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A Clinical Study of 78 Children with Autism

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Autism, also known as Autism, is a type of pervasive developmental disorder that occurs before the age of 3 and usually manifests in the first or second years of life. The diagnosis of autism falls under one category of mental development disorders. Its incidence is increasing year by year, and there is no specific treatment [1]. This study selected 78 cases of autistic children in Shenmu City Hospital for research and analysis, according to the clinical manifestations, and related laboratory research, examination results, music therapy, comprehensive therapy, intervention methods and their efficacy to analyze and study, suggesting that clinical research on autism should be strengthened.

Keywords: Children; autism; clinical research.

1. INTRODUCTION

Autism is a disease that seriously affects children's physical and mental health, and brings serious burden to society and family. It is estimated that there are 35 million people in the world, 40% of whom are children. The incidence rate of autism spectrum disorders in China is 1:100, and the total number of people has reached 10 million, of which more than 2 million are children aged 0-14. In recent years, scholars have tended to call it Autism Spectnum Disorder (ASD), also known as Autism spectrum Disorder. Social communication and communication disorders are the core defects of children with autism, and one of the important conditions for

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children to establish contact with the outside world. As children with autism cannot express themselves properly, they lack basic survival skills and social skills, which have a great impact on their daily life, learning and future work [2]. However, combined with previous studies, most scholars focus on the etiology, occurrence mechanism and communication behavior of autism. In order to improve the research and progress of childhood autism, we conducted clinical analysis and study on 78 children with autism who received outpatient treatment, diagnosis and treatment in Shenmu Hospital from 2017 to 2022.

1.1 Research Background

In recent years, the prevalence of autism has increased year by year, according to the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition, published by the American Psychiatric Association in 2013.

According to the Diagnostic criteria of the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition, DSM-5, the incidence of autism is 16.8% [2]. In March 2014, The Centers for Disease Control and Prevention (CDC) reported that The incidence of autism was 1:68; October 2014. The incidence rate of autism spectrum disorders in China is 1:100, and the total number of people has reached 10 million, including more than 2 million children aged 0-14. Children with autism lack social skills such as non-eye contact, inability to recognize other people's emotions, and inability to tolerate changes in the environment. They are unable to communicate and interact with others, develop normal attachment relationships with their parents, and develop good friendships with their peers. Based on this, researchers take autistic children as research objects to improve their social communication disorders as the main research objective. American famous psychoscientist Richard. Mr Cahnner first identified autism as a very rare mental disorder, with an incidence of about 0.04% at the time, and it is still rising. Several studies in Asia, Europe and North America have shown that the prevalence of autism ranges from 1% to 2% on average. The rehabilitation training and education of autism, as well as a series of impacts on society have been gradually paid attention to [3]. Mainly reflected in social communication barriers, poor communication, lack of interest and rigid behaviors. Specific performance is: can not use appropriate words, expressions or movements to express their thoughts correctly. The incidence of autism has been rising and has become a global problem.

Shenmu city is located in the northwest of Shaanxi, with a total land area of 7635 square kilometers. It is the largest county and city in Shaanxi Province with a long history and ancient culture. There were people living in Shenmu city four or five thousand years ago, and Shenmu County was established in the sixth year of yuan Dynasty (1269). Surrounded by the Mu Us Desert, with cold, dry climate and less rain, the city has considerable light and heat resources. It is one of the areas with many sunshine and strong radiation in Shaanxi Province, with an average annual sunshine of 2716 hours, annual average temperature of 9.2℃ and annual average rainfall of 410.3 mm. Its annual economic income is one of the top 100 counties in China, with a GDP of 184.8 billion yuan last year. The city has a population of 571,900, of which 55.66% are males and 44.34% are females. In the age structure, 22.06% are 0-14 years old, 65.28% are 15-59 years old, 12.66% are over 60 years old, and 8.52% are over 65 years old. The annual population out-birth rate was 11.67 per thousand, the mortality rate was 6.97 per thousand, the natural growth rate was 4.70 per thousand, and the urbanization rate was 70.39 percent. Data on the incidence of children with autism are not well documented [4].

