

DIR Floortime (D-Development, I-Individual, R – Relationship-Based) - Non-Directive Method Helping To Improve Communication And Develop The Emotional Intelligence.

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ABSTRACT: In the presented article the authors discuss theoretical basis and provide a brief summary of the DIR® Floortime methodology for working with patients who suffer from communicative disorders (autism spectrum disorders, autism, delayed speech or general development). The authors share their own personal experience with the use of this method.

This evidence-based method has been successfully practiced in more than 60 countries around the world. It is based on the child's functional-emotional development (D), individual differences (I) and the child's relationship (R) with the surrounding environment.

The Floortime technique involves assessment and interaction with the child at his/her level on the floor - through play. The purpose of the methodology is formation of emotionally significant interaction in play, study and life. It is managed in phases and is meant to contribute to establishment of close relationships with peers and adults, promotes meaningful communication and achievement of high abstract thinking and empathy on advanced levels.

Research results in the United States present significant improvement in the functional and emotional development of children. The method has shown a 100% parent satisfaction rate. The financial costs of applying this method are significantly lower than those of other programs used for working with children with ASD.

This article can be relevant for both medical specialists and caregivers of children with impaired communication development.

KEY WORDS: floortime DIR, autistic spectrum disorders, communication disorders, emotional development, developmental delay.

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I. INTRODUCTION.

Over the past decades, the individual approach has come to the forefront in both healthcare and social work. More and more new methods appear nowadays that take into account the individual characteristics of the child and caregiver. It seems that there is a need for an individual family therapist who works comprehensively and holistically, and takes into account the many aspects of life of a particular family raising a child with a serious illness or developmental disability. Given the rapid development pace of rehabilitation approaches, computer devices and technologies, a question arises - what is most essential and necessary for a person with special needs to become a fully competent member of society? What exactly makes us successful in general? The ability to move, to use one's hands to create something or at least perform basic self-care, the ability to think? Unfortunately, each individual ability may turn out to be useless and not lead to independence and satisfaction with the quality of life if a person cannot use it in combination with the other abilities. The ability to communicate is the key to everything. The ability to communicate freely gives a person the option of giving their answers to people nearby - the answer gives the adults a signal that they are on the right track, that their support is really needed, and that the child accepts it. This is the ability to show the world one's thoughts, feelings and desires. In general, it is the communication that allows one to create a motivating environment for relationships, helping to overcome the barriers created by developmental peculiarities or an illness.

This means that communication is key to any developing processes. This is true for the society as a whole as well as for any group of people - from an ordinary family to organizations with a complex structure. A

group of people cannot exist and develop without communication. What exactly is necessary for the development of communication and why nowadays there are more and more people with autism spectrum disorders and/or communicative development disorders? How can we help to develop and strengthen the ability to communicate? Would it be like with our muscles, through training, or using some kind of device - like glasses for poor eyesight?

Different data from the world and Europe indicate that autism affects 0.7-0.8% of the population. Officially, at the end of 2017 in Latvia there were 530 patients diagnosed with autism, but, taking into account statistics, the actual number of patients under 18 could be up to 2 000. By adding patients who have reached adulthood, we would have up to 14 000 patients with autistic spectrum disorders (ASD). [2]. According to the definition of The National Autistic Society, autism is "a lifelong disability which affects how people communicate and interact with the world." (2017). However, despite the problems of the autistic spectrum, the patients learn to integrate into society by overcoming their own peculiarities or partially compensating for them, share their experiences with other patients on social networks, helping other people and their families to overcome similar difficulties.

Autism.

According to DSM-5 (Diagnostic and Statistical Manual of Mental Disorders), autism (ASD) is defined with the following criteria

A. Persistent deficits in social communication and social interaction across multiple contexts:

- from inadequate social skills and inability to maintain a dialogue, reduced ability to share interests, emotions or affect, to unsuccessful attempts to initiate communication or respond to communication: 1) in non-verbal communication (including visual); 2) in the establishment, maintenance and understanding of human relationships.

