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IMPROVING THE EFFECT OF CORRECTIONAL PEDAGOGICAL METHODS OF WORK ON CHILDREN WITH AUTISM SPECTRUM DISORDER IN PRESCHOOL AGE

Qosimova Nafosat Jahongir qizi

Basic doctoral student of UZMPU named after Nizami

Email: kosimovanafosat@gmail.com +998939679828

Annotation: This article discusses why Autism Spectrum Disorder (ASD) is diagnosed more often in boys than in girls. It examines biological factors, differences in symptom presentation, and diagnostic challenges that may lead to the underdiagnosis of girls. The article highlights the importance of improving awareness and diagnostic practices to ensure accurate identification and support for all individuals with autism.

Keywords: Autism Spectrum Disorder (ASD), autism diagnosis, gender differences, autism in girls, autism in boys, neurodevelopmental disorders, diagnostic bias, female autism phenotype, camouflaging, sex differences.

Annotatsiya: Ushbu maqolada nega Autizm Spektri Buzilishi (ASB) o‘g‘il bolalarda qiz bolalarga nisbatan ko‘proq tashxislanishi masalasi muhokama qilinadi. Unda biologik omillar, simptomlarning namoyon bo‘lishidagi farqlar hamda qizlarda autizmning yetarlicha tashxislanmasligiga olib kelishi mumkin bo‘lgan diagnostik qiyinchiliklar tahlil qilinadi. Maqolada autizmga chalingan barcha shaxslarni to‘g‘ri aniqlash va zarur yordam bilan ta‘minlash uchun xabardorlikni oshirish hamda diagnostika amaliyotlarini takomillashtirish muhimligi ta‘kidlanadi.

Kalit so‘zlar: Autizm Spektri Buzilishi (ASB), autizm diagnostikasi, gender farqlari, qizlarda autizm, o‘g‘il bolalarda autizm, neyro-rivojlanish buzilishlari, diagnostik xolislik muammosi, ayollardagi autizm fenotipi, kamuflyajlash, jinsiy farqlar.

Introduction. Autism Spectrum Disorder (ASD) is a neurodevelopmental condition characterized by differences in social communication, behavior, and sensory processing. Over the past several decades, the number of diagnosed autism cases has increased substantially worldwide. One of the most notable patterns in autism research is the unequal distribution of diagnoses between males and females. Studies consistently report that boys are diagnosed with autism more frequently than girls, with ratios commonly ranging from 3:1 to 4:1. This difference has prompted extensive research into biological, psychological, and social explanations. One of the most popular theories as to why autism affects more boys than it does girls is Simon Baron-Cohen’s “Extreme Male Brain Theory.” This theory, however, doesn’t exist in isolation, it itself is rooted in Leo Kanner’s foundational work from 1943. In 1943,

Leo Kanner published the first known scientific description of childhood autism and he made the remarkable observation then that many of the symptoms of autism appeared to him to be an “extreme variant of male intelligence.” In other words, the autistic brain was just an ordinary male brain but one that is taken to its extremes. Almost 60 years after Kanner’s work, Simon Baron-Cohen was able to show that many of the cognitive difficulties observed in autism, were often found in areas where the average female would typically outperform the average male. many of the cognitive difficulties observed in autism, were often found in areas where the average female would typically outperform the average male Think verbal communication, empathy and language - for example - all things which girls are often perceived to be better at than boys. Girls, for example, tend to speak on average a little earlier than boys and also tend to show a more sophisticated use and grasp of language. Incidentally, verbal communication tends to be something that many children with autism struggle with. And while not all autistic people are good at mathematics and science, there is a substantial amount of evidence that their fathers might be. Fathers who are engineers, doctors or accountants (all jobs that require strong analytical skills) were found to be twice as likely to father autistic children than men who had non-analytical jobs.

