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Updated Research on 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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Review Article

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ABSTRACT

Autism begins in childhood, and at its core is a serious interpersonal relationship and communication disorder. The effects of the disorder intervene in multiple ways in relationships with the environment, participation in community life, the ability to adapt to society, and cognitive and language, motor, emotional and interactive functions are all affected. Such individuals perform better in a low-stimulation environment. So finding or creating a friendly environment for people with autism is a fundamental goal. Research on autism is still in its infancy in China, suggesting that clinical research on autism should be strengthened.

Keywords: Autism; child; treat.

1. INTRODUCTION

The prevalence of autism has increased in recent years, and the development of these children and the life experiences of their families have become a global concern. Autism is a disease that seriously affects the physical and mental health of children. It is a serious neurodevelopmental disorder, mostly occurring in the first three years after birth [1]. The results of many studies suggest that the tendency of 90% and more of people to develop autism is genetically determined [2]. Several studies on genome scans of autism susceptibility loci have been completed with some positive results, but have rarely been replicated by other studies. In recent years, scholars tend to call it Autism Spectrum Disorder (ASD). ADS is a

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neurodevelopmental disorder characterized by social communication disorders and restricted repetitive behaviors [3]. Most of the affected individuals have problems in social contact, communication and language , many people show repetitive, rigid behavior and interest,the complexity of mental development disorders, has become one of the serious public problems affecting children's health worldwide. Anxiety is one of the most negative emotions such as tension, worry and fear when facing stressful situations. It is one of the most common mental disorders in childhood [4,5,6].

2. HISTORICAL ASPECTS

The Swiss psychiatrist Eugen Bleuler coined the term autism around 1911 as part of his research on schizophrenia. He initially applied it only to the disease and wanted to describe one of its basic symptoms of retreating into the inner world of the mind. Bleuler understands autism as "divorced from reality, and the relative or absolute dominance of inner life". Sigmund Freud borrowed the words "autism" and from Bleuler, and roughly equated them with "narcissistic", as antonyms of "social". Over time, the meaning of the word has changed from "living in a world of its own mind and imagination" to being "self-centered" in the general sense. Hans Asperger and Leo Kner then adopted the concept of autism, probably independently. However, instead of just seeing a single symptom in it, complete disease with it. They distinguished people with schizophrenia from those who live in an intrinsic state of withdrawal from birth. The latter now defines the term "autism". Kanner narrowly defined the term "autism", it essentially corresponds to now called early childhood autism (therefore: Kanner syndrome), His views gained international recognition and became the basis for further autism research.

There are so many books about people with autism. Neurologist Oliver Sachs and psychologist Torrey l. Hayden have published books on their autistic patients and their lives. Among the books written by autistic people themselves, American animal scientist Temple Grandin, Australian writer and artist Donna Williams, American educator Lianne and German writer and film producer Axel Braun are particularly famous.

3. STATISTICS IN AUTISM

In recent years, scholars tend to call it Autism Spectrum Disorder (ASD). The prevalence of autism has been reported across countries, but has seen a significant upward trend around the world in recent years. Autism is a disease that seriously affects the physical and mental health of children, bringing a serious burden to the society and the family. Social communication and communication disorders are the core defects of children with autism, and they are one of the important conditions for children to establish contact with the outside world.

At present, it is found that autistic children are equally distributed in high, middle and low social classes. According to the CDC, the incidence of ASD has increased from 1/68 to 1/59 by 2018 [7]. An analysis of 11,091 interviews found that the prevalence of ASD was 2.24% in age groups aged 3-17, 3.29% in boys and 1.15% in girls. The report says that autism cases increased by 57% between 2002 and 2006. In March 2014, The Center for Disease Control and Prevention (CDC) reported an autism incidence rate at 1:68.

According to statistics, there are 35 million people worldwide, among which children account for 40%. The incidence of autism spectrum disorders in China is 1:100, and the total number reaches 10 million, among which more than 2 million children are between 0-14 years old. The age of autism onset is mostly 1 year old, and the ratio of men to women in China is 6:1 to 9:1. China's population ranks first in the world, with about 300 million children. In recent decades, the number of autism cases seems to rise sharply. According to the CDC, although better and earlier diagnoses play a role, it cannot be excluded that part of the increase was due to an increase in actual cases. However, autism presents not only as a disorder in the population, but also as a continuous personality trait.