2. GENERAL INFORMATION

Age and Sex:

There were 59 males and 14 females, the male to female ratio was 59:14, and 4 cases were 0-3 years old, accounting for 5.5%. 55 patients aged 4-7 years, accounting for 12 patients aged 8-14 years, accounting for 75.3%; There were 30 cases of autism (41.1%), 40 cases of autism spectrum disorder (54.8%), 35 cases of rural area (47.9%) and 38 cases of urban area (51.1%).

3. RESEARCH METHODS

(1) Literature review method: A retrospective study was conducted on 73 cases of children treated in the outpatient department of Shenmu Hospital. Qualified pediatricians and specialist nurses performed medical examinations on 43 cases of children, including cranial NUCLEAR

magnetic CT, oral motor function assessment, intelligent development assessment and ABR examination. Finally, statistical analysis was conducted. Through searching domestic and foreign literature research on autism, the theory and methods used in previous research were summarized, thus laying a solid foundation for the development of this study.

(2) Statistical analysis: The general status, sociodemographic characteristics, behavior and clinical manifestations, health status, examination and living environment of 78 children with autism were described by descriptive statistical analysis, and the adoption rate/composition ratio of counting data were described.

4. RESEARCH TOOLS

(1). General information of children with autism: this part mainly includes demographic information, social and economic status of the respondents and health status of the patients, such as name, gender, age and other information.

(2). Physical condition assessment: Head CT, the mouth movement function assessment, smart developmental assessment, childhood autism rating scale, the scale for assessment of autistic children parents, repetitive stereotyped behavior rating scale (total number/total score), ABR inspection (dBnHL), GESELL children's developmental diagnosis table (DQ/DA), children's scale, children with autism ABC scale autism And S-M Infant-Junior High School Social Life Ability Scale (crude score/standard score).

5. RESULTS

43 cases were compared before and after treatment. As shown in Fig. 1 in the music group, 43 cases were treated, 33 cases were treated after treatment, and 10 cases were quit midway. Fig. 2: Comparison of the effects of 43 cases before and after treatment showed that 32 cases (74.4%) had significantly improved their language ability, and 30 cases (69%) had significantly improved their communication ability.

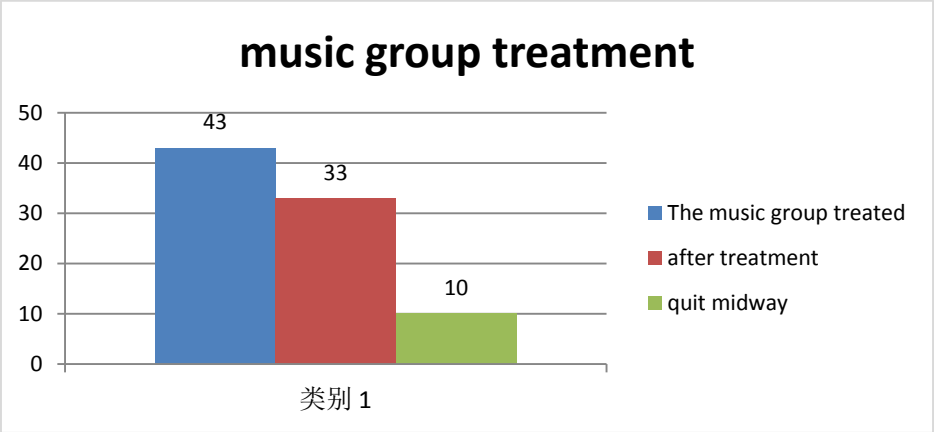

Fig. 1. The music group treated 43 cases, 33 cases after treatment, 10 cases quit midway