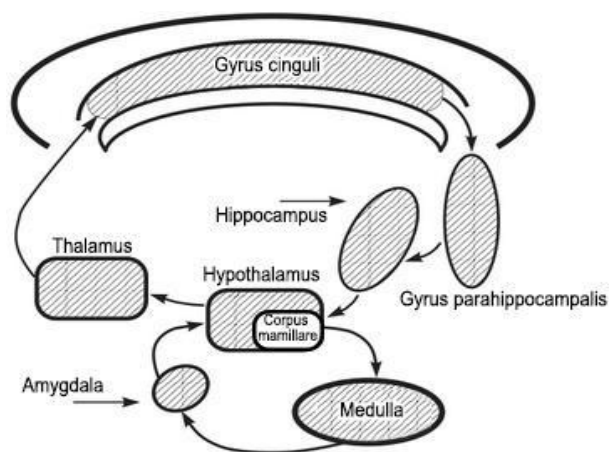
B. Restricted, repetitive patterns of behavior, interests, or activities

- stereotypic and / or repetitive movements, use of objects or speech; the tendency to insist on rituals, rigid or ritualistic behavior and an exaggerated reaction to ritual violations; limited, to an extent fixated interests; hyper-hypo reactivity in response to sensory stimuli or unusual interest in such.

Brain and autism.

The neurophysiological basis of autism is associated with changes in the system of neurotransmitters and structural features of the brain in areas responsible for the organization of emotions, motivated behavior and social communication.

These are mainly neurobiological disorders in various structures of the limbic system, basal ganglia, frontal part of the cerebral cortex, cerebellum. With reduced cognitive function, there usually are some developmental disorders found in corpus callosum. [3]. The limbic system consists of phylogenetically older parts of the forebrain. The name (limbus - edge) reflects the peculiarity of its location in the form of a ring between new cortex and the final part of the brain stem. The limbic system includes a number of functionally combined structures of the hindbrain, midbrain and forebrain. These are the cingulate, parahippocampal and dentate gyri, hippocampus, olfactory bulb, olfactory tract and adjacent sections of the cortex. In addition, the amygdala, anterior and septal thalamic nuclei, hypothalamus and mammillary bodies are also referred to the limbic system. (pict. 1). [4.]



The limbic system is involved in various responses of an individual, where one needs to use emotions or unconscious components of sensory and motor activity. The basis of the limbic system is formed by the limbic cortex and subcortical associative nuclei, with the hypothalamus in the center - the communication paths connect it to different parts of the cortex and subcortical nuclei.

Both afferent and efferent connections are formed between neurons of the limbic system. This aids with modulation of certain autonomic and somatic reactions through a short circulatory arc (individual nuclei of the limbic system), and modulates a long signal path through the long arc (connects 5-10 nuclei) as a reaction to stimulus. [1]. Neurons of the basolateral nuclei of amygdala receive sensory signals from the thalamus and afferent signals about

the semantic (conscious) content of signals from prefrontal cortex of the frontal lobe, temporal lobe of the brain and the cingulate gyrus.

Therefore, the main functions of the limbic system are as follows [4]:

- Emotionally-motivational behavior (with fear, aggression, hunger, thirst), which may be accompanied by emotionally colored motor reactions;
- Participation in the organization of complex forms of behavior, such as instincts (food, sexual, defensive);
- Participation in the formation of memory and in the dynamics of learning (the development of individual behavioral experiences, conditioned reflexes in the hippocampus - during the learning process, the rhythmic activity of high-amplitude signals is generated, increasing the number of active synapses along both the small and the large neurocirculatory pathways).

In the hippocampus, new synapses are constantly being formed, capable of changing shape, disappearing and appearing again within a few minutes. While developing conditioned reflexes, the hippocampus takes part in orientational reflexes:

- Reaction of alertness, attention - which ensures that the individual retains attention to achieve the chosen goal;
- Participation in the orientation reflex and regulation of biological rhythms, in particular, changes of sleep and wakefulness phases;
- Participation in maintaining homeostasis by vegetative function regulation.

We have to remember that in case of autism, neural connections between various structures of the limbic system, subcortical nuclei and neural pathways are disrupted, including both anatomical changes (insufficient myelination, immaturity of neurons, damage to synapses) and problems at the level of neurotransmitters. There is currently no precise unambiguous model for the etiology of autism; more and more importance is attached to its underlying genetic characteristics, but research on this topic continues. Keeping in mind the neurophysical basis of this problem, it is clear that the methods of work with regular dynamic sessions conducted with the patient to develop new neuropatterns should come to the forefront. Desired goals include orienteering skills in various situations, regulation of emotions, stimulation of motivation and the ability to communicate successfully. On the contrary, any medications have only very narrow indications - mainly severe functional impairment with a burdened inclusion in the social environment (severely impaired behavior, aggression, significantly impaired concentration, which greatly limits the quality of life of patients and caregivers).

