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Behavior & Developmental Treatment Models for Autism Spectrum Disorders: Factors Guiding Clinician Preference and Perceptions

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Behavior & Developmental Treatment Models for Autism Spectrum Disorders: Factors Guiding Clinician Preference and Perceptions

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Abstract

      1 in 88 children are diagnosed with an Autism Spectrum Disorder, a condition that inhibits a person's ability to communicate and relate socially to other people, as well as cause a person to partake in repetitive or stereotyped behaviors. There are several interventions parents and professionals can utilize to remediate the three core deficits of Autism, however the theories behind what should be focused on in these treatment models are very different. This qualitative study aimed to investigate the factors that guide clinicians' preferences and perceptions of a behavioral and developmental model as well as analyzed the interventions for autistic symptoms employed by developmental and behavioral theories--specifically looking at the Developmental, Individual Difference, Relationship-based (DIR) model and Applied Behavior Analysis (ABA). A total of six experienced ASD clinicians were interviewed: three working under a development scope and three practicing under the behavioral scope. Each clinician was asked a series of questions concerning which model they prefer, their knowledge of both models, and how their knowledge was gained. Primary factors guiding participant's perceptions stemmed from independent research, parent reports, and colleague reports. Strengths and deficits of each model identified by all participating clinicians were congruent with current literature but the rationale concerning the strengths and deficits differed depending on the participant's theoretical lens. These themes were identified and explained in this clinical research.

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Introduction

In 2000 the Center for Disease Control (CDC) created the Autism and Developmental Disabilities Monitoring (ADDM) Network with the charge of tracking the occurrence of developmental disabilities in children. Since then the CDC's most recent ADDM summary it has been recorded that the prevalence of Autism Spectrum Disorders (ASD) in the United States has steadily risen from 1 in every 150 children being identified on the autism spectrum to 1 in every 88 as of 2008. Similarly, ADDM Networks in Europe and Asia have also found an equivalent rise of ASD diagnoses according to the same 2012 report by the CDC. This dramatic increase in the worldwide prevalence of ASD is concerning since a specific etiology has not been identified despite research over the last decade. ASD can manifest in any demographic making research in treatment for these disorders relevant; hence, this study will focus on treatment of ASD through assessing the strengths and deficits of two popular intervention models by reviewing the literature and interviewing experienced clinicians on these interventions.

The CDC describes ASD as "a group of developmental disabilities characterized by impairments in social interaction and communication and by restricted, repetitive, and stereotyped patterns of behavior" (2012). The DSM-IV-TR (2000) identifies five disorders within the Autism Spectrum: Autistic Disorder, Rett's Disorder, Childhood Disintegrative Disorder, Aspergers Disorder, and Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS). The DSM-IV-TR language refers to Autism Spectrum Disorders as Pervasive Developmental Disorders but the two terms are interchangeable.

Treatment for children on the Autism Spectrum has advanced considerably over the past decade. Currently the two primary approaches to treating autism include a

developmental-focused approach and a behavior-focused approach. The two approaches stimulate disagreement amongst professionals as developmentalists view autism as interfering with developmental milestones and behaviorists focus strictly on changing the behaviors associated with autism. This research paper will focus on the two most popular and widely used models: the Developmental, Individual Difference, Relationship-based (DIR) model developed by Dr. Stanley Greenspan and Serena Wieder and the Applied Behavior Analysis (ABA) model, which was formatted to treat Autism by Dr. Ole Ivar Løvaas. Both the DIR and ABA models were originally intended for children with emotional disturbances and were later utilized for autism years after they were developed.

The primary objective of DIR is to help a child achieve the developmental milestones that they failed to accomplish due to their developmental disorder (Greenspan & Wieder, p. 3, 1998). The therapist helps the child achieve these milestones through child-directed play and relationship building. The theory suggests that through play and emotional attunement, the therapist can influence the child out of their internal world and want to begin to experience the external world (Greenspan & Wieder, p. 123, 1998) ABA on the other hand focuses more so on the behaviors than on the child's development. The ABA approach uses conditioning and reinforcement to teach the child preferred behaviors and to refrain from undesired behaviors. The literature review will provide more in-depth information on the techniques employed by DIR and ABA, as well as the strengths and weaknesses practitioners identify.

Both the ABA and DIR models are popular with clinicians in treating ASD, yet many professionals and their agencies tend to utilize and promote one over the other. An overview of each model will be provided to give clinicians and parents a good grasp of

each theory, offering them the knowledge to make an educated decision on if a behavior approach or a developmental approach is best for their loved one on the Autism Spectrum. This decision is significant because each model focuses on different areas and the approaches tend to stigmatize each other. Ultimately, this study asks what factors lead a clinician to apply ABA or DIR?

Literature Review

This literature review focuses on describing the Developmental Individually-based Relationship (DIR) model's approach to treating Autism Spectrum Disorders (ASD), which will then lead to a discussion on what professionals identify as the model's strengths and deficits in treatment. The same review will then be conducted on the Applied Behavior Analysis (ABA) model and theory in treating Autism Spectrum Disorders. Both models are popular in the treatment of ASD however; both were designed to help children with any social-emotional deficits and were later tailored to address ASD's symptomology.

Developmental Individually Based Relationship (DIR) Model

Dr. Stanley Greenspan and Serena Weider created the DIR model in 1979 with the idea that using a developmentally-based approach and an intensive relationship-focused intervention tailored for that specific child's level of social-interaction development would result in a decline in social-emotional issues (Greenspan & Wieder, p. 1, 1998). DIR alone is a framework clinicians and parents alike can use to assess the needs of the child and develop strategies specifically to the child's needs and interests. An understanding of the child's interests is critical in keeping the child engaged and invested in his or her treatment. Showing shared interest facilitates a relationship necessary to practice the social and developmental skills the child is lacking (Wieder & Greenspan, p. 426, 2003)

DIR is centered around helping a child master six developmental milestones Greenspan identified as essential for a person to develop a sense of self as well as appropriate cognitive, social, emotional, language, and motor skills: (1) Self-Regulation,

(2) Intimacy, (3) Two-Way Communication, (4) Problem-Solving, (5) Emotional Ideas, and (6) Emotional Thinking. According to Greenspan & Weider (1998) the importance of the milestones: "These six basic steps form a developmental ladder; each layers new abilities onto those of the prior stage. We call these steps the six milestones because each one marks a major turning point in the life of a child. Children who receive warm nurturing and do not have developmental challenges often master these milestones automatically by the age of four or five. But children with challenges need help from parents and therapists and often take longer to achieve." *(p. 71)*

The intensive intervention utilized by DIR in helping a child master the six milestones is known as Floortime, which is integrated into the child's day-to-day life. Floortime is defined as "…the component that is spontaneous and led by the child, where the caregiver follows the child's lead and promotes the continuous flow of interactions utilizing affect cues that entice, challenge, soothe and encourage the child further" (Weider, 2003, p. 427). In other words, the adult must engage the child by following the child's lead and teaching social skills and affect regulation through the child's play. In a sense the adult is providing a safe place to practice these skills that develop naturally in most typical children. This practice is necessary as Leach and LaRocque (2011) note, "A child who displays social reciprocity is aware of the emotional and interpersonal cues of others, appropriately interprets those cues, responds appropriately to what he or she interprets, and is motivated to engage in social interactions with others" (p. 151). The approach is in line with the evidence that children on the autism spectrum require extra practice in social reciprocity and reading cues in social situations.

The main goal of the DIR/Floortime Therapy approach is to help children with autism learn to self-regulate, to engage and develop relationships with the world, to partake in intentional two-way conversation, to solve complex problems, to have abstract thoughts and ideas, and to relate and interpret symbols and behaviors. In other words, DIR's goal is to teach children with ASD these skills so that the child can naturally interact in society and have spontaneous ideas and responses to others (Pajareya & Nopmaneejumruslers, p. 565, 2011). Greenspan and Wieder (1998) emphasize the importance of a global perspective of the child since many other interventions focus on one aspect of the child's life and hope for a "spillover" into other settings or situations (p.12). DIR/Floortime is an integrated approach that involves all systems in the child's life (e.g. school, home, therapies, etc.) in helping the child develop relational skills, produce spontaneous thoughts and actions, and fully develop abstract thought capabilities.