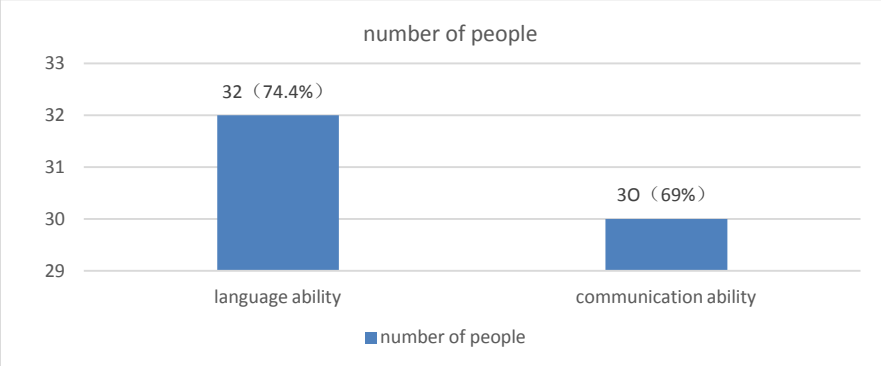

Fig. 2. Comparison of 43 cases before and after treatment showed that 32 cases (74.4%) had improved their language ability significantly, and 30 cases (69%) had improved their communication ability significantly

Table 1. Test results of 45 autistic children

Project	Head CT	Assessment of the oral motor function	Intelligent development evaluation
Participate in the inspection	14(100.00%)	3 (100.00%)	35(100.00%)
The result is abnormal	6(42.86%)	3(100.00%)	31(88.57%)

As shown in Table 1, the physical condition of the participating children was evaluated, among which 14 autistic children underwent head CT examination, 3 autistic children underwent oral motor function evaluation, and 35 autistic children underwent intelligent development evaluation. Children with autism rating Scale, children with autism parents rating Scale and repetitive behavior evaluation were used. 0-6 years old mental development test, ABR test, child psychology scale, etc.

6. DISCUSSION

Autism is a serious disease that affects children's physical and mental health, and its onset is insidious, and it is not easy to be detected and noticed in the early stage. Autism can significantly affect personality development, employment opportunities and social interactions. The long-term course of asD depends on the individual presentation of each patient. There is no specific treatment for autism, and only supportive treatment can be given in individual symptomatic areas.

The main manifestation of autism is communication disorder, including the following two aspects: (1) Non-verbal communication disorder, children with this disorder often cry or scream to express their discomfort or need. Lack of corresponding facial expression, rarely nod, shake head, wave hands and other movements to express their will. (2) Speech communication disorder, children with this disorder have obvious difficulties in speech communication, including: impaired language comprehension to varying degrees; speech development is delayed or not developed, there are also some children before 2-3 years old had expressive speech, but later gradually reduced, or even completely disappeared; abnormal speech form and content: children often have imitation speech, stereotyped and repeated speech, grammatical structure, common errors in personal pronouns, intonation, speed, rhythm, stress and other abnormalities; impaired speech use ability: although some children can recite children's songs and advertising words, they seldom communicate with words, and will not put forward topics, maintain topics or only rely on stereotyped and repeated phrases to talk, entangling in the same topic.

Folding is a pattern of narrow interest and rigid repetition. Children with this disorder are less interested in toys and games, and more interested in objects that are not usually toys, such as wheels or bottle caps, which are round and swivel. Some children also develop attachment to inanimate objects such as plastic bottles and sticks. Children's behavior is often very rigid, such as: often do things in the same way or play with toys, items in a fixed position, go out to the same route, eat only a few kinds of food for a long time. And the regular occurrence of stereotypical repetitive movements and strange and strange behavior, such as repeated jumping, staring hands in front of the eyes, flapping or tiptoe walking.

Other symptoms: about 3/4 of children with this disorder have mental retardation. About 1/3 to 1/4 of the children have epilepsy. Some children with low intelligence can also appear "autistic talent", such as music, calculation, date calculation, mechanical memory and recitation and other outstanding performance, known as "idiot savant".

