

REHABILITATION TRAINING METHODS FOR CHILDREN WITH AUTISM SPECTRUM
DISORDERS IN CHINA

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REHABILITATION TRAINING METHODS FOR CHILDREN WITH AUTISM SPECTRUM
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ABSTRACT

REHABILITATION TRAINING METHODS FOR CHILDREN WITH AUTISM SPECTRUM DISORDERS IN CHINA

The purpose of this research was to introduce the main methods of autism rehabilitation training in China. Applied behavior analysis is the most effective and commonly used training method for autism rehabilitation in China. Of course, play therapy is also a commonly used rehabilitation method in China, which can help young children better learn happily in a play environment. Adhering to the principle of "early detection, early treatment", the younger children with autism receive rehabilitation training, the more effective it is. The development and rehabilitation of autism in China has only started for a few decades and is still in its infancy, so China is learning from the experience of the United States to walk hard on the road of autism rehabilitation training. It is precisely because the field of autism in China is just starting, so the law on autism is not perfect, and the government and society have little publicity on autism, thus bringing economic and mental pressure to Chinese families. The research also described the pressures and needs of families with children with autism in China.

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CHAPTER 1

INTRODUCTION

Background

Kanner (1943) first reported and named *autism* in paper entitled, *Autistic Disturbances of Affective Contact*. Autism spectrum disorder (ASD) is a developmental disorder that affects communication and behavior. The causes of autism are not entirely clear, and current research suggests that the risk factors for autism include (a), heredity, (b), pregnant women infected with the virus have an increased risk of autism in their children, (c), a history of epilepsy medication and alcohol abuse in early pregnancy has been linked to an increased risk of autism in children. In its early stages, the prevalence of typical autism is about five in ten thousand (Ying Liu, 2007). Autism is characterized by (a) persistent deficits in social communication and social interaction across multiple contexts, (b) restricted, repetitive patterns of behavior, interests, or activities, (c) symptoms must be present in the early developmental period, (d) symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning, and (e) these disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur (American Psychiatric Association, 2013). In China, Guotai Tao first reported four cases of autism in 1982, and cases have gradually increased thereafter.

Statement of the Problem

"Autism" is a blanket term that describes a number of related conditions that all involve impaired brain development. The more formal term that encompasses all the conditions of autism is

“autism spectrum disorders”. China diagnosed its first case of autism in the 1980s. Since then, autism rehabilitation technology has been gradually introduced into China. However, due to the lack of awareness and the hardship of conditions, autism rehabilitation techniques mostly rely on the sum of parents' exploration and experiences. In 2012, the US Centers for Disease Control and Prevention (CDC) released estimates from 2008 data that among USA eight-year-old, one in 88 children suffers from some form of autism. This reflects a 75 percent increase from 2002 and a 23 percent increase since 2006, according to the CDC. Boys are at much greater risk than girls; one in 54 boys but only one in 252 girls was afflicted with an ASD in the 2008 CDC data. So, in the USA, boys are more than four and a half times more likely to suffer from autism than girls are. Many risks and causative factors may be at work, perhaps in several sequences, accounting for varying types and severities of autism. On March 20, 2013, the CDC released results of a new survey showing one child in 50 is on the autism spectrum in the USA. The United Nations (UN) reports that the incidence of autism in all regions of the world is high.

ABA Changes Autism (Jiamei Du, 2014, pg. 198) reported

ABA treatment can be effective for anyone, including any child with ASD. Each specific rehabilitation training method of ABA has its own characteristics: DTT (Discrete Trial Training) is critical to the establishment of attention, listening to commands and other abilities; VB (Verbal Behavior) is very helpful for language ability; PRT (Pivotal Response Treatment) has an obvious effect on children who are severely affected; NET (Natural Education Training) helps to generalize the content in one-to-one courses.

So the question is, how do the various rehabilitation training methods bring children with ASD

back into society in China? What are the characteristics of these methods? Can these methods be applied to Chinese families? What are the characteristics, pressures and needs of families with children with ASD in China?

Definitions of Terms

Autism Spectrum Disorder (ASD): a developmental disorder that affects communication and behavior.