When we speak about communication, there is a four-way model developed by German psychologist Friedemann Schulz von Thun (*Friedemann Schulz von Thun*). According to his description, there are four levels of communication - content (what you want to say for sure, or facts, information bits); the level of interpersonal relations (what the initiator of communication thinks about his communication partner, how much he appreciates his responses); level of expectations (what is expected from the partner as a result of communication); level of expression (feelings and motivation of the initiator of communication). Therefore, it is important to make sure that the child not only knows the information and facts he speaks about, but also that he or she wants to get in touch, shows initiative, gets interested in others and gets some feedback from the partner, has motivation and expects a response from the communication partner, as well as recognises the fact that the thoughts of this partner may not coincide with his or her own thoughts ("theory of the mind") - all of those are necessary points for successful communication. Fortunately, most neurotypical children master this process instinctively, unconsciously.

Children with ASD have sensory problems, which impairs both the ability to perceive information and the ability of intuitive interpersonal understanding; they are characterized by a reduced interest in people around them and a lack of understanding of what can be expected from those around them (DSM-5). As a result, both the level of expectation and the level of expression are disturbed. It also contributes to the fact that over time, having no resources for the development of any of the levels of communication, the general ability to communicate lags more and more behind the age norm. Therefore, a child who initially has some contact with the environment, gradually becomes more and more immersed in his own inner world and less accessible to communication. By increasing his interest in people, encouraging initiative and helping to predict the consequences of involving other persons, we could significantly accelerate the growth of communication skills. Of course, this would be possible only within individual limitations, which are largely determined by the individual sensory characteristics of patients with ASD.

About DIR®Floortime



Thinking of the need to work simultaneously in all of the above areas, Dr. S. Greenspan and his colleague Dr. S. Wider created DIR® Floortime, a method for working with patients with communicative disorders, which is based on observations and studies and has a wide evidence base. Dr. Greenspan, a children's psychiatrist, studied the development of feelings and thinking in infants, children, and adolescents. He made a great contribution to the methods of diagnosis and intervention. He developed a tool of investigation of socio-emotional development, which was included in the Bayley test and is widely used to diagnose early signs of disturbances in the child development. More than 40 years ago, Dr. Greenspan realized that in order to improve communication, cooperation and learning ability, it is necessary to perceive the child at the level where he is - both mentally and physically - at the particular moment. That is, he recognized the need to "meet" a child at his level. The method provides

that the specialist is at the child's level and is fully involved in communication (hence the name FLOORTIME - literally "time on the floor" - that is, the level of the child).

DIR® is a therapeutic approach based on the diagnosis of the levels of functional emotional development of the child (D - Developmental), taking into account the individual characteristics of the child and the social environment in which he develops (I - Individual differences), based on the relationship between the child and his/her significant people, parents or caregivers (R - Relationship-based). The goal of the DIR® concept is to create an assistance program that takes into account all of the above.

The Floortime® methodology is one of the components of a comprehensive development program based on the DIR® concept[9]. The purpose of this methodology is the formation of emotionally significant interaction (in play, life, learning) that promotes development, the establishment of warm and close relationships with adults and peers, the ability to communicate meaningfully using emotional gestures and words, and to achieve high levels of abstract thinking and empathy (ICDL Site). This method is available to professionals working with children, and also for parents. Its innovation lies in the fact that, having taught parents the strategies and techniques of Floortime®, we can create an environment in which the child's communicative and social development will be formed, maintained and expanded not only in the conditions of the treatment room, but in the amount necessary for real everyday life. In modern conditions, when we are forced to live in social isolation, the ability to educate and support parents through various online platforms allows us to continue to work with the child without limitations.

The DIR concept identifies 6 main stages of development. They are called Functional Emotional Development Levels (FEDL). The mastering of these levels is important for successful interaction and communication. Unfortunately, children in the autistic spectrum have difficulties with their passage through these levels. The goal of DIR® Floortime is to help the child overcome difficulties by returning him on the path of healthy development. Studies confirm: the use of the method improves the teacher's ability to understand the needs of the child, recognizing elements of verbal and non-verbal communication. The caregiver's ability to respond to the child's desire for communication also improves the quality of care and emotional well-being of both the child and parents. The child's ability to generate ideas and solve problems, build socially significant relationships and communicate both verbally and non-verbally increases. As a result, the overall level of functioning improves. Unlike other methods used in patients with ASD, DIR® Floortime is not focused on specific tasks, but works with the child holistically, allowing to create a development vector for the child and the ability to observe, think and, in future, to learn from the environment, as his "neurotypical" peers do.

