

CALIFORNIA STATE UNIVERSITY NORTHRIDGE

Exploring the Developmental, Individual-differences, Relationship-based (DIR)/Floortime
Model

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DEDICATION

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ABSTRACT

Exploring the Developmental, Individual-differences, Relationship-based (DIR)/Floortime

Model

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Educational Psychology

This thesis examined the developmental, individual-difference, relationship-based (DIR)/Floortime model and its impact as an early intervention strategy. The DIR/Floortime model, is a relationship-based model of intervention for Autism spectrum disorder (ASD), developed by Greenspan and Wieder to promote behavioral, cognitive, and social skills. The review of the literature discovered the effectiveness of DIR/Floortime with children diagnosed with ASD and the limitations such as limited parent engagement and outside factors such as work, family life, or other children being present. Given the findings from the literature, 15 intervention specialists, all from the same organization, completed the Exploring the Developmental, Individual-differences, Relationship-based (DIR)/Floortime Model survey. The online survey was designed to identify key features and limitations of DIR/Floortime, therapists' perceptions on utilizing this intervention strategy, and how a child's progress is measured through DIR/Floortime. The themes discovered from the survey included key features and limitations of DIR/Floortime, learned techniques, how a child's progress is measured, and overall experience and likeliness to recommend DIR/Floortime as an intervention strategy. The study included limitations based on the convenience sample, implications, and ideas for future research.

CHAPTER ONE: INTRODUCTION

“Early intervention services can change a child’s developmental path and improve outcomes for children, families, and communities” (Centers for Disease Control and Prevention, 2020).

According to the Centers for Disease Control and Prevention (CDC) (2019), early intervention services support eligible children with developmental delays or disabilities and their families; eligibility is based on the child’s skills and abilities. The United States Department of Education (2016) stated, children with disabilities are defined as those who:

- 1) are experiencing developmental delays, as measured by appropriate diagnostic instruments and procedures, in one or more of the following five areas: cognitive development, physical development, communication development, social or emotional development, or adaptive development; or
- 2) have a diagnosed physical or mental condition that has a high probability of resulting in developmental delay.

The Individuals with Disabilities Education Act (IDEA) was passed by Congress to provide free public education, early intervention, special education, and related services to over 6.5 million children with disabilities (U.S. Department of Education, n.d.). According to the United States Department of Education (n.d.), children birth through age 2 receive early intervention services under IDEA Part C and children age 3 through 21 years receive services under IDEA Part B.

Early intervention strategies include speech therapy, occupational therapy, physical therapy, behavioral therapy, and other services based on the individual child’s needs. Services are available in every state and are publicly funded to provide free or reduced priced services for any eligible child (CDC, 2019). Early intervention services can provide significant positive impact on children’s development and can increase success in school.

Floortime is an early intervention strategy developed by Greenspan and Wieder to engage with children through emotional and relationship-based connections to promote behavioral, cognitive, and social skills rather than teaching appropriate behaviors and receiving rewards to reinforce the behaviors (Verywell Health, n.d.). Floortime evolved into the Developmental, Individual Difference, Relationship-Based (DIR) model, which “was [the] first model to identify the functional emotional developmental capacities that provide the foundation for lifelong learning and relating” (Profectum, n.d.). Developmental refers to the capacities for attention and regulation, engagement, communication, and social problem solving; Individual Difference refers to individual differences in sensory motor processing and regulation, purposeful movement, and communication; and Relationship-Based refers to the relationships necessary for affect-based development (Profectum, n.d.). Being the first relationship-based model of intervention for Autism spectrum disorder (ASD), DIR acknowledges relationships as a fundamental key for development.

Autism spectrum disorder (ASD) refers to “conditions characterized by some degree of impaired social behavior, communication and language, and a narrow range of interests and activities that are both unique to the individual and carried out repetitively” (World Health Organization, 2019). Approximately one in 160 children has ASD, which begins in childhood and often continues into adolescence and adulthood (World Health Organization, 2019). The prevalence of ASD is increasing globally due to improved awareness, diagnostic tools, and general knowledge by health care professionals.

The DIR /Floortime model “has the strongest research of any intervention to support its effectiveness in improving the core challenges of Autism including relating, interacting, and communicating while decreasing caregiver stress and improving parent-child relationships” (The

Interdisciplinary Council on Development and Learning, n.d.). Floortime sessions are child lead and can be conducted anywhere free play is possible (park, office, living room) by anyone who has a relationship with the child (therapists, parents, grandparents). The adult sits on the floor with the child, observes the child's interest and actions, and engages with the child while increasing communicative interactions (verbal or nonverbal) (Autism Speaks, n.d.). Floortime encourages engagement with another person while meeting the child at their developmental level. According to Autism Speaks (n.d.), "Sessions emphasize back-and-forth play. This builds the foundation for shared attention, engagement and problem solving."

Floortime incorporates six key milestones to develop emotional and intellectual growth in children: 1) Self-regulation and interest in the world, 2) Intimacy, or engagement in relationships, 3) Two-way communication, 4) Complex communication, 5) Emotional ideas, and 6) Emotional thinking (Autism Speaks, n.d.). Self-regulation and interest in the world focuses on shared attention with another person; intimacy, or engagement in relationships encourages meaningful relationships; two-way communication challenges the child to communicate (verbally and nonverbally); complex communication assists communication and problem solving; emotional ideas relates mental representations and ideas; and emotional thinking connects internal representations and emotional ideas (Profectum, n.d.). After children becomes more interactive, the adult can "increase the complexity of the interactions, working toward specific goals" (Verywell Health, n.d.); however, children can move back and forth through milestones.

Statement of Problem

Various intervention services are available to eligible children and their families with developmental delays and disabilities. Congress passed IDEA, which guarantees free public

education, early intervention, and other related services to children with disabilities. Intervention services include, but are not limited to, applied behavioral analysis (ABA), speech therapy, occupational therapy, sensory integration therapy, DIR/Floortime, and other services based on the individual child. Finding an intervention strategy to best fit a child's developmental needs may be difficult for parents, especially if they have no prior knowledge of early intervention or the process.

Services and enrollment varies based on the child's age. Families with children 0-to 3-years old contact their local early intervention regional center for services, while families with children 3 years or older must call their local public elementary school (even if the child does not attend the school) to receive services. According to the Center for Parents Information and Resources (2016), parents do not have to have to wait for a suggestion for their child to be screened for a developmental delay or disability; parents can contact either their early intervention regional center or local public elementary school, depending on the child's age, and arrange to have their child screened. All screenings are free of charge and are considered "part of the State's responsibility toward the well-being of its resident children) (Center for Parents Information and Resources, 2016, n.p.).

For eligible children birth to 3 years old, an individualized family service plan (IFSP) is created to serve the child and family's specific goals, needs, and services. The IFSP includes information about the child's current level of development, the family's resources, priorities, and concerns, the expected outcomes for the child and family, the services needed, the environment the services will be provided, the date services will begin and end, the service coordinator, and the future steps to support the child into preschool or other services (CDC, 2019). The IFSP plan is developed in collaboration between parents and the early intervention team. Before the IFSP

meeting, parents should gather information including medical records, evaluations, or notes, to present real life examples of the child's ability. At the meeting, parents can ask clarifying questions about services offered and the results expected, as well as discuss in home support programs. Parents must agree and sign the IFSP before services are implemented, but have the right to disagree with the content and may request a mediation (CDC, 2019).

Overall, without the prior knowledge of early intervention or the process to get children screened, parents may not be fully aware of the services they are eligible to receive. A new parent, or a parent new to early intervention, may find it difficult to find an intervention strategy to best fit their child's developmental needs. The CDC found the earlier a child receives intervention, the more likely it is to be effective.

Purpose of Project

The purpose of this study is to bring light to early intervention strategies, specifically, the DIR/Floortime model. It will bring awareness to this specific intervention strategy for parents, educators, and those in the early intervention field. The Developmental, Individual Difference, Relationship-Based /Floortime model "focuses on emotional and relational development (feelings, relationship with caregivers). It also focuses on how the child deals with sights, sounds, and smells" (CDC, 2019, n.p.). Floortime is child led and focused on the child's interests and strengths, which can be utilized in home, in the community, or in clinics. The online survey was designed to discover the following:

- 1) What is DIR/Floortime and how is it utilized in a therapy setting?
- 2) What are interventionists' and therapists' thoughts on utilizing this intervention strategy as opposed to other intervention strategies?
- 3) How is a child's progress measured through DIR/Floortime?

Significance of Project

Since early intervention is critical for children with developmental delays and disabilities, it is crucial to explore the impacts of DIR/Floortime as an intervention strategy for children and adolescents. Through an online survey, interventionists and therapists will have an opportunity to share about their personal experience, thoughts on utilizing this intervention strategy, and overall feelings towards DIR/Floortime. The responses will be analyzed for common themes and comparisons will be made between participants' ages, amount of time spent at the company, and thoughts on DIR/Floortime. The data collected from this study will bring awareness of DIR/Floortime to parents, educators, and those in the early intervention field; this may provide future researchers to recognize the significance of DIR/Floortime and choose to utilize this intervention strategy.

Terminology

Autism Spectrum Disorder (ASD): “a lifelong developmental disability that is characterized by impairments in communication and reciprocal social interaction, and as well as restricted and repetitive behaviors or interests” (Liao, Hwang, Chen, Lee, Chen, and Lin, 2014, p. 356).

Coaching: “the investigator observing the parents playing with their child and giving them feedback about their performance” (Pajareya & Nopmaneejumrulers, 2011, pp. 567-568).

Developmental: “the developmental capacities (i.e. functional milestones) that emerge during the child’s early years including shared attention and engagement, back and forth interactions, problem solving, creating play ideas and abstract thinking” (Wieder & Greenspan, 2003, p. 426).

Developmental Disability: “ [children] who generally have better social abilities than children with ASD” (Pajareya, Sutchritpongsa, & Kongkasuwan, 2019, p. 332).

Developmental, Individual-difference, Relationship-based (DIR)/Floortime Model: “focuses on the child’s developmental capacity for relating and communicating, taking in, regulating, responding, understanding sensations and information, and planning actions. It is a developmental intervention involving meeting a child at his or her current developmental level, in which the parent or therapist follows the child’s lead, with playful positive attention while tuning into the child’s interests” (Pajareya, Sutthritpongsa, & Kongkasuwan, 2019, p. 331).

Developmental Optometry: “a method that claims to alter use of visual information through guided practice and, in conjunction with DIR, to help patients engage with therapy” (Mercer, 2017, p. 632).

Floortime: “adults follow the child’s lead utilizing affectively toned interactions through gestures and words to move the child up the symbolic ladder by first establishing a foundation of shared attention, engagement, simple and complex gestures, and problem solving to usher the child into the world of ideas and abstract thinking” (Wieder & Greenspan, 2003, p. 425).

Individual-difference: “individual differences in sensory motor processing and regulation which need to be taken into account and treated to support development (e.g. auditory or visual spatial processing deficits)” (Wieder & Greenspan, 2003, p. 426).

Modeling: “the investigator showing parents how to use Floortime with their child” (Pajareya & Nopmaneejumruslers, 2011, p. 567).

Relationship-based: “the relationships and environment necessary to provide the interactions through which the development of emotional, social and cognitive capacities are nurtured, practiced and enhanced” (Wieder & Greenspan, 2003, p. 426).

Sensory Integration: “a neurological process that organizes sensations from different modalities and parts of the body and allows the individual to use the body within the environment” (Mercer, 2017, p. 632).

Symbolic Play: “provides the distance and safety from real life and the immediacy of needs, it offers practice to differentiate one’s own and others’ experience and feelings as well as to differentiate from the environment in order to prepare for abstract thinking” (Wieder & Greenspan, 2003, p. 426).

Preview of Thesis

The upcoming chapters will describe information regarding the use of DIR/Floortime as an intervention strategy. Chapter Two provides significant literature on a child and father’s interactions during Floortime to see if the DIR model had an impact on the child over a 3-year period (Wieder & Greenspan, 2003); the effects of DIR/Floortime on children with a developmental disability and whether adding a parent training program improved children’s attention and initiation (Pajareya, Sutthritpongsa, & Kongkasuwan, 2019); the factors associated with parent engagement in DIR/Floortime (Prapaththanakunwong, Kiatrungrit, Hongsanguansri, & Nopmaneejumruslers, 2018); the effects of DIR/Floortime on social interaction and adaptive functioning in autistic children (Liao, Hwang, Chen, Lee, Chen, & Lin, 2014); the effectiveness of DIR/Floortime in preschool children with ASD (Pajareya & Nopmaneejumruslers, 2011); and the theory and research on DIR/Floortime for children with ASD (Mercer, 2017). Chapter Three provides information regarding the methodology of the study, including detailed information about the participants, procedure, instrumentation, and data. Chapter Four provides the findings of the completed online survey. Chapter Five provides a discussion about the key findings, including implications, limitations, and suggestions for future research.