Biological Explanations. Researchers have proposed several biological theories to explain the higher prevalence of autism diagnoses among boys. Genetic factors appear to play an important role in autism development. Some studies suggest that females may possess a greater level of biological protection against autism-related genetic variations, a concept known as the “female protective effect.” According to this theory, girls may require a larger number of genetic risk factors before developing characteristics that meet diagnostic criteria. Neurological research has also identified sex-related differences in brain development that may influence the likelihood of autism. Hormonal factors, particularly exposure to prenatal sex hormones such as testosterone, have been investigated as possible contributors. While evidence supports some biological influence, no single biological mechanism has been identified as the sole cause of the sex difference in autism diagnoses. Biological factors are often discussed as a possible explanation for why autism is diagnosed more frequently in boys than in girls. One important idea is the “female protective effect,” which suggests that girls may need a higher number of genetic risk factors than boys to develop autism. This means that females might have some biological protection that reduces the likelihood of showing clear autistic traits. Genetic research has shown that autism is highly heritable, involving many different genes rather than a single cause. Some studies suggest that certain genetic variations linked to autism may be expressed differently in males and females, potentially increasing susceptibility in boys. Hormonal influences during prenatal development have also been studied. In particular, exposure to higher levels of testosterone before birth has been suggested as a possible factor affecting brain development and social behavior. However, this theory does not fully explain all cases of autism. Neurological differences in brain structure and connectivity have also been observed in individuals with autism. These differences may vary between males and females, but research is still ongoing.

Differences in Symptom Presentation. An important explanation for the diagnostic gap is that autism often presents differently in girls than in boys. Traditional descriptions of autism

were largely developed from studies involving male participants. As a result, diagnostic criteria have historically reflected characteristics more commonly observed in boys. Girls with autism may demonstrate stronger social imitation skills and greater motivation to maintain social relationships. They may develop strategies to hide or compensate for social difficulties, a phenomenon known as masking or camouflaging. For example, a girl may observe and copy the behavior of peers, allowing her challenges to remain unnoticed in educational and social settings. Restricted interests, which are a common feature of autism, may also appear differently in girls. While boys may develop highly focused interests in topics such as transportation systems or technology, girls may exhibit intense interests that resemble socially accepted hobbies. Consequently, these behaviors may not attract clinical attention. This article highlights that the higher prevalence of autism diagnosis in boys compared to girls is a complex issue influenced by multiple interacting factors. Biological mechanisms, including genetic risk and the proposed female protective effect, may contribute to true sex differences in susceptibility. However, these factors alone do not fully account for the diagnostic gap. Social and cultural expectations significantly shape how autism is expressed and recognized. Many girls develop masking or camouflaging strategies that reduce the visibility of autistic traits, leading to underrecognition in everyday settings. In addition, clinical practice has historically relied on diagnostic frameworks based on male presentations of autism, which may result in missed or delayed identification in females. The evidence suggests that the observed gender difference in autism diagnosis is not only a matter of prevalence but also of recognition and assessment. Future research should continue to refine diagnostic tools and increase awareness of female autism presentations to ensure more accurate and equitable identification across genders.

Diagnostic Bias and Underdiagnosis. Diagnostic bias has become a major focus of contemporary autism research. Because autism was historically viewed as a predominantly male condition, healthcare professionals may have been more likely to recognize symptoms in boys than in girls. This has contributed to delayed diagnosis or missed diagnosis among females. Research indicates that many autistic girls receive alternative diagnoses before autism is recognized. Conditions such as anxiety disorders, depression, attention-deficit/hyperactivity disorder (ADHD), or eating disorders may be identified first. As a result, some girls are not diagnosed with autism until adolescence or adulthood. Increasing awareness among clinicians has improved the identification of autism in girls, but experts believe that underdiagnosis remains a significant issue. This article highlights that the higher prevalence of autism diagnosis in boys compared to girls is a complex issue influenced by multiple interacting factors. Biological mechanisms, including genetic risk and the proposed female protective effect, may contribute to true sex differences in susceptibility. However, these factors alone do not fully account for the diagnostic gap. Social and cultural expectations significantly shape how autism is expressed and recognized. Many girls develop masking or camouflaging strategies that reduce the visibility of autistic traits, leading to underrecognition in everyday settings. In addition, clinical practice has historically relied on diagnostic frameworks based on male presentations of autism, which may result in missed or delayed identification in females. The evidence suggests that the observed gender difference in autism

