, it was difficult to address this child's anxiety or nervousness specifically in the social skills intervention. Furthermore, it is assumed that physical impairments can also affect how YETI can be adapted to the home setting (i.e., visual impairments, dietician needs). For example, if a child is considered to be legally blind, the YETI intervention does not have specific tools and materials readily available that can be adapted to such an individual need. Thus, if the tools and strategies that are used to help improve social skills are not easily available to a child with a specific physical disability, then such a difficulty would be considered a barrier to the generalization of social skills.

Lack of resources in the community. This code refers to coded material that indicated there is a lack of resources in the community which makes it more difficult for social skills to be generalized and maintained. Resources may include programs provided within the local community and school district, financial means, and opportunity to practice the skills learned at YETI. A parent explained that "he [child] has never done any other social skills stuff. He has

done lots of camps, but they were just regular camps, there weren't any other social skills stuff available." Further, another parent stated that having children on the ASD can be difficult financially because there few or no affordable services for their children. For example, a parent reported that "I knew that everything was paid for with YETI. We're not a poor family, but we are not as rich as everyone seems to think we are, and we have two kids on the spectrum. One has diabetes, my husband and I can't afford health insurance for ourselves, only for our kids." Moreover, the data showed that there are only a few resources available in the community and schools that provide support for social skills. For example, a parent stated, "Yeah, [Bobby] gets maybe 30 minutes a week during lunch with a small group at school where he is supposed to work on social skills. They [school personnel] never tell me anything about it or when it happens either". If there are few resources made available to families and individuals with social skill difficulties, then it is likely to make the generalization of social skills more difficult. In turn, the assumption is made that if there are less resources available, then there is less opportunity to practice and work on developing social skills. Thus, the lack of resources is considered to be a barrier to the generalization of social skills.

Lack of YETI knowledge. This code refers to material that indicated parents' difficulty understanding YETI or knowing what is addressed in the intervention. Through this data analysis, the research team discovered that the majority of parents who completed the PABI indicated that they do not have a clear understanding of what YETI works on during the sessions, but try to get a better sense about YETI from what their children discuss with them. For example, one parent stated that "I wouldn't know what to do because I don't know what the strategies are, so I have nothing to replicate", while another parent explained that his daughter tried describing the 5-Point Scale to him, but had no idea how the numbers aligned with different

emotions/feelings. Therefore, the parents' lack of YETI knowledge was determined to be a barrier to the generalization and maintenance of social skills in the home setting.

Theme 4: Parent Suggested Improvements

Data were collected using the PAQ, PAI, and the PABI over a two-year period. Although the PAQ and PAI may have alluded to some parent suggested improvements, the primary investigator wanted a direct question dedicated to examining parent suggestions for improvement of the intervention. Therefore, the PABI was specifically created to better examine specific parent suggested improvements. Therefore, only 10 participants of the 28 participants completed the PABI. Of those 10 participants, 60% provided suggested improvements, while the other 40% of participants who completed the PABI could not think of any suggestions and explained how they really enjoyed YETI.

For this study, parent suggested improvements are considered to represent improvements that can be made directly to the intervention to increase generalization and maintenance of social skills or general suggestions that parents believe would facilitate generalization and maintenance of social skills. Parent suggestions include: *parent training, increased parent/clinician communication,* and *additional YETI intervention*.

Parent training. This code refers to material that indicated parents have a desire for specific trainings on how to use YETI themselves. This code includes information referring to parents wanting observational periods, modeling of strategies, and specific classes that teach the strategies used in YETI. Parents expressed that they wished they had an opportunity to observe some sessions without distracting their children during the summer intensive YETI treatment to gain a better understanding of the intervention and observe first hand how their children are doing in the group setting. Moreover, to gain a better understanding of the different strategies

used in YETI and to gain knowledge in how to implement such strategies in real-life situations, parents suggested that clinicians model how to use YETI strategies during mock situations. For example, a parent explained that "I think an explanation modeling, or a why you're doing what you're doing, and modeling it would help with sending a written description home." Lastly, parents suggested gaining access to YETI strategies through classes to gain a sense of community with other parents. One parent explained in detail that it would be nice to have a parent training, because she appreciates the updates that are sent home with the kids but would really like it if "we [clinicians] schedule a time with the parents, even for just an hour, to learn how to use different things [strategies] at home."

