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DIR Floortime Therapy

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Abstract

DIR Floortime Therapy is a social pragmatic approach used to help children with autism develop stronger verbal and social skills. Dr. Stanley Greenspan determined there were six milestones all children must master in order to develop appropriate language and social skills. DIR Floortime Therapy engages with the child through play in order to create a naturalistic environment that helps children achieve these milestones. While the approach is not evidence based, several studies have been conducted using DIR Floortime Therapy to strengthen language and social skills in young children with autism. The majority of these studies found a greater increase in the participants' language and social skills. The study that did not find an increase in language, did see greater joint attention and enjoyment in social interactions. These two factors are predictors of language which possibly points to the assumption that with a longer period of DIR Floortime Therapy, these children would eventually improve their language skills. Moreover, while DIR Floortime is not evidence-based, the Early Start Denver Model, whose foundation is based on DIR Floortime, was deemed evidence-based. This model targets mostly toddlers in hopes that intensive early intervention of this therapy could significantly decrease autism symptoms, enabling these children to progress socially and verbally at a similar rate to their typically developing peers. Perhaps with further research DIR Floortime therapy will be found as an evidence-based practice to increase positive social interactions and language skills in young children diagnosed with autism.

Overview of DIR Floortime Therapy

The strategies used to instruct children with developmental delays, especially autism spectrum disorder fall into two categories: behavioral and social-pragmatic. While the two approaches are different, their foundations share key characteristics: early intensive intervention, strategic direction, and structured programs. ABA (applied behavior analysis) is the most common behavioral approach used for individuals with autism. Under this approach, behavior is shaped through operant learning (modifying behavior through reinforcement) (Prizant & Wetherby, 1998). The most common method of intervention using a social-pragmatic approach is DIR Floortime Therapy, developed by psychiatrist Stanley Greenspan. He figured that by creating an intervention based on developing relationships, he could teach children with developmental delays socialization skills, improve language, develop joint attention, and decrease repetitive movements (Solomon, Necheles, Ferch, & Bruckman, 2007). He determined that there are six milestones all children must master for healthy emotional and intellectual growth: "self-regulation and interest in the world; forming relationships, attachment and engagement; two-way, purposeful communication; behavioral organization, problem solving and internalization; representational capacity; and representational differentiation" (Solomon et al., 2007, p. 11). He hypothesized that children would be more likely to reach their emotional and intellectual potential if instruction started at their developmental level and then teachers used the children's strengths to better their skills. Through this type of teaching and as the children mature emotionally and intellectually, their communication skills would increase as well (Greenspan & Wieder, 2006). So while DIR Floortime therapy can be used to teach typically and atypically developing children since it simply uses the children's strengths and interest to stimulate their emotions and intellect, it became a popular technique to instruct children with emotional

disabilities, mental health challenges, developmental delays, and autism spectrum disorder (Haan, n.d.).

DIR Floortime was created based on the DIR model (Developmental, Individual-differences, and Relationship-based) which illustrates child development and helps adults understand how to support growing children (Haan, n.d.). Since DIR Floortime bases its foundation on starting at the child's level and building on his/her strengths, the approach has the adult physically work with the child at his/her level—the floor. Then instead of having the mentor initiate the interaction, the mentor enters the child's play. So the child determines the framework of the therapy, and the adult uses these activities to strengthen communication.

Typically parents and therapists appreciate DIR Floortime therapy because it can be done in the child's natural environment and embedded in the daily routine. So through training, parents can implement the therapy with their children which not only decreases the cost of therapy, but also strengthens the parent-child relationship. The first step of the intervention is to engage the child using their interests in order to bring them into "our world." A way this can be done is by having the adult simply copy the child's actions. For example, if the child is banging a lego on the floor, the mentor might join the individual by tapping a toy on the floor as well. Then the adult might engage the child a little more by giving the child another lego, or providing some commentary to add language. The same technique can be applied to older children as well, but perhaps instead of banging a lego on the floor, the older child might be interested in building train tracks. So in order to enter that child's world, the adult might suggest adding a drawbridge to the track so the child's play is being expanded, but it is still based on the individual's interest (Autism Speaks, 2016).