It is reported that music therapy is extremely effective to children with autism, for children with autism, music is the best medicine, they can communicate through music and the world better, take music therapy and compose training for autistic children to intervene, can adjust their mental state and behavior, improve the treatment curative effect, improve the function of speech [5-6]. In this paper, 43 children with autism and autism spectrum disorder were analyzed and studied. It was found that the onset age of autism was mostly 1 year old, and the male to female ratio was 6:1 ~ 9:1, which was very consistent with the literature [6]. China has the largest population in the world, with about 300 million children and about 2 million autistic children.

Shenmu city ranks the most northern part of Shaanxi Province, with the largest annual economic income in China and a GDP of 184.8 billion yuan last year. The city has a population of 571,900, with 22.06% of children under the age of 14. The research shows that there is no direct causal relationship between economic development and the occurrence of autism, and more attention should be paid to the occurrence and early detection of autism in economically developed areas, and the symptoms of autism are mainly language and communication disorders. We can also adopt the design and application of a head-mounted display (HMD) immersive virtual reality system to improve and train the emotional and social skills of children with autism spectrum disorders [7,8,9,10].

Autism treatment principles: ① early discovery, early treatment. The earlier the treatment age, the more obvious the improvement degree; ② Promote family participation, so that parents become partners or participants in treatment. Children themselves, child health care doctors, children's parents and teachers, psychologists and society should participate in the treatment process to form a comprehensive treatment team; ③Adhere to the comprehensive treatment training program with non drug therapy as the main, drug therapy as the supplement, and the two mutually promote; ④ The treatment plan should be individualized, structured and systematic. According to the children with different conditions for treatment, and according to the treatment response at any time to adjust the treatment plan; ⑤ treatment, training at the same time to pay attention to the body of children.

Sensory integration training

Sensory integration training therapy was founded by Ayres in the United States. It was mainly applied to the treatment of adhd and learning disabilities in children at first. As there are common sensory and perceptual abnormalities in children with autism, this method is also widely used in the treatment of children with autism. The therapy, which uses play facilities such as skateboards, swings and balance beams to train children, has been reported and observed to be effective in reducing hyperactivity and increasing language in children with autism. Other therapies similar to sensory integration include auditory integration, music therapy, chiropractic, squeeze therapy, hug therapy, and touch therapy. The efficacy of sensory integration training is controversial abroad and has not been recognized by mainstream medicine.

The role of family in autism education and training

Education and training for autism is not solely a medical issue. The socioeconomic status of the family, as well as parental attitudes, environmental or social support and resources, all influence the outcome of a child. With comprehensive education and training, coupled with medication, the prognosis of children with autism can be significantly improved, and a significant proportion of children may gain the ability to live, study and work independently, especially those with Asperger's syndrome and high-functioning autism. In the process of education or training, three principles should be adhered to: (1) tolerance and understanding of children's behavior; (2) correction of abnormal behaviors; (3) the discovery, cultivation and transformation of special abilities. Training should be family-centered, while paying attention to the full use of social resources, set up day training and education institutions, while training children, but also to spread relevant knowledge to parents, autism education and treatment is the main measures. Parents need to accept the facts, overcome the psychological imbalance, and properly handle the relationship between children's education and training and parents' life and work. With love, patience and perseverance, we actively engage in children's education, training and treatment, and establish long-term consultation and cooperation with doctors.

Prognosis: This disorder is a chronic course of disease with poor prognosis. About 2/3 children cannot live independently in adulthood and need lifelong care and maintenance. The prognostic factors included IQ, communicative language at age 5, and education and training. Planned medical and corrective education early and consistently improves outcomes [11].

7. CONCLUSION

Autism can significantly affect personality development, employment opportunities and social interactions. Because children with autism are unable to communicate effectively, they lack essential survival and social skills, which have a significant influence on their everyday lives,

education, and future employment prospects. In economically developed places, more emphasis should be paid to the development and early detection of autism, whose symptoms are primarily language and communication difficulties.

CONSENT

As per international standard, parental written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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