To What Extent 'Neurodevelopmental Disorder' and 'Neurodiversity' Provide Useful Frameworks for Understanding and Supporting the Learning Needs of Children with Autism

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Abstract

Autism is a developmental disorder that lasts a lifetime and is difficult to reverse in individuals who support neurodevelopmental disorders, whereas neurological differences are normal in individuals who support neurodiversity. This essay will review the concept of autism, its perspectives and its opposing aspects from a neurodevelopmental disorder and neurodiversity perspective, thus make recommendations to supporting children's learning and interventions based on an understanding and conceptualization of the two perspectives.

Keywords

Children with Autism; Neurodevelopmental disorder; Neurodiversity; Intervention; special education; Learning needs.

1. Introduction

Following Kanner's (1956) definition of autism in the United States, there has been a growing body of scholarly research on children with autism, which is generally recognized as a developmental disorder due to neurological dysfunction [1]. The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), developed by the American Psychiatric Association (2013), revised the diagnostic criteria and core disorders for "autism," meaning that children will be defined according to different aspects of behavioral deficits [2]. However, the neurodiversity movement looks at individuals with autism from a different perspective, identifying and accepting individuals with autism in a positive way from the perspective of neurological differences. According to neurodiversity, individuals with autism behave differently from the general population only because the two groups are "different" and not "deficient". Clarifying the differences and concepts of neurodevelopmental disorders and neurodiversity can only help find more effective support for children with autism.

2. Autism from Neurodevelopmental Disorder Perspective

Leo Kanner originally described autism as a mental disorder, a genetically determined phenomenon (Kanner & Eisenberg, 1956) [1]. It is seen as a disability that follows a person throughout their life, a group of pervasive developmental disorders characterised by atypical development of social and communication skills (Gayle et al, 2012) [3]. It therefore affects the way a person communicates and interacts with the outside world.

Wing and Gould (1979) introduced the concept of the autism spectrum [4]. As with a growing number of psychological disorders, is often considered to be a 'spectrum' disorder that includes a variety of different symptoms and symptom profiles of varying severity (Gayle et al, 2012) [3]. This means that the general level of autism varies widely, with some people potentially being severely affected by autism and having significant impairments, while others are less affected. Autism spectrum disorders (ASD) used to include three categories of autism, Asperger's and

pervasive developmental disorder not otherwise specified (PDD-NOS) (NIMH, 2011), with autism being the most typical disorder that falls within the autism spectrum disorders [5]. Deficits in verbal and non-verbal, social interactions, and repetitive or patterned behaviours and movements, such as spinning and head banging, are all symptoms of ASD (Lord et al., 2000) [6]. Also, ASD is often accompanied by language and learning difficulties, as well as inflexibility and rigid routines. These social and communication difficulties are commonly measured through assessments of body language, facial expressions and eye contact, as well as the child's relationships with peers and family members (American Psychiatric Association, 2000) [7].

The latest revision of the DSM-5, with some updates in the diagnostic criteria for autism compared to the DSM-IV, eliminates the concepts of childhood disintegrative autism and Asperger's syndrome and uses a single autism spectrum disorder. A combination of the categorical and continuum autism approaches into one category. The three domains of autism disorders were combined into two, social communication disorders, restricted interests/repetitive behaviors, and three "levels" of classification in the two disorder domains, with 1 being in need of support and 3 being in need of very substantial support. The diagnostic criteria for autism spectrum disorders in the DSM-5 are also divided into five categories: aspects of social communication and interaction; restricted or repetitive patterns of behavior, interests, or activities; symptoms that are present during early development; symptoms that result in clinically meaningful impairment of existing social, occupational, or other important domains; and symptoms that cannot be better explained by mental retardation or global developmental delay (American Psychiatric Association, 2013) [8].

The Centers for Disease Controland Prevention (CDC) published an autism prevalence rate of 1 in 68 in 2014, an updated autism diagnosis rate of 1 in 59 in 2018, and an updated autism prevalence rate of 1 in 54 in 2020, which means that the prognosis for autism is poor, but the prevalence is increasing (Rinaldi, 2016) and autism has become a serious global public health problem (Andrew, 2014) [9-10]. Therefore, the understanding of autism involves the understanding of child development and neurodevelopmental disorders in children and requires medical approaches to study its etiology. However, the current field of medical research has not yet found a cause or cure for autism, and the understanding of autism is still not perfect. The clinical phenotype of the study of etiology should be determined to the specific disorder and subtype as much as possible, but researchers are more accustomed to diagnose the disorder by typology, and to diagnose each disorder by specific classification for the "broad category", while it is unclear whether the diagnosis of "spectrum disorders" is typological (Zheng, 2019) [11]. This may have caused a portion of the public to become frustrated with medical approach, at a time when the emergence of neurodiversity has changed the way of thinking and attempts to view autism in a positive way and to consider certain aspects of autistic individuals as natural variants.