CHAPTER TWO: LITERATURE REVIEW

Chapter Two provides a review of the literature related to the DIR/Floortime model. The following research articles examined the factors and benefits associated with DIR/Floortime intervention for children with Autism and developmental disabilities. In the first study, Wieder and Greenspan (2003) analyzed a child and father's interactions during Floortime to see if the DIR model had an impact on the child over a 3-year period. In the second study, Pajareya, Sutchritpongsa, and Kongkasuwan (2019) measured the effects of DIR/Floortime on children with a developmental disability and whether adding a parent training program improved children's attention and initiation. In the third study, Praphatthanakunwong, Kiatrungrit, Hongsanguansri, and Nopmaneejumruslers (2018) evaluated the factors associated with parent engagement in DIR/Floortime. In the fourth study, Liao, Hwang, Chen, Lee, Chen, and Lin (2014) investigated the effects of DIR/Floortime on social interaction and adaptive functioning in autistic children. In the fifth study, Pajareya and Nopmaneejumruslers (2011) explored the effectiveness of DIR/Floortime in preschool children with Autism spectrum disorder. In the sixth study, Mercer (2017) studied the theory and research on DIR/Floortime for children with Autism spectrum disorder.

Climbing the Symbolic Ladder in the DIR Model Through Floortime/ Interactive Play Hypothesis

Wieder and Greenspan (2003) studied an autistic child and his father's interactions during Floortime to see if the developmental, individual-difference, relationship-based (DIR) model had an impact on the child over a 3-year period. During Floortime, adults follow the child's lead and affect and use gestures and words to help develop attention, engagement, and problem-solving skills (Wieder & Greenspan, 2003). Researchers measured the first six developmental stages

(self-regulation and shared attention, engagement and relating, two-way intentional communication, purposeful complex problem solving communication, creating and elaborating symbols, and building bridges between symbols) and hypothesized the Floortime sessions would “usher the child into the world of ideas and abstract thinking” (Wieder & Greenspan, 2003, p. 425).

Participants

The participants in the study included an autistic child and his father ($N = 2$). Participants’ interactions were studied over a 3-year period, after the 6-month period it took for the child to be evaluated; overall, the child and father were in contact with researchers for 4 years. At the start of the study, the child was 30 months and was diagnosed with Autism spectrum disorder (ASD) 6 months prior. The child did not speak and had “few guttural sounds” (Wieder & Greenspan, 2003, p. 430). According to researchers, “He did not respond to his name or appear to understand what was said to him, typically looking away” (Wieder & Greenspan, 2003, p. 429). Wieder and Greenspan (2003) also stated the child recognized a few songs, turned pages from books, loved jumping, dancing, and bouncing on the bed.

Procedure

Wieder and Greenspan (2003) correlated the key elements of Floortime to the first six developmental stages: 1) self-regulation and shared attention, 2) engagement and relating, 3) two-way intentional communication, 4) purposeful complex problem-solving communication, 5) creating and elaborating symbols, and 6) building bridges between symbols. Self-regulation and shared attention focused on developing senses and regulation; engagement and relating encouraged intimacy and pleasure in relationships; two-way intentional communication challenged the child to communicate (verbally and nonverbally); purposeful complex problem-

solving communication assisted back and forth communication; creating and elaborating symbols related sensations, ideas, and behaviors; and building bridges between symbols connected ideas, feelings, and actions (Wieder & Greenspan, 2003). Researchers then observed the child and father's interactions during Floortime and described their own interpretations of the child's progress.

Instrumentation

Wieder and Greenspan (2003) observed the Floortime intervention progress of a child and father over a 4-year period. The intervention included: "1) six daily Floortime sessions, 2) four semi-structured and sensory-motor activities, 3) intensive speech and occupational therapies, 4) three to five playdates weekly, 5) inclusion in a preschool, and 6) various music, gym, drama, and sports activities" (Wieder & Greenspan, 2003, p. 430). During each Floortime session, researchers recorded the child and father's interactions. Following the session, researchers described their own interpretations of the child's progress according to the first six developmental stages.

Results

During the first stages of intervention, many goals were accomplished such as: enhancing the child-father relationship, mutual attention and engagement, problem solving, and complex gestures (Wieder & Greenspan, 2003). The child-father relationship was deepened by the father engaging with his child in play and making human interactions more compelling than playing alone. Mutual attention and engagement were developed, such as when the father waited for his child to initiate play and communicate his son's intent through nonverbal gestures. Through waiting, the child's problem-solving skills were enhanced as he developed more complex gestures trying to get his father's attention to reciprocate his play.

Six to 18 months later, the child began using verbal cues to indicate to his father what he was playing. The child used phrases such as, “All aboard,” “Ready, set, go,” and “Daddy, on!” when playing with a small plane (Wieder & Greenspan, 2003, p. 431). Building on his previous accomplishments, the child developed verbal language and motor planning to express himself through symbolic play (Wieder & Greenspan, 2003). Additionally, the child’s abstract thinking expanded through reflective conversations with his father where the child “was encouraged to give his opinions, figure out what he and others were feeling, empathize, and determine what was right and wrong, safe and dangerous” (Wieder & Greenspan, 2003, p. 433).

Three years later, the child was able to contemplate motives and strategies, negotiate with his father about play, and anticipate his own and others’ feelings. Wieder and Greenspan discovered:

After a tough day he [the child] brought his daily struggles to Floortime, reenacting his conflicts and confusion. After a victorious day he brought his success to Floortime to analyze what was fair and loyal, as well as to empathize with others. (Wieder & Greenspan, 2003, p. 434)

The child was able to use his experience and emotions to construct play so he could experiment with scenarios without negative consequences. Researchers do note “not every child progresses at the same rate” (p. 434); however, overall, researchers found Floortime essential to this specific child’s development as it set the foundation for abstract and logical thinking. Would the benefits of DIR/Floortime increase if parents were given upscale training programs on how to conduct the intervention session?

**DIR/Floortime Parent Training Intervention for Children with Developmental Disabilities:
A Randomized Controlled Trial**

Hypothesis

Pajareya, Sutchritpongsa, and Kongkasuwan (2019) investigated the effects of the developmental, individual-difference, relationship-based (DIR) model and Floortime on children with a developmental disability and whether adding a parent training program improved children's attention and initiation. Developmental disability described children who had "better social abilities than children with ASD" (Pajareya et al., 2019, p. 332). The researchers hypothesized a 4-month parent training program would increase positive parenting and reduce children's problematic behaviors.

Participants

The original sample consisted of 60 families and their preschool children who were screened ($N = 60$), however, four declined participation ($n = 4$), two did not respond to the evaluation ($n = 2$), and six were not eligible due to their child's health problems ($n = 6$) (Pajareya et al., 2019). The remaining 48 participants ($N = 48$) consisted of caregivers including parents, grandparents, or any adult who cared for the child. Participants "were recruited through posters and paper advertisement from February 2013 to December 2016" in Thailand (Pajareya et al., 2019, p. 332). The children were between the ages of 2-to 6-years old ($M = 39.98$ months) and diagnosed with a developmental disability (moderate to severe), global development delay (68%), or cerebral palsy. Children who also had autism, significant hearing or vision impairments, medical problems, intractable seizures, and who had illiterate caregivers were excluded from the study (Pajareya et al., 2019).

Procedure

After the study was approved by the Institutional Review Board of Faculty of Medicine Siriraj Hospital at Mahidol University and participants were recruited, one researcher, who was a

developmental pediatrician, confirmed the child's diagnosis of a developmental disability, global development delay, or cerebral palsy (Pajareya et al., 2019). Once each participant signed an informed consent and completed a baseline assessment, the children were divided into two groups according to age (24-to 47 months and 48-to 72 months). A research assistant then used a random number table to place participants in the DIR/Floortime training group ($n = 23$) or a control group ($n = 25$) (Pajareya et al., 2019).

Caregivers in the training group viewed a 2-hour video about DIR/Floortime and received a book to study methods of parents with children on the autism spectrum. Caregivers were then trained for 1-hour on how to observe their children, "join the children in pleasurable activities, maintain engagement, and to sustain reciprocal interactions" (Pajareya et al., 2019, p. 332). While pretend play was encouraged, "controlling and intrusive responses on the part of caregivers were identified, discouraged, and substituted with two-way emotional gestural communication" (Pajareya et al., 2019, p. 332). Furthermore, caregivers were asked to spend 15-hours per week (minimum) utilizing DIR/Floortime and keep a log of the hours and other intervention services their child was receiving. Caregivers in the control group did not receive training or study materials, however, both groups were encouraged to continue utilizing their other intervention services such as speech therapy or occupational therapy throughout the study.

The Functional Emotional Developmental Questionnaire (FEDQ) was given to caregivers to evaluate Greenspan's six Functional Emotional Developmental Levels (FEDLs), which were each rated on a 7-point scale. These levels include: 1) shared attention and regulation, 2) engagement and relating, 3) purposeful emotional interaction, 4) social problem-solving, 5) creating ideas, and 6) logical use of symbolic ideas in social problem solving (Pajareya et al., 2019, p. 333). The Parenting Stress Index-Short Form (PSI-SF) was also given to caregivers to

measure child-caregiver stress on three subscales. These subscales include: 1) parental distress, 2) parent-child dysfunctional interaction, and 3) difficult child (Pajareya et al., 2019, p. 333). The higher the caregivers rated the subscale, the greater stress the child-caregiver endured. For example, if caregivers rated parent-child dysfunctional interaction a 6-to 7, the results would indicate the child-caregiver encountered a great amount of stress in this subscale.

Instrumentation

According to Pajareya et al. (2019), caregivers in the intervention group were observed and given feedback on how well they related to their children, in terms of the child and caregiver's functional emotional capacities, after the first and the third month. After conducting observations, researchers stated, "Controlling and intrusive responses were again identified and discouraged and substituted with responses aimed at facilitating two-way emotional signaling and communication between parents and their children" (Pajareya et al., 2019, p. 332). To improve caregiver performance, modeling behaviors and coaching were available. Caregivers in the control group did not undergo observations or have an opportunity for modeling or coaching, but were urged to continue utilizing their other intervention services, if any.

The Child Behavior Rating Scale (CRBS) was used to rate the child-caregiver interaction. The interactions were video recorded and assessed by two developmental psychologists. The developmental psychologists "rated attention (attention to activity, persistence, involvement, and compliance or cooperation subscales), and initiation (initiation of activity, joint attention, and affect)" (Pajareya et al., 2019, p. 332) on a 5-point Likert scale and then averaged the scores together. Additionally, the Mullen Scales of Early Learning (MSEL) was administered by a developmental pediatrician to assess four cognitive domains (visual reception, fine motor skills, receptive language, and expressive language) in children.

The data was analyzed using SPSS (version 18) with an “intent-to-treat analysis” (Pajareya et al., 2019, p. 333). Next, t-tests were used to compare pre-test and post-test scores. Then, an analysis of covariance examined “the impact of the treatment intervention between groups, with follow- up scores as the dependent measure and baseline scores as covariates” (Pajareya et al., 2019, p. 333). Both the intervention and the control groups were reassessed after the fourth month.

Results

Pajareya et al. (2019) found while the control group pre-test and post-test scores for attention and initiation of the CRBS and FEDQ scores were not significantly different ($p = .099$), the intervention group post-test scores were significantly higher than the pre-test scores ($p < .001$ attention and initiation) ($p = .001$ FEDQ). The MSEL pre-test scores revealed higher for both groups, with the intervention group scoring higher in receptive language and expressive language ($p = .043$), but no difference in the visual reception or fine motor subscales (Pajareya et al., 2019). Researchers also found PSI-SF post-test child-caregiver dysfunctional interaction score was lower than the pre-test ($p = .011$) in the intervention group. Furthermore, while caregiver stress and difficult child scores did not vary, the child-caregiver dysfunctional interaction score was significantly higher ($p = .026$) in the intervention group during the pre-test.