Sessions can be organized by a specialist or a trained parent, the main goal is to take into account the individual sensory characteristics of both the child and the parent. It is recommended that previously trained parents work with the child at home and maintain parallel regular consultations with a specialist - in person or online - it will help parents to notice their progress along the FEDL boxes, as well as adapt to the changing needs of the child. The method can be used both for working with children with developmental disabilities, as well as for promoting a successful emotional and intellectual development of a neurotypical child.

II. METHODOLOGY

The work with a child is organized in three stages. The first stage is meant to obtain an anamnesis and evaluate the individual profile of the child and caregiver. The tables FEDL 1D and FEDL 2i are used for these purposes. Table 1D displays the level of development of the child (as well as the level of the guardian, if the table is written for both) at each stage of the playing activity. Table 2i displays the individual characteristics of

the sensory pathway, describing the characteristics of the reactivity of the nervous system through individual sensory channels: auditory, visual, vestibular, proprioceptive, gustatory, olfactory; ability to plan movements; reaction to sounds, gestures and verbal communication; the ability to use sounds, gestures and verbal communication to communicate; the level of development of the ability to process visual spatial information; praxis - level of development of executive function. Parents of the child discuss the possibilities of using their own strengths and strengths of the child to develop communication. Keeping in mind the features of the development of the child, it is important to understand what limits him in everyday life and what is difficult for the parents to cope with. Parents are offered options on how to provide their child with emotional support when impaired development of sensory channels create obstacles in everyday life and cause unwanted behavior and discomfort. Often these recommendations allow parents to better understand the individual needs of the child and at the same time to build communication more successfully.

If the child's parents have videos with material that displays regular playtime of the child at home, only 1-2 sessions are necessary for this stage. If it's impossible and they can not make a video at home, then a larger number of face-to-face sessions will be required both with the child and together with the caregiver - for better evaluation of the interaction between the child and the caregiver when the child is already used to the session routine and the the room itself.

Then there is the second stage of work - or play, to be precise- with the child. Playtime sessions are best held twice a week for 30-45 minutes. The therapist establishes the basis for interaction with the child, monitors his initiative and provides sensory support. The sessions can be held in the therapist's office or, for kids with more developed verbal skills and supportive parents, on an online platform. The type of play is modified every time to match the current development state of the child. The therapist tries to support the child in moments of sensory overload, and show a full range of emotions, helping the child recognize all participants' emotions during the game; trains self-regulation mechanisms, adjusts to dramatic games using the developed techniques for supporting the child, and helps to continue the game as long as possible. The purpose of a session is to achieve playing activity, which develops age-appropriate self-regulation and the manifestation of initiatives of the child, to develop the ability of social problem solving within a game, create a long communication cycle, generate and develop emotion-related ideas. The duration of this stage depends on the child's current level at the beginning of the program, as well as on the parents' ability to provide classes at home, to captivate children's attention for an episode of play for 20-30 minutes every day.

Third stage. If the family possesses resources for 20-30 minute sessions of playing with the child every day, then gradually the parents themselves are also being included in the sessions together with the therapist, and, when a good understanding of the situation is reached, the parents are given the task of working at home with the child by themselves. For at least one playtime session a week, it is advisable for the caregiver to record a video of the child playing and mail it to the therapist. Full-time sessions-supervisions with a therapist - with or without the child - are necessary at least once every 4 to 8 weeks, so that it is possible to assess the condition of the child's current level of communication, address the possible problems and provide recommendations for future organization of the playing activities.

Considering the current necessity of social isolation, an option with parental coaching online is also available, when parents first send a video with a routine example of the child's spontaneous playing activity and, with the help of a specialist, examine the child's and their own individual perceptual characteristics; the next step is a game with the child with online supervision of a specialist with the possibility to provide support directly during the game, and the third stage is direct coaching for parents with discussions of fresh videos every 2-3 weeks .

When the child's first 3 levels of play activity are well developed, sessions can be organized in small groups of 2 to 3 children, and adults play the role of a buffer and help everyone feel comfortable during the session.

If the work proceeds with a child who is verbal and who is not interested in manipulative games with toys, in the classroom you can use board games or any other creative activities, following the choice and interests of the child. It is most important to focus on the individual interests of the child, take into account his sensory characteristics and work on development of the emotional spectrum.