3. Autism from Neurodiversity Perspective

Neurodiversity emphasises that autism is not a defect, but a difference. It represents differences in the structure of the human brain, as well as other human diversities (e.g. culture, gender, race, sexual orientation), and neurological differences are normal differences (Runswick-Cole, 2014) . Its advocates use scientific methods to prove that the neurological abnormalities of people with autism are differences in the brain, they try to fight for the rights of people with autism, against discrimination and want society to recognize and accept individuals with autism (Runswick-Cole, 2014) [12]. Thus, neurodiversity revolutionises the public's perception of autism, shifting from a 'medical paradigm' to a 'neurodiversity paradigm', and also heralds a shift in the philosophy of education and intervention, facilitating a change from trying to

overcome the deficits of individuals with autism to enhancing their strengths (Masataka, 2017) [13].

However, as the neurodiversity movement has distanced itself from the medical field, questioned traditional expertise, and challenged pathologization (Kirkham, 2017), critical perspectives have also emerged [14].

The first view is that autism is clearly a disability. den Houting (2019) argues that disability does not contradict the neurodiversity paradigm, and that disability is caused by living in a society that is unfriendly to children with autism, rather than by autism itself [15]. Therefore, a social model of disability for autistic people is necessary (Reindal, 2008) because this model describes the experience of autistic people to reduce and avoid disability through environmental changes and appropriate aids [16].

The second argument argues that the neurodiversity paradigm can only be applied to support high-functioning (lower support needs) individuals with autism because critics often argue that those with support lower functioning (higher support needs) individuals are too severely disabled to be included in the neurodiversity movement. Assuming social acceptance of autism as a natural variant of neurodiversity, individuals with high-functioning autism will no longer be plagued by statements like "autism is a disability". However, for individuals with low-functioning autism, social acceptance does not alleviate the serious problems they face in social relationships, social communication, and stereotyping (Jaarsma & Welin, 2012) [17]. Classifying individuals with autism as high-functioning and low-functioning may deprive low-functioning individuals of agency, limit one's chances of success, and potentially limit access to support for high-functioning individuals (den Houting, 2019) [15]. Thus, within the framework of neurodiversity, the diagnostic criteria for autism should be applied more to individuals with low to moderate functioning autism, but it does not mean that the neurodiversity movement does not value individuals with high functioning autism, but rather the need to gain more confidence, support and opportunities (den Houting, 2019) [15].

The third view is that the neurodiversity implies that people with autism do not need support because it leads us to consider that autism is simply a natural variant (Jaarsma & Welin, 2012) [17]. In fact, neurodiversity advocates also differ on the question of whether individuals with autism need intervention. Some advocates are in favour of intervention, acknowledging the deficits of individuals with autism and advocating for interventions to improve them, and they hope that in the future there will be less investment in etiological research and a shift in research focus towards clinical interventions (Pellicano and Stears, 2011) [18]. High-functioning autism advocates, on the other hand, oppose impairment-oriented diagnoses and interventions (Jaarsma & Welin, 2012), argue that individuals with autism have specific cognitive styles and communication styles, and emphasise the need to respects individuals with autism [17]. In addition, neurodiversity advocates oppose a 'cure for autism' and vary in their intensity. Researchers who hold a mildly opposing view of a 'cure' favour certain interventions for individuals with autism by doctors, professionals, parents and others. Those who are radically opposed to the idea of a cure argue that doctors and autistic parents who hold the idea of a 'cure for autism' do not respect the lifestyles of individuals with autism and that supporting a cure would mean erasing the differences of individuals with autism (Sinclair, 2005) [19].

4. Providing Support to Children with Autism

Interventions for autism vary from integrated are intervention models, such as applied behavior analysis, and others are focused interventions that focus on a particular goal (Wong et al, 2013) [20]. ABA, developed from the field of psychology and stemming from behaviorism, is a more classical behavioral training that focuses on the functionality of behavior (Smith, 2013) [21]. It uses a one-to-one training approach with task delineation and reinforcement. ABA has

significant effects on behavioral problems and interpersonal communication in children with autism. According to Lovaas (1987) studies on the effectiveness of behavior therapy have shown that children's intelligence increased and behavior problems decreased significantly after behaviorist therapy [22]. However, as ABA became more and more used, it also began to generate controversy and criticism, mostly from members of the neurodiversity movement (Kirkham, 2017) [23]. They believe that the problems caused by autistic behavior may be caused by a lack of tolerance in non-autistic people, so they reject the medical model of autism as a neutral difference rather than a deficit (Kapp, 2013) [24]. They reject ABA and its therapeutic purpose, and even have advocates who believe that aba has abusive properties for autistic children physically (Bascom, 2012) [25].

From a neurodiversity perspective, we should pay more attention to the strengths of autistic individuals and increase the number of services that support autistic individuals and create a social environment that is accepting of autistic individuals. This is why interventions should emphasize social support for individuals with autism and adaptation to the needs of individuals with autism, with a focus on improvement. Neurodiversity thus provides a framework for supporting children's learning needs in the following ways.