A regression analysis was used to determine the effects of variables on the attention and initiation scores. Researchers found children’s ages correlated with improved scores in attention ($p = .002$) and initiation ($p = .001$). Pajareya et al. (2019) stated, “Pre-test attention and initiation composite scores had a significant negative weight, indicating the children with higher baseline scores might have a lower chance of improving” (p. 336). Meaning, the children’s ages

were associated with the improvement or decline of attention and initiation scores; showing, children who were older would be more likely to show improvement.

According to the caregiver logs, only one-third of participants met the requested amount of 15 hours a week of DIR/Floortime; 35% reported an average of 14 hours, 52% reported 7-to 14 hours, and 13% spent greater than 7 hours (Pajareya et al., 2019). In addition to DIR/Floortime the children in both groups were receiving about an hour per week of additional services (speech therapy, occupational therapy, physical therapy) outside the study. Researchers found there was no statistical difference between the children whose caregivers reported spending more or less time implementing DIR/Floortime; however, the children with developmental disorders (exposed to DIR/Floortime) showed greater involvement and better communication with caregivers (Pajareya et al., 2019). Furthermore, Pajareya et al. (2019) stated, “when the [training] programs were implemented with high fidelity, the parenting practices improved significantly, but the effect was much less when implementation fidelity was low” (p. 336).

Overall, the effects of DIR/Floortime appeared beneficial during the four-month study; however, long-term outcomes were unknown. Researchers suggested a future study be conducted with “more diverse caregivers, better stratification of the children regarding their challenges, and longer follow-up are needed” (Pajareya et al., 2019, p. 337). Does parent engagement during DIR/Floortime influence the overall child’s development?

Factors Associated with Parent Engagement in DIR/Floortime for Treatment of Children with Autism Spectrum Disorder

Hypothesis

Prapaththanakunwong, Kiatrungrit, Hongsanguansri, and Nopmaneejumruslers (2018) explored the association between parent engagement and the developmental, individual-differences, relationship-based (DIR)/ Floortime model through a cross-sectional study. According to researchers, the DIR/Floortime model is commonly used therapy for Autism spectrum disorder (ASD), “a neurodevelopmental disorder that affects one’s social interaction, communication skill, interest and behaviors” (Prapaththanakunwong et al., 2018, p. 1). Researchers hypothesized, parental engagement in DIR/Floortime was “an essential element for child improvement” and is “essential to various interventions for ASD children” (Prapaththanakunwong et al., 2018, p. 2).

Participants

The original sample of participants included 103 parents ($N = 103$) of children who received DIR/Floortime between March 15, 2017 and May 15, 2017 at the National Institute for Child and Family Development (NICFD); however, 28 participants did not meet the study criteria ($n = 28$), 19 had a disability or disorder ($n = 19$), 11 declined participation ($n = 11$), and 3 dropped out ($n = 3$), thereby leaving a sample size of 42 participants ($N = 42$) (Prapaththanakunwong et al., 2018). Included in the study were parents with children 2-to 12-years-old who had been diagnosed with Autism spectrum disorder; the children had to be diagnosed by psychiatrists or pediatricians according to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR) (Prapaththanakunwong et al., 2018). Additionally, children must have received over three sessions of DIR/Floortime at the NICFD and parents who were participating in the study had to live with their children for a minimum of 1 year (Prapaththanakunwong et al., 2018). Excluded from the study were

“children who had a disability or were diagnosed with specific syndromes such as Down’s syndrome or Rett syndrome” (Prapaththanakunwong et al., 2018, p. 2).

Parent participants included 11 males (26.2%) and 31 females (73.8%) with a mean age of 40.93 ($M = 40.93$) years old. Thirty-one participants were employed (73.8%), 38 were living with their spouse (90.5%), 26 had single family households(61.9%), and 27 had a bachelor’s degree or lower (64.3%) (Prapaththanakunwong et al., 2018). Child participants included 33 males (78.6%) and 9 females (21.4%) with a mean age of 6.07 ($M = 6.07$) years old. Twenty-six participants were in early childhood 2-to 6 years old (61.9%), 16 were in middle childhood 7-to 12 years old (38.1%), 10 were using psychotropic medication (23.8%), and 32 were not using psychotropic medication (76.2%) (Prapaththanakunwong et al., 2018).

Procedure

After the study received ethical approval from the Mahidol University Central Institutional review board, participants who received DIR/Floortime at the NICFD between March 15, 2017 and May 15, 2017 were recruited. Prapaththanakunwong et al. (2018) stated, “Participants were informed about the data collecting method, and informed consent was obtained” (p. 2). Additionally, only therapist who had “the required skills and knowledge” and over 5 years’ experience of DIR/Floortime were included in the study (Prapaththanakunwong et al., 2018, p. 2).

Prapaththanakunwong et al. (2018) provided participants with parental, child, provider, and service factors questionnaires to document: gender, age, occupation, marital status, level of education, monthly income, severity of child’s diagnosis, participants’ relationship with their therapists, and time spent using DIR/Floortime each day. Researchers measured the severity of the child’s diagnosis using the Clinical Global Impressions-Severity (CGI-S) and the Childhood

Autism Rating Scale (CARS). Then, an eight-question multiple choice knowledge of DIR/Floortime technique questionnaire was given with 1 point awarded for each correct answer. Next, a five-question, four choice (strongly agree, agree, disagree, strongly disagree) attitude towards ASD and DIR/Floortime questionnaire was given to participants. Additionally, the nine-question, four choice (not at all, several days, more than half the days, nearly every day) Patient Health Questionnaire-9 Thai version was given to participants to measure depression in parents.

Instrumentation

Prapaththanakunwong et al. (2018) assessed the quality of parent engagement during DIR/Floortime in three categories: 1) coaching, 2) modeling, and 3) reflection. Coaching referred to the parent's responsiveness to the therapist's advice during Floortime interactions; modeling referred to the parent's responsiveness to observing the therapist. Both categories were evaluated on a 5-point scale (not interested = 1, sometimes = 2, often = 3, always = 4, always and ask questions when they are in doubt = 5). Reflection referred to the parent's reflection on what they discovered after each session, which was evaluated on a 5-point scale (do not reflect = 1, poorly reflect = 2, fairly reflect = 3, reflect well = 4, perfectly reflect = 5). The total scores were then separated into high (greater than 10 points) and low (below 10 points) groups.

Furthermore, researchers provided a questionnaire which assessed how much time parents allotted to utilize DIR/Floortime at home, practice daily life skills, and practice structured activities (Prapaththanakunwong et al., 2018). To evaluate the child's holistic, emotional, and social development, researchers used the six step Functional Emotional Developmental Level (FEDL). The six steps were worth 0.5 points each and included: 1) calm regulation and attentiveness, 2) relationship with others, 3) emotional intent, 4) problem-solving communication, 5) emotional ideas, and 6) logic (Prapaththanakunwong et al., 2018, p. 3). The

FEDL difference was calculated by subtracting the final score with the initial score when the child started therapy. In addition, the Clinical Global Impressions-Improvement (CGI-I) scale was used to evaluate the child's development. The CGI-I utilized a seven-point scale which ranged from: 1 = very much improved, 2 = much improved, 3 = minimally improved, 4 = no change, 5 = minimally worse, 6 = much worse, and 7 = very much worse (Praphatthanakunwong et al., 2018).

Data was analyzed using SPSS (version 22) with descriptive statistics to report “frequency, percentage, mean and SD for demographic data, parents, child, and provider and service factors, together with parent engagement and improvement of child development” (Praphatthanakunwong et al., 2018, p. 3). A chi-squared test was used to report associations between the factors and parent engagement after a likelihood ratio determined the association in low-frequency factors. Additionally, a t-Test compared “the average score between parent engagement and improvement of child development” (Praphatthanakunwong et al., 2018, p. 3).

Results

Praphatthanakunwong et al. (2018) found “factors such as parents marital status, income, knowledge of principles, attitude towards ASD and techniques, severity of ASD and duration of treatment had a positive correlation with parental engagement in DIR/Floortime” (p. 8). Researchers discovered parents who lived with spouses ($\chi^2 = 4.43, p = 0.035$), had lower income ($\chi^2 = 13.1, p < 0.001$), had knowledge about DIR/Floortime ($\chi^2 = 4.06, p = 0.044$), and had a good attitude towards ASD and DIR/Floortime techniques ($\chi^2 = 3.65, p = 0.056$) were more likely to be practicing daily life skills with their child. Additionally, the higher severity of the child's diagnosis ($\chi^2 = 5.83, p = 0.016$) and quality of parent engagement ($t = -2.00, p = 0.053$) correlated with an improvement in the child's development.

Prapaththanakunwong et al. (2018) measured the children's severity of the diagnosis using CGI-S and uncovered 4 children (9.5%) tested mild, 17 children (40.5%) tested moderate, 17 children (40.5%) tested markedly, and 4 children (9.5%) tested severe. Conversely, when measuring the severity of the diagnosis using CARS, 10 children (23.8%) tested mild to moderate and 32 children (76.2%) tested severe. When assessing development, FEDL showed children starting at 1.0 and ending at 3.0, whereas the CGI-I showed 21 children improved (50.0%) and 19 children minimally improved (45.2%) (Prapaththanakunwong et al., 2018).

Overall, if parents believed Autism spectrum disorder could be improved and DIR/Floortime was dependable, parents were more likely to use the technique. The study did not find a correlation between the amount of time parents spent using DIR/Floortime and the child's development; however, researchers suggested future studies include communication skills, social skills, behavioral problems, and joint engagement (Prapaththanakunwong et al., 2018). What are the effects on social interactions and adaptive functions of children with Autism spectrum disorder when utilizing DIR/Floortime?

Home-based DIR/Floortime Intervention Program for Preschool Children with Autism Spectrum Disorders: Preliminary Findings

Hypothesis

Liao, Hwang, Chen, Lee, Chen, and Lin (2014) analyzed the effects of DIR/Floortime on social interaction and adaptive functioning of children with Autism spectrum disorder. Researchers explored the following questions: 1) Does the home-based DIR/Floortime intervention program increase the social interaction and adaptive behaviors of preschool children with Autism spectrum disorder and 2) Do mothers perceive a reduction in their stress levels after undergoing parent-child intervention training? (Liao et al., 2014, pp. 358-359). Liao et al.

(2014) defined Autism spectrum disorder as “a lifelong developmental disability that is characterized by impairments in communication and reciprocal social interaction, and as well as restricted and repetitive behaviors or interests” (p. 356).

Participants

The participants in the study included 11 boys ($N = 11$) age 45-to 69 months ($M = 55.9$ months) and their mothers age 29-to 44 years-old ($M = 35.7$ years). The children had been diagnosed with Autism spectrum disorder by a mental health professional according to the Diagnostic and Statistical Manual IV Text Revision and had their nonverbal intelligence quotient (IQ) evaluated using the Leiter International Performance Scale-Revised. The severity of the child’s ASD was calculated by combining the verbal IQ score and levels of functional language and social adaptation; three children ($n = 3$) measured mild and eight children ($n = 8$) measured moderate for severity. The mothers were all married ($n = 11$), 6 were unemployed ($n = 6$), and 9 had a bachelor’s degree or higher ($n = 9$). Participants had no previous training on DIR/Floortime and were recruited through research fliers distributed at hospital clinics, private clinics, and early intervention centers.

Procedure

The study was approved by the National Cheng Kung University Hospital internal review board and “written informed consent was obtained from the parents before enrolling their child” in [the] study” (Liao et al., 2014, p. 359). Prior to the study, a researcher studied DIR/Floortime from books, watched a DVD of the Play and Language for Autistic Youngsters (PLAY) Project, and “underwent 25 [hours] of structured, intensive, and supervised training in the DIR/Floortime model provided by an experienced therapist” (Liao et al., 2014, p. 361). Subsequently, the

researcher instructed participants on how to implement DIR/Floortime intervention in a 3-week one-on-one training.

Before the first session, researchers collected the demographic characteristics of children and mothers. Additionally, each mother attended a 3-week one-on-one training and a 3-hour DVD lecture about the DIR/Floortime model, methods, and play strategies; during each training, mothers reviewed the intervention model and set individualized goals for the child (Liao et al., 2014). Mothers were trained how to “observe their child’s cues, follow the child’s lead, and implement the play strategies that were appropriate for their child’s current level of functional development” (Liao et al., 2014, p. 361).