Applied Behavior Analysis (ABA): a scientifically based method for understanding behavior.

Augmentative and Alternative Communication (AAC): a term that is used to describe various methods of communication that can help people who are unable to use verbal speech to communicate.

Discrete Trial Training (DTT): a method to improve the core symptoms of children with ASD through one-to-one behavioral training, such as increasing eye contact in social interaction, enhancing attention, sharing positive emotions, and using regular gestures and postures to communicate.

Verbal Behavior (VB): a method of teaching language.

Pivotal Response Treatment (PRT): a naturalistic intervention model adapted from ABA approaches.

Natural Education Training (NET): a comprehensive application of skills acquired in the one-to-one training.

Pragmatics: the study of the practical aspects of human action and thought, the study of the use of linguistic signs, words and sentences, in actual situations.

Purpose of the Study

The World Health Organization (WHO) reported: Autism spectrum disorder (ASD) refers to a range of conditions characterized by some degree of impaired social behaviour, communication and language, and a narrow range of interests and activities that are both unique to the individual and carried out repetitively. People with ASD begin in childhood and tend to persist into adolescence and adulthood. In most cases the conditions are apparent during the first five years of life.

The purpose of this study is to determine whether some rehabilitation training methods can help or improve children with ASD in China, and whether these methods and Chinese society can be integrated and applied to Chinese families. In addition, this study explores the characteristics of rehabilitation training methods, the requirements and pressures of families with children with ASD in China, and the relationship between Chinese society and families with children with ASD.

Significance of the Study

With the deepening of the research on autism, people attach importance to the rehabilitation training methods for children with autism. In China, people have been searching for rehabilitation training methods suitable for Chinese children with autism. This research will explore some rehabilitation methods used in China, as well as the needs of Chinese society and families, which will help Chinese parents and teachers understand and help Chinese children with autism.

Methodology

Research for this project was done online using search engines such as Google, Baidu and China National Knowledge Infrastructure (CNKI) using keywords such as ASD, Chinese family, ABA, play therapy. Many sources were found online and books were read about rehabilitation training methods of autism and data on autism in China.

CHAPTER 2

REVIEW OF LITERATURE

Autism Spectrum Disorder

It has been more than 100 years since the research on autistic children was proposed. Although autism has a long history of development, the research on children with autism still faces many problems. With the development and progress of society, people are constantly exploring new methods of rehabilitation training and intervention. Although the incidence of autism has always changed as diagnoses and definitions have been updated, we believe that the number of children with autism is rising dramatically.

Until recently, you still heard people talking about different types of autism, such as (a), asperger's syndrome, this is on the milder end of the autism spectrum. People with asperger's may be very intelligent and able to handle their daily life. They may be really focused on topics that interest them and discuss them nonstop. But they have a much harder time socially, (b), pervasive developmental disorder not otherwise specified (PDD-NOS), this mouthful of a

diagnosis included most children whose autism was more severe than Asperger's syndrome, but not as severe as autistic disorder, (c), autistic disorder, this older term is further along the autism spectrum than asperger's and PDD-NOS. It includes the same types of symptoms, but at a more intense level, (d), childhood disintegrative disorder, this was the rarest and most severe part of the spectrum. It described children who develop normally and then quickly lose many social, language, and mental skills, usually between ages two and four. Often, these children also developed a seizure disorder. (Ping Yang, 2010). But now they are all called "autism spectrum disorders".

When we look at each of the core features of autism, remember that these abilities are interrelated, not independently developed.

Function of the Family during the Treatment of Children with Autism (Xiaohui Gong, 2012, pg.