Sometimes a question arises of how to combine this method with other, more traditional ones - after all, a child who is used to structured activities will need some time to develop the ability to independently choose an activity and act spontaneously. On the other hand, when this happens, parents often notice that it becomes more difficult to motivate the child to the previous, structured work. This is usually a relatively short stage, and if sufficient amount of time at home is allocated to free play, subsequently the child gains the ability to recognize the unique characteristics of various activities. It happens naturally. Suppose the child had weak self-regulation and short cycles of spontaneous communication, and during sessions something starts to change. The patient reaches the emotional level of an 18-24-month-old child, and in this case it is important to remember and consider that at this age it is impossible to expect the child to be able to participate in motionless

academic studies, which would be designed for his biological age - he devotes every moment to research and discovery of the surrounding world. However, continuing to provide the child with the opportunity to develop these emotional skills, gradually he will again be able to be a good participant in traditional activities, but with a different understanding of what is happening and a different level of involvement. It is important to remember that Floortime DIR does not work on the development of a specific skill, but it is created as a method that changes the emotional world of a child, opening a window for the child and giving him an opportunity to develop naturally at his own speed.

Some evidence on the effectiveness of DIR Floortime

On ICDL.com there is a lot of information on studies showing significant improvement in the condition of children with autism spectrum disorders after applying the DIR Floortime method (Solomon, et al., 2014; Casenheiser, Shanker, & Steiben, 2011; Lal and Chhabria, 2013; Pajareya and Kopmaneejumruslers, 2011). These studies also demonstrate the positive effects of parent / guardian involvement in regular work with the child (Casenheiser et al., 2011; Solomon, et al., 2014), as well as acquiring better understanding of the child's specific abilities, ability to follow rules, expanding mutual communication, increasing understanding of the causes and consequences, improving emotional thinking (Lal and Chhabria, 2013).

Solomon et al. (2007) also created a DIR-based program for working with teens with autism in 17 US states. The results showed a significant improvement of functional and emotional development levels in children. 100% of parents reported their satisfaction with the program.

The cost of using DIR Floortime for weekly sessions has been described by Casenhiser et al. (2012) and approximated at around \$5,000 per child per year, which is significantly cheaper than any other program used in the United States to work with children with ASD (Flanders et al., 2005; Motiwala et al., 2006). There are also reports of clinical cases that demonstrate individual effect of DIR Floortime during successive years of work with children with ASD. (Dionne and Martini (2011), Wieder and Greenspan (1997, 2005)). Good long-term results have been described on the development of children's abilities, improved family relationships and emotional stability. Recent publications on the PubMed database also show positive results of the method, as well as a positive correlation between the results of the child and the participation of parents in daily use of the method at home. (6, 7, 8).

Clinical experiences.

Currently, in Liepaja (Latvia), Dr. Julia Cirule-Galuza has been working with 7 children with various types of communication disorders for about 3 months (2 children with ASD, 1 child with polymicrogyria, 1 child with Cri-du-chat syndrome, 1 child with trisomy 21, 2 children with Dandy-Walker syndrome, 1 child with impaired behavior and speech, the age of children from 13 months to 9 years) as part of the ICDL DIR Floortime 201 course. Given the short duration of applying this method and its implementation as part of the educational process, this cannot be considered a full course of therapy. Of the 8 children, two participated irregularly (1 due to maternal health problems and 1 due to teething and temperature reactions, which made it difficult to plan class time), the rest attended sessions once a week for 30-40 minutes. Parents of all children in the final conversation noted an improvement in children's communication skills and better contact with the child in everyday life compared to the period before the start of sessions. The children were happy to see the specialist, and communication during the sessions improved markedly with each of the children. The only "side effect" that the parents of two children noticed - before the start of sessions children were indifferent to the toy shelves in a store, but now they point to the toys and demonstrate a desire to play. Considering that the completion of sessions coincided with Christmas time, this made it easier for parents to choose gifts for their children. Parents also noted that children began to spend more time with toys at home, playing actively, both independently and together with parents, brothers and sisters.

In turn, Galina Istkovich - a specialist with international experience, has been practicing the method in New York for ten years. She has worked with dozens of children and their parents, and various individual dynamics were obtained: from improved communication at home and school to global improvement and even the disappearance of symptoms that made participation in everyday life impossible. By supporting and recognizing the individual characteristics of the child, the specialist and parents could create the most optimal cycle of emotionally significant interaction, which promotes interest in the surrounding world and creates a strong motivation for participating in mutual communication.

III. CONCLUSION

We hope that DIR Floortime, as a thoroughly developed, evidence-based and widely used method in more than 60 countries of the world, will become available for use in Latvia and other places where it is a new tool, and will serve the purpose of better communication, emotional balance and well-being of children with

developmental disabilities. We also hope that it will be introduced and applied by professionals and families to create a supportive environment and relationships that contribute to the development of a child's communication skills.

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