The mothers were trained on how to conduct DIR/Floortime at home and were instructed to do so for a minimum of 10 hours a week. The researcher who conducted the trainings met with the mothers and children twice a month (every 2 weeks) to discuss any difficulties or concerns experienced by either the parent or the child. Furthermore, the mothers were instructed to continue their child’s regular routines throughout the study including education programs and other therapies.

Instrumentation

Liao et al. (2014) measured emotional functioning between the parent and child through video-taped interactions using the Functional Emotional Assessment Scale (FEAS). The parent and child interactions were videotaped before and after intervention for 15 minutes and then therapists were asked to “rate each child’s emotional functioning from the videotapes” being “unaware of whether they were viewing the pre- or posttest” (Liao et al., 2014, p. 360). The FEAS measured six domains: 1) self-regulation and interest in the world, 2) formulation of relationships, attachments, and engagements, 3) two-way, purposeful communication, 4)

behavioral organization, problem solving, and internalization, 5) representational capacity, and 6) representational differentiation with the higher FEAS score indicating greater functional behavior and developmental level in the child (Liao et al., 2014).

Researchers also used the Vineland Adaptive Behavior Scales (VABS-2) and Parenting Stress Index-Short form (PSI/SF). The VABS-2 measured children's adaptive behaviors including communication, daily living skills, socialization, and motor skills (Liao et al., 2014). The PSI/SF measured mothers' perceptions of stress encompassing "36 items and yields a total stress score from three subscales: parental distress, parent-child dysfunctional interaction, and difficult child" (Liao et al., 2014, p. 360). The items were measured on a five-point Likert scale with higher score indicating more perceived stress.

Data was analyzed using SPSS (version 17) with descriptive statistics to report demographic data, independent variables, and outcome measures. Additionally, Wilcoxon-signed rank tests measured children's emotional functioning, adaptive behaviors, and levels of parental stress. Researchers stated, "level of significance was set at $p < .05$ " and "an effect size index r was established on the basis of the z score divided by the square root of the total sample" (Liao et al., 2014, p. 362).

Results

Liao et al. (2014) compared pretest and posttest scores and found the overall FEAS score ($p < .05$) and the domains of forming relationships, attachment, and engagement ($p < .05$), two-way purposeful emotional interaction ($p < .01$), and behavioral organization, problem solving, and internalization ($p < .05$) increased over the 10-week intervention. Additionally, the overall VABS-2 score ($p < .05$) and the domains of communication ($p < .05$), daily living skills ($p < .05$), and socialization ($p < .05$) displayed significant improvements. Conversely, the overall

PSI/SF score ($p = 0.21$), parental distress ($p = 0.41$) and difficult child ($p = 0.20$) revealed small change; however, there was a decrease in the parent–child dysfunctional interaction score ($p < .05$). Meaning, mothers recognized positive interactions after the intervention. Mothers also reported confidence and eagerness to play with their child because “they did not know how to play with their child at the beginning of the study” (Liao et al., 2014, p. 364).

Overall, training parents in DIR/Floortime was beneficial for children with Autism spectrum disorder and their parents; children made significant improvements in emotional functioning and adaptive functioning, while mothers made significant improvements in positive interactions. Each child continued their regular routines throughout the study, including education programs and other therapies. The study included mothers who “expressed interest in their children receiving additional services” and therefore, researchers stated the mothers “may not reflect the attitudes and beliefs of all mothers of young children with ASD” (Liao et al., 2014, p. 363). What is the efficacy of adding DIR/Floortime for preschool children with Autism spectrum disorder?

A Pilot Randomized Controlled Trial of DIR/Floortime Parent Training Intervention for Pre-School Children with Autistic Spectrum Disorders

Hypothesis

Pajareya and Nopmaneejumrulers (2011) explored the influence of the developmental, individual-difference, relationship-based (DIR)/Floortime model on preschool children with Autism spectrum disorder (ASD). Researchers focused the incorporation of the intervention model on the parents of children with ASD as opposed to the children. Pajareya and Nopmaneejumrulers (2011) aimed to discover if adding DIR/Floortime would, “confer

additional benefits over routine clinical care available to both groups in terms of climbing ‘the developmental ladder’ and reducing autistic symptoms” (p. 565).

Participants

The participants in the study included 32 parents and their children with Autism spectrum disorder or Pervasive Developmental Disorder, Not Otherwise Specified (PDD-NOS) ($N = 32$). Researchers used a stratified random assignment to designate children to typical treatment or to DIR/Floortime intervention based on age and severity of diagnosis. Four groups were created within both groups, “mild autism and age 24–47 months, mild autism and age 48–72 months, severe autism and age 24–47 months, severe autism and age 48–72 months” (Pajareya & Nopmaneejumruslers, 2011, p. 566). Overall, 23 of 32 children (71.9%) were diagnosed with ASD while the remaining nine children (28.1%) had PDD-NOS.

Participants were recruited by advertising the DIR/Floortime intervention model at the National Institute for Child and Family Development, Mahidol University, Thailand. Children were included in the study if they were between 2 and 6 years old, had their diagnosis confirmed by a developmental pediatrician, and met clinical criteria according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). Children were excluded if they were unavailable for follow-up visits, had additional medical diagnosis, or if their parents were illiterate or had chronic psychiatric or physical illness (Pajareya & Nopmaneejumruslers, 2011).

Procedure

The study was approved by the Institutional Ethical Committee of Mahidol University and written informed consent was given by participants. Interested participants called researchers for information and registration; registrations were arranged in sequence and participants were called for screening and confirmation of diagnosis. Researchers used the

Childhood Autism Rating Scale (CARS) to measure the severity of the diagnosis and children were arranged in two categories including mild autism (30-to 40 points) and severe autism (41-to 60 points), with eight children in each group.

Prior to the study, a researcher studied DIR/Floortime using books, manuals, DVD trainings, and practicing the intervention for 2 years. Additionally, all parents attended a one-day training with the researcher to learn about DIR/Floortime techniques, the biological challenges of children with ASD, and Greenspan's Six Functional Developmental Levels. At the end of the training, parents received a 3-hour DVD recording of the workshop.

During the first session, parents were given weekly logs to document the time spent implementing DIR/Floortime and any other health or education services their child utilized. Additionally, parents were trained to "observe their child's cues, follow the child's lead, and implement the Floortime techniques that were appropriate for their child's current level of functional development to achieve the identified goals" (Pajareya & Nopmaneejumruslers, 2011, p. 567). Researchers divided Floortime into various levels which correlated with the children's levels of functional development. After the parents observed the researcher (modeling), parents were asked to demonstrate the skill; the researcher then observed the parents and provided feedback (coaching).

At the end of the first month, researchers followed up with the intervention group participants. Researchers provided modeling and coaching to parents, replaced controlling and intrusive responses with two-way emotional signaling and communication responses, and refined techniques to correlate with the child's progress (Pajareya & Nopmaneejumruslers, 2011). Researchers stated, participants in the intervention group used DIR/Floortime "in addition to ongoing routine care of one-on-one treatment intervention based on behavioral or discrete trial

principles throughout the study period” while children in the control group “continued their routine care for three months while they were waiting for the DIR/Floortime parent training” (Pajareya & Nopmaneejumruslers, 2011, p. 568). Meaning, while the intervention group received DIR/Floortime trainings and intervention sessions along with ongoing routine care, the control group only received their routine care, including other therapies such as speech or occupational therapy.

Instrumentation

Pajareya and Nopmaneejumruslers (2011) used the Functional Emotional Assessment Scale (FEAS) to measure the children’s functional development through videotaped interactions at the first and last session. Parents were asked to interact with their child as they normally would at home and were videotaped for 15 minutes. At the last session, researchers assessed identical FEAS items as the first session, averaged the scores, and determined the child’s overall improvement.

The Childhood Autism Rating Scale was used to measure the severity of the children’s diagnosis on a scale of 15-to 60. The children were placed into two categories: mild autism (30-to 40 points) and severe autism (41-to 60 points). Furthermore, while the children’s developmental rating was originally estimated by parents, researchers used the Functional Emotional Developmental Questionnaire (FEDQ) at the end of the study. The FEDQ correlated with Greenspan’s six Functional Development Levels: 1) shared attention and regulation, 2) engagement and relating, 3) purposeful emotional interaction, 4) social problem-solving, 5) creating ideas, and 6) thinking logically (Pajareya & Nopmaneejumruslers, 2011, p. 569).

Results

Pajareya and Nopmaneejumruslers (2011) found participants implemented DIR/Floortime on average 15.2 hours a week. Additionally, 11 participants utilized DIR/Floortime activities with behavioral treatments and 5 participants decreased or stopped their child from attending preschool due to results witnessed by parents. Conversely, some parents found it challenging to implement DIR/Floortime and complete the recommended activities due to work, family life, parent-child interactions, or other children being present.

Researchers found after the intervention group implemented DIR/Floortime, there was a difference in the FEAS ($p = .031$), CARS ($p = .002$) and FEDQ ($p = .006$) scores compared to the control group. The FEAS score increased in the control group by 1.9 points ($SD = 6.1$), compared to 7.0 points ($SD = 6.3$) of the intervention group. Meaning, the children in the intervention group showed greater overall improvement. The CARS score showed a decrease for the intervention group, compared to the control group whereas the FEDQ score showed an increase for the intervention group, compared to the control group. Meaning, DIR/Floortime intervention “could help the autistic child to better engage, relate, and communicate with their caregiver than those who received the routine behavioral interventions” (Pajareya & Nopmaneejumruslers, 2011, p. 573).

Overall, most participants controlled and instructed their child rather than playing; researcher modeled to parents how to play and engage with their child and provided coaching to offer feedback. Pajareya and Nopmaneejumruslers (2011) stated results could be attributed to DIR/Floortime, as well as more time spent with parents. Since the study included parents interested in learning about DIR/Floortime, researchers suggested future studies analyze variables “associated with favorable or unfavorable responses to interventions” (Pajareya &

Nopmaneejumruslers, 2011, p. 575). What is the theory and research behind DIR/Floortime for children with Autism spectrum disorder and is it favorable or unfavorable?

Examining DIR/Floortime as a Treatment for Children with Autism Spectrum Disorders:

A Review of Research and Theory

Hypothesis

Mercer (2017) studied the background of the Developmental, Individual-difference, Relationship-based (DIR)/Floortime model and assessed the validity of the model and existing research through a meta-analysis. Mercer (2017) acknowledged the use of other intervention strategies such as applied behavior analysis (ABA), but focused on the lesser known strategy of DIR/Floortime. The researcher stated the article “describes the theory and practice of DIR/Floortime and addresses the plausibility of and evidentiary support for, the treatment” (Mercer, 2017, p. 626).

Participants

Mercer (2017) utilized a meta-analysis to review 10 studies ($N = 10$) which implemented DIR/Floortime. Articles were considered if listed on the “webpage www.icdl.com/research (“Research & Evidence,” n.d.) and described as evidence supporting the effectiveness of DIR/Floortime” (Mercer, 2017, p. 630). The meta-analysis only included published articles, which impacted the amount of studies with negative results towards DIR/Floortime. The articles included a single-subject study, a chart review, a pre and post intervention design, and a study comparing children with pervasive developmental disorders and developmental delays; all of which reported success for DIR/Floortime methods. Additionally, six were listed at www.icdl.com/research, with five involving a control and treatment group and one involving social-developmental with no mention of DIR/Floortime (Mercer, 2017).

Procedure

The researcher conducted a meta-analysis on 10 studies and performed a search for “DIR,” “Floortime,” and “DIR/Floortime” on search engines such as Academic Search Complete, PsycINFO, and PubMed. Mercer (2017) then found the limitations of the studies which included self-selection bias, reported time utilizing DIR/Floortime, DIR/Floortime comparison to other services, and DIR/Floortime comparison to other treatments. The researcher stated, “the existing studies give weak support to the effect of Floortime on some skills of autistic children, although improved language functioning is not among these” (Mercer, 2017, p. 631). Additionally, Mercer (2017) studied the unfavorable events related to DIR/Floortime and asserted, “Because of Greenspan’s affect diathesis hypothesis, stating that experiences must be pleasant in order for developmental progress to be caused, there seems little chance of any direct harm to children” (p. 631). Conversely, DIR/Floortime could be harmful to parents or siblings due to the demanding schedule, commitment, rejection of other methods, and disregard of family interests (Mercer, 2017).