6)

The core features of autism are as follows: (a), impaired social functioning, people with autism exhibit impairments in a variety of areas that involve skills that are critical to early social development (mimicking others, sharing focus of attention with others, understanding others' emotions, and escaping into hypothetical games). Children with autism are limited in their sensitivity and responsiveness to social stimuli from others and rarely share experiences or emotions with others, and they process social information in unusual ways. Children with autism also have problems processing emotional information, including body language, gestures, facial expressions or voices. In addition, children with autism express their emotions in a very different way from normal children. Their use of expressive gestures is unnatural, and their facial expressions are strange, rigid or mechanical, so they are unusual in

the way they process and express emotional information, (b), impairments in communication. Children with autism show severe abnormalities in communication and language at an early age, and these abnormalities persist. The main difficulty in language development in children with autism is not the number of words or the use of semantics, but the serious impairment in pragmatics or the proper use of language in social and communicative situations. People with autism also use language in written form, but in their case the meaning of a word is fixed and cannot be separated from the meaning they acquired when they first grasped the word. Even children with autism who have a large vocabulary show impairments in pragmatics, (c), people with autism exhibit rigid and repetitive behaviors, interests, and activities, including obsessive routines and rituals, unusual attention, and consistent adherence to rigid physical movements. In addition to these three core symptoms, people with autism are associated with a number of other characteristics, such as low or paranormal intelligence, sensory and perceptual impairments, internal speculation deficits, and general deficits in higher-level planning and behavioral regulation.

Applied Behavior Analysis

ABA is to divide skills, behaviors and knowledge into a series of small steps in a certain way and in a certain order. Appropriate reinforcement methods are adopted to train each small step step by step in a certain order until children grasp all the steps, complete the task independently, and be able to apply the knowledge and skills they have learned in other occasions.

At present, methods based on ABA principle mainly include DTT (Discrete Trial Training), VB (Verbal Behavior), PRT (Pivotal Response Treatment), and NET (Natural Education Training).

DTT is the core technology of ABA. It aims to improve the core symptoms of children with

ASD through one-to-one behavioral training, such as increasing eye contact in social interaction, enhancing attention, sharing positive emotions, and using regular gestures and postures to communicate. The DTT training process involves a variety of operations. Each operation has a definite beginning and end. DTT has the following characteristics: (a), DTT breaks each skill to be taught into small steps, and then the children practice it step by step, which makes the children more likely to be successful in learning; (b), intensive teaching, repeatedly training each step; (c), to assist children in responding correctly; (d), use of reinforcement. High-density, high-intensity DTT training is necessary for the rehabilitation of children with autism, and 20 to 40 hours of intensive DTT training per week for children between two and four years of age can be very effective in rehabilitation.

Verbal Behavior, also known as VB, is a method of teaching language that focuses on the idea that a meaning of a word is found in their functions. VB is based on the traditional DTT development. The term was coined by B.F. Skinner. Instead of just teaching a word, we must teach children how to functionally apply those words. For example, a child with autism might say the word "toilet" when they see one, but may not be able to say "toilet" when they need to use the bathroom or answer correctly when asked what a toilet is used for. According to Skinner, the basic verbal parts of language include echoics (vocal imitation), mands (requesting), tacts (labeling), and intraverbals (conversational skills). In the ABA method of teaching language, children are taught to label or name things. For example, they will learn to say the word "phone" when they see a phone. They may not be able to use the word in a sentence because they are not been taught the function of the phone. Since VB focuses on teaching functional languages, it can complement ABA Discrete Trial Training. Verbal Behavior is a great approach that can be combined with other teaching methods such as Discrete Trial Training

(DTT) or Natural Environment Training (NET). In fact, combining the total operants of Verbal Behavior across both DTT and NET may contribute to acquiring a more complete language repertoire (Sundberg & Michael, 2001). Children need the functional skills across the verbal operants to increase verbal behavior, particularly in environments with their peers (Sundberg & Michael, 2001). A child without strong internal verbal skills may not respond appropriately to their peers' verbal behavior, which may impair further interaction.

Pivotal response training (PRT) (aka pivotal response teaching) was initially developed in the 1970's by Robert L. Koegel, PhD and Lynn Kern Koegel, PhD at The Koegel Autism Research & Training Center at the University of California, Santa Barbara. Goals of PRT include development of communication and language skills, increasing positive social behaviors, and relief from disruptive self-stimulatory behaviors. PRT is described as a naturalistic intervention model adapted from ABA approaches. The PRT targets "pivotal" areas of a child's development instead of working on one specific behavior. Pivotal areas include motivation, response to multiple cues, self-management, and initiation of social interactions. Motivation strategies are an important part of the PRT approach. For example, if a child makes a meaningful attempt to request a toy train, the reward is the toy train, not a candy or other unrelated reward. Children are rewarded for making a good attempt, even if it is not perfect. If a child with autism has certain behavioral characteristics, such as his or her interest in toys, ability to interact with parents, does not avoid eye contact with others and has less stereotypical behavior, then the child tends to have better results after PRT intervention. On the contrary, PRT intervention is difficult to be effective.