DIR Floortime Experiments

In a study done by Michigan University, Solomon et al. (2007) determined the effectiveness of the PLAY Model (Play and Language for Autistic Youngsters). This project's framework was based on the DIR Floortime model, to study whether a social-pragmatic approach can improve the functioning skills of children with autism. The children chosen for the experiment had to be older than eighteen months but less than six years of age. They also had to have a diagnosis of autism, pervasive developmental disorder not otherwise specified (PDD-NOS), or Asperger syndrome. They also could not have a severe medical disability. The children had to live within 60 miles of a home consultant, and receiving no other type of intensive therapy. Overall, 68 children were chosen to participate in the study. Ten had severe autism, twenty-two had moderate autism, eighteen had mild autism, fourteen had PDD-NOS, and three were diagnosed with Asperger syndrome (Solomon et al., 2007).

Consultants worked with the families once a month for 3-4 hours, training the parents how to provide the therapy. The parents also received a one-day training that discussed the PLAY Project and DIR Floortime model. The parents were taught these skills in order to provide therapy to their child for at least 15 hours a week, through either structured play periods or embedded into the daily routine. The parents were required to record the number of hours their child received therapy per week (Solomon et al., 2007).

To determine the effectiveness of the PLAY Project, the participants were given the Functional Emotional Assessment Scale (FEAS) before and after the intervention was provided. The FEAS determined the functional level of the child based on Greenspan's six developmental levels. Overall, 45.5% of the participants scored "good" to "very good" functional developmental progress. The consultants also used clinical ratings to determine the functional

development level of these children. It was found that 52% of the children made very good clinical progress, and 14% made good progress. While it was not statistically significant, researchers discovered that the more hours during the week a child received therapy, the higher the outcome scores were for that child. After therapy the parents were given the opportunity to rate their satisfaction with the PLAY Project. From the 68 families who participated, 74% completed the satisfaction survey. Seventy percent were very satisfied with the PLAY Project, 10% were satisfied, and 20% were somewhat satisfied. No family, however, was unsatisfied with their child's progress using the intervention. Another important aspect of this project was the cost. While the typical therapies for autism (Applied Behavior Analysis, Pivotal Response Therapy, Verbal Behavior Therapy) cost between $25,000-$60,000 a year, the PLAY Project only costs $2,500 a year. This extreme difference might be a deciding factor for many families (Solomon et al., 2007).

While the experiment did appear successful in strengthening the participants' functional skills, there were some limitations to the study. For instance, there was no control group used in the experiment, so it was impossible to claim that the changes seen in the children's pre and post FEAS scores were directly caused by the PLAY Project interventions. Also since it was found that the more hours of intervention a child received, the higher the functional developmental scores were, this possibly indicates that parent involvement and time was more important than the actual therapy. The researchers agreed that further studies need to be done to determine if the DIR Floortime framework is an effective strategy to use with children with autism. However, the strong results from this pilot study highly suggests that the DIR Floortime framework is successful in increasing the functional levels of children with autism (Solomon et al., 2007).

Another study by Casenhiser, Shanker, and Stieben (2011) used the DIR Floortime framework to compare social and communication skills of young children with autism. They used the Milton and Ethel Harris Research Initiative treatment program [MEHRIT] (an intervention based on the DIR principles) with children who were diagnosed with autism. This study selected 51 participants between the ages 2-4 years. Families had to be able to commit two hours a week to therapy training, and interact with their children for at least 3 hours a day. The children were then split into two groups: a treatment group and a control group. The treatment group received MEHRIT, while the control group received community therapies.

The participants in the treatment group met with therapists for two hours each week, during this time parents consulted with the therapists for 15 minutes to discuss treatment. In these sessions, therapists assessed the children's strengths and weaknesses in speech, communication, sensory, cognitive, and motor abilities. They also demonstrated to parents how to shape therapy to build on the children's strengths and support the weak areas. Furthermore, parents met with the therapists every eight weeks to look at the children's progress and reviewed taped therapy sessions to provide the parents with a more objective view of the children's development and response to the intervention. Both the children in the treatment group and control group received services for 12 months. To determine the effectiveness of the treatments, both groups were given pre and post tests of a modified version of the Child Behavior Rating Scale. This assessment was designed to look at responsiveness, cognitive skills, language, and socio-emotional functioning. The participants' language abilities were also assessed using the Preschool Language Scale IV (PLS) and Comprehensive Assessment of Spoken Language (CASL). Furthermore, because the majority of the therapy was not provided by trained

professionals, but rather caregivers, the study measured their fidelity in delivering the treatment using the MEHRIT Fidelity Scale (Casenhiser et al., 2011).