4. CAUSES AND POSSIBLE TRIGGERS OF AUTISM

A growing number of studies show that genetic factors are one of the important causes of autism, resulting in about 25% of patients, and about 10% to 20% of patients with autism spectrum disorders have chromosomal rearrangements. On the study of chromosomal and genetic abnormalities, in 2007, Liu Xiangjie et al. found with high-resolution G band and artificial bacterial chromosome (BAC) fluorescence in situ hybridization (FISH) that a few Chinese children with autism have chromosomal changes. BAC, FISH contributed to the precise determination of chromosomal breakpoints, studied chromosomal

fragile sites in childhood autism, and found that higher fragile sites expressed green and broken point frequency is one of the material basis and causes of disease in pediatric autism [8-10].

To investigate the relationship between the single-nucleotide polymorphism (SNP) at the rs4301112 site of the CD157 / BST1 gene and the risk of developing autism spectrum disorder (ASD) in children. A total of 102 children with ASD treated in the psychology discipline of Qinhuangdao First Hospital from March 2017 to January 2019 were included as the ASD group, and 100 healthy children without neurodevelopmental disorders were included as the control group. According to the pediatric Autism Assessment Scale (CARS) score, ASD was mild to moderate (66 cases) and severe (36 cases). Post-sequencing analysis of CD157 / BST1 locus rs4301112 in blood samples by Sanger sequencing showed that AG genotype is a risk factor for ASD. The AG genotype and G allele at the rs4301112 locus of the CD157 / BST-1 gene may be related to the risk of ASD and the severity of the disease [11]. In 2006, Son et al., autism local cerebral blood perfusion changes, the results show that children with autism temporal lobe, caudate, putamen, hypothalamus, hippocampus, occipital blood flow decreased to different degrees, thalamic perfusion is significantly higher than the cortical area, because children cerebral blood flow changes and the maturity of brain function, thus concluded that the cerebral blood flow of children with autism is increase with age [12].

Autism usually occurs before the age of three, children autism factors are more, there is no effective treatment and poor prognosis, so early prevention has important significance, risk factors of autism during pregnancy, but complex risk factors during pregnancy, autism may be the result of a variety of risk factors, risk factors during pregnancy and the relationship between child autism is not clear. The occurrence of autism may be related to threatened abortion, viral cold during pregnancy, medication history during pregnancy, no folic acid supplementation, mental depression during pregnancy, pregnancy vomiting, and genetic history [13-14].

Martina Arenella, Gemma Cadby, Ward De Witte investigated the genetics of individual dimensions, or autism-like characteristics, of the individual dimensions of autism spectrum disorder phenotypes. These autism-like traits are continuous variants in autistic behavior occurring in the general population. Data on autism-like traits in four different population cohorts were meta-analyzed and a set of genetic analysis was performed to identify common variants in autism-like traits and to understand how these variants are linked to autism spectrum disorders and how they contribute to neurobiological processes. The findings suggest the genetic relevance of specific autism-like traits and links to the immune system [15].

5. TREATMENT OPTIONS FOR AUTISM

On the basis of individual development, a plan was developed in which the type of treatment for individual symptoms was identified and coordinated. Under the Convention on the Rights of Persons with Disabilities (United Nations), an appropriate environment should be created for all those involved to learn how best to consider the characteristics of children. In the case of children, the treatment plan includes the entire environment (parents, family, kindergarten, school).

Exercise interventions are very beneficial for children with autism. Dong Liangshan et al. Select 185~12 years old children with autism, explore 10 weeks exercise intervention on autistic children's basic movement skills and social communication ability, concluded that exercise intervention can not only improve the basic movement skills of children with autism, and to a certain extent can provide more opportunities for social communication, improve the core symptoms such as social communication defects [16].