In ABA one-on-one teaching, because the teaching objectives are divided into small manageable goals, it is easier for teachers to teach and easier for children to learn. But if the acquired skill

can only be used in a teaching environment and only separately, then the skill has no social value or significance.

NET (Natural Education Training) can connect the skills acquired by children with a topic. For example, in the Natural Education Training with the theme of playing with train toys, the teacher can design the activity according to the children's ability: open the box, take out the railway track, combine the railway track, take out the train, take out the animal model, put the animal model on the train and push the train. To accomplish these activities, intersperse the following skills that the child already gets: requirements include “can you help me, I want the train, I want the railway track, and I want the animal”; naming includes color, animal name, motion, and item name (railway track, train); listener's reaction includes “the train is here, and the animals are getting off ”; action imitation includes trains go through caves, and animal movements; imitate sounds include the sound of trains, and the sound of animals; interactive language includes sentence completion, and “go ahead, good job, well done”. NET can be regarded as a supplement to the one-to-one training method of DTT,VB and PRT. It is a comprehensive application of skills acquired in the one-to-one training.

The four training methods mentioned above are all based on ABA, so they all have some scientific basis. There are some differences between the four approaches in terms of specific operational forms or in specific project areas. DTT is a more traditional method, which is very effective for children in early training, but its form is more fixed and rigid. VB pays attention to the use of language ability, it is developed on the basis of DTT, it will be better for children who have certain training basis, the effect is not as good as DTT for the early training of children. PRT is based on children's motivation, it is more flexible and practical, but it is also better for children with training basis. NET operation will emphasize the flexible use of

children's acquired skills in a complete activity, with high operability, but it is mainly the comprehensive application of the previous several training methods, and there is almost no new content to learn in NET.

In summary, each method has its advantages and disadvantages. Each child should choose the training method that is more suitable for them according to their own situation.

Augmentative and Alternative Communication

Impairments in communication is one of the three core features of autism, and almost all children with autism have problems with communication. The language barrier hinders not only their education but also their social adaptation and emotional development. Augmentative and Alternative Communication (AAC) emerged in the 1970s and began to help people with communication problems. A large number of foreign studies have shown that AAC can improve or replace the communication skills of different groups of people with autism, mental retardation and delayed language development to different degrees, and solve the problems of language expression. An AAC system is an integrated group of components used to enhance communication.

These components include forms of AAC (aided or unaided), symbols, selection techniques, and strategies (American Speech-Language and Hearing Association). AAC is typically divided into two broad categories: unaided and aided. Unaided forms of AAC do not require an external tool. Unaided forms require some degree of motor control, such as gestures, manual signs, facial expressions, vocalizations, verbalizations, and body language. Aided forms of AAC require some form of external support, either electronic or nonelectronic. Nonelectronic aided forms are often referred to as "light-tech" or "low-tech", such as pictures, objects,

photographs, writing, and communication boards or books. Electronic forms are referred to as "high-tech", such as speech generating devices (SGD), single-message devices and recordable or digitized devices, and AAC software that enables dynamic symbol or language representation and that is used with some form of technology hardware (e.g., computer, tablet, smart-phone). Symbols refer to the use of symbols such as abstract symbols (e.g., visual, auditory, tactile) for expression, such as gestures, expressions, pictures, and photographs. Selection techniques refers to the method of transmitting communication information, which can be divided into direct selection and indirect selection. Direct selection means that AAC users use their own voice, hands, eyes and other body parts, or use alternative tools to directly select the desired symbol. Indirect selection means that the user can go through several steps to get the desired option, such as scanning. A strategy is a process or plan of action used to improve performance. An individual's use of AAC can be enhanced by the application of strategies that include topic setting, letter and word prediction, location of vocabulary for efficient access, and one-shot message communication aids that allow for the message to be changed for different activities as needed (American Speech-Language and Hearing Association).