Overall, the children in the treatment group showed greater enjoyment when interacting with parents, were more attentive and involved in interactions, and displayed more joint attention compared to the control group. An interesting observation made in this study was that children in the treatment group increased their compliance and attention level. This was surprising because the DIR Floortime model does not target compliance, but rather gains the child's attention through child-led activities. While the improvement was only slightly higher than the control group's and was not statistically significant, it was still an unexpected outcome. Furthermore, there was no difference in language skills between the two groups, which leads the researchers to believe that as long as the children are receiving some type of early intervention, language is likely to improve. However, other studies like Mundy et al., 1990 and Tomasello and Farrar 1986 (as cited by Casenhiser et al., 2011) have shown that initiation of joint attention and enjoyment of interaction are predictors of language development. So considering that the children in the treatment group received higher scores than the control group in both those areas, it is curious that the children in the treatment group did not have stronger language skills. As a result, Casenhiser et al. (2011) hypothesized that twelve months may not be enough time to see the discrepancy in language skills.

While this study does show improvement in children's social skills using MEHRT, there were some limitations. For instance, because it would have been unethical to use a control group where children with autism were not able to receive any therapy, the study used children receiving other types of therapy as the control group. However, since the children in the control group were not receiving the same therapy or the same number of hours of therapy, this added

extraneous variables to the experiment. If all the participants in the control group had received the same number of hours and type of therapy, it would limited the number of unaccountable factors. Furthermore, while the caregivers recorded the hours spent purposefully interacting with their child using the DIR Floortime approach, the parents found that after they began incorporating DIR therapy techniques whenever they interacted with their child. So while the children received 25 hours of intentional therapy, the participants probably received a higher amount since the parents embedded the therapy into all interactions with their children. Moreover, the nature of the study created selection bias because it required a specific participant: parents had to approve the DIR model, be able to provide at least 3 hours of therapy a day, attend training two hours a week, and be willing to complete assessments. Furthermore, overall the study cost families $5,000 per year, which while lower than other intensive therapies, the price was higher than that of children receiving community or government treatment, like Preschool Services for Children with Disabilities or local parenting classes. Further studies will need to be conducted to determine if the MEHRIT approach is effective for families with less available time or lower incomes. Finally, this study did not look at IQ or the severity of autism and how that effects the therapy, so further research will need to be done to determine the efficacy of this therapy with severe autism and differing IQ levels (Casenhiser et al., 2011).

A third study designed by Liao et al. (2014) in Thailand looked at the effectiveness of the DIR Floortime approach in increasing social behaviors in preschoolers and lowering mothers' stress levels. Eleven boys, ages 3-5 years old participated in the study. They were all diagnosed with autism spectrum disorder, and the severity of their autism was determined by verbal IQ scores combined with their level of functional language and social adaptations. The children were given the Functional Emotional Assessment Scale (FEAS) to measure their emotional

functioning skills. In order to assess the children's adaptive behaviors they were given Vineland Adaptive Behavior Scales. This test also looked at communication, daily living skills, socialization, and motor skills. Finally, to measure the stress levels, mothers were given a Parenting Stress Index-Short form to complete before and after the intervention (Liao et al., 2014).

The participants' mothers underwent two-three hours of one-on-one training of the DIR Floortime model for three weeks. During these sessions the mothers learned DIR Floortime strategies and created an individual plan for her child. The mothers were also required to watch a three hour video on the core concepts of the DIR Floortime model. Before the mothers could begin the intervention, they were trained to observe their child's cues, follow their son's lead, and use play strategies that were appropriate for the child's functional development (Liao et al., 2014).

The intervention lasted for ten weeks, where mothers provided the therapy to their child for at least ten hours a week. Every two weeks the mothers met with the main researcher to discuss concerns about the intervention or difficulties experienced with the child. The average child received 109.7 hours of therapy over ten weeks. It is important to note that while these children were receiving DIR Floortime therapy, they also continued their other interventions: special education for preschool, speech therapy, or occupational therapy. After the ten weeks of intervention, the children increased their FEAS scores from 30.6 to 39.8 and had significant improvements in their communication skills, daily living skills, and social skills. While there was not a strong decrease in mothers' stress levels, the researchers did find that the mothers had more positive parent-child interactions (Liao et al., 2014).