Increased parent-clinician communication. This code refers to material that indicated parents want increased communication with their child's clinician. This code includes information referring to parents wanting more specific feedback regarding their child's behavior and progress, and a desire to use different forms of communication (face-to face, written report, emails, etc.). For example, one parent stated "I like that my son's clinician gave me a list of positives things he did all day and explained them well to me, however, I want to know what he didn't do well so we can work on it at home and he can improve later on". Thus, the research team concluded that parents want increased communication with their child's clinician so they could gain a better understanding of their child's progress and know what they could do to help and continue observed improvements.

Additional YETI intervention. This code refers to material that indicated parents wanted more YETI in some form or another. This included information referring to parents wanting more YETI sessions during different times of the year and clinician consultations. The research team discovered it was very clear that parents wanted more of YETI in any form they

could get it, whether that be through individual instruction by a clinician later on after the intervention concluded or through different types of YETI themed groups. For example, a parent suggested something “like a back-to-school boot camp that really prepares them [children with ASD] for what to expect from school right before the school year starts”. Therefore, the research team determined that there are several ways that YETI could be improved to better help families and their children foster environments that improve the generalization and maintenance of social skills for children with ASD.

Chapter V: Discussion and Implications

The purpose of this research was to use qualitative methodology to explore parent acceptability and parent's perceptions of skills used in YETI and if these skills have been used in the home setting. Specifically, the purpose of this study was to understand how parent acceptability influenced the generalization and maintenance of social skills among children with ASD. In turn, potential barriers to the generalization of social skills and suggested improvements were also identified.

Overall, the results of this study found that parents generally perceive that the intervention is positive and acceptable, but actually have little knowledge of the specific strategies used in YETI. Moreover, the generalization of skills was difficult for parents to identify, and was challenging to implement the strategies or interventions in the home setting. Parents also identified clear barriers to the generalization and maintenance of social skills, and provided suggestion as to how to improve the intervention.

Parent's perceptions and beliefs about YETI. The first research question was related to parents' perceptions and beliefs about the group-based social skills intervention (i.e., YETI), as well as whether they perceived the intervention as acceptable. Although parent's perceptions regarding the effectiveness of the intervention were varied, there was general support for the structure of YETI. More specifically, the majority of parents found the intensity of the intervention (e.g., the number of hours of intervention in a short period), the individualized attention to goals and progress, and the group setting to be most appealing. Furthermore, results also showed that all parents would recommend YETI to other families with children who struggle with social skills. Therefore, parents appear to accept the framework approach to intervention that YETI uses to provide group-based social skills intervention.

Literature suggests that there are varied results when considering the effectiveness of social skills interventions. Greshman et al. (2001) and Quinn et al. (1999) note that social skills interventions are often ineffective when there is a mismatch between strategy and skill deficit. Therefore, the intervention strategy should be designed around the specific needs of the child instead of the child needing to fit within the selected strategy that does not appropriately address the need of the child (Bellini et al., 2007). A framework approach to treatment, however, is flexible enough to individualize treatment within a group setting and allows the specific needs of the child to be addressed. Therefore, based on the results of this study, it appears that parents accept this framework approach to treatment because specific strategies are used to address the individual needs of their children with ASD within a group setting.

Moreover, the results of this study suggest parents would like more group-based social skills interventions for their children. Specifically, several parents explained how they wished that YETI lasted for a longer period of time, or that YETI was implemented more frequently so their children could continue practicing social skills in a group setting. Importantly, parents found this intervention acceptable despite reporting varied perspectives regarding the intervention's effectiveness.