Early implementation of AAC can aid in the development of natural speech and language (Lüke, 2014) and can increase vocabulary for children ages 3 years and younger (Ronski, Sevcik, Barton-Hulsey, & Whitmore, 2015). The use of AAC does not affect motivation to use natural speech and can, in fact, help improve natural speech when therapy focuses simultaneously on natural speech development and use of AAC in a multimodal approach (Millar, Light, & Schlosser, 2006). AAC can help decrease the frequency of challenging behaviors that may arise from frustration or communication breakdowns (Drager, Light, & McNaughton, 2010).

Play Therapy

Games can not only make children have fun, but also act as a means of psychological therapy to intervene in children with autism. There are many kinds of games, such as sand-play therapy, toy bricks games, stories, drawing, and playing silly putty. Since children are more likely to show emotional and social interaction behaviors that are seldom seen in other situations, the play environment can be used as a place for children to freely express their emotions. The main purpose of game therapy is to build a warm, trusting, relaxed and free environment for children through games, to help children relieve and vent their anxiety, and to let children discover their own problems and feel the fun of communicating with others in the process of games. I think the way we choose and use games as the main medium of communication in children's psychotherapy can be called play therapy.

The following is a brief introduction to the sand-play therapy that is the most commonly used game in the training of children with autism in China. Sand-play therapy was developed by Dora Kalff, who was inspired by working with Margaret Lowenfeld, a British child psychiatrist and developer of World Technique. One of the most common techniques used in sand-play therapy is the World Technique. This nonverbal approach involves the use of miniatures. People in therapy are encouraged to use miniature toys, figurines, and objects in the sand in ways they choose while the therapist observes and later analyzes the person's interaction. The nonverbal nature of sand-play therapy and the familiar medium of sand can help children achieve feelings of comfort and security. With little instruction from the therapist, the child is free to play and develop their own expression of situations. Often, the children will experience a sense of independent play and begin making assumptions and behavior changes without cues from the therapist.

Research has shown that play therapy can reduce or eliminate stereotypical or bad behaviors in

autistic children without recurrence, and play therapy can effectively reduce the anxiety response of children with autism (Xuefei Wang, 2014).

The Pressure and Needs of Chinese Families

The appearance of children with autism has a severe impact on the family, and parents have to bear great mental pressure. Studies have shown that parents' acceptance of the fact that their children are autistic goes through four stages of "doubt, denial, struggle and acceptance", accompanied by psychological states of tension, anxiety, eagerness for success, high expectations, depression, self-distrust, over-dependence and over-compliance (Shenzhen Autism Society, 2013). These mental pressures mainly come from family conflicts, the gap between future expectations and reality, and social discrimination, etc. In addition to mental pressure, families with children with autism, especially low-income families, also have economic pressure. The rehabilitation training for children with autism is a long-term process. Currently, most of the institutions providing rehabilitation training in China are private institutions, which charge relatively high fees. Shenzhen Autism Society's survey found that 73.63 percent of the families surveyed said the cost of their children's rehabilitation training was entirely borne by themselves. While 79.29 percent of the surveyed households have a monthly income of less than \$715, of which 52.81 percent have a monthly income of less than \$429. More than half of the surveyed families indicated that their children's monthly expenditure on rehabilitation and training was more than half of the family's monthly income, of which 24.39 percent were more than the family's monthly total income. Expensive training costs and few government subsidies have left many families deeply in debt, so many children with autism stay at home and miss out on rehabilitation training. The reasons for the economic difficulties of Chinese families include: (a), the decrease of family financial resources, because children with autism lack social and life