Instrumentation

Mercer (2017) acknowledged Greenspan’s recommendation of speech therapy for children with autism due to speech and language deficits being common indicators of Autism spectrum disorder (ASD). The researcher found one article showed speech therapy had a positive effect on social communication skills, however, Mercer (2017) cautioned “many of the studies had weak designs” in regard to speech therapy (p. 632). Additionally, the researcher analyzed sensory integration therapy (SIT) treatments, which is commonly utilized by occupational therapists. The treatment involved sensory integration, sensory abilities, and sensory diets; treatment included dimming or brightening lights, changes in volume, weighted

items, pressure techniques, and textured toys (Mercer, 2017). Mercer (2017) found the claim “exposure to sensory stimulation generally leads to adaptation to the stimulus and a lessening of sensitivity” was unlikely due to the fact SIT had been rejected and deemed ineffective for 30 years (p. 632).

Developmental optometry was investigated as it claimed to “alter use of visual information through guided practice and in conjunction with DIR” to promote engagement in participants (Mercer, 2017, p. 632). The treatment involved visual tracking, block rotation, and visual sequencing in the shape of games to improve visual and spatial capacities and emotional thinking (Mercer, 2017). The researcher found developmental optometry was not plausible because “If good vision and visual processing were necessary for emotional or cognitive development, we would find that children blind or visually impaired from birth were unable to develop along typical lines of emotional or cognitive achievement” (Mercer, 2017, p. 632). Thus, children predisposed to ASD may require various services to attain development and prevent autistic symptoms, but developmental optometry does not affect children who are visually impaired.

Results

Mercer (2017) found while DIR/Floortime appeared effective, it was not an evidence-based treatment, but an evidence-based practice. The 10 articles presented concluded DIR/Floortime effectively treated Autism spectrum disorder, however, only “five provided a comparison group, or used a randomized design, or did both” (Mercer, 2017, p. 625). The researcher found the research on the effectiveness of DIR/Floortime was weak due to parents’ control on the frequency and duration of the treatment, choice on parental engagement, and nonrandomized designs. Furthermore, Mercer (2017) found SIT and developmental optometry

less effective due to the potential harm to children “because of their physical nature” (p. 633). The researcher went on to state social workers should be made aware of these facts, but DIR/Floortime should also be considered, with caution, by social work practitioners due to the fact “some of the claims for this intervention are not well supported” (Mercer, 2017, p. 634).

Mercer (2017) suggested an evaluation of the assessment tools used in each study would be beneficial, however, the 10 studies included a variety of tools, thus making it beyond the scope of the meta-analysis. Additionally, the researcher proposed future studies monitor the frequency and duration of DIR/Floortime treatments in the intervention groups and ensure the comparison groups attain an equivalent amount of other treatment, such as speech or occupational therapy. While Mercer (2017) stated, “Advocates of DIR/Floortime might do well to delay the commercialization and advertising of the intervention until better evidence has been collected,” (p. 633) the researcher also stated DIR/Floortime was just as effective as other Developmental, Social, Pragmatic (DSP) treatments for Autism spectrum disorder.

Summary of Literature Review

The review of the literature highlighted parent engagement and the effects, theory, and research of DIR/Floortime for children diagnosed with Autism spectrum disorder. Given the findings, children and families utilizing DIR/Floortime observed significant improvement in two way purposeful communication, relationship building and attachment, child engagement, problem solving, and attention. While the literature presented correlated with the effectiveness of DIR/Floortime with children diagnosed with ASD, limitations were correspondingly presented. Researchers found parent engagement challenging due to parent control of frequency and duration of treatment, not knowing how to initiate play with their child, or outside factors such as work, family life, or other children being present. Furthermore, many studies stated their

research was not generalizable due to including participants interested in early intervention or specifically DIR/Floortime. Researchers suggested to avoid a selection bias, future researchers include more participants, randomized controlled trials, and participants' expectations and motivation in receiving treatment.

What are therapists' expectations, thoughts, and experience utilizing DIR/Floortime as an early intervention strategy? Can therapists identify the strengths and limitations of the intervention strategy applied on a daily basis? The following chapter describes the sample, methods, and instrumentation employed in the present study. The researcher developed an online survey for employees of the Child Development Institute to gain insight on therapists' perspectives.

CHAPTER THREE: METHODOLOGY

In light of the numerous intervention strategies used to support eligible children with developmental delays or disabilities and their families, if early intervention services were widely known, the ambiguity of choosing an intervention strategy for a child would be inconsequential. As a result of the aforementioned literature (Wieder & Greenspan, 2003; Pajareya et al., 2019; Praphatthanakunwong et al., 2018; Liao et al., 2014; Pajareya & Nopmaneejumruslers, 2011; Mercer, 2017), a survey was developed to investigate therapists' experiences and perceptions of DIR/Floortime as an early intervention strategy. This chapter illustrates the participants, procedure, and instrumentation used to evaluate DIR/Floortime as an early intervention strategy and the therapists' overall involvement with DIR/Floortime.

Participants

The participants in the study included 15 therapists ($N = 15$) age 20 to 49 years old (Figure 3.1) employed by the Child Development Institute (CDI) in Reseda, California. The majority of participants ($n = 11$, 73.33%) obtained a Master of Arts (MA) or Master of Science (MS) degree. The remaining participants earned a bachelor's degree ($n = 3$, 20%) or was in progress of earning a bachelor's degree ($n = 1$, 6.67%). Participants' employment statuses at CDI varied from interventionists ($n = 3$), occupational therapists (OT) ($n = 2$), speech therapists (ST) ($n = 3$), marriage and family therapist/trainee (MFT) ($n = 6$), and licensed clinical social worker (LCSW) ($n = 1$) (Figure 3.2). Additionally, years of experience working at CDI varied from less than 1 year ($n = 1$, 6.67%) to 16 or more years ($n = 2$, 13.33%) (Figure 3.3).

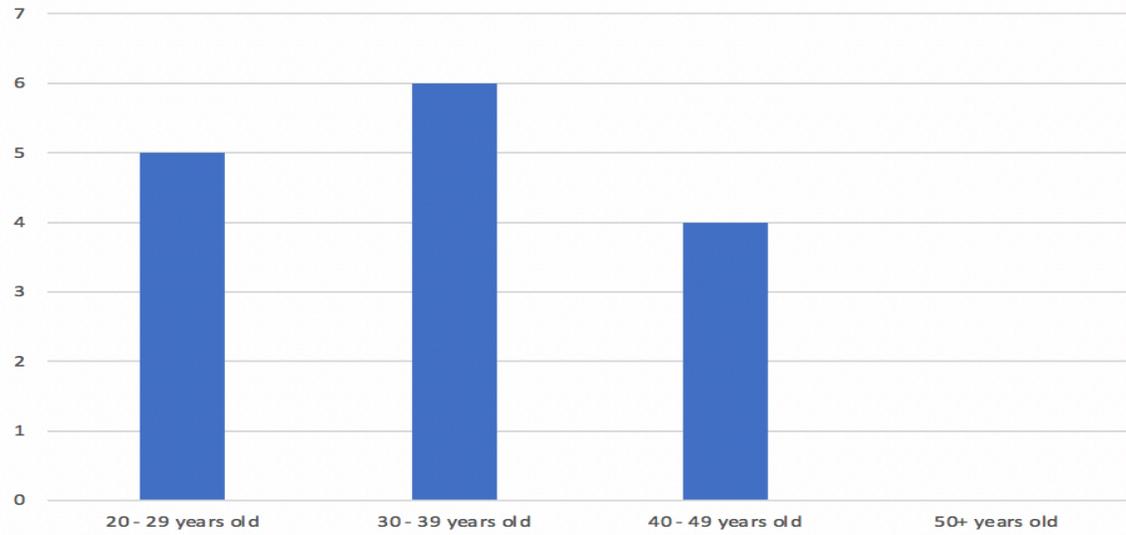


Figure 3.1

Age of Participants

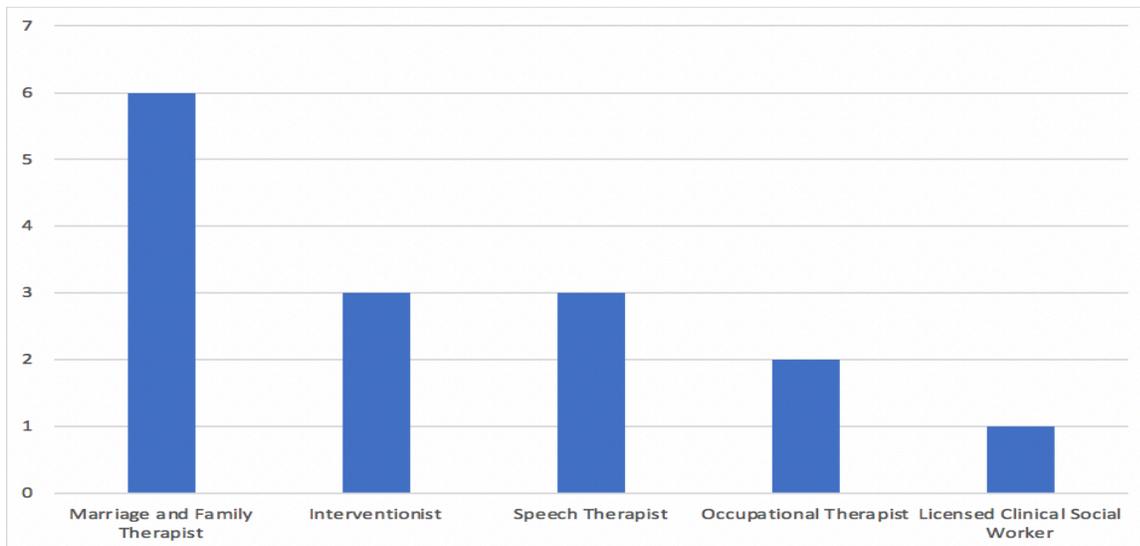


Figure 3.2

Occupation of Participants

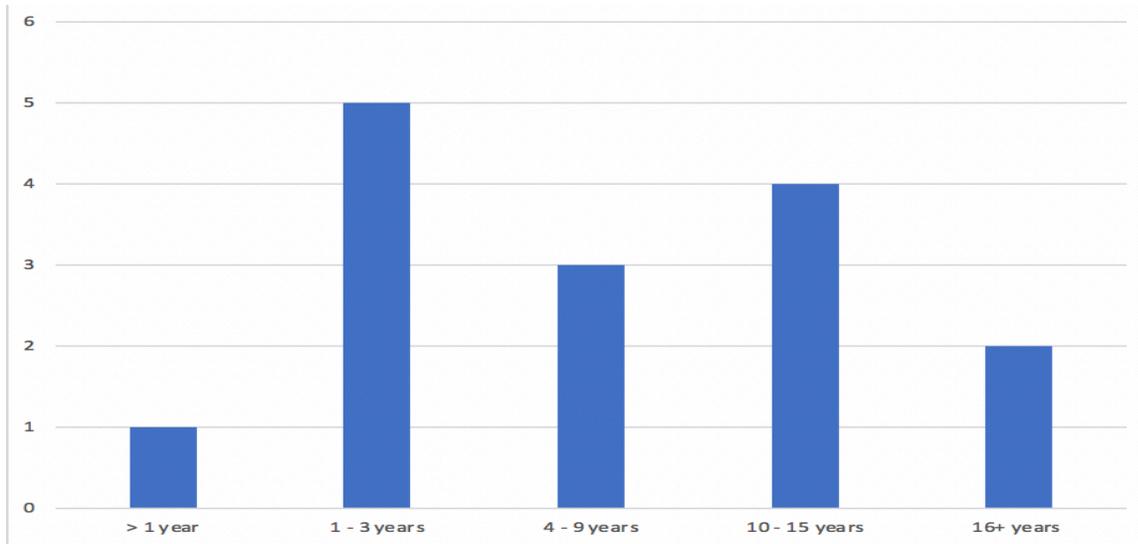


Figure 3.3
Years of Experience at the Child Development Institute

Procedure

A convenience sample of 15 therapists currently employed at the Child Development Institute were recruited to participate in the study. The researcher began by emailing the co-founder and executive director of the Child Development Institute to obtain authorization to conduct a survey amongst the staff. The use of human subjects for this study was approved by the California State University, Northridge Institutional Review Board (IRB) (Appendix A). Following the authorization, a formal introduction and explanation of the study was emailed to the director of clinical programs at the Child Development Institute (Appendix B). The director of clinical programs then sent the introduction and link to the survey to all applicable staff members. The survey consisted of 10 questions (Appendix C) and took approximately 2 minutes to complete.