Create an accepting social environment. Everyone needs to be accepted and to learn and live in an environment that is completely free of stereotypes, and this is especially true for individuals with autism. Viewing autism as a "difference" allows them to avoid discrimination or stigma for actions or behaviors that differ from the norm (Ortega, 2009) and thus increases self-esteem, enhances social participation, which in turn improves social skills and builds relationships with peers (Barnhart, 2016) [26-27]. Therefore, they need a friendly environment in which they can live and learn, where their unique skills are taken seriously, and where they can reach their fullest potential. We should create respectful, friendly, and accepting social environments that reject discriminatory, stigmatizing attitudes. We need to take a more holistic view of autism, to see the positive aspects of it, to re-examine the negative "deficits" that were thought to exist, and to see autism as a "difference," a difference based on the neurological diversity of human beings. Instead of trying to erase their autism, we should embrace their autistic qualities, focus on their neglected positive qualities, and provide a social environment that is as accepting and respectful of their existence as possible.

Provide equal educational opportunities for children to learn. Children with autism should have the right to an education free from stigma, helping them to progress in a normal, caring and supportive educational environment. Because every individual's existence has value, children with autism, regardless of severity, should be seen first and foremost as a rapidly developing, growing part of society. In other words, they should not be denied the right to education on an equal basis with their peers because of their deficiencies, but should be given an education that is appropriate, respects their values, and provides them with opportunities to interact and learn from other children their age.

Interventions for children with autism are provided with the goal of improvement. In daily intervention, children's restrictive interests, stereotypical behaviors and strange behaviors are not deliberately changed. Instead, they are transformed into selective advantages by supporting and strengthening the social interaction and parent-child interaction between autistic children and other groups (Steiner, 2011) [28]. For interventions in learning strategies, parents or interveners are encouraged to emphasize relying on the visual strengths of individuals with autism and allowing individuals with autism to express feelings and motivations in written form through narratives, rather than focusing on training individuals with autism to express themselves verbally (Masataka, 2017) [13]. Due to mental and physical impairments, children with autism often show withdrawal and a reluctance or inability to participate in crowd activities. A variety of fun games and toys can also encourage children with autism to interact with normal children, improve verbal communication skills and learn socially

beneficial rules of play. For example, Lego therapy uses a structured approach to constructing models (Bond et al, 2016), social interaction is supported through cooperative play using Lego blocks [29]. It is designed for young people on the autism spectrum or other young people who need more support with socialization, language, and friendships. Through their interest in LEGO models and shared interests, children with autism can make friends and build relationships while having fun (Play Included, 2021) [30]. By tapping into and utilizing the strengths and interests of children with autism to achieve a better improvement role and help them better adapt to learning and social life.

Provide the support and services that children with autism need. The school is the primary educational setting for children with autism and should provide a structured and orderly environment with as few distractions as possible to help them participate in instructional activities. It should also determine in a timely manner which interventions to implement for children with autism, select the most targeted interventions by using quality and educational criteria, and provide training and supervision to ensure their effectiveness (Bond et al, 2016) [29]. It also integrates school and home, and the Secret Agent Society (SAS) is integrating the two to perform practical, hands-on tasks. The program engages children through spy-themed games and activities that teach children how to identify their own and others' emotions, cope with anger and anxiety and express their feelings in an appropriate way (Secret Agent Society, 2021) [31]. SAS program has been shown in research to improve children's social skills and emotional regulation at school and at home (Beaumont et al., 2015) [32]. In addition, the broader autism community can support services for children with autism in need, for example, the community can become a venue for social skills training for children with autism to improve their quality of life and well-being, and to preserve and respect their way of life, depending on their geographic location and social resources (den Houting, 2019) [15].

5. Conclusion

On the one hand, from the perspective of neurodevelopmental disorder, autism spectrum disorder is a neurodevelopmental abnormality. Whether it is a disorder or disability, there should be a clear boundary and strict criteria to judge. The term "diversity" may blur this boundary or make it more difficult to determine and intervene in autism. On the other hand, from the perspective of neurodiversity, we advocate diversity, and people with autism are no different from us in nature. Neurodiversity is proposed so that the general public can better understand the autistic group, view them correctly, change their original perceptions, accept and embrace the autistic group, and on the basis of understanding, accept and communicate, and act as each other's role in society, thus creating a better social environment. However, this is more beneficial to high-functioning individuals, while for low-functioning individuals with autism increasing acceptance and identification does not bring substantial changes to them, so it should still be combined with education and treatment in the direction of all-round assistance. Therefore, it is wise to provide a humanistic and non-discriminatory social environment for individuals with autism and accept that this group is different, but also to use different interventions and treatments for different individuals with autism, offering more possibilities for the child's life and learning.

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