skills, and some even self-harm, they need someone to be around all the time, so many parents give up their jobs to take care of their children and help them with rehabilitation training. Family income can only rely on one parent support, the family's economic pressure increased; (b), the cost of rehabilitation training is huge. At present, 77.14% of autism rehabilitation and training institutions in China are private enterprises, so these institutions must charge tuition fees to maintain normal operation and development. Some parents say their children's training and treatment depends on the family's income. The children can be trained for a period of time if the income is good, the children can only stay at home if the income is not good; (c), inadequate government assistance. Research by the Shenzhen Autism Society shows that currently 8.52 percent of rehabilitation training costs for children with autism are shared by the government and families, while less than two percent of families are fully covered by the government; (d), narrow coverage of social support. With the increasing publicity about autism, the attention of the society on people with autism is also increasing. Some social welfare institutions also provide certain financial support for children with autism, but most of these financial support are invested in rehabilitation training institutions, and children with autism need to apply for funds through rehabilitation institutions. In other words, they can apply for the fund only after they have studied in a rehabilitation institution. For those who cannot afford to attend rehabilitation institutions in the first place, they have already lost the opportunity to apply for funds. Moreover, the number of places in each batch of funding is limited, and not every autism rehabilitation training institution will receive funding opportunities. Therefore, children with autism studying in non-funded institutions will not be able to receive funding; (e), inadequate advertising, and many parents have lost their children because of the lack of information. Also many parents do not know how to apply for aid. Local governments in many parts of China do

not hold activities on children with autism, families or institutions. The social advocacy and publicity for autism is mostly carried out by some parents of children with autism or private autism services.

Rehabilitation education for children with ASD is not only the responsibility of the family, but also the responsibility of the government and society. Only with the cooperation of family, government and society can children with ASD be reintegrated into the society. What are the needs of Chinese families with children with autism?

First, strengthen and improve services for children with autism attending regular schools. In recent years, although integrated education has been promoted in the world, its development in China is not satisfactory. Many special children do not get the education they need. Most regular schools in China refuse to accept children with autism, and many schools lack the equipment to support children with autism, and teachers do not have the knowledge and experience to teach children with autism. Parents prefer that their children can be integrated into regular schools, receive regular education, get in touch with society as early as possible, and return to the mainstream. However, teachers of special education hope that children with autism can continue to receive rehabilitation training, because regular schools are not equipped with the ability to deal with the special needs of children with autism at present. If children with autism blindly study in regular schools, it will be detrimental to their recovery. It is hoped that the government can improve the services for children with autism attending regular schools as soon as possible, so that children with autism can get the best education, return to the mainstream to the greatest extent, and reduce the burden and pressure of parents.

Second, families with children with autism hope that the government will increase support for

people with autism and their families and improve the social security system for people with autism, because they are under great economic pressure.

Third, parents hope that the government, institutions or schools can provide parent support services and strengthen parent training. Autism harms parents and families, and parents also need professional psychological support and informal parental support. According to the survey, 71.23 percent of the surveyed parents' most wanted help during the process of accepting the fact is that they "hope to have a center or institution to provide support and services for parents" (Shenzhen Autism Society, 2013).

Finally, it is hoped that the government can strengthen social propaganda and increase the social acceptance of people with autism. The recovery of children with autism depends on the support of social environment. In the rehabilitation education of children with autism, the concrete manifestation of social acceptance is: can children with autism be admitted to regular schools? Can they return to the mainstream and learn appropriate social behavior in a general social setting? The reality, however, is not so good.

CHAPTER 3

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In China, the research on autism has only begun about two decades ago. Basically all rehabilitation training methods are from foreign methods and experience. These experiences and methods have indeed helped to advance the development of autism rehabilitation training in China. In China, most rehabilitation institutions or special schools adopt ABA to help children

with autism train. ABA is the most commonly used method as well as a very effective measure. DTT, VB, PRT and NET are four training methods developed on the basis of ABA. The specific method should be decided according to the different conditions of each child. It is also possible that a combination of various methods can achieve better training results. AAC is also a method to improve the language barrier of children with autism, but it is not widely used in China because of its high price. Play therapy is also a fun and effective method of training. Children can learn some life skills while playing games, which is also a popular method in Chinese rehabilitation training institutions and schools. Most people and society do not know what ASD is, and the Chinese government does not have perfect laws to protect the rights and interests of people with ASD and their families, so it is still a difficult road. Relieving the mental and financial pressure of families with children with ASD in China is also our future focus. I believe that more people will pay more attention to or devote themselves to the path of ASD.

CHAPTER 4

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