Instrumentation

The 10 question survey titled “Exploring the Developmental, Individual-differences, Relationship-based (DIR)/Floortime Model” (Appendix C) was conducted through Qualtrics

with multiple choice answers and the option to write in responses. Participants were asked to answer the questions they identified with (questions 1-4), select all that applied (questions 5-8), and rate DIR/Floortime (questions 9-10). Questions 1 through 4 included nonidentifying demographic questions, which consisted of participant age, primary role, highest level of education, and years of experience at CDI. Questions 5 through 8 identified what participants considered the key features and limitations of DIR/Floortime, how participants learned the techniques associated with DIR/Floortime, and how a child's progress is measured through DIR/Floortime. Questions 9 and 10 were based on a Likert scale asked participants to rate their overall experience of utilizing DIR/Floortime (very satisfied, satisfied, neutral, dissatisfied, very dissatisfied) and how likely they are to recommend DIR/Floortime as an intervention strategy (very likely, likely, neutral, unlikely, very unlikely).

Data Management

Prior to data collection, security measures were put into place through Qualtrics to prevent open access, ballot box stuffing, indexing, and to secure participants' files. Before gaining access to the survey questions, the participants were presented with an informed consent form indicating, but not limited to, the purpose of the study, time commitment, confidentiality, and data storage. No identifying information was asked from participants throughout the survey to preserve anonymity. Once data was collected, the survey was locked and analyzed by the researcher. The following chapter illustrates the results of the survey.

CHAPTER FOUR: RESULTS

The study consisted of 15 employees of the Child Development Institute in Reseda, California. An online survey was created due to COVID-19 and limitations on social distancing. Using the online survey (Appendix C), participants provided data about their individual experiences with DIR/Floortime, how it is utilized in a therapy setting, and how a child's progress is measured. The themes discovered as a result of the survey are analyzed in the upcoming sections of this chapter.

The first section of this chapter explores what the participants thought were the key features of DIR/Floortime. The second section reports the believed limitations of DIR/Floortime. The third section reveals how participants learned the techniques of DIR/Floortime. The fourth section identifies how a child's progress is measured. The fifth section discovers the participants' overall experience utilizing DIR/Floortime. The sixth section reviews the participants' likeliness to recommend DIR/Floortime as an intervention strategy. All participant responses are reported and presented below.

Key Features of DIR/Floortime

To the question, "What are the key features of DIR/Floortime?" participants were instructed to check all that applied of the 12 options and were given a space to write in any other key features. Participants responded with a total of 13 key features. The results of the responses are presented below (Figure 4.1). All participants reported play-based (n= 15, 100%) a key feature in the intervention strategy, while child-centered, family centered, relationship building, and social emotional development were also reported frequently (n= 14, 93.3%), and collaboration with the intervention team (n= 10, 66.7%) followed. The next most selected features were accessibility (n= 5, 33.3%), sensory integration (n= 5, 33.3%), and assessment (n=

4, 26.7%). One participant (n= 1, 6.7%) included “strength based” as an additional key feature of the intervention strategy.

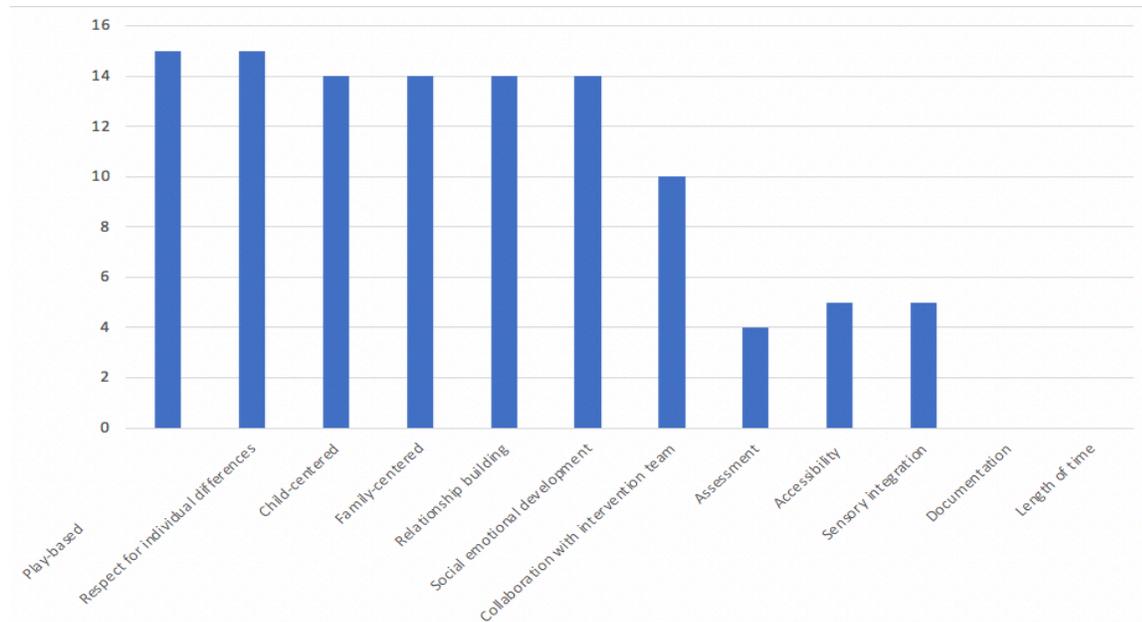


Figure 4.1 Key Features of DIR/Floortime

Limitations of DIR/Floortime

When asked, “What do you see as the limitations of DIR/Floortime?” participants were asked to check all that applied of the 9 options and was given a space to write in any other limitations. Participants responded with a total of 11 limitations. The results of the responses are displayed below (Figure 4.2). A majority of participants indicated DIR/Floortime was not covered by all insurances (n= 12, 80%), not implemented at schools (n= 8, 53.3%), and did not have enough parent engagement (n= 6, 40%). Other limitations included not targeted enough to specific behaviors (n= 3, 20%), not enough structure (n= 3, 20%), not enough materials available (n= 2, 13.3%), difficulty seeing progress (n= 2, 13.3%), and too much parent engagement required (n= 2, 13.3%). One participant noted, “Parent engagement can be a challenge, but if the parents understand it can be incredibly empowering to learn how to implement [DIR/Floortime]

in all daily routines.” Additionally, one participant selected too much of a commitment required (n= 1, 6.7%), while another noted, “[It is] difficult explaining the value of social emotional development to parents and have them understand; it can seem less concrete than speech [therapy] for an example.”

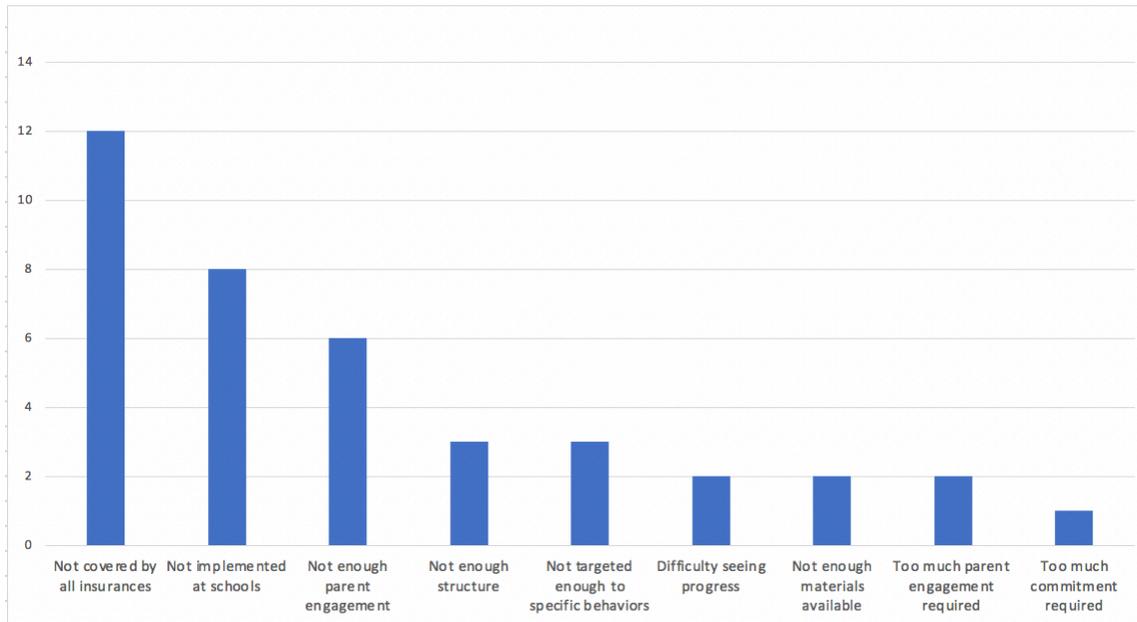


Figure 4.2 Limitations of DIR/Floortime

Learned Techniques of DIR/Floortime

The next question on the survey asked, “How did you learn the techniques associated with DIR/Floortime?” Participants were directed to check all that applied of the 8 options and was given a space to write in any other learned techniques. Participants responded with a total of 9 learned techniques. The results of the responses are presented below (Figure 4.3). All participants selected work-based trainings (n= 15, 100%) for learning the techniques associated with DIR/Floortime, while observations (n= 12, 80%), books and materials from the Institute (n= 11, 73.3%), professional education (n= 10, 66.7%), and videos (n= 10, 66.7%) followed. The next most selected learned techniques included internet searches (n= 6, 40%) and word of mouth (n= 4, 26.7%). The outlier established was the Center for Disease Control and Prevention (n= 1,

6.7%). Furthermore, one participant (n= 1, 6.7%) included “hands on experience with clients” as an additional resource for learning the techniques of DIR/Floortime.

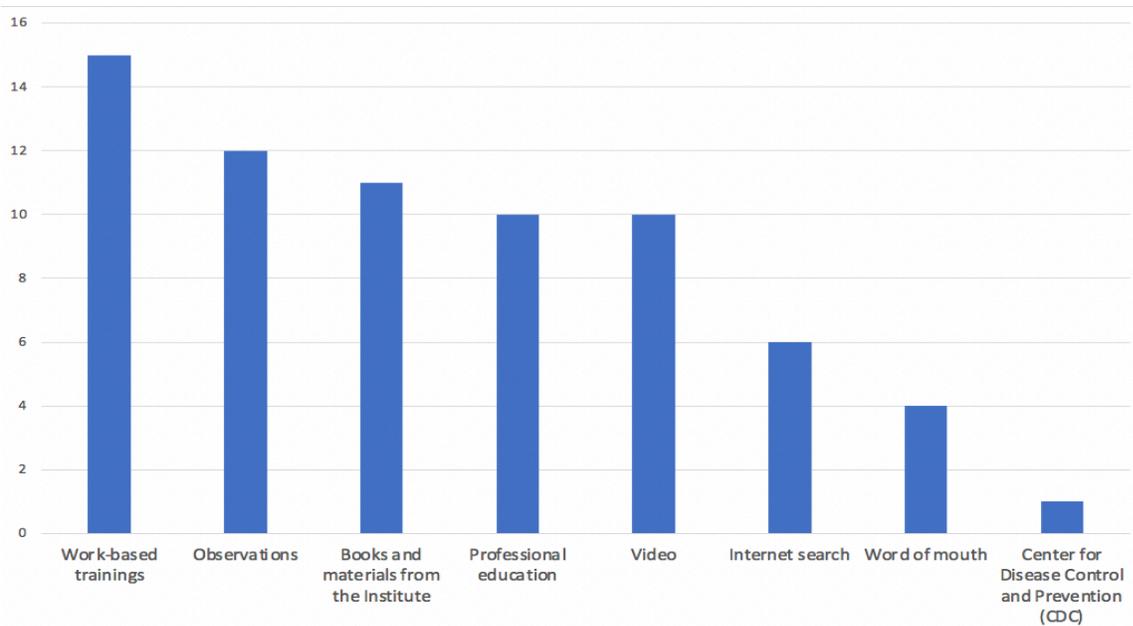


Figure 4.3 Learned techniques of DIR/Floortime

Measuring a Child’s Progress

To the question, “How do you measure a child’s progress through DIR/Floortime?” 8 options were offered along with the option to write in any other methods used to measure a child’s progress. Participants responded with a total of 8 ways to measure a child’s progress. The results of the responses are presented below (Figure 4.4). All participants reported observations (n= 15, 100%) and progress goals (n= 15, 100%) as methods of measuring progress. The next most selected measures included child performance (n= 14, 93.3%), assessments (n= 11, 73.3%), and checklists (n= 7, 46.7%). Following those methods were progress charts/tables (n= 3, 20%) and questionnaires (n= 3, 20%). The outlier discovered was utilizing rating scales (n= 1, 6.7%) as a form of measurement.