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Social and Environmental Factors. Social expectations may also influence autism diagnosis. In many cultures, girls are encouraged to develop communication and relationship-building skills from an early age. These expectations may lead autistic girls to work harder to adapt socially, making their challenges less visible. Teachers and parents may interpret social difficulties differently depending on the child's sex. Behaviors that raise concerns when displayed by boys may be considered shyness or introversion when displayed by girls. Such differences in perception can affect referral rates for assessment and diagnosis. Social factors may contribute to the lower rate of autism diagnoses in girls. In many societies, girls are expected to be polite, quiet, and socially engaged. Because of these expectations, autistic girls may learn to imitate the behavior of their peers and hide their social difficulties. This process, known as camouflaging or masking, can make autism less noticeable. Parents and teachers may also interpret autistic behaviors differently in boys and girls. For example, a boy who avoids social interaction may be referred for evaluation more quickly, while a girl with similar behaviors may be described as shy or reserved. As a result, girls are less likely to receive an early assessment. Peer relationships can also influence diagnosis. Many autistic girls develop strategies to maintain friendships, even when social interactions are challenging. These coping mechanisms may reduce the visibility of autism symptoms and delay diagnosis. In addition, historical stereotypes have portrayed autism as a predominantly male condition. This perception has affected public awareness and clinical practice, contributing to the underrecognition of autism in girls. Increased awareness of female presentations of autism is helping to address these challenges and improve diagnostic accuracy.

Implications for Research and Clinical Practice. The recognition of sex differences in autism has important implications for healthcare and education. Improving diagnostic tools to better identify female presentations of autism can help ensure earlier intervention and support. Researchers are increasingly studying autism in girls and women to develop a more comprehensive understanding of the condition across the entire population. Future research should continue to investigate genetic, neurological, psychological, and social factors contributing to diagnostic differences. A more balanced approach to autism research will help reduce disparities in diagnosis and improve outcomes for all individuals on the autism spectrum. Clinical practice plays an important role in the difference in autism diagnosis rates between boys and girls. Historically, diagnostic criteria for Autism Spectrum Disorder were developed based mainly on studies of boys. As a result, clinicians may be more familiar with male presentations of autism, which can lead to missed or delayed diagnosis in girls. In clinical settings, assessment tools and behavioral checklists may also be less sensitive to how autism appears in females. Girls are more likely to show subtle social difficulties, better language skills, or stronger imitation abilities, which may not fully match traditional diagnostic expectations. Another factor is diagnostic substitution. Girls with autistic traits are sometimes diagnosed with other conditions first, such as anxiety, depression, or attention-deficit/hyperactivity disorder (ADHD), before autism is considered. This can delay accurate

identification. Time constraints in clinical evaluations may also affect diagnosis. If symptoms are not clearly visible during a short assessment, especially when a child is masking their difficulties, clinicians may not recognize autism.

Conclusion. The higher rate of autism diagnoses among boys results from a complex interaction of biological factors, differences in symptom presentation, diagnostic practices, and social influences. Although boys continue to receive diagnoses more frequently than girls, growing evidence suggests that many girls have historically been overlooked. Greater awareness and improved diagnostic methods are helping to address this imbalance and provide a more accurate understanding of autism across sexes. This article highlights that the higher prevalence of autism diagnosis in boys compared to girls is a complex issue influenced by multiple interacting factors. Biological mechanisms, including genetic risk and the proposed female protective effect, may contribute to true sex differences in susceptibility. However, these factors alone do not fully account for the diagnostic gap. Social and cultural expectations significantly shape how autism is expressed and recognized. Many girls develop masking or camouflaging strategies that reduce the visibility of autistic traits, leading to underrecognition in everyday settings. In addition, clinical practice has historically relied on diagnostic frameworks based on male presentations of autism, which may result in missed or delayed identification in females. The evidence suggests that the observed gender difference in autism diagnosis is not only a matter of prevalence but also of recognition and assessment. Future research should continue to refine diagnostic tools and increase awareness of female autism presentations to ensure more accurate and equitable identification across genders.

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