Music therapy can greatly improve the condition of children with autism. Wang Chunxiao chose the Child Rehabilitation Department of Jiangnan Branch of Chongqing Three Gorges Central Hospital to treat 52 autistic children, and divided them into control group (26 cases) and observation group (26 cases) by random group. The control group implemented the regular autism rehabilitation treatment, and the observation group added the music treatment to the conventional autism rehabilitation treatment program. Contrast two groups of adverse events, rehabilitation treatment plan implementation total time, parents of rehabilitation treatment plan and the effect of satisfaction, the conclusion shows: children with autism music therapy rehabilitation intervention, can reduce the occurrence of adverse events, greatly improve children condition, make parents satisfaction of rehabilitation treatment [17].

Drug treatment, because the cause of autism is not clear, so there is no specific drugs for children autism, commonly used in children autism drugs has five categories, antipsychotics, antidepressants, antianxiety, drugs or mood stabilizer, the most widely studied is antipsychotics, in 2004, Xu Ye et al on olanzapine autism effect and side effects, proved that olanzapine treatment in children autism is safe and effective, especially for irritability, psychiatric disorders and sleep disorders good effect [18]. In 2011, Huang Fei et al. demonstrated that risperidone, as an atypical antipsychotic, significantly improved behavioral problems in autistic children and was well tolerated [19]. In addition, there are some studies of the antidepressant fluoxetine on autism in children.

Sensory comprehensive training method, which has an effect on childhood autism, is one of the research focuses in recent years. This method has good effects on children's behavioral problems, physical movement incoordination, inattention, emotional instability and poor academic performance. Zhang Guixin, Wang Yao selected from March 2017 to January 2019, the first people's hospital admitted 65 cases of children to observe the application of sensory integration training in children, the conclusion: on tomoxetine treatment of functional autism spectrum disorder children, sensory integration training can improve behavior, improve comprehensive response control ability, comprehensive attention and adjust psychological state, prove that sensory integration training is effective in children with autism [20].

To advocate clinical comprehensive nursing for autistic patients, Liu Yuhua selected 32 pediatric autistic patients treated by our hospital from January 2014 to January 2015 to study the clinical nursing methods of pediatric autism, and found that the clinical effect of pediatric autism is remarkable, which is worthy of clinical application [21].

Applied behavioral analysis interventions proved to be effective in improving their cognitive, language, and social and emotional skills, but service delivery varied between developed and developing countries. Liao Yi, Carolla Drenberg and Hu Xiaoyi conducted a qualitative study to explore the practical fidelity of behavior analysis services for autistic children in western developed countries (UK) and eastern developing countries (China).The study found: (1) lack of support for autism and behavioral analysis services; (2) applied behavioral analysis interventions not widely recognized by UK healthcare or education systems; Chinese parents face challenges in inclusive education and access to quality services, and social stigma; (3) limited awareness and application of early intensive behavioral intervention; and (4) specific aspects of one's practice are similar and increase with ongoing training [22].

6. RESULTS AND PROGNOSIS

Autism spectrum disorders have a poor outcome and are generally considered a accompanying lifetime disorder. However, with the expansion and deepening of the research, some children diagnosed with autism in the early stage, with the age and the intervention of related interventions, their cognition, adaptability and other aspects can reach the normal development level, and no longer meet the diagnostic criteria of autism, that is, the "best result". However, most individuals still have varying degrees of residual defects [23].

Autism can significantly affect personality development, employment opportunities, and social interactions. The long-term course of autism spectrum disorder depends on the individual presentation of each patient. There is no effective treatment for the cause of autism, because it is not yet known. Only supportive therapy in individual symptomatic areas is possible. On the other hand, many of the difficulties reported by people with autism can be prevented or reduced by adjustments to the environment. For example, some people have reported sensitivity to pain at specific sound frequencies. Such individuals perform better in a low-stimulation environment. Therefore, finding or creating a friendly environment for people with autism is a fundamental goal.

Approximately 10 – 15% of individuals with early childhood autism are able to live independently in adulthood. The remainder usually required life-long guardianship and sheltered housing.

7. CONCLUSION

However, many people with autism are not diagnosed until after completing their studies. Regarding education and career, the individual level of development must also be taken into account. Therefore, finding or creating an autism-

friendly environment, such as special schools, is a fundamental goal.

CONSENT AND ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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