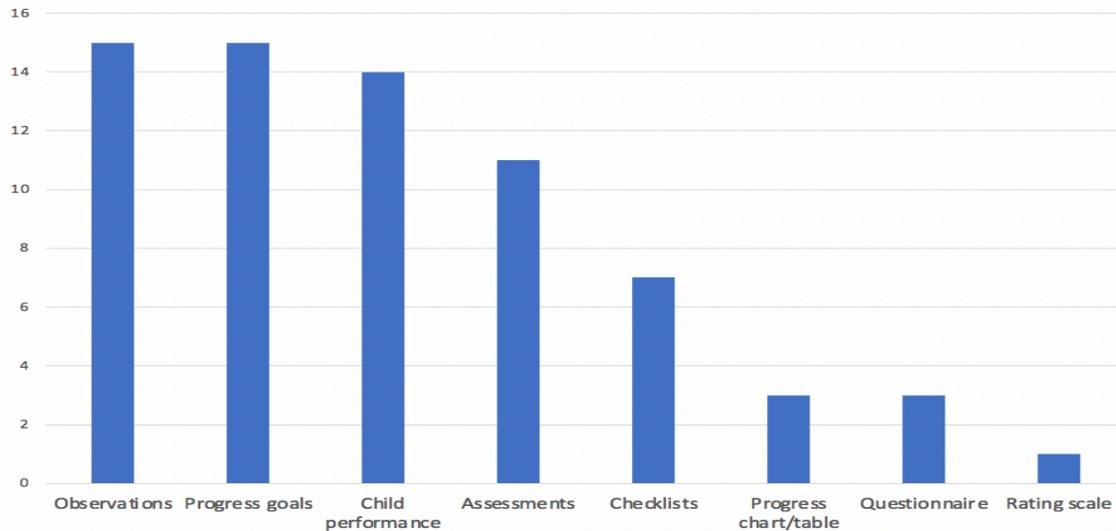


Figure 4.4 Measuring a Child's Progress

Overall experience utilizing DIR/Floortime

Next, participants were asked, “How would you rate your overall experience of utilizing DIR/Floortime?” Participants were given options based on a Likert scale of very satisfied, satisfied, neutral, dissatisfied, and very dissatisfied. An additional space was given to write a brief explanation of their rating. Participants responded with a total of 5 aspects for overall experience. The results of the responses are presented below (Figure 4.5). Most participants (n= 9, 60%) selected they were very satisfied with their overall experience while utilizing DIR/Floortime as an intervention strategy. The other participants (n= 6, 40%) indicated they were satisfied with their overall experience. One participant stated, “I can see the changes and why it should be a preferred form of therapy.” Another participant wrote, “I like that DIR is play-based and that we meet the child where they are at [developmentally].” Furthermore, an additional participant expressed, “When a family ‘gets it’ and they are putting in the work, it is great. But when a family is resistant or not fully understanding, DIR is a struggle.”

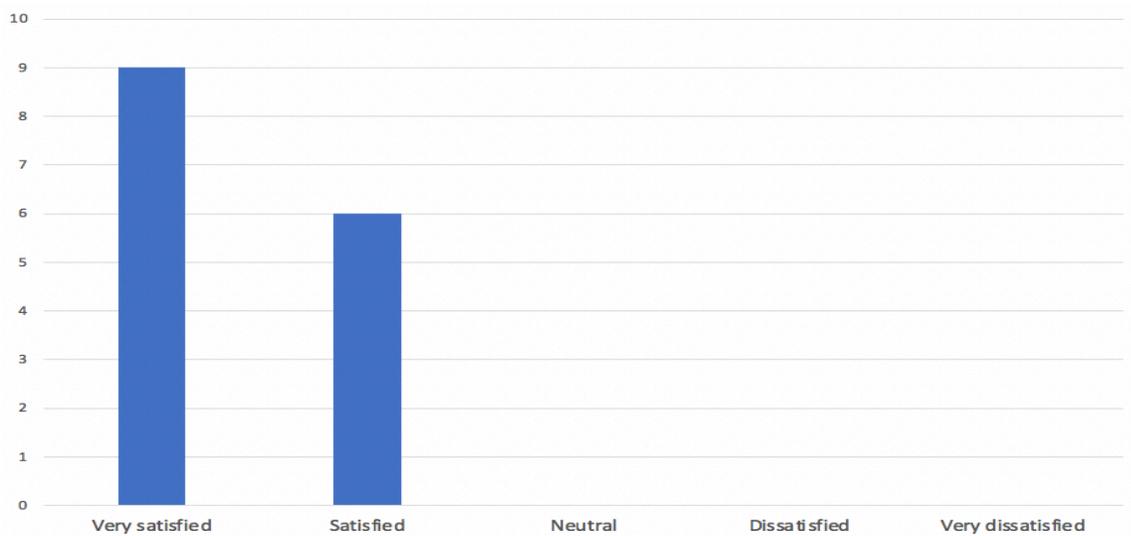


Figure 4.5 Overall Experience Utilizing DIR/Floortime

Likelihood to Recommend DIR/Floortime as an Intervention Strategy

To the question, “How likely are you to recommend DIR/Floortime as an intervention strategy?” participants were given options based on a Likert scale of very likely, likely, neutral, unlikely, and very unlikely. An additional space was given to write a brief explanation of their rating. Participants responded with a total of 4 reasons for likelihood to recommend. The results of the responses are presented below (Figure 4.6). Most participants (n= 12, 80%) indicated they were very likely to recommend DIR/Floortime as an intervention strategy. The remaining participants (n= 3, 20%) indicated they were likely to recommend the intervention strategy. One participant wrote, “I think DIR is a great strategy for strengthening relationships within families and creating more meaningful interactions.” Another participant expressed, “I wanted to say very likely, but I know that maybe some families are not the right fit and I would make the recommendation off of supporting what is going to be the most successful for everyone in the family.”

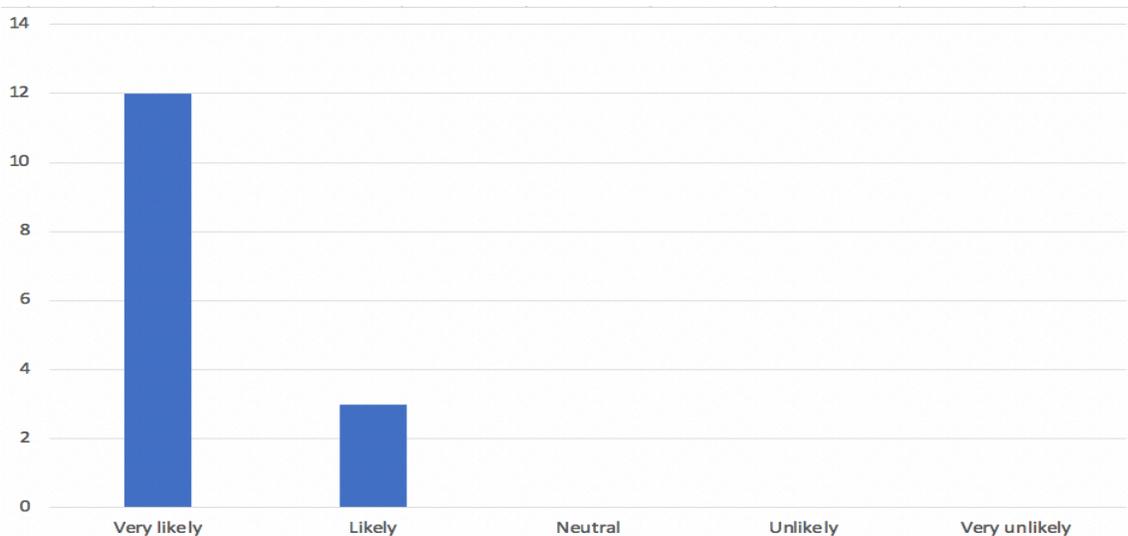


Figure 4.6 Likelihood to Recommend DIR/Floortime as an Intervention Strategy

Summary of Results

An analysis of participants' responses to the Exploring the Developmental, Individual-differences, Relationship-based (DIR)/Floortime Model survey (Appendix C) yielded results that revealed therapists' personal experiences and perspectives of the DIR/Floortime model. The survey highlighted general demographic questions and participants' individual experiences with Floortime. The results indicated most participants are between the ages of 30 and 39, acquired a MA/MS degree, and have been employed by the Child Development Institute for 1 to 3 years. When asked about the key features of Floortime, participants reported it was play-based, child-centered, family centered, relationship building, and assisted with social emotional development. Similarly, when asked about the limitations of Floortime, many participants reported it was not covered by all insurances, not implemented at schools, and did not have enough parent engagement. All participants stated they learned the techniques of Floortime through work-based trainings and measured a child's progress through observations and progress goals. Overall, therapists rated they were very satisfied with their experiences utilizing DIR/Floortime and are very likely to recommend Floortime as an early intervention strategy.

Chapter Five will illuminate the significance of the results from the Exploring the Developmental, Individual-differences, Relationship-based (DIR)/Floortime Model survey (Appendix C). In addition, potential implications and applications of the findings will be examined. Moreover, the limitations and suggestions for future research will be explored.

CHAPTER FIVE: DISCUSSION AND CONCLUSION

This study was designed to identify DIR/Floortime, therapists' perceptions on utilizing this intervention strategy, and how a child's progress is measured through DIR/Floortime. Fifteen employees of the Child Development Institute were asked to complete the Exploring the Developmental, Individual-differences, Relationship-based (DIR)/Floortime Model survey (Appendix C). Findings revealed key features, limitations, and perceptions of DIR/Floortime. This chapter will begin by examining the results of the current study compared to those of the literature review. Next, potential implications and applications of the findings will be presented. Finally, the limitations and suggestions for future research will be discussed.

Discussion

Key Features of DIR/Floortime

The findings in the current study revealed the most important key features of DIR/Floortime are play-based, child-centered, family centered, relationship building, and social emotional development. These results corresponds with the DIR/Floortime philosophy, which values emotional and relationship-based connections through play to promote behavioral, cognitive, and social skills. One participant noted, “[It is] difficult explaining the value of social emotional development to parents and have them understand; it can seem less concrete than speech [therapy] for an example.” Another participant shared, “I think DIR is a great strategy for strengthening relationships within families and creating more meaningful interactions.” Overall, the research suggests DIR/Floortime strengthens social emotional development, therefore promoting an enhancement in communication, engagement, relationships, and much more.

While social emotional development is beneficial for creating and strengthening relationships through play, one key feature was not mentioned, documentation. No participant

selected documentation as a key feature; however, documentation is used after every session whether it be an LAUSD client or Regional Center client. This begs the question: Why was documentation not selected by any participant? Participants may not see documentation as a key feature, but without it, how can therapists measure a child's progress. Therapist would not know how much the child has progressed through the Floortime sessions unless documentation was ongoing, accurate, and assessed regularly.

Limitations of DIR/Floortime

The present study investigated the limitations of DIR/Floortime and found it was not covered by all insurances, not implemented at schools, and did not have enough parent engagement. According to The Individuals with Disabilities Education Act (IDEA), children with disabilities are entitled to free public education, early intervention, and special education (U.S. Department of Education, n.d.). If children are entitled to these services, why are insurances not paying to support the child in and out of school? If insurance will not cover the costs of intervention, should the government then cover the cost? Because each child requires various levels of support; without the funding for the appropriate support, this might limit the quality of the support received.

In addition to support for the child, families correspondingly need support in home. In the present study, participants selected "not enough parent engagement" as a limitation of DIR/Floortime. One participant stated, "Parent engagement can be a challenge, but if the parents understand it can be incredibly empowering to learn how to implement [DIR/Floortime] in all daily routines." When discussing overall experience, another participant expressed, "When a family 'gets it' and they are putting in the work, it is great. But when a family is resistant or not fully understanding, DIR is a struggle." Parent engagement is crucial for DIR/Floortime, but can

be difficult to obtain due to parent accessibility, control of frequency and duration of treatment, not knowing how to initiate play with their child, or outside factors such as work, family life, or other children being present. An in-home support system for families during Floortime sessions could be critical for gaining engagement. For example, therapists can involve other family members, such as aunts and uncles, older siblings, or grandparents in the Floortime sessions so parents can maintain engagement without worrying about their other children being present. Additionally, Floortime can be done conducted anywhere, so if a family is having difficulties committing to a specific time frame, therapists can have the session in clinic, in home, or in the community.