Indeed, the results of this study appear to mirror many other results concerning the effectiveness of other social skills interventions for children with ASD (Bellini et al., 2007). Moreover, several quantitative studies are concerned about parent bias and attempt to control for such bias when examining an intervention's effectiveness (Durbin & Wilson, 2012). However, this qualitative study specifically explored parent perceptions and beliefs regarding the intervention. Therefore, concern of parent bias is not considered to be problematic for this study. Rather, when parent reports vary regarding the effectiveness of the intervention and the

intervention's ability to generalize to the home setting, the inherit parent bias only supports the argument that the parent perspective is important when exploring the generalization and maintenance of social skills. That is, despite it being likely that parents have a desire to see improvements in their child's social deficits, parent opinions and perspective are constructive and their critiques should be focused on to further improve the intervention's ability to be adapted for use in the home setting.

Parent's perceptions and use of evidence-based practices in YETI and at home. The second research question was related to parent's knowledge regarding the specific strategies used in YETI, and whether or not they use such strategies in the home setting. Unfortunately, the results of the study suggest that the parents have little knowledge regarding the evidenced-based practices (EBPs) used in YETI. This lack of knowledge regarding what the EBPs are and how to use them makes it difficult for parents to implement YETI in the home setting. In contrast, some parents have recognized elements of specific strategies and attempted to implement EBPs in the home (e.g., token economy, social narratives), yet parents indicated that they had great difficulty with implementing and adapting these strategies. That is, parents would try to implement a token economy and/or social narratives for a week or two, but had difficulty continuing the intervention with confidence and fidelity.

Many parents explained how the EBPs were too difficult to implement at home or they have yet to attempt implementing EBPs in the home setting. This difficulty and ambivalence in implementing EBPs may be due to the barrier that parents lack adequate knowledge regarding the YETI intervention to implement EBPs in the home setting with confidence and fidelity. This barrier of lack of knowledge on implementing EBPs in the home setting may lend support as to why children with ASD have difficulty generalizing and maintaining social skills (DiSalvo &

Oswald, 2002; Krasny et al., 2003; Weiss & Harris, 2001). That is, if skills are only practiced within one setting, then it is more difficult to appropriately use the learned skills in naturally occurring situations. Consequently, children with ASD may not be getting the opportunity to appropriately practice learned social skills in more natural environments and the maintenance of improved skills does not occur.

Recently, studies promote the use of parent-implemented interventions to use EBPs in the home setting. Parent-Implemented Interventions involve parents using individualized treatments in the home to increase their child's positive learning opportunities and acquisition of important skills (Hendricks, 2009). Furthermore, parent-implemented interventions met the EBP criteria for children with ASD when parents learned to implement such intervention practices through a structured parent training program (Hendricks, 2009). Therefore, research shows that interventions can be implemented by parents in the home if parents have adequate knowledge and training to implement their child's individualized treatment plan.

Parent suggestions for evidence-based practice at home. The third research question was related to identifying what parents perceived as barriers to the generalization and maintenance of social skills, as well as obtaining parent suggestions on how to improve the intervention. Overall, the results identified several barriers and suggestions for improvement. The range of barriers covered systems to individual level road blocks to the generalization and maintenance of social skills.

The results of this study were supported by previous research examining barriers to the implementation of social skills interventions. Literature suggests that some barriers may exist more on a systems level, as opposed to specific details found within the intervention (Ostemeyer & Scarpa, 2012). For example, the current research study found that parents believe that there is

a lack of resources in the community to support children with ASD. Furthermore, there was a lack of continuity and communication between the social skills curriculum used in YETI and that of the school. Therefore, parents found an intervention (YETI) in their community that they generally accept and perceive as useful in improving their child's social skill deficits. However, the tools and strategies used in YETI is not what parents observe being used in local school districts. Thus, the lack of continuity between YETI strategies and the school's social skills curriculum may be viewed as a systematic barrier that prevents children with ASD to receive consistent and accepted social skills intervention throughout multiple settings.

Research studies have also shown that individual needs of clients may make the generalization of skills difficult (Tantam, 2000). A few parent reports imply that although YETI attempts to provide individualized treatment within the group setting, not all individual social needs may be addressed through one intervention. For example, individual difficulties like visual and hearing impairments provide yet another barrier to teaching social skills using the EBPs used in YETI. The majority of tools used in YETI have not been adapted to provide adequate treatment to such populations. Moreover, comorbid diagnoses that are commonly associated with ASD provide multiple treatment concerns and treatment is focused on more than just improving social skills. For example, a YETI clinician will have some difficulty treating a child who is diagnosed with both social anxiety and ASD. This intervention is designed to address social skill concerns, therefore, YETI clinicians are adequately trained to treat social skill concerns and may lack adequate training in how to treat the comorbid disorder.

Research studies suggest that comorbid diagnoses may create additional barriers to the generalization and maintenance of social skills by making it more difficult for children with ASD to use the learned social skills outside of the clinic setting. For example, Chang, Quan, and Wood

(2012) studied the effects of anxiety disorders on the social functioning of children diagnosed with ASD and found that higher anxiety predicted lower assertive and responsible social skills. Thus, comorbid disorders such as anxiety disorder may be a barrier to developing socials skills among children with ASD because the symptomology of anxiety may prevent a child to initiate or use social skills in natural social situations. For example, "Bobby" may have the knowledge and know exactly how to use a social skill during a situation, but may be unable to use the social skill appropriately because his nerves and racing heart (anxiety symptoms) are too difficult to overcome to use the social skill. Additionally, research also suggests that affective disorders and conduct disorders are common secondary diagnoses to ASD (Tantam, 2000). Thus the symptomology or characteristics of these diagnoses (i.e., depressive mood; antisocial behavior) may make it more difficult to use social skills despite having the knowledge of how to use social skills. Therefore, multiple diagnoses may require the clinician to develop a more complex treatment plan to account for additional barriers comorbid disorders may foster to work on improving social skills.

Despite there being several barriers to generalization identified in this project, this study also examined parent suggestions in how to improve the YETI intervention. Many parents recognized their lack of knowledge of EBPs, and many parents suggested improving their knowledge of the intervention. Research suggests that parents have a good understanding of the intervention(s) during individual therapy sessions which has shown to improve parent acceptability and strengthen the therapeutic alliance between the parent and clinician (Brookman-Frazee, Drahota, & Stadnick, 2012). However, publications examining group-based interventions and interventions within the school setting tend to focus on intervention

effectiveness opposed to parent knowledge of the intervention and recommend that further attempts for skill generalization needs to occur (Bellini et al., 2007; Rodgers, 2000).

Therefore, the parent suggested improvements identified in this study are useful in developing strategies to help foster the generalization of social skills. For example, parents suggested having trainings specifically designed for parents that teach them about the components of YETI (e.g., token economy) and how to use them at home. Furthermore, parents suggested that there be an increase in communication between the parents and clinicians. For example, parents expressed how they would like to know what their child had difficulty with during the intervention session and be provided instructions for how they could work on this difficulty at home. Thus, further explanation and communication would familiarize parents with the intervention, and further problem-solving and consultation may occur during these times which could increase the implementation and use of YETI in the home setting.

There are few programs that focus on training parents in EBPs for children with ASD. Nonetheless, parent trainings like Parent Management Training (PMT) work alongside treatment and focus on enhancing parenting strategies by coaching parents in the principles of learning theory and behavior modification to decrease a child's inappropriate behaviors (Sofronoff, Leslie & Brown, 2004). PMT has shown to decrease the inappropriate behaviors of children with ASD by using the EBP of differential reinforcement (Bogin & Sullivan, 2009). Furthermore, the "Lovass' Model" of Applied Behavior Analysis is a comprehensive treatment for children with ASD that uses a variety of EBPs (Rodgers & Vismara, 2008). Within the initial years of treatment there is an emphasis on one-on-one instruction in the home setting. Moreover, the Lovass' Model relies on parent training and involvement so parents can work on the generalization of skills and aid in continued progress (Rodgers & Vismara, 2008). Thus, it

appears that parent trainings can help cultivate parent involvement and possibly help with the generalization of social skills.

Nevertheless, these identified barriers to the generalization of social skills suggest that the YETI intervention may fall into the category known as a "train-and-hope" model of intervention. This "train-and-hope" philosophy refers to clinicians implementing interventions in the clinic setting and hoping that clients use skills taught in the clinic in more natural settings. The train-and-hope approach may be successful with specific populations because generalization is often effortless for typically developing individuals (Ghezzi & Rogers, 2011). Generalization of skills may be more natural for typically developing individuals because they are more likely to showcase social competence in the natural settings of home and school. However, this approach is not appropriate for children with ASD because of the perceived difficulty they experience with generalizing learned skills. Therefore, in order to accomplish generalizability and maintenance, clinicians and interventions should consider using other methods to address the continuation of skills in multiple settings.

Unlike other studies, this research explored parent suggestions for how to improve the intervention. Specifically, the results identified specific elements of the intervention that can be adapted to promote further generalization and maintenance of social skills. Other studies have provided more general recommendations from the researcher's perspective. For example, many recommendations for improving generalization and maintenance involve intervention-specific suggestions, such as incorporating video feedback to promote the mastery of skills (Deitchman, et. al., 2010), and the development of peer-mediated interventions so individuals interact with typically developing individuals and experience more authentic social interactions (Leinert, 2013; Schmidt & Stichter, 2012). Furthermore, strategies such as script fading, should be used

so verbal initiations to peers, social interactions, and general conversation skills can be mastered and broadened to be used in multiple situations (Wichnick, 2013). However, many of these recommendations are already provided within the YETI framework of treatment. Nonetheless, literature has identified parent and teacher trainings to be useful in helping the generalization of skills across multiple settings (Dekker, et. al., 2014; Miyashiro, 2001). This research identified parents wanting specific parent training. Therefore, if YETI provides a parent training then the generalization of social skills may be improved

Limitations and Future Research

The results of this study have contributed to understanding how parent acceptability influences the generalization of social skills for children with ASD. Through this exploration, barriers to the generalization of social skills and parent suggested improvements have also been identified. Nonetheless, there are a number of limitations in the study that should be considered and future directions for research will be discussed.

First, this study only explored the parents' perspective. Although the parent perspective is deemed valuable and useful for intervention development and improvement (Carter, 2007), a multi-method and multi-source approach to this research may generate more generalizable results for a larger population. Gathering information from multiple perspectives (e.g. client, teacher) through the use of multiple tools (i.e Likert scales, focus groups) will provide balance in the interpretation of results and provide further support for the interpretation of results.

Another limitation to this study is the small sample size used to examine parents' perceptions of the group-based social skills intervention. Although 28 participants were used to examine the various research questions in this study, these participants were of the same community and did not include participants from other communities. Therefore, these results

cannot be generalized to the overall public and the themes and barriers may only be community specific. To account for the small sample size of this study, YETI should be implemented in various communities of multiple regions across the United States to gain more participants and further generalize results.

Future research should also be conducted to further improve the generalization of skills taught in the YETI intervention. Parents provided suggestions such as parent trainings and further communication and involvement with the schools. Future research should therefore, attempt to achieve such improvements. For example, parent training can be easily implemented and achieved within the current structure of the YETI intervention. Furthermore, the EBP known as parent-implemented interventions encompass the use of parent trainings, individualized goal setting, and the implementation of an intervention in the home setting lead by the primary caregiver of the child (Hendricks, 2009). Moreover, parent-implemented interventions have shown to improve the generalization and maintenance of social sills for children with ASD (Hendricks, 2009).

Furthermore, this study only focused on the implementation of YETI within the home setting. Even though this study focuses on parent perceptions and the use of YETI in the home setting, parents still identified a need that was not specifically considered for this study. It is assumed that social skills will be better generalized if practiced and maintained in the natural settings of home and school (Hendricks, 2009). Therefore, future research will need to focus on how to improve the communication and continuity with the school's social skills curriculum.

In order to do that, the developers of YETI may need to consider changing the structure of YETI to better adapt to the school environment. Currently, YETI requires a one-to-one client-to-clinician ratio. Furthermore, because YETI focuses on providing individualized treatment

within a group setting, the client's individual clinician provides a lot of time in treatment planning. For many school districts, schools do not have the personnel or time to provide such a framework approach. Thus, many school professionals resort to using a set curriculum that does not address the individual needs of many students so few professionals can provide services efficiently (Bellini et al., 2007).

Therefore, future research should focus on adapting YETI to the school setting and possibly using implementation science models, such as the Interconnected Systems Framework (ISF; Barret, Eber & Weist, 2014), as a guide to successful interconnect resources, the school, and community in order to provide appropriate education and mental health services to all children within the school system (Barret, Eber & Weist, 2014). Specifically, ISF is focused on making mental health interventions more accessible and frequently used within the school system by implementing professional skill development strategies such as formal peer coaching, small learning communities, and data tracking systems monitoring (Barret, Eber & Weist, 2014).

Clinical Applications

The take-home message school psychologists, speech-pathologists, or other professionals working with children who have ASD is that effective communication with parents is essential for successful implementation of social skills strategies. Communication with parents fosters a trusting and positive relationship between parent and clinician, which may make parents more committed to implementing strategies in the home environment (Lane & Beebe-Frankenberger, 2004). However, as the results of this study indicated, the implementation and maintenance of a social skills intervention in the home setting can be very difficult for parents.

Therefore, it is recommended that clinicians invest time in making a social skills intervention more applicable for the home setting. Thus, with the improved communication

between parent and clinician, specific intervention strategies can be discussed, concerns and questions can be addressed, and the combined efforts of parents and clinicians can work together to help improve the social difficulties children with ASD encounter. Moreover, in attempts to improve the implementation and maintenance of a social skills intervention, clinician can provide materials and information on how to use such tools to parents so the intervention will be easier for parents to use in the home setting.

Lastly, improving the working relationship between parents and clinicians, along with providing tools and materials to parents to easily implement the social skills intervention at home will provide the child with ASD a more consistent treatment across multiple settings. As previously discussed, children with ASD typically have difficulty generalizing learned skills across multiple environments (DiSalvo & Oswald, 2002; Krasny et al., 2003; Weiss & Harris, 2001). Therefore, it is recommended that clinicians stop expecting children with ASD to continually change themselves to meet social norms. Rather, clinicians should focus on consistently changing the child's environments by implementing interventions across multiple settings so desired improvements have a better chance to occur over time.

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APPENDIX A - (PAQ)

Parent Thoughts & Feeling of YETI

We are interested in learning about your thoughts and feelings about the Youth Engagement Through Intervention (YETI) social skills intervention. Please circle your responses to the items below.

1. **Did you observe any of the sessions in YETI?** Yes No

2. **Have you used the following strategies with your child? If so, how *confident* are you in using the strategy?**

				How confident are you in using the strategy?		
2a. Video Modeling	**Yes**	**No**	**I don't know**	*Not at all*	*Neutral*	*Very Confident*
2b. Reinforcements (tokens, prizes)	**Yes**	**No**	**I don't know**	*Not at all*	*Neutral*	*Very Confident*
2c. Visual schedules	**Yes**	**No**	**I don't know**	*Not at all*	*Neutral*	*Very Confident*
2d. YETI Language (e.g., "new way" and "old way")	**Yes**	**No**	**I don't know**	*Not at all*	*Neutral*	*Very Confident*
2e. Social narrative or social story	**Yes**	**No**	**I don't know**	*Not at all*	*Neutral*	*Very Confident*

3. **How clear is your understanding of the intervention?** 1 Not at all clear 2 3 Neutral 4 5 Very Clear
4. **How acceptable do you find the intervention to be regarding your concerns about your child?** 1 Not at all acceptable 2 3 Neutral 4 5 Very acceptable
5. **How likely might there be disadvantages with this intervention?** 1 Not at all likely 2 3 Neutral 4 5 Very likely
6. **How likely is this intervention going to make long lasting improvements in your child's behavior?** 1 Not at All likely 2 3 Neutral 4 5 Very likely

7. How confident are you that this group intervention will be effective?	1 Not at all confident	2	3 Neutral	4	5 Very confident
8. How affordable is this intervention for your family?	1 Not at all affordable	2	3 Neutral	4	5 Very affordable

9. Overall, how successful do you think this intervention was for your child? Why?

10. If your child participated in another social skills intervention or group, what do you notice that is different about YETI?

11. Would you recommend this intervention to other parents of children with autism? Why or why not?

12. To what extent do you think this intervention helped your child learn specific strategies and social skills?

APPENDIX B – (PAI)

Parent Acceptability of Youth Engaged Through Intervention

Guided Interview Schedule

The following statements and questions will help researchers' understand what interventions are effective outside of the social skills group. In addition, the interview will aid in finding the aspects of YETI that are most effective at teaching children with autism specific social skills. The interview will commence with an initial statement, listed below, and then address aspects of the social skills group.

Interview Script

Welcome. Thank you for participating in this interview. For approximately the next 15 minutes, we will be asking you different questions to learn more about the effectiveness of Youth Engaged Through Intervention outside of a clinical setting. You will be asked to discuss topics such as your experiences and knowledge of children with autism, specifically your child, your assessment of other interventions, and your perceived effectiveness of YETI.

Before we begin, we will review the informed consent form. After reading it, please sign it, acknowledging that you have read and agreed to participate in this interview.

The information you provide during the interview will be kept confidential. That is, we will make sure that we do not link you or your child's name with any information we share through publications or presentations. Additionally, we will be audiotaping and taking notes to make an accurate record of your answers to the open-ended questions. There is no right or wrong answer to the questions--the important thing is that you share your experiences and opinions.

The information you provide in the interview will be kept confidential. Members of the research team will analyze the information collected during this study. This information will be kept in a locked research lab on the University of Montana campus. No one else outside of the research team will see your responses.

Do you have any questions about the informed consent or how we will be spending the next 15 minutes?

Open-ended Questions

1. Overall, how successful do you think this intervention was for your child? Why? How could it be improved?
2. If your child participated in another social skills intervention or group, what do you notice that is different about YETI?
3. Would you recommend this intervention to other parents of children with autism? Why or why not?
4. To what extent do you think this intervention helped your child learn specific strategies and social skills?
5. If you used this intervention at home which strategies did you prefer? Why?

6. If you used any intervention strategies at home when did you use them? How often did you use them?

Ending the Interview

Thank you again for taking the time to participate in this important research. We want to remind you that your name will be kept confidential and separate from any of your answers in the interview. If at any point you have any questions or are concerned about your comments being used, please contact the primary investigator, Anisa Goforth, at the contact numbers provided in the informed consent. Do you have any questions before we end? Thank you.

APPENDIX C – (PABI)

Parent Acceptability and Barrier Identification of Youth Engagement Through Intervention

Guided Interview Schedule

The following statements and questions will help researchers' understand what interventions are effective outside of the social skills group. In addition, the interview will aid in finding the aspects of YETI that are most effective at teaching children with autism specific social skills. The interview will commence with an initial statement, listed below, and then address aspects of the social skills group.

Interview Script

Welcome. Thank you for participating in this interview. For approximately the next 20 minutes, we will be asking you different questions to learn more about the barriers to the generalization of Youth Engaged Through Intervention outside of a clinical setting. You will be asked to discuss topics such as your experiences and knowledge of children with autism, specifically your child, your assessment of other interventions, and your perceptions of YETI.

Before we begin, we will review the informed consent form. After reading it, please sign it, acknowledging that you have read and agreed to participate in this interview.

The information you provide during the interview will be kept confidential. That is, we will make sure that we do not link you or your child's name with any information we share through publications or presentations. Additionally, we will be audiotaping and taking notes to make an accurate record of your answers to the open-ended questions. There is no right or wrong answer to the questions, the important thing is that you share your experiences and opinions.

The information you provide in the interview will be kept confidential. Members of the research team will analyze the information collected during this study. This information will be kept in a locked research lab on the University of Montana campus. No one else outside of the research team will see your responses.

Do you have any questions about the informed consent or how we will be spending the next 20 minutes?

Open-ended Questions

1. How many times has your child participated in YETI?

2. Overall, how successful do you think this intervention was for your child? Why? How could it be improved?

3.If your child participated in another social skills intervention or group, what do you notice that is different about YETI?

4. Would you recommend this intervention to other parents of children with autism? Why or why not?

5. To what extent do you think this intervention helped your child learn specific strategies and social skills?

6. If you used this intervention at home which strategies did you prefer? Why?

7. If you used any intervention strategies at home when did you use them? How often did you use them?

8.What barriers or difficulties do have when trying to use the strategies taught in YETI at home?

9. Other than sharing social narratives after each YETI session, what else could be done to help use these skills at home?

Ending the Interview

Thank you again for taking the time to participate in this important research. We want to remind you that your name will be kept confidential and separate from any of your answers in the interview. If at any point you have any questions or are concerned about your comments being used, please contact the primary investigator, Zachary Shindorf, at the contact numbers provided in the informed consent. Do you have any questions before we end? Thank you.

APPENDIX D

Informed Consent & Parental Permission

Research Title: Exploring Barriers to the Generalization of Social Skills Interventions for Children Diagnosed with ASD: A Qualitative Analysis of 'Youth Engagement Through Intervention'

Investigator(s):

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Purpose:
Children with Autism Spectrum Disorders experience difficulties with social interaction and friendship development. Group-based social skills interventions may teach children with autism and related disorders specific skills to appropriately interact with their peers. Such interventions have shown to be effective in the clinical setting, but have had difficulty generalizing to other settings like the home and school.

You are being asked to give permission for your participation in a research study examining the barriers to the generalization of Youth Engagement Through Intervention (YETI).

Procedures:
This study will take place in a private room at the DeWitte RiteCare Clinic or the Clinical Psychology Center at the University of Montana. You will participate in an interview via in-person or phone conversation for approximately 20 minutes. The interview will be recorded using audio equipment. We will be asking you different questions to learn more about the barriers to the generalization of Youth Engaged Through Intervention outside of a clinical setting. You will be asked to discuss topics such as your experiences and knowledge of children with autism, specifically your child, your assessment of other interventions, and your perceptions of Youth Engagement Through Intervention.

Risks/Discomforts:
You may experience some mild risk and discomfort from participating in this study. Some individuals may be hesitant to share their thoughts and opinions about specific topics due to how others may perceive their comments. Furthermore, individuals may be worried about the sharing of their identities or the identities of their children.

Benefits:
You and your child may benefit from this study. Once barriers to the generalization of Youth Engagement Through Intervention are identified, the intervention can be improved to account for such difficulties so Youth Engagement Though Intervention can be easily used in the home setting.

Confidentiality:
All records will be kept private and will not be released without your consent except as required by law. Only the researchers will have access to the files and the data will be stored in a locked file cabinet. Both you and your child's identity will be kept private. If the results of this study are written in a scientific journal or presented at a scientific meeting, neither you nor your child's name will be used.

Voluntary Participation/Withdrawal:
Your decision to take part in this research study is entirely voluntary. You may refuse to take part in or you may withdraw from the study at any time. You may leave the study for any reason. Your child may continue to participate in the intervention even if you would like to withdraw from the study.

Questions:
You may wish to discuss this with others before you agree to allow your child to take part in this study. If you have any questions about the research now or during the study contact: Zachary Shindorf at 419-450-2196, Anisa Goforth at 406-243-2917, or Jennifer Schoffer Closson at 406-243-5261. If you have any questions regarding your rights as a research subject, you may contact the Chair of the IRB through The University of Montana Research Office at 243-6672.

Statement of Permission:
I have read the above description of this research study and voluntarily agree to participate in the study. I have been assured that a member of the research team will also answer any future questions I may have. I understand that I will receive a copy of this permission form.

_____

Printed Name of Participant

_____ _____

Signature of Participant Date

Statement of Permission to be Audio-recorded
I understand that audio recordings may be taken during the study. I give permission to be audio recorded and understand that if audio recordings are used for presentations of any kind, names or other identifying information will not be associated with them

_____ _____

Signature of Participant Date