Greenspan (2007) observes, "The child is never simply doing aimless activity and us doing aimless activity with him. To do this, we pay attention to their individual differences and we pay attention to our own unique characteristics as caregivers, as family members, and our own family patterns." (p. 6). Floortime is individually based but the intervention is family focused as much of the therapy is conducted in-home with the expectation that parents will implement Floortime even when the therapist is not present. A clinician using this model will need to take into account the family dynamics and address how the child can learn to tolerate "annoyances" the family creates as well as educating the family on their child's autistic thought-processes. This mutual understanding will facilitate a more tolerable environment for the entire family unit.

In practice, Floortime is 20-30 minutes of child directed play (Greenspan, p.122, 1998). For example, if the child is playing with his toys, then the adult will simply start by attempting to play with the child. One begins at the point of play the child is at and partakes in parallel play and moves into reciprocal play. Many children on the autism spectrum prefer independent play so there may be resistance to the initial engagement by way of the child moving away from you or having an outburst. Floortime is a gradual process of slowly building up the child's tolerance by adding little "annoyances" during play, the first of which may be your attempts of engagement, and supporting the child in self-regulation and acceptance of your interactions. This can be a very slow process but with time and patience the child will begin to engage once they see the benefits of social interaction and realize they have found an adult who relates to them (Greenspan, p. 124, 1998).

The above example is directed toward small children but Floortime can be adapted across ages; clinicians are not restricted to only playing on the floor. If an older child, who has outgrown playing with toys, requires intervention, then the clinician must familiarize themselves with the child's interests. For instance, if a 12-year-old enjoys being outside and has an interest in insects, then a productive Floortime session may include going outside and bug hunting. While doing this, the adult can process through problem solving issues such as 'how can we catch the bugs?', self-regulation concerns 'you seem really frustrated that bug got away, how can we deal with that?', as well as encouraging social interaction by talking about the insects with the child--'what kind of bug is that?'. A session could simply be sitting with the child and looking at books and talking about insects. This model does not have a limit in regards to an individual's age

or functioning level. Greenspan (1998) says, "Certain types of interactions with other people promote a child's growth… the brain and mind simply don't develop without being nurtured by human relationships" (p. 122).

DIR/Floortime is intended to be naturally integrated into the child's daily routine and is tailored to the individual child's needs and interests (Whiteford Erba, p. 88, 2000). The philosophy of intervention being incorporated and focusing on the child's global needs and various environments instead of one aspect or skill with the hopes of spill-over attract many people to DIR. However with these strengths there are also deficits to this framework, primarily the lack of research on long-term efficacy. Mary Jane Weiss (2009) notes this shortfall in her article on treatment methods for ASD by identifying the research and empirical evidence on DIR/Floortime's efficacy is lacking:

> *Greenspan and Wieder (1997) conducted a chart review of 200 children with autism who received DIR treatment and compared outcomes with those of children who received traditional (unspecified) services. After two years, they found that 58% of children were categorized as "good to outstanding" compared to 2% in traditional services. Their recent 10- to15-year follow-up of the 16 most high-functioning participants revealed long-term positive outcomes in social and school competence, low rates of comorbid depression and anxiety, and variable outcomes on sensory motor profiles (Wieder & Greenspan, 2005). Limitations of these studies include a nonexperimental design and a lack of information on concurrent treatments, making it very difficult to confidently attribute gains to the approach.* (p. 300)

As Weiss (2009) states, the validity of this study is limited since the review was vague on what other factors may attribute to the subject's developmental gains and was not scientific in nature. The initial study and follow-up are unreliable without an experimental design and investigation of other potential interventions because it could be argued that Greenspan and Wieder were biased in reviewing a model they created.

Since Greenspan and Wieder's review, there have been other studies to test the efficacy of DIR in order to build validation for this approach as a treatment for ASD. Solomon, Necheles, Ferch, and Bruckman (2007) implemented a program evaluation on the home consultation model known as The PLAY Project, which is based on DIR's theoretical framework. Parents involved in The PLAY Project were trained by professionals on how to implement the DIR/Floortime intervention with monthly 3-4 hour home visits. In between visits parents were instructed to implement Floortime at least 15 hours per week with their child. The outcomes were measured by implementing the Functional Emotional Assessment Scale (FEAS) at the beginning and end of the first year of intervention. The FEAS is a reliable, age-specific tool clinicians use to measure change in child development (Solomon et. al, p. 212, 2007). With the exception of special education curriculum through the school, participants were only receiving DIR as a treatment intervention. 68 participants were analyzed in this observational study, which found that after 1 year of using DIR/Floortime, 45.5% of the children receiving the treatment gained significant developmental skills based on the FEAS. Unfortunately, this study contains limitations that challenge its validity. In particular, this study did not have a control group to compare results: "it is impossible to know whether the changes in post FEAS scores are directly attributable to the home-based training" (Solomon et. al, p. 219,

2007). Although the children were not receiving other in-home interventions, they were receiving special education in school, which in principle could have contributed to the child's improvements. The FEAS scores only reflected skills gained in the home and was not measured outside of the child-parent relationship, so there is no evidence that the skills learned from DIR were generalized outside of the home.

Pajareya and Nopmaneejumruslers (2011) conducted a study in Thailand, where ABA is the dominant treatment for ASD, to see if DIR would benefit children on the spectrum. The researchers began by training parents in DIR/Floortime with a one-day seminar, then going to the home and coaching the parents with their child. Over the course of three months, the intervention group, continued in-clinic ABA treatment while the parents were practicing DIR/Floortime at home. The other group of children, the control group, only received their usual ABA training without DIR/Floortime being implemented. The outcomes were measured by implementing the FEAS at the beginning and end of each DIR session with the intervention group and at the beginning and end of the study for the control group. The Childhood Autism Rating Scale (CARS) was also used as a secondary measure, which is a tool used to measure autistic symptoms in a child.   The results of the study found that the intervention group's symptoms decreased significantly in the three-month period compared to the control group.

Solomon (2007) notes in his own study "despite clinical acceptance of play-based, social/ pragmatic approaches, the scientific evidence for their efficacy has been limited. These approaches are more difficult to operationalize and quantify than behavioral approaches" (p. 207). This limitation lies in developmental approaches being abstract and challenging to track visually with charts and graphs unlike behavioral methods that

can easily operationalize progress. With the lack of additional scientifically based evidence of DIR's efficacy it is hard to confidently say that this theoretical framework is truly effective in the long term and that individuals with ASD maintain the skills they learn from DIR/Floortime.

Applied Behavior Analysis (ABA)

Applied Behavior Analysis (ABA) therapy has its basis in the teachings of behaviorist B.F. Skinner and is described as "… an approach to changing behaviors that uses procedures based on scientifically established principles of learning" (Kearney, p.9, 2008). Skinner's research on conditioning is applied to clients by identifying a problem behavior, analyzing the causes and outcomes of that behavior, and attempting to modify the behavior with conditioned responses and positive reinforcement. The ultimate goal and focus of this behavior-based model is extinction of the undesired behaviors, where "extinction refers to the elimination of reinforcement for the maladaptive behavior, and takes place when reinforcement that previously maintained a behavior is withheld following the occurrence of a behavior" (Weiss et al, p. 311, 2009). In other words, undesired behaviors are identified and through reinforcement and conditioning the behavior is phased out and replaced with an appropriate behavior.

Skinner defined behavior using a three-term concept he dubbed the contingency of reinforcement (Kearny, p. 20, 2008). When observing a behavior it is important for the professional to identify (1) the antecedent; what precedes the behavior to cause it, (2) the behavior needing to be modified, and (3) the consequences caused by the behavior. Identifying these three aspects of the behavior is essential because it helps pinpoint the function of the behavior, which will aid in the modification of the undesired behavior.

The concept of fluency is important in reinforcing the "appropriate" behavior as Weiss et al. (2009) illustrates, "Fluency has been defined as responding accurately, quickly, and without hesitation" (p. 291). Practitioners being fluent in responses helps the individual identify maladaptive behaviors and which behavior to replace it with.

Baer, Wolf, and Risley (1968) wrote a review of ABA describing and defining the ABA treatment model and how ABA interventions should be formulated. Baer et al. (1968) state, "An applied behavior analysis will make obvious the importance of the behavior changed, its quantitative characteristics, the experimental manipulations which analyze with clarity what was responsible for the change, the technologically exact description of all procedures contributing to that change, the effectiveness of those procedures in making sufficient change for value, and the generality of that change" (p.97). The ABA model emphasizes that its interventions be measurable and that the clinician track and review progress regularly. Furthermore Baer et al.'s (1968) article is used as a popular reference for clinicians as it outlines and defines the seven dimensions of ABA: (1) Applied, (2) Behavioral, (3) Analytic, (4) Technological, (5) Conceptually Systematic, (6) Effective, and (7) Generalizable Dimensions.

Baer, et al. (1968) defines the first dimension: "the label applied is not determined by the research procedures used but by the interest which society shows in the problems being studied" (1968, p. 92). Fisher et al. (2011) further states in The Handbook of Applied Behavior Analysis that ABA practitioners "... select behaviors that are applied, meaning that they are socially acceptable and currently important to the individual whose behavior is being modified and his or her family" (p. 11). The second dimension of behavior encourages the practitioner to focus on behaviors that are both observable and

measurable. The practitioner needs to observe the behavior instead of relying on reports of the behavior. Additionally, Fisher et al. (2011) reminds practitioners that behavior analysts "… attempt to identify a function of the behavior by manipulating environmental events as independent variables and observing changes in the behavior as the dependent variable" (p. 12). The third dimension concerns "… a believable demonstration of the events that can be responsible for the occurrence or non-occurrence of that behavior" (Baer et al, p. 94, 1968). In other words the ABA therapist must be able to demonstrate that their intervention is what is actually manipulating the behavior.

The first three dimensions of ABA illuminate how the model received its name of Applied Behavior Analysis and identify which behaviors are appropriate for this treatment. The remaining four dimensions guide the practitioner further on how to implement ABA effectively. The technological dimension requires the therapist to thoroughly and accurately describe the procedures of the intervention implemented (Fisher, et. al, 2011, p.12). Baer et al. (1968) emphasize the importance of detail in the implementer's documentation and recommend "the best rule of thumb for evaluating a procedure description as technological is probably to ask whether a typically trained reader could replicate that procedure well enough to produce the same results, given only a reading of the description" (Baer et al., p. 95, 1968). Not only must the techniques used be well documented, but they must also be conceptually systematic, i.e. the techniques are scientifically proven to work and have empirical evidence of being effective. The sixth dimension of effectiveness simply means the therapist must be able to show their intervention is showing improvement, typically documented by visuals such as charts and by data keeping. Finally the behavior change must be generalizable among various

settings. If the client has stopped the undesired behavior at school but still exhibits the behavior at home or in the community, then the intervention was not completely effective. The seven dimensions aid professionals in identifying targeted behavior(s) and explain how to measure effectiveness of the intervention (Baer et al., p.93, 1968). This is a strength of ABA as it simplifies implementation for clinicians and makes progress easy to operationalize and track.

In regards to ASD, the intervention utilized in the ABA framework is Discreet Trial Training (DTT). DTT was first utilized by the late Dr. O. Ivar Lovaas to treat autistic behavior in the early 1960's (Whiteford Erba, 2000). According to Weiss et al. (2009), "DTT uses repetition and sequenced instruction to build a variety of skills in students with autism" (p. 289). As the name implies DTT intervention relies on discrete-trial sessions based on operant conditioning, with a focus on positive reinforcement, to change the individual's behavior. (Whiteford Erba, p.83, 2000). DTT suggests that positively reinforced behaviors will continue while negative behaviors will achieve extinction by ignoring or using a deterrent such as time outs or simply saying "no" or "stop". According to the National Professional Development Center on Autism Spectrum Disorders "DTT is a particularly strong method for developing a new response to a stimulus. Its limitations involve lack of reinforcement of learner spontaneity and difficulty with generalization." (Bogin et al, p. 1, 2010). Their organization goes on to make the recommendation that guardians and professionals develop ways to generalize the client's new skills across settings and situations. The National Professional Development Center on Autism Spectrum Disorders lists out nine steps to conducting DTT similar to the seven dimensions of ABA therapy (Bogin et al., 2010). The two

additional steps instruct "teachers/practitioners [to] generate a list of possible locations in which the teaching can take place" and in the Massed Trial Teaching dimension for "…practitioners [to] repeat the same learning trial several times in a row, ensuring that the learner is successful multiple times at whatever step of the skill is being taught" (p.7), assisting in making the skills learned in DTT are generalized and understood by the individual.

As Weiss (2009) states, "Applied Behavior Analysis has substantial documentation of its effectiveness in remediating the deficits associated with autism. There is no other treatment approach that even approaches ABA in terms of empirical validation, scientific support, or confidence of findings" (p. 293). Manning-Courtney et al. (1999) note over 19,000 articles have been published, 500 of those focusing specifically on ABA's efficacy treating autism, such as Anderson and Romanczyk (1999), adding credence to the effectiveness of the ABA approach, and validating long term effects (p. 293). Furthermore the ABA model is scientifically based as Keenan and Dillenburg (2011) comment in their research, "forty years of research evidence in favour of ABA-based treatments mean that there is no genuine uncertainty about its effectiveness" (p. 4). Keenan and Dillenburg (2011) also mention past reviews (e.g. Larsson, 2005, & Matson, 2007) of studies proving ABA's efficacy in treating ASD (p. 4).

Despite the empirical evidence for the effectiveness of ABA, the method does have weaknesses that clinicians and parents are quick to point out. One criticism concerns the intensity of the program; particularly that "the first phase of intervention includes 40 hours per week of one-on-one discrete trial training" (Whiteford Erba, p. 84,

2000). Along with the time commitment, many people feel that the first phase resembles 'training' the child based on cues, "Concerns largely center on the teacher-directed nature of behavioral approaches and a bias that such techniques emphasize skill building but neglect children's social and emotional needs" (Downs et al, p. 4, 2007). Although ABA is able to be individualized much like DIR, critics say ABA does not facilitate spontaneous thought that can be generalized to different situations, instead it creates cued and rehearsed responses (Simpson, p. 69, 2001). Cost is another criticism, particularly since the model can require a large amount of labor and the program is time-intensive requiring 40 hours per week (Downs et al, p. 4, 2007). In defense of this criticism of cost Manning-Courtney et al. (2000) cite a cost analysis by Mulick and Jacobsen (2000) stating, "Although the cost of programming [for ABA] has been criticized, Mulick and Jacobson (2000) conducted a cost-benefit analysis of using intensive behavioral intervention and found that millions of dollars could be saved across the lifespan" (Manning-Courtney et al, p. 293, 2000). There is a general understanding that it is much cheaper to provide early intervention to a special needs child then it is to have a special needs adult dependent on the state due to vulnerability from their disorder.

Conclusion

Currently research on why professionals choose one approach over the other is minimal. Available research and articles outline the strengths and deficits of each model and detail critiques by parents and professionals. However, they do not go in depth as to why a professional would gravitate to one model over the other. DIR and ABA are two theoretical frameworks utilizing strong interventions that can be individualized and utilized in a number of settings. DIR lacks research on its efficacy and does not involve

the focus on data that ABA relies on to track progress. Granted, given more empirical research DIR/Floortime could be proven to be an effective model of treatment. DIR also requires a therapist and guardians who are aware of the "right moment" to implement skill building whereas ABA is very incremental and laid out for practitioners. Insurance companies may be less inclined to fund DIR since there is a lack of evidence the intervention has long term effects.

Solomon et al. (2007) found that in DIR parent involvement is essential. Based on the FEAS scores in The PLAY Projects evaluation, children whose parents did not commit as much time to the intervention showed less improvement than those children who had parents commit the full 15 hours per week (p. 220). ABA is generally not seen as a method that is implemented naturally, as compared to DIR, and it does not enable a person with ASD to have spontaneous thought. It is the intent of this research to interview professionals and discover specifically *why* they prefer a behavior model or a developmental model. This information will assist parents and guardians of a child with ASD in selecting a model that fits their child best.

Conceptual Framework

This study is comparing the behavior analysis theory to an integrated developmental theory in regards to children diagnosed with an Autism Spectrum Disorder (ASD). Both theories are designed to treat mental health issues but they have very different perspectives on what the therapist's focus should be. Many mental health professionals choose between these two disciplines in psychology and tend to keep an allegiance to either the behavior or developmental frameworks of the field. This study will compare behavior analysis and the integrated developmental approach in an attempt to figure out why professionals choose an "allegiance" to one over the other.

Greenspan and Wieder (1998) state "… a number of studies have documented that interactive experience can actually change the physical structure of the brain… We have created a developmental approach that engages a child at her current level of functioning, works with the unique features of her nervous system, and utilizes intensive interactive experiences to enable her to master new capacities" (p. 1). Based on research in developmental psychology Greenspan and Weider created what they call an integrated developmental theory. All developmental theories (e.g. Attachment theory or psychoanalytic theory) focus on early relationships in a child's life and believe emotional connections with the caregiver foster growth and development (Whitford Erba, p.87, 2000). However, Greenspan and Wieder (1998) believe a global perspective is required instead of just honing in on one aspect of an individual's life, as they state "The DIR model examines the functional developmental capacities of children in the context of their unique biologically based processing profile and their family relationships and interactive patterns" (Greenspan & Wieder, p. 426, 2003). The child's unique

developmental, biological, and social profiles along with the various relationships (e.g. family, peers, school, etc.) the child has are all incorporated and considered in treatment under this theory.

In their book, <u>Handbook of Applied Behavior Analysis,</u> Fisher et al. (2011) outlines the five basic tenants of behavior analysis theory. The first tenant emphasizes behavior as subject matter; that is, behavior is the only focus and is defined as "…anything an individual does when interacting with the physical environment" (p.3) as opposed to psychoanalysts who interpret internal events like thoughts or emotions to influence behavior. Second, private events can only be observed by the individual performing the behavior where as behavior in public events can be verified by other individuals (p.5). Third, behavior analysis only studies the behavior of individuals (rather than groups). Fisher et al. (2011) continue, "Modern psychology often focuses on the study of groups in order to identify patterns of individual differences… By contrast, behavior analysis generally focuses on the behavior of individuals in order to identify general principles describing behavior relations that show consistency across species and environmental contexts" (p. 6). Fourth, identify environmental explanations of behavior. Behavior analysts divide environmental behavior into two categories: phylogenetic behaviors are genetic traits developed over generations for survival and ontogenetic behaviors are learned behaviors reinforced by consequences (p. 7). Behavior analysts focus on the ontogenetic behaviors as they are learned rather than inherited behaviors. The final tenant states behavior is studied as a natural science. This tenant reminds behavior analysts to develop theories based on scientific data and conduct experiments as chemists or physicists would in their disciplines (p.9).

Behavior analysis is scientific in nature and focuses solely on the behavior of interest and investigating what attributes to the behavior as opposed to developmental theories that focus on emotions and relationships. Although not outlined in the tenets, behavior analysts do attempt to create a therapeutic alliance with their clients in order to ensure treatment is successful. The primary difference is the alliance and past relationships are not the primary focus of treatment like developmental perspectives emphasize. Despite the two theories taking different approaches to treatment, both have the ultimate goal of diminishing maladaptive symptomology, yet professionals have still developed a rivalry between the frameworks.

Methodology

Introduction

The purpose of this study was to gain insight as to why professionals choose behavioral approaches, such as ABA therapy, as opposed to developmental approaches like DIR (and vice versa) in treating Autism Spectrum Disorders (ASD). This research was exploratory and qualitative in design involving a semi-structured interview with clinicians versed in treating ASD with either the ABA or DIR approach.

Sample

To recruit participants, the principal investigator contacted local agencies specializing in working with the ASD population as well as clinicians practicing independently. The sample for this study consisted of six clinicians currently working with the ASD population, three practicing ABA and three practicing DIR to treat ASD. Participants in this study held a graduate degree and had 7 to 15 years of experience utilizing ABA and/or DIR to treat Autism. All clinicians were female and came from different professional backgrounds in the mental health field. Of the three DIR practitioners a Licensed Professional Counselor (LPC), a Licensed Independent Social Worker (LICSW) who was also a DIR consultant, and a DIR consultant holding a Master's in Education represented developmental perceptions in treating ASD. Of the three ABA practitioners a Licensed Psychologist (LP) who was also a Board Certified Behavior Analyst (BCBA), a BCBA who was also an LPC, and program supervisor who had been practicing ABA for 15 years and held a degree in child psychology represented behavioral perceptions in treating ASD. A purposive non-probability design was utilized

with the intent being that the study required clinicians have a knowledge base in at least one of the practice models being reviewed. Data collection began after IRB approval, on January 3rd, 2013 and was completed on February 27th, 2013.

Data Collection

After IRB approval, agencies and independent clinicians serving the ASD population were contacted via email (Appendix A) with an explanation of the purpose and method of the study. Agencies and Clinicians were asked if they were willing to partake in a semi-structured interview. Once clinicians contacted the principal investigator and agreed to partake, a copy of the consent form (Appendix C) and a copy of the interview questions (Appendix D) were sent via email to the participant.

Interviews with clinicians were conducted in-person, with the option of meeting at the clinician's agency of employment or an agreed upon neutral area. The semi-structured interviews lasted no more than 30 minutes and consisted of 8 questions concerning their practice and reasoning behind their preferred model. The interviews were audio-recorded on the principal investigator's laptop, with the risks and benefits to the clinician as well as security steps in data-retention being outlined in the consent form.

Measurement

A semi-structured interview was conducted with the clinician lasting approximately 30 minutes and themes were identified after transcription of each interview. Themes of the interview focused on the clinician's preference of practice

(ABA or DIR), reasons for their preference, and perceived strengths and limitations of each model as well as what guided the clinicians perceptions of both models.

Protection of Human Subjects

There were no inherent risks involved to the clinician's participating in this study. The methods of data collection were outlined in the consent form (Appendix B) and introduction email (Appendix A). Participants were provided with the interview questions (Appendix C) prior to their interview. Confirmation was obtained from each participant prior to the interview that she was fully aware of the data collection procedures and that the participant understood the research questions. Interviews were audio recorded and password protected on the principal investigator's laptop. The principal investigator was the only individual reviewing the audio-recordings and completing and analyzing all transcriptions. Once the study was completed, all audio-recordings and transcriptions were destroyed on May 20th, 2013.

Data Analysis

Data was transcribed and analyzed solely by the principal investigator. The principal investigator looked for recurring themes in transcriptions as to why clinicians had chosen their model of treatment for ASD.

Findings

The primary purpose of this study was to explore why clinicians preferred a behavioral or developmental model in treating Autism Spectrum Disorders (ASD), as well as to investigate the perceptions behaviorists and developmentalists had of their preferred and non-preferred model and where these perceptions stemmed from. Core themes revolved around the Factors guiding the participants' preference for their model of practice, factors guiding their perceptions of both models, as well as the reported perceptions of both ABA and DIR by all six participants.

Factors Guiding Preference

Of the six clinicians interviewed, the core theme that continued to come up was this concept of their preferred model fitting with their "professional style" and the approach "making sense to them". When all six participants were asked why they prefer their current theory, participants made statements such as *"I'm more behavioral because of my training and what fits with my style"* or *"I think it just fits my natural person, I think as a clinical person as I've really looked at it, I think a lot of my own training has been developmental. And I just think developmentally and I don't think behaviorally."* As these statements illustrate, the clinicians received training in a particular theory and stayed with their current method of practice because it came naturally to them in their work. Upon further exploration with the participants these terms spoke to the professional's personality and core values in working with this population.

Of the six clinicians interviewed a commonality of what led them to their current method of practice with the ASD population was they were introduced to their model by an influential person in their life and continued to research that theory from there. Be it a

supervisor, professor, or colleague the clinicians were introduced to their current method and stuck with it because "*it just made sense*" to them. This statement of "*it just made sense to me*" was the primary reason all six clinicians stuck with either behavioral or developmental theory. Upon further exploration of this 'making sense' the clinicians interviewed described their models as "*feeling natural*" to them in practice, "*complementing their personality*", and "*seeing evidence of the efficacy*" be it in practice and/or through research. The major theme of why the clinicians preferred their method of practice revolves around the concept of a model fitting professional style.

All three behavior analysts interviewed described themselves as scientific personalities who rely on empirical evidence and research in working with any population, *"I think that for young practitioners and even old practitioners we need to keep up and evolve according to what's being published in literature… we are operating within our competency"*. Behavioral theory in and of itself is very scientific and ABA is a well researched and numbers driven model in working with all children, especially children on the Autism Spectrum.

The three developmentalists participating described their natural style as very child centered and relational in nature, *"I really believe in relationships and affect and that's the way we relate to people in the real world and it would be no different, I really think, for kids with autism relating… You need to learn with affect, you need to learn in a real situation, and then you are more likely to carry into another real situation."* In speaking with the developmental practitioners there was a focus on relating to the child's interests and developing a relationship that evoked a positive emotional response within the child. Developmental clinicians also reported a feeling that focusing just on the

behavior instead of the child's emotions was not genuine and felt "unsettling" in their work, which is why the developmental theory translates better in their mode of practice.

Despite the commonalities, one enigma did exist with one of the developmentalists interviewed in this study,

"I am a numbers person, a stats person, and a results person. I like data. So, DIR is not stats orientated; there's not standardization, there's not validity and I find that to be a weakness in the DIR model. ABA offers that, so, I struggle with that because it is this intuition with which you use DIR. It is not where I can look at my numbers and say where are we going to go with the next goal. And so ABA lends itself to that, DIR does not and as a numbers and stats person that's a deficit in my perception of DIR. So, not everyone feels that way but in a world of psych stats that that's what drives progress, that's what drives insurance the reality is there needs to be some validation and standardization behind the approach and DIR lacks that which is why insurance companies don't want to cover it". She goes on to explain why she still prefers DIR over ABA, *"...that [DIR] gets you to tap into them [children] and then they want to tap into you. And I don't get that from ABA. You know? So, it's [ABA] more about knowing what is expected of me, what I should be doing right now, but where's the want, where's the drive?... how does that standardize in their [ABA practitioner's] chart? It doesn't."*

As this clinician alludes to above, insurance companies primarily fund today's mental health services. Funding comes from proven efficacy that must be measurable and easy to see on paper; which a behavioral treatment is able to provide. Despite her natural style

to go with science and numbers she has identified the importance of emotions and relationships in working with people. In the interview with this particular clinician she discussed how she merges the ABA and DIR models in her practice, very similar to how the behavior analysts take aspects of DIR and developmental theory and blends them with their ABA treatment.

The Factors Guiding Perceptions

All participants were able to report strengths and weaknesses of their preferred model, which stemmed from their experience and training in their practice. Factors guiding perceptions of the participants non-preferred model all six clinicians reported their knowledge stemmed from various sources such as research and articles on the model, opinions of colleagues, and reports from parents who had experience with the other model. The majority of participants did not have formal training in their non-preferred model and relied on the sources listed previously to form their perceptions. Two of the six participants reported "on the job training", which included reading scholarly articles, books, and manuals provided by their employer. Only one developmental participant had formal training in ABA, however she did note that her ABA training was roughly 10 years ago. She describes her experience with ABA compared to DIR,

> *"So when I first began, so, I have my Masters in child development and, as I'm*
> *sure you know, you have to do internships. And so one of my first internships was*
> *actually in a school that was primarily ABA. And at that time I really didn't*
> *know very much about, I mean I knew generally speaking about Autism, and*
> *I knew generally speaking about some approaches but I really didn't know*

the difference. So, I got placed into an ABA classroom. And I didn't know it at the time but it just really didn't sit well with me; like, it was really a struggle each day for me to be there and I didn't know, at that time, why… So, in hindsight I can really see now why that preschool classroom was hard for me to be in because of the different approach that they were going with. And then being able to juxtapose it to the DIR model it just made more sense to me."

This report circles back to the idea of professional style being a major factor in clinicians choosing a preferred model of practice. Again, it was noted this experience was several years ago, so this practitioner may have a different experience if she were observing or practicing modern ABA. None of the behavioral participants had formal experience practicing or observing DIR/Floortime and could only speak to what they have heard or read in their years of practice. Both ABA and DIR have evolved over the years and continuous training in both models is essential to staying current with best practices.

Observation is also important so professionals can truly understand the methods utilized in each model, as one behavioral participant described when consulting with schools, *"Teachers told me 'You're turning kids into robots' or, you know, just bad things, and they heard based on not knowing anything about ABA, just on 'someone told me'. I had a lot of school districts say 'well, if I'm wrong, let me come see what it is. Come show me'. And they would come in and sit in the corner and I'd be in the kid's basement and do therapy with them; and every time they would say 'Wow, I had no idea' because they thought we just sat and the kid sat for 3 hours at a time and did therapy."* This experience captures the importance of observing various modes of intervention and communicating with other practitioners to truly grasp what is being done in a session.

Perceptions of ABA and the Behavioral Theory

All six clinicians agreed that ABA is a model that is well researched and evidence based, as well as effective in achieving client goals and objectives. One behavior analyst interviewed explained, *"There's a purpose, there's a methodology, I think there's empirical research that there isn't with other methods…. it's a proven therapy that works; it's been proven over and over again with various studies that it works and it keeps growing and getting better".* Participants described ABA as a model that looks strictly at the behavior of the child, which makes tracking progress of goals and objectives easy to operationalize and document. According to the behavior analysts participating, the empirical evidence and operationalization of progress in and of itself is why Minnesota Medical Assistance funds ABA treatment under the children's therapeutic and support services (CTSS) code and why state legislation is considering a proposal to create another funding stream for behavioral interventions. The main disagreement however between the two schools of thought is how appropriate the outcomes are for the child. As one developmental practitioner stated, *"Because they are doing this repetitive therapy over and over again the child is able to take in those aspects and gain, not to sound negative, but splintered, or at least it feels like, splintered skills".* This statement captures the main criticism of the ABA model and behavioral theory in general from all three developmental practitioners; that children are not *natural* in their social interaction and that they become dependent on prompts and cues, hindering their ability for abstract thought and visceral responses.

Despite this critique that ABA simply teaches children to anticipate prompts and respond accordingly, the participating behavior analysts argue that the ABA model is often misrepresented. All three behaviorists discussed how ABA has evolved over the last two or three years to focus on the developmental sequence and losing some of the rigidity for which ABA has been so harshly criticized, as one behaviorist in the study described, *"...Sally Rogers is kind of our guru that brought in, not only her but others, had us [behavior analysts] all start to think about the developmental sequence and we can't ignore that so at our international conferences that's what they're talking about."*. Although edibles and other external rewards are used, the behaviorists interviewed emphasized how social reinforcers are encouraged and are what is used primarily in ABA sessions. Examples included giving tickles when requested by the child or allowing the child to do a preferred activity with the practitioner as a reward. In fact, many of the social rewards that were described are very similar to what DIR/Floortime and other developmental approaches use in session to initiate engagement and reciprocation.

All three behavior analysts interviewed acknowledged that originally ABA required all practitioners to stay consistent and always use the same phrases and items to condition behavior. In recent years however, behavior analysts have become less rigid to avoid prompt dependency and generalization issues. As one behaviorist interviewed explains,

> *"You want to make sure that the skill is practiced across different people. You want to make sure that you're doing it in different settings. You want to make sure that for more basic things that the stimuli you use is similar but that your not using the exact cup all the time, not using the same shoe all the time. That you're*

just changing it up, or you're language to. For a long time in the ABA community

they said 'Ok, we all have to say it the same way, the same time' and now they're

saying 'well, maybe we can change it up a little'. You know, instead of 'touch

this' it's 'give me this' or 'show me this' which gives you kind of the same

outcome that they're recognizing an object but they're not getting stuck on 'you

have to say it this way'"

All three behaviorists interviewed went back to the skill set of the practitioner

being a factor for successful ABA intervention. They explained that if the practitioner is

not skilled in using a variety of prompts, generalization of skills, and prompt fading, then

the child will run into prompt dependency and generalization issues typically described in

ABA. One behaviorist participating described prompt fading as a process of delaying the

reinforcer utilized to shape the desired behavior until the reinforcer is eventually faded

out and no longer expected by the child, *"I tell my staff never put in an extra prompt that*

you don't have a plan to fade it.". All three behaviorists depicted generalization of skills

in ABA as a very gradual process that also involves staying away from too much

repetition of phrases, examples, and settings. Another behavioral participant explains the

process of skill generalization as, *"So we're in the chair and then we're on the floor and*

then we're out of the room, and then we're with the family and doing things... So, you

know, it's different exemplars, it's different locations… and that's kind of why it takes so

long. So the kids that take 4 years to complete our program are usually the kids that take

a long time to generalize."

The Behaviorists and Developmentalists interviewed differ in opinions on how

ABA is manualized and highly structured. While participating Developmentalists felt

this attributes to ABA being a ridged model that is not tailored to the child's specific needs; the participating behavior analysts see it as a way of ensuring practitioners are well trained and have resources available in case they run into a situation where they are unsure of what to do. These three behaviorists still describe ABA as a dynamic practice that should be tailored to each individual child. They also stated that they are constantly looking to the research to shape their interventions to the child's needs and will use behavioral approaches such as reinforcement of appropriate behaviors to extinguish inappropriate behaviors. In fact, one behaviorist interviewed actually identified *"I think the biggest issue of Autism is social skills. And that's the hardest one, and that's the one I think you get the least direction on with ABA because it is difficult and it's different for every kid… I don't just look at ABA manuals, I'm always trying to find skills and resources from all different areas".* Unlike skills such as communicating needs or sitting, social skills can not necessarily be taught the same way for every child. At times, creativity of the practitioner and utilizing different approaches is essential to teach abstract skills such as conversation.

The particpating Developmentalists also perceive a lack of parent involvement and support when ABA is used as a treatment model, stemming primarily from parents reporting they felt they were being trained in how to deal with their child's behaviors rather than learning to interact with their child. The behaviorists interviewed described the parent trainings as a method to empower the parent and to teach them how to help their child use positive behaviors rather than negative behaviors in communicating needs and interacting with others.

Another misperception brought up by two behavioral practitioners interviewed was the idea ABA is simply the child sitting at a table with the therapist. One behavioral participant described ABA as "*playing with intention*" because most of the therapy is actually play based. Another behaviorist interviewed went on to explain that this misconception may come from how ABA therapy begins; with the child learning to sit on a chair and being isolated from distraction so he/she can focus on the therapist and begin to "*learn how to learn*". All three behavioral practitioners discussed how generalization occurs as therapy progresses and more play is incorporated into the session to teach skills and appropriate behavior responses. These behaviorists identified that they believed many of these misperceptions stem from families having bad experiences with unskilled ABA practitioners and from professionals not taking the time to educate themselves on recent development with in ABA and its approaches.

Perceptions of DIR and the Developmental Theory

The three developmental practitioners participating all discussed the core belief of needing to identifying with the child by following their lead and tapping into a positive emotional response from the interaction to remediate the core social deficits of Autism, as described by one developmentalist interviewed:

> "*One of the big things that we talk about is allowing for kids to have visceral responses; so really tapping into their emotions. So we really want for kids to be able to realize that this experience, in and of itself, is internally motivating. We do it through allowing for everything to be really child directed, so whatever the child is interested in we're just going to help expand that out and make it more meaningful for kids… we strongly believe that when you have a relationship with*

somebody you are going to be much more engaged and motivated. So, in

comparison to the behavioral model, yes they are working on the relationship but

a key piece of us engaging with kids is again that relationship; being able to

really internally motivate a child with Autism to be with people because that

person or whoever they're with is super fun."

The three developmentalists interviewed also emphasized creating an internal desire for, not only socialization, but a curiosity in the external world. Sparking this curiosity "*allows the child to wonder*" and "*figure out the world*" so as to think more abstract and explore their environment.

All six clinicians participating agreed that a major strength of DIR and developmental theory is the focus on, not only the therapeutic relationship between practitioner and child, but also the focus on building the relationship between child and parent. The participating Behaviorists reported hearing from parents that DIR improved their relationship with their child, validating that practicing Floortime helps with parent/child interactions. As the behavioral participants discussed, play and following a child's developmental sequence has been proven to be best practice when working with any child. What neuro-typical children learn naturally through observation must be taught to children with ASD, and since play is the language of children, it would make sense skills be taught through play. Another strength agreed upon by the clinicians interviewed is that utilizing the natural environment of the child and consistent parent involvement is beneficial in the generalization of skills, as described by this developmental participant *"I'm on the floor, and that's just why it's called Floortime because we are usually working with kids on the floor. But you can do Floortime with a*

teenager or a 12 year old and be sitting and having a conversation. You can have

Floortime with conversation, and thoughts, and ideas and it's about engagement." All

six clinicians also felt that the focus on engagement and reciprocity were important in

working on the core deficits of Autism.

In regards to deficits in the model, all six clinicians identified the lack of research

and empirical evidence of this model; however, the three developmentalists participating

did point out that more research is being conducted on DIR/Floortime's efficacy in

working with children. The interviewees also agree that DIR goals are not nearly as

concrete as ABA goals, as explained by on the of the developmental practitioner's, "*it's a*

lot harder, I think, to tangibly be able to say this is what the strengths are and this is how

we are going to be able to document the progress the child has made as opposed to a

more behavioral model; which really speaks to the behavior that they're looking at. As

opposed to the DIR model, which is very developmental. So, yes we are looking at

developmental milestones but even if you think about developmental milestones those

even come on a spectrum. So, it's looking at two different aspects of growth and child

development." Using a developmental approach makes it difficult for progress to be

measured easily because the focus is on the continuum of social reciprocity, which can

look different for every individual.

The participating behavior analysts were able to identify several other deficits in

the DIR model, which they found concerning to children who may be involved in this

method of treatment. One behaviorist discussed *"In a lot of those [developmental]*

models the kids do get to take a lot of the lead in what happens and in some cases we get

kids who don't learn to follow directions and they have a difficult time with adult

authority, which unfortunately is kind of how that works until you're a legal adult or if you have a job you're going to have a boss to deal with." This was a recurring concern; the fact that the model is so child directed it may prevent the child from functioning in settings where they need to be compliant (i.e. the store, school, work, etc.). Behaviorists also felt that due to the core social deficits, some children with Autism were not prepared for social relationships and may withdraw or refuse engagement and reciprocation with a strictly relational approach such as DIR. Additionally, all three behaviorists viewed the "following the child's lead" mentality as detrimental to the child functioning with other people and that some children will not respond to this; where as the three developmental practitioners interviewed believed this is the very principal that builds the internal desire for engagement for all children. All participating developmental practitioner's explained how following a child's lead shows the child with Autism that social interaction can be enjoyable, thus leading to a desire for more social interaction regardless of the child's feelings about socialization. The three developmental practitioners went on to explain that following the child's lead in interactions will establish the relationship that will create a foundation to build social skills, such as cooperation with others. Once the child is engaged, and connected to the internal reward of a social relationship, he or she will want to relate with others and learn how to appropriately interact with people; but first interactions must be child centered in order for the child with Autism to develop an interest in the person.

The three participating behaviorists also criticized the high amount of responsibility put on the parent in the DIR model. The behavioral participants explained that since parents are already stressed from raising a child with special needs, the added

pressure for the parent "to act as the therapist" for their child is an unfair expectation for DIR practitioners to put on the family. The behaviorists participating also noted a perception of DIR/Floortime lacks training, education, and direction for the parent as well as the practitioners implementing the intervention. In response to the idea that parents are given too much responsibility in the DIR model, one of the developmenalists stated, *"in a sense we're helping the parents to engage and be with their child so, isn't that what we want? For parents to be able to know how to interact and engage and be with their kids... You can read a book with a kid and still have it be DIR, you can be serving dinner and it still can be DIR... we [DIR Practitioners] believe that because we're helping to support the family in their natural environment that it is going to be much easier to generalize and easier for kids to be with other people."* Where the behavioral practitioner interviewed perceived an over reliance on the caregivers from the behavioral lens, this developmental practitioner sees her preferred model as creating a healthy and genuine relationship between caregiver and child that will transfer to other relationships the child will have. As a counter to the perception that DIR lacks direction, another developmentalist interviewed discussed how DIR/Floortime could be described as semi-structured in nature, *"We [DIR Practitioners] might have an idea of what we want and you can do that and still have fun; you can have an idea but it's about engagement. It's still not are they going to get the task done. It's that, we might have a task in mind but within that task it's all about interaction."* She went on to explain the primary goal is engagement and social reciprocity in the DIR model, it is not necessarily task oriented or behavior focused. The developmentalist circled back to why the goals in DIR are so

difficult to measure and operationalize given the emphasis of this model is motivating the child to want to interact with other people.

All three behavior analysts admitted that their knowledge of DIR was limited to articles they had read and reports from colleagues and parents. The core deficit perceived by all clinicians is primarily the lack of research and empirical evidence on the efficacy of this model, however, as time goes on and more evidence of the importance of the developmental sequence of children is emphasized, more research may focus on DIR and other developmental approaches in working with Autism's core deficits.

Shared Strengths and Deficits

A deficit of both models that was reported by all participants was how long and intensive both processes take in treating the core deficits of Autism. According to participants from both approaches, ideally both ABA and DIR are described as lifestyles for families and should be utilized around the clock; clinician involvement is recommended to last anywhere from 2 to 4 years depending on the child. In discussing deficits of both models one behavior analyst states, *"I couldn't even sit for 6 or 8 hours a day, which is what I think Floortime asks them to do, is spend the entire day being the therapist. And I mean, just like ABA, it can't stop at 5 o'clock it has to be a lifestyle."* This level of commitment and the time intensity involved with both models can be both intimidating and exhausting for caregivers, however given how learning skills are processed by individuals with ASD, the participants of this study agree the intensity is necessary to address the core deficits of the disorder no matter which model is utilized.

Discussion

Summary of Findings

Based on this study's interviews and analysis, all clinician's perceptions of their non-preferred model were based on reports from caregivers and colleagues as well as some research done on their own time. Interestingly, the positive and negative perceptions of all the practitioners were congruent with what is outlined as strengths and deficits of both ABA and DIR in the current literature. However, as this study outlines, it requires delving in deeper to the models and their frameworks to truly understand the approaches and their motivations. Upon further investigation into both schools of thought, it has brought up a disclaimer that some literature, no matter how well confirmed, might be written with a biased eye. The interviews outlined that a developmentalist can see the deficits of behaviorism, and vice versa, easier than the strengths. A behaviorist writing on ABA is going to be able to emphasize the strengths more naturally than if they were writing about DIR no matter how neutral they attempt to view the models. This goes back to why professionals prefer their chosen framework; this concept of "professional style" and what makes sense in their worldview.

Developmental theory emphasizes relationships and emotional memory as important factors in working with anyone in any capacity, so it would make sense that developmental clinicians highlight emotion, affect, and relationships in their practice. Since these concepts are so abstract and hard to operationalize, progress is not as easily measured or researched. This struggle to define and operationalize progress is a major hindrance for the many developmental models to prove efficacy in their interventions or receive reimbursement from insurance. Developmental participants discussed how

development is on a spectrum and unique to an individual's cognitive profile. Developmental theory identifies every person is an individual and although there is a sequence in which humans as a species learn social skills essential to our functioning in society; we all learn these skills in different ways at different paces. One of the key principals of DIR is "Individually-based", that is to tailor the intervention to the child's specific abilities and interests in order to engage the child and teach them necessary skills that did not develop naturally. However, again, it is difficult to receive funding in a world of statistics when progress is difficult to measure and research is lacking in proving efficacy.

ABA is still perceived by many parents and professionals as a model encouraging prompt dependency and splintered skills in children with ASD. After interviewing three behavior analysts versed in utilizing ABA, it ultimately can be argued that this model has evolved into a less rigid approach utilizing some concepts of developmental theory, such as honoring the importance of the developmental sequence and therapeutic relationship. As all participating behaviorists explained, this shift has only occurred over the past two or three years so the literature may not be reflective of these more dynamic practices of ABA. Those researching ABA or behavioral theory may instead be reading what was considered best practice prior to incorporating the developmental sequence into the model's interventions. As seen from participant interviews, incorporating aspects of both models in treatment can be beneficial to the client in teaching skills.

Like any child, a child with Autism is an individual. The six participants agreed on the importance of individualizing treatment to each child's needs and interests. The statement "*if you've met one child with Autism, you've met one child with Autism*" was a

common phrase brought up by the clinicians interviewed and for good reason. There really is no one size fits all approach, especially when it comes to children. The only way to engage is to appeal to the child's interests. For ABA it is about using those interests as rewards to reinforce positive behavior and for DIR, it is about a method of engagement and showing common interest with the child. As one looks to the core of both methods, behavioral and developmental approaches really compliment each other well. Based on the information gathered from these interviews, it would appear that the skill set of the practitioner, developed by experience and keeping current with best practices, is what really remediates the core deficits of Autism. As evidenced by this study, six clinicians that are passionate and skilled in working with this population are seeing results and progress in their clients because of their knowledge base, skill set, and keeping up with the literature on best practices. Being diligent on keeping up with the research is important, however as mentioned earlier, observations of other clinician's practice in order to understand various approaches and interventions. Most importantly, committing to individualized treatment and being flexible in how treatment is implemented are key to successful remediation of Autistic symptomology since every client is an individual and will require different approaches to learn to live with their unique processing of the world around them.

Relation to Current Literature

Perceptions reported by all six clinicians participating in this study are congruent with the perceived strengths and deficits of each model described in the literature. However, interviewing practitioners of each model allowed for further explanation as to why the strengths and deficits exist. Further more, the interviews also illustrated how one

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clinician's idea of a deficit could be seen as a strength by a different clinician. The ABA practitioners interviewed, as well as the literature on ABA, referenced how structured and manualized ABA is as a strength while the DIR practitioners interviewed and literature on developmental theory see too much structure as a deficit. This is one example of how strengths and deficits are based on the eye of the beholder.

The interviews with the three behavior analysts revealed how ABA is usually misrepresented and actually does focus more on supporting individuals with ASD in functioning appropriately in the community as described by Strain and Schwartz (2001),

> "In the current debate over instruction for children with autism, many parents and practitioners are advocating for intensive programs using applied behavior analysis (ABA) exclusively. Although this should be good news for those of us who identify ourselves as behavior analysts, in fact it is causing turmoil because many parents and practitioners are adopting an extremely narrow and erroneous view of ABA. ABA is not a curriculum or an instructional strategy. It was not invented by one person, and most importantly it was not developed to be used exclusively with children with autism. Applied behavior analysis is a scientific discipline that is interested in the application of behavioral principles to socially important problems" (p. 121)

Professionals and parents who are too narrow in their practice of ABA could be contributing to the misconceptions of the ABA model. All three behavior analysts mentioned how an unskilled practitioner or practitioner not up to date in current methods of intervention can be ineffective in treatment. This is not to be limited just to ABA, DIR also requires a skilled practitioner to engage a child with Autism in Floortime. In

interviewing all six participants it was apparent that these clinicians put a lot of energy into staying current in best practices as well as planning each session to be most beneficial for their individual clients.

Strengths and Limitations of the Study

This study included perceptions given by 6 clinicians with 7 to 15 years of experience working with the ASD population in their preferred theory of practice. The clinicians participating were evenly divided, three practicing ABA and three practicing DIR, giving both schools of thought equal representation. The results of the study were congruent with the literature on strengths and deficits of each model and explained other factors that guide clinician's perceptions, such as caregiver reports and the importance of the clinician's "professional style".

Limitations to the study are related to the small sample size and narrow focus. This study only analyzed one behavioral model, ABA, and one developmental model, DIR. There are several other behavioral and developmental models developed to treat ASDs as well as medicinal, dietary, and sensory integrative approaches that are used independently or in conjunction with therapy. However, DIR and ABA were chosen specifically because they are the two more popular interventions.

Recommendations for Further Study

A recurring perception of a deficit for the DIR model was the lack of empirical evidence on the model's efficacy. Further study on this specific model will be essential to legitimizing DIR/Floortime's treatment and potentially persuading policymakers to allow this intervention to be funded by insurance. Along with DIR and ABA, there are a

variety of models available to treat the symptoms of ASD. Exploring clinician's perceptions of the other developmental, behavioral, sensory integrative, and biological interventions would also further expand on what may guide clinicians to a preferred method of treatment, explain where perceptions in clinicians stem from, and identify the strengths and deficits of all the treatment methods developed for ASD.

Future studies focusing on behavioral and developmental theory overall would be beneficial rather then solely analyzing specific models of treatment with attention on how professional style influences a clinician's preference. This study demonstrated how personality and worldview directed which model of practice each participant focused on. Although the majority of participants agreed a blend of the two theories benefits the client, a clinician's primary theory of preference will dominate the interventions used. The one developmental practitioner interviewed who primarily used DIR/Floortime but incorporated aspects of ABA to engage her client's who were less cognitively aware illustrated this. The three behavior analysts interviewed who use a few aspects of developmental theory in their ABA interventions also showed this. This idea of personality driving professional bias to what works in treatment would be interesting to explore further, not just for ASD treatment, but for mental health treatment in general.

Implications

The findings of this study offer various implications for social workers and other professionals working with Autism. Primarily, it demonstrates a need to ensure that professionals are up to date in best practices with in the primary model of treatment when working with any population. The three behaviorists interviewed expressed their belief that negative perceptions of ABA, such as prompt dependence and the child being unable

to have natural interactions, stem from a family's experience with a practitioner lacking skill in the model. As the particpating behaviorists clarified, skilled clinicians will honor the child as an individual and implement various reinforcers to avoid prompt dependence and attempt to generalize skills.

The research identifies how clinician's form perceptions from various sources with a caregiver's report being a major influential factor in guiding a clinician's opinion of other theories and models. Sansosti et al.(2012) conducted a study focused on family experiences in the diagnostic process for Autism and to evaluate caregiver's knowledge on interventions and research related to best practice with ASDs. Sansosti et al.(2012) interviewed 16 caregivers around these 2 topics it was discovered that the majority of caregivers first went to their pediatrician as soon as they noticed differences in their child's development, which either led to a referral to a specialist or was ignored by the physician (p. 86). Sansosti et al. (2012) discovered a few recurring themes regarding caregivers feeling physicians and schools are uniformed of interventions for Autism as well as a lack of education on ASDs in general, "Medical and school professionals also were mentioned as potential barriers to services, especially because of poor communication and lack of guidance following a formal diagnosis. Participants stated that they often received no advice as to where to go after finally receiving a diagnosis" (Sansosti et al., 2012 p.88). Caregiver's reported feeling like they were left to navigate services and next steps for their child's treatment while processing this life long diagnosis just given to their child only to find that many insurance providers do not fund may ASD services (Sansosti et al., 2012 p.88). This lack of education and support from physicians, schools, and insurance companies contribute to barriers families face when attempting to

provide treatment for their child's ASD. The social worker can be of great use in helping families navigate services and educate families on the various services available. Although a physician or teacher are usually the first professionals parents report to, schools and clinics typically have a social worker on staff who other professionals could refer families to so as to provide some support post diagnosis.

Another major implication of this study revolves around the lack of federal funding for Autism services. As reported by two of the behavior analysts interviewed, Minnesota Medical Assistance will fund ABA services under the children's therapeutic and support services (CTSS) code. However, this is just in the state of Minnesota; this study did not explore how Autism services are funded in other states but it is known that private insurance does not fund any ASD services across the nation. It is fortunate that Minnesota funds some services through Medical Assistance however, policy makers should be urged to require private insurance companies reimburse for ASD treatments. As of 2008 the Center for Disease Control (CDC) reported 1 in 88 children are diagnosed with ASD, which has dramatically increased since reports in previous years. Research on why Autism develops is essential but competent treatment of symptomology is equally critical so people with an ASD can be productive in society.

Clinicians working with this population may want to consider looking to the literature and seeing how theories and interventions can be blended to the individuals needs. All three behaviorists interviewed acknowledged the strides ABA is making now that the developmental sequence and social reinforcers have been added to their model. One developmentalists interviewed discussed how ABA can "bridge the gap" for children cognitively lower functioning so she blends the models in those cases.   The

developmental practitioners did refer back to literature that legitimized the ideas of how essential interaction and starting at a client's individual and developmental level is for being effective in treatment. Whether ABA practitioners realize it or not, based on interviews with the three behaviorists and from some of the literature, skilled behaviorists do this when they take the time to find renforcers specifically motivating to the child, especially social renforcers, and decide the pace of treatment from there. All people, not just clinicians, are individual in how they make sense of the world. Some people require more concrete and scientific explanations while others are more driven by emotion. The findings in this study challenge clinicians to recognize how beneficial melding approaches can be to an individual client's unique cognitive profile. Ultimately, the goal for any treatment is to remediate the core deficits of communication, interpersonal relationships, and repetitive behaviors in a way that helps the individual function as independent as possible in society. Both models analyzed in this study have legitimate strengths and weaknesses, however, as learned through the clinicians interviewed it takes dedication, flexibility, knowledge, and skill to see results no matter if the approach is behavioral, developmental, or blended. If the practitioner is not willing to be creative, stay current on research, or develop rapport with the child, will not learn the skills he/she need.

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Appendix A

SUBJECT: Invitation for Participation in Research on Autism Treatments

Greetings,

My name is James Nee and I am working on my Master's in Social Work through the clinical program at the University of St. Thomas/St. Catherine University. I am looking for professionals holding a graduate degree with at least 1 year experience implementing either Analytical Behavior Analysis (ABA) or Developmental, Individual-Based, Relationship (DIR) interventions as a treatment for Autism Spectrum Disorders. The purpose of this study is to investigate why professionals prefer ABA vs. DIR and to analyze strengths and weaknesses of each model based on the professionals perspectives. All answers should be based on your own research and professional opinions. Attached to this email are the interview questions I will be asking, feel free to review them to help decide if you would be willing to participate.

The interview will be approximately 30 minutes and can be conducted in a private area either at your agency of employment or somewhere convenient for you at a date and time of your choosing. Interviews will be audio-recorded on my laptop and transcribed by myself to analyze. The recording and transcriptions will not be shared with anyone. If you have any questions or have an interest in participating in my study please contact me at nee13683@stthomas.edu or 608-397-0393. Thank you so much for your time!

Sincerely,

James Nee
MSW Student

CONSENT FORM
UNIVERSITY OF ST. THOMAS
GRSW682 CLINICAL RESEARCH PROJECT

**Behavior & Developmental Treatment Models for Autism Spectrum Disorders:
Factors Guiding Clinician Preference and Perceptions
IRB#-393876-1**

You are invited you to participate in a study about the factors that lead mental health professionals to choose a behavioral or a developmental approach to treating Autism Spectrum Disorders.. You were selected as a possible participant because you work in a professional capacity implementing either ABA or DIR. Please read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by: James Nee (Primary Investigator), a graduate student at the School of social work, St. Catherine University/University of St. Thomas and supervised by Dr. Colin Hollidge.

Background Information:
The purpose of this study is to explore why professionals choose a behavioral or a developmental model to treating autism spectrum disorders. This study will also explore weaknesses of ABA and DIR as well as strengths of each model in treating autism spectrum disorders.

Procedures:
If you agree to be in this study, the Primary Investigator will ask you to do the following things: To participate in a 30 minute audio-recorded interview consisting of 8 questions about your experience and perceptions with ABA and DIR in treating autism spectrum disorders.

Risks and Benefits of Being in the Study:
The study has low to no risks.

The study has no direct benefits.

Confidentiality:
The records of this study will be kept confidential. Research records will be kept in a password-protected file on the Primary Investigator's personal laptop. The Primary Investigator will be the only person transcribing and analyzing the interview. Your supervisor will not know whether you participate or not. Any identifying information will be deleted from the transcript. The audiotape and transcript will be destroyed by June 1, 2013.

Voluntary Nature of the Study:
Your participation in this study is entirely voluntary. You may skip any questions you do not wish to answer and may stop the interview at any time. Your decision whether or not to participate will not affect your current or future relations with St. Catherine University, the University of St. Thomas, or the School of Social Work. If you decide to participate, you are free to withdraw at any time without penalty.

Contacts and Questions

The Primary Investigator is James Nee. You may ask any questions you have now. If you have questions later, you may contact James at 608-397-0393 or nee13683@stthomas.edu. You may also contact the University of St. Thomas Institutional Review Board at 651-962-5341 with any questions or concerns.

You will be given a copy of this form to keep for your records.

Statement of Consent:

I have read the above information. My questions have been answered to my satisfaction. I consent to participate in the study and to be audiotaped.

_____   _____

Signature of Study Participant   Date

_____   _____

Signature of Primary Investigator   Date

Appendix C
Interview Questions

1) What is your current role working with ASD?

2) How long have you been in this particular role?

3) Have you worked with this population in any other capacities? If so how long have you worked with the ASD population?

4) Are you currently using ABA or DIR in your practice?

5) Why did you choose to use this method in your practice?

6) Can you identify any weaknesses to this model?

7) Have you ever practiced the other method?

8) What is your knowledge of the other method – Strengths/weaknesses?