Learned Techniques of DIR/Floortime

The findings in the present study discovered participants primarily learned the techniques of DIR/Floortime through work-based trainings, observations, and books and materials from the Institute. One participant included “hands on experience with clients” as an additional resource for learning the techniques of DIR/Floortime. Observations can be a valuable tool as it allows unexperienced therapists to learn various techniques and how to manage unprecedented situations. Every new therapist must complete a series of observations of a seasoned therapist before receiving a client; however, not every participant selected “observations” as a learned technique of DIR/Floortime. This begs the question: If hands on experience was listed as an option, would participants favor hands on experience over observations? Observations consist of watching another therapist perform Floortime; however, hands on experience could include performing Floortime alongside the season therapist or performing Floortime in a group setting. Some participants may have unknowingly associated observations with hands on experience, thereby, overlooking observation as an option. Another survey, which incorporates all

participants responses, or perhaps restating the question, could be conducted to compare and view a variation in the results.

Measuring a Child's Progress

The current study explored how a child's progress is measured and found participants reported observations, progress goals, child performance, and assessments as methods of measuring progress. Observations of the child's performance can be tracked and monitored through setting progress goals and assessments. All participants reported observations as a method of measuring a child's progress; however, not all participants selected observations as a learned technique of DIR/Floortime. Similarly, participants selected assessment as a method to measure a child's progress, but did not select assessment as a key feature of DIR/Floortime. These results reveal a controversial representation of both observation and assessment. This begs the question: Why is there a difference in results when each are proven a crucial component of DIR/Floortime? Participants may have diverse views on what they consider an observation or assessment. Definitions of key terms could be given to participants beforehand to ensure a baseline knowledge of each selection.

Overall experience and Likelihood to Recommend DIR/Floortime

The findings in the current study suggested participants were very satisfied with their overall experience and very likely to recommend DIR/Floortime as an intervention strategy. One participant stated, "I can see the changes and why it should be a preferred form of therapy." Another participant wrote, "I like that DIR is play-based and that we meet the child where they are at [developmentally]." While participants responses could be seen as biased due to only using DIR/Floortime at CDI, conversely another participant expressed, "I wanted to say very likely, but I know that maybe some families are not the right fit and I would make the

recommendation off of supporting what is going to be the most successful for everyone in the family.” Thereby suggesting, while participants are satisfied with utilizing DIR/Floortime themselves, they know it is not the right fit for every family. Families should conduct their own research prior to starting an intervention service to make sure it will align with family values, time, and needs.

Implication and Application

Fifteen participants were asked to complete the Exploring the Developmental, Individual-differences, Relationship-based (DIR)/Floortime Model survey (Appendix C). Of the participants, four selected “assessment” as a key feature; however, when asked about measuring a child’s progress, eleven participants selected “assessment” as a measurement tool. These responses expose a controversial representation of whether or not assessment is critical for DIR/Floortime. How can 11 participants select “assessment” as measurement tool, but only 4 participants select “assessment” as a key feature? This begs the question: how is assessment incorporated into the trainings participants received? Does every therapist have the same definition of “assessment?” These findings indicated while assessment may not be utilized frequently with the intervention strategy, it is applied when measuring a child’s progress. What other responses made participant responses come to question?

While participants had conflicting views on assessment, one limitation was preferred among participants; DIR/Floortime is “not covered by all insurances.” Why are some insurances favored above others when a child is in need of assistance? According to The Individuals with Disabilities Education Act (IDEA), children with disabilities are entitled to free public education, early intervention, and special education (U.S. Department of Education, n.d.). Early intervention includes DIR/Floortime and other intervention services based on the individual

child's needs. Parents should not have to compensate when children with disabilities are entitled to early intervention, which is proven to significantly impact a child's development. What types of early intervention are available?

The present study primarily focused on DIR/Floortime; however, other intervention strategies include applied behavioral analysis (ABA), speech therapy, occupational therapy, sensory integration therapy, physical therapy, and other services based on the individual child's needs. DIR/Floortime is the first relationship-based model of intervention that meets the child at their developmental level, can be conducted anywhere free play is possible, and encourages engagement and relationships. Each intervention strategy reveals significant improvement in a child's development. However, one intervention strategy may not be a match for an individual or family, despite the efforts of the various therapists who work collectively to develop an individualized treatment plan for optimal outcomes.

While contrasting in intervention style, DIR/Floortime is often compared to ABA therapy as an early intervention strategy. DIR/Floortime therapists engage with children through emotional and relationship-based connections to promote behavioral, cognitive, and social skills rather than teaching appropriate behaviors and receiving rewards to reinforce the behaviors (Verywell Health, n.d.). While both can be effective, counseling to families which intervention strategy would best accommodate their child and family seems worthwhile. It also presupposes that there are options in each child's community that are conveniently located.

Limitations and Future Research

Despite its contribution to literature, the present study had several limitations. Due to COVID-19 and limitations on social distancing, an online survey (Appendix C) was created via Qualtrics. This alone presented considerable limitations.

The survey was only distributed to employees of the Child Development Institute, thus creating a convenience sample. A selection bias can be formed in research when including a convenience sample due to the limited amount of available participants. The participants all received the same training at the Child Development Institute, which included, but is not limited to, the background of DIR/Floortime, the milestones, reflective practice, and roles and relationships. As a result, the participants had similar answers on many of the survey questions.

Additionally, to maintain participants' privacy and anonymity, limited demographic data was collected. Knowing the sex, ethnicity, and socio-economic status of participants could help shed light on similarities and differences between participants. Although the participants varied in age, experience, and education level, the sample does not represent the population at large. A sample with greater diversity in terms of demographic data, employment location, training, and experience would create more generalizable findings.

Furthermore, due to limitations on social distancing, the online survey was created in lieu of participants being interviewed. As a result of the survey, the researcher was unable to have in depth conversations with participants and expand on questions. Although there were sections on the survey for participants to expand on, many did not take advantage of giving their input or explanations. Future research may consider administering the Exploring the Developmental, Individual-differences, Relationship-based (DIR)/Floortime Model survey (Appendix C) in person to discuss the answers after completion or via video chat to have the opportunity to expand on participants' answers.

Most importantly, the present study concentrated on therapists' experiences and perceptions of DIR/Floortime as an early intervention strategy, not families. Future research may consider surveying children and families who have experienced DIR/Floortime in their

home, school, or community. By gaining a family's insight on the key features, limitations, and experience with DIR/Floortime, researchers evoke a diverse perspective on the effectiveness of DIR/Floortime as an intervention strategy. This research and knowledge could benefit employers in training employees or families in choosing an intervention service.

Besides a survey available to children and families, future researchers may also consider an in-depth exploration of early intervention services. A longitudinal, qualitative study of two or three cohorts receiving various services such as DIR/Floortime, ABA, speech therapy, occupational therapy, or physical therapy should be conducted to gain a better understanding of the strengths and weaknesses of each service. The present study primarily focused on DIR/Floortime as an early intervention strategy. While it was said DIR/Floortime "has the strongest research of any intervention to support its effectiveness in improving the core challenges of Autism including relating, interacting, and communicating while decreasing caregiver stress and improving parent-child relationships" (The Interdisciplinary Council on Development and Learning, n.d.), a comparison of various intervention services would be beneficial for families to visualize what would best support their child and family's needs. For example, while one intervention strategy may be best for a child with low functioning Autism, another might be best for a gifted child, families with limited English proficiency, or families with limited time and space. Future research may benefit from comparing and contrasting several early intervention services to bring to light the countless benefits of each service and to ease the stress of parents who may have no prior knowledge of early intervention.

Overall, there has been a large increase in children with Autism Spectrum Disorder (ASD). Approximately one in 160 children has ASD, which begins in childhood and often continues into adolescence and adulthood (World Health Organization, 2019). Without the prior

knowledge of early intervention services and the process to get children screened for disabilities or delays, parents may not be fully aware of the services they are eligible to receive. An epidemiological study conducted over the last 50 years found “the prevalence of ASD appears to be increasing globally. There are many possible explanations for this apparent increase, including improved awareness, expansion of diagnostic criteria, better diagnostic tools and improved reporting” (World Health Organization, 2019). The CDC found the earlier a child receives intervention, the more likely it is to be effective; however, parents new to early intervention may find it difficult to find a service to best suit their child’s developmental needs.

Along with intervention information for parents, society must also be aware of ASD and how to support those with ASD within the community. According to the World Health Organization (2019), “People with ASD are often subject to stigma and discrimination, including unjust deprivation of health care, education and opportunities to engage and participate in their communities.” The access to intervention services and assistance within the community is inadequate, globally. The World Health Organization (2019), suggests “Interventions for people with ASD need to be accompanied by broader actions for making physical, social and attitudinal environments more accessible, inclusive and supportive.” If everyone had a basic understanding of ASD and how to support those in their community, those with ASD could reduce their difficulties in communication and social skills, improve quality of life, and live independently within their community. This is the catalyst that should spark the revolution to rebuild the intervention system; however, for society to acquire a basic understanding of ASD and intervention, legislation must be involved. Public service announcements across all media platforms (television, podcasts, social media, etc.) should be facilitated to address a wider variety

of intervention strategies, destigmatize those with special needs, and increase knowledge of ASD.

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APPENDIX B: INTRODUCTION

Dear Child Development Institute Staff,

My name is Madison Butler and I am a Graduate Student at California State University, Northridge in the Educational Psychology Program. Currently, I am working on a thesis entitled, *Exploring the Developmental, Individual-differences, Relationship-based (DIR)/Floortime Model*. To complete my research, I need to collect data using a brief survey among interventionist and therapists who utilize DIR/Floortime with children from infancy to school age. This survey should take about 5 minutes to complete and all data will be anonymously published.

If you choose to participate, you will complete the multiple choice survey online via Qualtrics. The short 10 question survey will help me enormously with my understanding of DIR/Floortime. If you would like to receive an executive summary of my research, please feel free to contact me after August 1.

Should you have any further questions, comments, or concerns, please contact me at madison.butler.777@my.csun.edu. I look forward to hearing from you and I truly appreciate your willingness to help me conduct my research.

Best,

Madison Butler

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APPENDIX C: SURVEY

Exploring the Developmental, Individual-differences, Relationship-based (DIR)/Floortime Model

1. What is your age?
 - 20- 29
 - 30-39
 - 40-49
 - 50 >

2. What is your primary role?
 - Interventionist
 - Occupational therapist
 - Physical therapist
 - Speech therapist

Other, please specify: _____

3. What is your highest level of education?
 - BA
 - MA/MS
 - EdD
 - PhD

Other, please specify: _____

4. How long have you worked at the Child Development Institute?
 - <1 year
 - 1-3 years
 - 4- 9 years
 - 10-15 years
 - < 16 years

5. What are the key features of DIR/Floortime? Check all that apply.
 - Accessibility
 - Assessment
 - Child-centered
 - Collaboration with intervention team
 - Documentation
 - Family-centered
 - Length of time
 - Play-based
 - Relationship building
 - Respect for individual differences
 - Sensory integration

Social emotional development

Other, please specify: _____

6. What do you see as the limitations of DIR/Floortime? Check all that apply.

- Difficulty seeing progress
- Not covered by all insurances
- Not enough materials available
- Not enough parent engagement
- Not enough structure
- Not implemented at schools
- Not targeted enough to specific behaviors
- Too much commitment required
- Too much parent engagement required

Other, please specify: _____

7. How did you learn the techniques associated with DIR/Floortime? Check all that apply.

- Books and materials from the Institute
- Center for Disease Control and Prevention (CDC)
- Internet search
- Observations
- Professional education
- Video
- Word of mouth
- Work-based trainings

Other, please specify: _____

8. How do you measure a child's progress through DIR/Floortime? Check all that apply.

- Assessments
- Checklists
- Child performance
- Observations
- Progress chart/table
- Progress goals
- Questionnaire
- Rating scale

Other, please specify: _____

9. How would you rate your overall experience of utilizing DIR/Floortime?

- Very satisfied
- Satisfied
- Neutral
- Dissatisfied

Very dissatisfied

Why? _____

10. How likely are you to recommend DIR/Floortime as an intervention strategy?

Very likely

Likely

Neutral

Unlikely

Very unlikely

Why? _____