Like the previous studies, these results have some limitations. For example, the sample used for the study was based on parent interest and convenience, adding some bias to the experiment. Also, only males were used in the study, so it is unknown if females would have similar results. Despite the shortcomings of this study, there were positive findings that illustrate the effectiveness of the DIR Floortime method. The children made considerable gains in two-way purposeful communication, creating relationships, and problem solving skills. Overall, mothers were pleased with the gains their sons made and were even happier with the fact that they now knew how to play and interact with their child (Liao et al., 2014).

Early Start Denver Model

Although DIR Floortime Therapy is not evidence-based, its foundation was used to establish a similar therapy that is evidence-based, Early Start Denver Model (ESDM). This treatment is a social-pragmatic therapy that incorporates some ABA approaches. Since it is so similar to DIR Floortime, it is reasonable to use its success to support the DIR Floortime intervention. The Early Start Denver Model is an intervention for children who have autism or are at-risk for autism between the ages 12-48 months. The intervention essentially coaches parents how to interact with their child, so the child learns through a positive relationship with the parents. Before this model, providing therapy to toddlers had not been considered, but now there is confidence that it will be more effective than therapy directed at preschoolers, because the infant/toddler mind is so flexible and is learning so much at a fast pace (Autism Speaks, 2016). Also, as Greenspan illustrated with his six stages of emotional and intellectual growth, the skills and understandings needed for socialization and interest in the world are developed before the age of 18 months (Greenspan & Wieder, 2006). Perhaps if therapy is provided during this crucial time period, the effects of autism will be severely limited.

A study done by Dawson et al. (2010) explored the effectiveness of using the Early Start Denver Model with children diagnosed with autism. Forty-eight children between the ages 18 months and 30 months with a diagnosis of autism or PDD-NOS, were randomly assigned to either the treatment group or control group. The children in the treatment group received 20 hours a week of the Early Start Denver Model intervention by clinicians and parents. The children in the control group continued with their usual treatment, which were interventions and recommended treatments by their community providers. The children were assessed three times during the study: before the start of the intervention, after one year of intervention, and at the end of the study (two years of intervention). The assessments looked at the degree of the children's diagnoses, their IQ, adaptive skills, and repetitive behaviors. When the children were first assessed, there was little to no difference in their scores and severity of their autism diagnosis. Even after one year of intervention, there was no significant improvement between the treatment group and the control group. However, after two years of intervention the treatment group had increased their IQ levels by 18 points, while the control group had increased their IQ level by 4 points. The treatment group also increased their receptive language skills by 18 points, and the control group increased their skills by 10 points. Finally, seven of the twenty-four children in the treatment group had a change of diagnosis from autism to PDD-NOS (a milder form of autism). Only one child from the control group also received a change of diagnosis from autism to PDD-NOS. Currently, more studies are being funded to replicate this experiment to determine if the same success can be found with other children. They are also researching if the intervention can be applied to even younger children, hopefully decreasing autism symptoms even more (Dawson et al., 2010).

Although DIR Floortime therapy is not evidence-based, the studies' results and the success of ESDM (which is so closely related to DIR Floortime), illustrates that using a social-pragmatic approach in therapy might be effective in decreasing symptoms in young children diagnosed with autism. Since the therapy can be implemented by parents and can be used with both typically and atypically developing children, perhaps DIR Floortime Therapy will enable children to receive services at a younger age. This might encourage social interactions and develop social interest at a more appropriate age, which hopefully could help these children establish relationships and set them up for success, instead of shaping surface behaviors and attempting to establish relationships at an older age.

Personal Perspective

Working in a classroom with very young students (15-22 months), this writer thinks that DIR Floortime therapy could be very effective for engaging students who might be at risk for autism or developmental delays. Typically at this age children are not showing definite symptoms, and doctors will not often diagnosis a child with a disability that cannot be identified without a test before the age of two. So this means that usually children who are at-risk are in classrooms with typically developing peers. DIR Floortime therapy enables instructors to use the intervention with all children because it is using the children's interests and abilities to shape play and decide the framework for instruction. This means the children are learning social cues and social skills through interacting with their teachers. Typically developing peers can usually master and generalize these skills easily. However, children who could be developmentally delayed may take a longer time to acquire these skills, and then may need to be taught how to generalize these social skills to their peers. Since DIR Floortime therapy uses play and can incorporate children's peers, this does not take away from the daily instruction of early

childhood education, but rather enhances the students' play and ensures that the play is targeting certain skills that all the children need to master. This writer believes this makes DIR Floortime therapy invaluable to early childhood educators.

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