

### **The martial arts Aikido, an alternative for children with autism**

#### **Abstract**

Autism spectrum disorder (ASD) is not a disease but a clinical syndrome, it is a set of heterogeneous alterations at the neurodevelopmental level that begins in childhood and remains throughout life. As of yet, there is no cure for ASD, but early intervention, including therapy and education, can improve the quality of life for people living with ASD. The objective of this work was to develop a syntheses document of scientific literature that identifies and summarizes the best available alternative regarding ASD that, allows readers to have important information that is scattered in different sources. The martial arts are an activity for the body and mind that cause improvements in the emotional state, managing with problems and increased self-confidence among others. Aikido is a vehicle that allows us to reach a state in which we can change the center of the adversary through his own spherical movement around our center in order to wrap him in it and be able to handle and inspire human life, a way to prevent violence. The disability should not be a barrier to success.

Keywords: ASD, Martial Arts, disability, Aikido

## Introduction

Autism Spectrum Disorders (ASD) represent 3 of the Pervasive Developmental Disorders (PDD) defined in The General Assembly of the United Nations through its resolution A/RES/62/139, designates April 2 as World Awareness Day on Autism, to be observed every year from 2008 (ONU, 2019).

The definition of the terms "disability" or "special needs education" and the relationship of these issues to children's difficulties in learning is still the subject of much debate among specialists, researchers and the community as a whole. The definitions and methods for measuring disability vary from one country to another, according to the WHO disability is a "rare disease of low prevalence to be addressed progressively" (WHO, 2017).

Autism is not a disease but a clinical syndrome, it is a set of heterogeneous alterations at the neurodevelopmental level that begins in childhood and remains throughout life. It implies alterations that lead to the appearance of various anomalies during the growth of the individual, such as alteration of social and emotional interactions in behaviors, anomalies of verbal and non-verbal communication, impoverished imaginative activity and a collection of activities and interests characteristically restricted and repetitive. (Rapin, 1997; Baldares and Orozco, 2012; Chamak, 2018).

The term autism is widely used to refer to children who seem to "live in their own world", however, research carried out on these children indicates that they are victims of a biological alteration causing their mind to differ greatly from the of individuals without this pathology (Baldares and Orozco, 2012). The word autism comes from Greek *autto*, which means that it acts on itself; this, added to the suffix *-ism*, which means pathological process, indicates the pathological process that acts on oneself (Kanner, 1946; Volkmar and McPartland, 2014; Ntiembou, 2020).

An autistic child usually shows a significant delay in language acquisition, uses words inappropriately and without an adequate communicative purpose (Ntiembou, 2020). The autism does not represent a single pathological process, but rather a symptomatic procession that may be due to different diseases (WHO, 2017; Grassi, 2021). Its early detection and proper treatment can reduce the development of future complications. Untreated ASD carries risks and complications that endanger the physical and mental integrity of children, adolescents and adults.

According to the WHO, it is estimated that in the world 1 in 160 children (0.625%) has an ASD. The worldwide prevalence is around 1% (WHO, 2017). It occurs more frequently in men than in women, in a 4:1 ratio, although it has been observed that women with autism tend to express greater cognitive impairment (Sweileh *et al.*, 2016; Grassi, 2021; Real, 2022).

The autistic children seem to be unaware of other people's feelings and the negative impact of their own behavior on others, they are unable to make friends and play with other children; despite this, they do not seem to be affected by this social isolation (Reza, 2012; WHO, 2017; Grassi, 2021; Gasteiz, 2022).

Unbending behaviors, resistance to change (they insist on always eating the same thing, playing with the same toys or the same game monotonously and without changes, or always wearing the same clothes), is a common finding in these children (Volkmar and McPartland, 2014; Gil, 2019). Attempts to change these routines are often met with stubborn resistance and can lead to fierce tantrums (Gil, 2019).

The physical exercise seems to modify the structure and function of the brain in a beneficial way for children with autism, some researchers defend that physical activity could be useful as an adjuvant in pharmacological treatment or as replacement therapy (Reche, 2016; Herrera -Valenzuela et al., 2019).

Martial arts are exercises useful for body, mind and spirit, which mostly originated in the East. The use of martial arts as therapy and as an educational and socializing tool has been widely implemented and recognized in many countries such as the United Kingdom, Germany, Canada or the United States of America for more than half a century (Herrera-Valenzuela *et al.*, 2019; Real, 2022). It combines a broad index of knowledge about physical, cognitive and sensorial disabilities or special learning needs.

The term "martial arts" is not only referred to as a set of East practices that served as preparation for combat or war, but "art" is referred to as the fact that they require certain spiritual values, to preserve more the life of others before an aggression, than to have the highest possible sportive performance (Real, 2022).

There is much more to learn from martial arts than the sheer use of combat techniques; the spirit of the one who practices them must also enter into action. They are based on a holistic concept of the individual and often emphasize the importance of being one with the world around you. This type of philosophy is usually integrated with combat techniques through breathing exercises that must be coordinated with movement. Among these Asian martial arts, the Aikido stands out.

Aikido is defined as a meditation in movement and is attributed to increases in the consciousness of its practitioners (Hidalgo *et al.*, 2019). