

2011

DIR/FLOORTIME MODEL: USING RELATIONSHIP-BASED INTERVENTION TO INCREASE SOCIAL-EMOTIONAL FUNCTIONING IN CHILDREN WITH AUTISM

Stephanie E. Horn

Southern Illinois University Carbondale, shall@siu.edu

Follow this and additional works at: http://opensiuc.lib.siu.edu/gs_rp

Recommended Citation

Horn, Stephanie E., "DIR/FLOORTIME MODEL: USING RELATIONSHIP-BASED INTERVENTION TO INCREASE SOCIAL-EMOTIONAL FUNCTIONING IN CHILDREN WITH AUTISM" (2011). *Research Papers*. Paper 67.
http://opensiuc.lib.siu.edu/gs_rp/67

This Article is brought to you for free and open access by the Graduate School at OpenSIUC. It has been accepted for inclusion in Research Papers by an authorized administrator of OpenSIUC. For more information, please contact opensiuc@lib.siu.edu.

DIR/FLOORTIME MODEL: USING RELATIONSHIP-BASED
INTERVENTION TO INCREASE SOCIAL-EMOTIONAL FUNCTIONING IN
CHILDREN WITH AUTISM

by

Stephanie Horn

Bachelor of Science, Southern Illinois University-Carbondale, 2009

A Research Paper
Submitted in Partial Fulfillment of the Requirements for
the Master of Science Degree

Rehabilitation Institute
in the Graduate School
Southern Illinois University
at Carbondale
March 2011

RESEARCH PAPER APPROVAL

DIR/FLOORTIME MODEL: USING RELATIONSHIP-BASED
INTERVENTION TO INCREASE SOCIAL-EMOTIONAL FUNCTIONING IN
CHILDREN WITH AUTISM

By

Stephanie Horn

A Research Paper Submitted in Partial

Fulfillment of the Requirements

for the Degree of

Master of Science

in the field of Rehabilitation

Approved by:

Valerie E. Boyer

Kirsten L. Schaper

Graduate School
Southern Illinois University Carbondale

TABLE OF CONTENTS

| | |
|----------------------------------------|----|
| Definition of Autism..... | 1 |
| DIR/Floortime Model..... | 4 |
| Developmental Capacities..... | 5 |
| Individual Processing Differences..... | 6 |
| Relationships & Interactions..... | 6 |
| Floortime..... | 7 |
| Supportive Research..... | 10 |
| Conclusion..... | 22 |
| References..... | 26 |
| Vita..... | 29 |

Autism is described in the *Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV)* as a mental disorder that displays three critical deficits (1) impaired development of social interactions (2) impaired development of communication and (3) a restricted range of activities or interests. The severity of deficits is highly variable and related to developmental level and chronological age (*DSM-IV*). The social interaction impairment is typically accompanied by a limited use of nonverbal behaviors (e.g. gestures, facial expressions, or eye-to-eye gaze) that restricts the child from regulating social interactions and communication (*DSM-IV*). A child with autism also often fails at developing peer relationships and lacks the ability to experience social and emotional reciprocity. The individual's awareness of others is often lacking and may have no concept of the wants, needs, or emotions of others (*DSM-IV*). Though the *DSM-IV* states that "impairment in reciprocal social interaction is gross and sustained" (p.70), it has been suggested that comprehensive relationship-based interventions may be able to encourage children to learn and use behaviors that can assist the child in reaching a higher level of social-emotional functioning (Mahoney, 2003).

The concept behind relationship-based interventions is that children with autism miss critical developmental milestones that fuel the ability to connect affect (intent) with motor planning, sequencing

abilities, and symbol formation (Greenspan, 2001). Due to these deficits, these individuals have a hard time engaging in reciprocal turns of meaningful interaction that is needed for abstract thinking and high-level social skills (Greenspan, 2001). Recent research suggests that cognitive abilities and language capacities can be influenced by emotional interactions in infancy and early childhood (Greenspan, 2001). Among the many symptoms present with ASD, cognitive, language, and social deficits are very prominent and can affect a range of other functional developmental deficits (Greenspan, 2001). Some of the capacities affected by these deficits include empathy, seeing the perspectives of others, abstract thinking, and shared attention. Studies show that the capacity for empathy, abstract thinking, functional language, social problem solving, and efficient reciprocity all stem from the child's ability to relate intent to motor planning and sequencing (Greenspan, 2001).

A relationship based model that has been introduced by Stanley I. Greenspan is the Developmental, Individual Difference, Relationship-based model (DIR). This intervention, also referred to as "Floortime," focuses its main goals on developing individual capacities for language, motor planning, sequencing, and building core functional developmental abilities that provide a framework for the development of relating, thinking, and communicating. Shared attention, engagement, reciprocal emotional interactions and logical uses of ideas are all components of the

core functional abilities of relating, thinking, and communicating (Greenspan, n.d.). The unique component to the DIR model over other relationship-based models is that not only do children show improvements in basic social and emotional functioning of relating, interacting, and communicating meaningfully, they also demonstrate acquisition of these skills far beyond the original capacity of children with autism (Greenspan, n.d.). These abilities include engaging in high levels of empathy, enjoying age-appropriate peer relationships, and making inferences (Greenspan, n.d.).

The DIR model is a human development, comprehensive model that is designed to meet the individual strengths and challenges of each child based on his or her specific processing and developmental needs (Wieder & Greenspan, 2003). It takes into account the child's and family's individual profile so to create a specific intervention that is efficient and effective for each child. Each component of the DIR model is based on the philosophy that all learning takes place through interactive relationships (Wieder & Greenspan, 2003) that initiate the mastery of presymbolic stages that essentially serve as a foundation for language development and other higher level capacities (Greenspan & Wieder, 1997).

Though the *DSM-IV* identifies the core deficits of autism as consisting of impairments in social interaction, communication, and

restricted repetitive behavior, Greenspan suggests a slightly different view on the deficits associated with autism. The three core problems that Greenspan identifies include the ability to establish warmth and intimacy, the ability to communicate with gestures and emotional expressions, and the ability to use words meaningfully with symbols of meaning and desire embedded (Greenspan & Wieder, 2006). While Greenspan does concur with the deficits listed by the DSM-IV, he focuses the DIR model on the deficits associated with language, cognition, emotional, and social skills that are “learned through relationships that involve emotionally meaningful exchanges” (Greenspan & Wieder, 2006, p.37). These learned skills include the core functional development capacities to relate, think, and communicate (Greenspan, n.d.).

The DIR Model

The DIR model is a comprehensive intervention program that focuses on the child’s individual processing needs as well as educational programs, family patterns, motor functioning, and developmental history (Greenspan, 2008). The main focus of the DIR model is separated into three core components; 1) functional emotional **D**evelopmental capacities, 2) **I**ndividual processing differences, and 3) **R**elationships and interactions (Wieder & Greenspan, 2003). Each component of the DIR model focuses on a different aspect of development that coincides with one another. Understanding each component of the DIR model allows us

to view child development as a whole rather than by each specific area separately (Greenspan, 2008).

The first component to the DIR model is the functional emotional developmental capacities level, or the developmental capacities level. This level identifies how children with autism combine all their capacities to achieve meaningful, emotional goals (Wieder & Greenspan, 2003). The developmental capacities level is based on six functional emotional developmental milestones that together correspond to four specific goals of the DIR model (Simpson, 2005). These milestones include the ability to 1) self-calm and process environmental information, 2) engage in relationships, 3) indicate and respond to two-way communication, 4) create complex gestures and organize two-way communication to problem solve, 5) create ideas and use them functionally for imaginative thinking, and 6) build bridges between ideas as a foundation for logic, reality testing, judgment and thinking (Weider & Greenspan, 2003). The goals associated with these milestones include “encouraging attention and intimacy, two-way communication, encouraging the expression and use of feelings and ideas, and logical thought” (Greenspan, Wieder, & Simons, 1998, p. 125). Together, these milestones play a prominent role in the overall development of a child and organize all mental capacities by focusing on affect and emotions as a guide for development (Greenspan, 2008).

The second component of the DIR model includes individual processing differences. This component focuses on the way the child comprehends their environment and how they process incoming information (Greenspan, 2008). For example, some children with autism may be over-reactive or under-reactive to stimuli such as touch, smell, or auditory levels. These individual differences are categorized as prenatal, genetic, and maturational variations and/or deficits (Wieder & Greenspan, 2003). Greenspan identifies four areas that can be affected by sensory processing deficits which are 1) sensory modulation such as hypo- or hyperactivity to each sensory modality (touch, smell, vision, or movement in space), 2) sensory processing in each modality including auditory, language, and visual spatial processing, 3) sensory affective processing such as the ability to react to affect/intent or connect affect to motor planning and sequencing, and 4) motor planning including the ability to sequence behavior, actions, and symbols to develop thought, ideas and other concepts (Wieder & Greenspan, 2003).

The final component, and possibly the foundation of the DIR model, is relationships and interactions. In this component, developmental emotional functional milestones and individual differences are combined together and incorporated into learning relationships with peers, caregivers, and parents (Greenspan, 2008). These learning relationships include developmentally appropriate relationships that are

tailored to each child's individual needs and differences. If the relationship is above or below the child's developmental emotional functional level then it is possible that critical milestones could be missed (Greenspan, 2008). Also, interactions that do not focus on the child's developmental level or individual processing differences can delay developmental progress (Wieder & Greenspan, 2003). Interactions between the child and caregiver also help to strengthen the child's thinking capacity by forming back and forth emotional signaling that encourages the use of meaningful language (Greenspan, 2008). Relationships and interactions take place at the most essential component of the DIR model, known as *Floortime*.

Floortime

Floortime is a "play-based interactive intervention approach that emphasizes individual differences, child-centered interests, and affective interactions between child and caregiver" (Simpson, 2005, p.26). Floortime incorporates learning and play activities that involve the child and caregiver interacting together, typically these interactions take place on the floor. This intervention is based on Greenspan's developmental theory that missed milestones may be reacquired through intensive child-directed play and positive interactions between involved individuals or caregivers and the child (Simpson, 2005). Floortime is mostly aimed at infants, toddlers, and preschoolers, but it may be used with older

children if necessary. Regardless of the age of the child, Floortime intervention requires that the play partner takes an active and developmental role in creating spontaneous and fun activities that are targeted toward the child's interests and actions (Simpson, 2005).

Messina (as cited in Simpson, 2005) states that the Floortime process consists of five steps including 1) observation, 2) approach-opening circles of communication, 3) following the child's lead, 4) extend and play, and 5) child closing circles of communication. During the first step, *observation*, the observer listens and watches the child in order to determine the best way to approach the child. Facial and verbal expressions, body movement, and voice tone can all serve as indications to the child's personality and communication styles (Simpson, 2005).

Approach, or *open circles of communication* is the second step to Floortime. During this step, the child is approached with appropriate words and gestures that are compatible with the child's mood and communication style based off the observation collected in step one (Simpson, 2005). By accepting the child's emotional state and interests, a circle of communication is allowed to be opened between the play partner and the child (Messina as cited in Simpson, 2005). During this time, the play partner is able to manipulate the play situation by moving toys or objects out of the reach of the child. This action by the play partner

captures the full attention and greatest interest of the child (Heflin & Simpson as cited in Simpson, 2005).

During the third step, the play partner focuses on *following the child's lead* and allowing the child to create personal events or situations that are supported by the play partner. Messina (as cited in Simpson, 2005) states that the support provided by the caregiver or play partner provides an opportunity for interaction that allows the child to feel emotions of warmth, connectedness, and being understood. The supportive interactions also increase the child's self-esteem and self-confidence while developing the child's sense of self in the world (Simpson, 2005).

The fourth step, *extend and expand on play*, the caregiver or play partner makes encouraging comments directed toward the child's play. Messina (as cited in Simpson, 2005, p.28) states that the primary goal of this step is to assist the child in expressing ideas by asking questions designed to "stimulate creative thinking" and to "clarify the emotional themes."

The fifth and final step to Floortime involves the child *closing the circles of communication*. This is completed when the child creates comments or gestures of his or her own that are directed toward the play partners comments or gestures (Simpson, 2005). The continuation of

interactions allows for many circles of communication to be opened and closed in rapid chains. During this time, the child begins to develop appreciation and an understanding of the concept of two-way communication (Messina as cited in Simpson, 2005).

The DIR model also strongly emphasizes the importance of including family support, school programs, home programs, biomedical intervention and other necessary therapies into the child's intervention program (Greenspan, 2008). Including these areas into the child's intervention plan creates a more comprehensive intervention that is tailored to the child's complete needs and goals (Greenspan & Wieder, 2006). Greenspan and Wieder (2006) also suggest that providing appropriate levels of interactions and activities in many different settings and environments can be a large factor in the child's progress toward his or her goals.

Supportive research

Greenspan and Wieder (1997) reviewed the charts of 200 children who had been diagnosed with autistic spectrum disorders or pervasive developmental disorders, not otherwise specified (PDD-NOS). These children were between the ages of 22-months and 4-years of age. All children scored between the ranges of mild, moderate or severe on the Childhood Autism Rating Scale (CARS). Each child received an

intervention approach that targeted (1) affects and relationships, (2) the child's developmental level, and (3) the child's individual processing differences and language functioning. The goal of the chart review was to discover patterns in ASD symptoms, individual processing difficulties, early development components and how or if these components can be effected by appropriate intervention. The charts were reviewed for information relating to the child's development, presenting symptoms, and other individual differences. Information from follow-up visits was collected every two to six months for at least two years with some being up to eight years.

The information collected from the review suggests that 116 (58%) of the 200 children were able to develop empathy, affective reciprocity, creative thinking and were able to participate in healthy peer relationships. These children were categorized into the "good to outstanding" outcomes level and all children in this group shifted to a non-autistic range on the CARS autism rating scale. Fifty (25%) of the children were rated in the "medium" outcomes level and had developed relatively good mastery of developmental levels but continued to have difficulties with symbolic capacities. The final rating group, "ongoing difficulties," included 34 (17%) children who were struggling with their basic ability to relate and communicate and made little to no progress. In all outcome groups, there was a diversity of CARS autism rating scores

ranging from mild to severe. It is suggested that the improvements seen throughout the study may have been influenced by an intervention that focused on the child's individual differences, developmental level, and an intervention that allowed for many effective interactions. Though future research is still needed, the review does indicate that some children with autism are able to show developmental progress in areas that were once thought of as unattainable for children with ASD through relationship-based interventions.

In 2005, Greenspan and Wieder conducted a 10 to 15 year follow-up on 16 of the children who had been part of the previous case review. The purpose of this report was not to necessarily advocate for the DIR/Floortime model, but to instead determine if a subgroup of children with ASD were capable of exceeding past their expectations of children with ASD who are high-functioning and learn to be connected, creative, and insightful thinkers. All the children in this report were males between the ages of 12 and 17. The follow-up collected a comprehensive range of information including social, emotional, and sensory processing variables along with academic and cognitive abilities. Information was collected and outcomes were determined by parent interviews and parent completion of a functional, emotional developmental questionnaire. Authors of the report also rated their impressions of the children based on the interviews either conducted independently with the authors and

the child, or interviews completed by the parents. Achenbach Scales-Child Behavioral Check List (CBCL) was also administered to obtain the child's competence and clinical syndromes.

The follow-up data collection found that the subgroup involved was able to obtain high levels of empathy and were strong in theory of mind tasks such as being able to relate their own thoughts, beliefs, and intentions to themselves and others (Greenspan & Wieder, 2005). Some children were even more empathetic than their typically developing peers. It was also determined that the children not only maintained their gains from the former case review, but made further progress in their ability to relate, communicate, and think reflectively (Greenspan & Wieder, 2005). The children were able to progress out of their original core deficits and symptoms of ASD, and become individuals with an optimistic future (Greenspan & Wieder, 2005). While this study is not a strong representation of all children with ASD or even all children who have received Floortime intervention, there is illustration of some significant development in children who participated in the DIR intervention model.

Wieder and Greenspan (2003) also examined the developmental capacities based on individual processing differences and interactive patterns of one young boy who had been diagnosed with autism at 30-months of age. Wieder and Greenspan observed and reported on the

boy's developmental gains over a four year period. The child participated in an intensive therapy program including 1) six daily Floortime sessions, 2) sensory motor activities, 3) speech and occupational therapy 4) three to five weekly play dates, 5) daily preschool program, and 6) various sports and motor activities. Wieder and Greenspan reported that through interactive play with caregivers the child was able to move up the symbolic ladder and develop a higher level of thinking and relating. This gain was established during spontaneous Floortime by creating a foundation for shared attention, engagement, gestures, and problem solving that allowed the child to experience abstract ideas and to think critically.

While Wieder and Greenspan (2003) reported positive results for this particular child, it is unlikely that the same results will occur for all children. Progress will vary among individuals. The only certainty is that effective interactions and relationships are necessary for children with developmental challenges to reach functional milestones (Wieder & Greenspan, 2003). According to the given data, Floortime intervention is capable of providing appropriate and effective interactions (Wieder & Greenspan, 2003). Also, because the child in this study was part of an intensive intervention program, it is hard to determine if Floortime alone is the main component to the child's progress (Wieder & Greenspan, 2003). However, the intervention did focus on meeting the child's

individual processing needs and creating interactions and relationships through developing affect and gestures, which all support the DIR model philosophy.

In 2007, Hilton and Seal also investigated the DIR Model. However, instead of reporting only on the DIR intervention, they compared the outcomes of the DIR model to the outcomes of the Applied Behavioral Analysis (ABA) intervention in twin brothers with autism. The purpose of this study was not to support either intervention, but instead to help the parents determine the most appropriate intervention for their children. The twin boys were 2-years, 4-months-old at the time of study and both children were administered the Communication and Symbolic Behavior Scales (CSBS) during the initial and final sessions. The CSBS measured seven different communication clusters. The scores of the twins were not equal at the beginning of the study with one scoring 5 points higher than the other. During the comparative trials, the materials (toys, books, and snacks) used for each child were the same, but treatment was implemented according to each intervention's protocol. After nine weeks of intervention the CSBS was re-administered and reported that the twin who participated in ABA increased his total score from a 7 to an 8, while the twin who participated in DIR decreased in total score from a 12 to a 10 (Hilton & Seal, 2007). It is also worth mentioning that the CSBS interprets positive and negative affect and gaze shifts as part of social-

affective signaling. Therefore a large part of the differences in scores were due to the absence of negative behavior during the DIR session while an increase in negative behavior and negative vocalizations occurred during ABA trials (Hilton & Seal, 2007).

Both children revealed gains and losses in six of the seven clusters (Hilton & Seal, 2007). The child who participated in ABA recorded improvements on the CSBS in gestural and vocal communication and in social-affective signaling but revealed losses in reciprocity and symbolic behavior (Hilton & Seal, 2007). The child who participated in DIR showed improvement in reciprocity and symbolic behavior but losses in vocal communicative means and social-affective signaling. Hilton and Seal also reported behavioral data that revealed an increase in crying and tantrums in the twin who participated in ABA, but none for the twin involved in DIR.

Interpreting this data was rather complicated when comparing several subtest results that demonstrated losses and gains in contrasting areas. Higher scores for vocalizations were reported during ABA trials, but the majority of these vocalizations were negative. DIR sessions showed a higher use of words, but ABA trials showed a higher use of signs (Hilton & Seal, 2007). Yet both boys increased in name response and following one-step directions. The final result of this study ended in the parents determining that the DIR/Floortime intervention was the

better fit for their children. This decision was made with little concern for the losses and gains made by each child, but rather for the increase in negative behavior that occurred during ABA trials (Hilton & Seal, 2007).

This pilot study does not directly support the foundation of the DIR/Floortime model because the purpose of this study was to assist parents in selecting an appropriate treatment for their children rather than supporting a single treatment approach. However, this study does show that some parents prefer a relationship-based method that is directed toward following the child's lead and focusing on the child's needs and preferences rather than an intervention that is more intrusive and demanding of the child, such as ABA. It is also interesting to note that the behavioral and communicative gains of the interventions were not considered when making the choice of which method was best fit for the children (Hilton & Seal, 2007). This decision was based more on the intervention that elicited the least negative behavior and the more positive behavior. These results should be taken into careful consideration when applying them to the general population and generalizing the results is strongly guarded by the authors. The pilot study does however open the door for the need of future investigations and scientific research that examine comprehensive, relationship based intervention for children with autism.

Mahoney and Perales (2003) “investigated the effectiveness of relationship-focused interventions on the social and emotional well-being of children with ASD” (p.74). This study focused on the overall approach of relationship-focused interventions and how responsive interactions between children and parents encourage and promote social and emotional functioning. The sample included in this study consisted of 20 children who had been diagnosed with autism or pervasive developmental disorder (PDD). The sample size should not however be interpreted as representative of all children with ASD. The mothers of all the children were also included in the study. The intervention consisted of a weekly, 1 hour individual session that took place either at a clinical-based setting or at the parents’ homes and data was collected for a one year period. The sessions were adjusted according to the child’s needs, but the majority of sessions included objectives that targeted cognitive and communicative needs. The overall goals of each session for all children and parents were to a) help parents learn responsive teaching methods to incorporate into daily routines with children and b) encourage parents to continue using these strategies to increase their child’s ability to demonstrate reciprocity, contingency, shared control, and affect.

Pre- and post intervention measurements revealed significant changes in parents’ interaction styles by improving their responsiveness

and affect when interacting with their children (Mahoney & Perales, 2003). Post-test results also revealed significant improvements in the children's social and emotional behavior. The children had significantly higher ratings in attention, persistence, interest, cooperation, initiation, joint attention, and affect. Results also show that the children were less detached, had fewer problems regulating themselves, and were more socially reactive after the intervention. These results suggest that relationship focused interventions greatly impact the development of social and emotional functioning of children with ASD. Also, by training parents to effectively respond to and enhance interactions, children with ASD are more likely to learn and use behaviors that increase social-emotional and developmental functioning (Mahoney & Perales, 2003). This study also suggests that relationship-focused interventions may help develop foundational behaviors that are integral to social-emotional functioning.

The pilot study by Mahoney and Perales (2003) did not directly address the DIR/Floortime model, but DIR is a relationship-focused intervention that focuses on creating meaningful interactions that promote developmental capacities needed for relating, thinking, and communication. Therefore, it is likely that the DIR/Floortime model could also be successful for increasing the socio-emotional functioning of children with ASD. This study does present information that positively

supports relationship-based interventions. However, more research is needed to conclude that improvements in the children's behaviors are directly linked to the relationship-focused intervention rather than possible outside factors.

Solomon, Necheles, Ferch, and Bruckman (2007) investigated a home consultation program with 68 children with ASD using Greenspan's DIR/ Floortime model in a pilot study. The PLAY Project Home Consultation (PHHC) program is designed to "provide an intensive, cost-effective, intervention that addresses the language, social, and behavioral deficits of children with autism" (p 206). The PLAY Project utilizes the DIR/Floortime model as a foundation to its play-based intervention approach. The participating subjects included in the study consisted of 68 children who had previously been given a diagnosis of ASD or PDD-NOS and were between the ages of two and six-years-old. As part of the PLAY Project, all parents involved in the study were required to complete an intensive DIR/Floortime model training program in order to learn how to provide intensive, one to one, play-based intervention for their children with. Parents were provided with daily logs to help determine the average number of hours spent per week using the PLAY Project intervention method with their children. All children in the study were evaluated at the start and at the end of the first year of the PHHC program using the Functional Emotional Assessment Scale (FEAS). The

FEAS is a reliable and valid assessment used to measure parental behavioral changes and child functional development changes. The FEAS consists of six subtests that are directly related to Greenspan's six functional developmental levels and include: 1) self-regulation and interest, 2) forming relationships, 3) two-way purposeful communication, 4) behavioral organization and problem solving, 5) representational capacity, and 6) representational differentiations (Solomon et al., 2007).

The final outcome measures indicated no change in the parent FEAS scores before and after the PLAY intervention (Solomon et al., 2007). However, an increase in the children's total and scaled FEAS scores were noted over the twelve month period. According to FEAS scores collected, 45.5% of the children made good to very good functional development progress. Home observations also indicated that parents were very capable of interacting with their children with autism in a way that promoted and required adequate reciprocity skills. The children also made significant increases in their functional developmental levels with 52% making very good progress, and 14% making good progress (Solomon et al., 2007). However, a trend in data suggests that parents who spent less time in interaction had children who made much less progress in functional developmental level.

While this pilot study presents valuable information, some study limitations have been noted. Since the study did not include a control group, it is impossible to determine that the results are a direct cause of the PLAY project (Solomon et al., 2007). Since scores were lower in children who participated in less interaction, it could be possible that the number of hours involved in interaction could be more significant than the PLAY project itself. This suggestion could have a negative impact for the PLAY project as a whole, yet it provides positive feedback for a relationship-based intervention. A comparative study is planned to help determine a more clear understanding of the developmental effects of the PLAY project (Solomon et al., 2007). Also, the participants in the study are not representative of all children with autism. Most of the children came from a middle-class SES with college educated parents or caregivers. Children from a lower SES with uneducated parents or caregivers are likely to see less progress.

Conclusion

The majority of studies that have investigated Greenspan's DIR/Floortime model have identified several strengths of the intervention (Simpson, 2005). Benefits cited include it is inexpensive, requires no special qualifications, can be implemented in any setting and though it can be relevant for all children, it seems to be especially beneficial for

children with ASD (Simpson, 2005). The fact that the DIR model is child directed and tailored to meet each child's needs also increases its appeal to parents and caregivers. Because the DIR model is comprehensive and requires the participation of all family members and caregivers, encompasses several aspects of daily life, and is often carried over to school and other social settings, it is suggested that all participants focus on a team approach to reduce the chance of family stresses (Simpson, 2005). Also, the DIR intervention would only be appropriate for a family that is motivated and willing to be completely involved in their child's progress (Simpson, 2005).

All the studies reviewed in this paper reported some degree of social-emotional developmental improvements in children with ASD. Greenspan and Wieder (1997) reported that over half of participants developed at least some degree of empathy, reciprocity, and were able to participate in peer interactions. Greenspan and Weider (2005) reported an increase in levels of empathy and an increase in the ability to relate, think, and communicate. Wieder and Greenspan (2003) also reported an increase in thinking and relating abilities. Hilton and Seal (2007) reported that while ABA training can be beneficial for children with ASD, the DIR/Floortime model elicited more improvements in reciprocity and was more appealing to parents. Mahoney and Perales (2003) noted improvements in social-emotional development, and Solomon et al.

(2007) reported that over half the participants made good functional developmental progress and increased in functional developmental level.

Children with autism are in need of a comprehensive intervention method that targets all areas of delay. Also, each child is unique in his or her own pattern of development and will benefit most from an intervention that assess those individual differences (Greenspan n.d.). Greenspan's DIR/Floortime model is a developmental, individualized, and relationship based intervention that provides the comprehensive and unique dimensions needed to benefit children with ASD. At the core of the DIR/Floortime model is the importance of providing relationships and interactions that target the development of social-emotional functioning and assisting children with communication impairments, such as ASD, to improve reciprocity and pragmatic communication (Soloman, 2007).

Relationships play an important role in the development of social-emotional functioning of children with ASD and children who experienced more interaction demonstrate more social-emotional progress (Mahoney 2003). Though more empirical evidence is needed to strongly support the relationship between the DIR/Floortime model and social-emotional development, the studies provided do suggest that by providing a developmental, individual, relationship-based intervention, such as the DIR/Floortime model, it is possible for children with ASD to

reach a higher level of social-emotional functioning and reach developmental levels that were once thought of as unachievable for children with ASD (Greenspan, 1997).

REFERENCES

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed). Washington, D.C.: Author.
- Greenspan, S. I. (2001). Role of emotions in the core deficits in autism and in the development of intelligence and social skills. *Journal of Developmental and Learning Disorders*, 5, 1-46.
- Greenspan, S. I. (2008). *DIR /Floortime Model*. Retrieved from www.stanelygreenspan.com.
- Greenspan, S. I. (n.d.) *Research support for a comprehensive developmental approach to autistic spectrum disorders and other developmental and learning disorders: The developmental, individual-difference, relationship-based (DIR) model*. Retrieved from Playworks: Center for Developmental and Learning website: <http://www.playworks.cc/articles/REsearchSupportfortheDIRModel.pdf>.
- Greenspan, S. I. & Wieder, S. (1997). Developmental patterns and outcomes in the infants and children with disorders in relating and communicating: a chart review of 200 cases of children with autistic spectrum diagnoses. *The Journal of Developmental and Learning Disorders*, 1, 87-141.
- Greenspan, S. I. & Wieder, S. (2005) Can children with autism master the core deficits and become empathetic, creative, and reflective? A ten to fifteen year follow-up of a subgroup of children with autism

spectrum disorders (ASD) who received a comprehensive developmental, individual-difference, relationship-based (DIR) approach. *The Journal of Developmental and Learning Disorders*, 9, 1-29.

Greenspan, S. I. & Wieder, S. (2006). *Engaging Autism: Using the Floortime Approach to Help Children Relate, Think, and Communicate*. Cambridge, Ma: Da Capo Press.

Greenspan, S. I., Wieder, S., & Simons, R. (1998). *The child with special needs: Encouraging intellectual and emotional growth*. Reading, MA: Addison Wesley.

Hilton, J. C. & Seal, B. C. (2007). Brief report: comparative ABA and DIR trials in twin brothers with autism. *Journal of Autism Developmental Disorders*. 37, 1197-1201.

Mahoney, G., & Perales, F. (2003). Using relationship-focused intervention to enhance social-emotional functioning of young children with autism spectrum disorders. *Topics in Early Childhood Special Education*. 23(2), 74-86.

Simpson, R. L. (2005). *Autism Spectrum Disorders: Interventions and Treatments for Children and Youth*. Thousand Oaks, CA: Corwin Press.

- Solomon, R., Necheles, J., Ferch, C., and Bruckman, D. (2007). Pilot study of a parent training program for young children with autism: The PLAY project home consultation program. *SAGE Publications and the National Autistic Society, 11(3)*, 205-244.
- Wieder, S., & Greenspan, S. I. (2003). Climbing the symbolic ladder in the DIR model through Floortime/Interactive play. *Autism. Special Issue on Play, 7*, 425-435.

VITA

Graduate School
Southern Illinois University

Stephanie Horn

Date of Birth: August 20, 1985

500 S. Jackson St.
Carterville, IL 62918

Shorn521@gmail.com

Southern Illinois University at Carbondale
Bachelor of Science, Communication Disorders and Sciences, May 2009

Research Paper Title:

DIR/Floortime Model: Using Relationship-Based Intervention to
Increase Social-Emotional Functioning in Children with Autism

Major Professor: Valerie E. Boyer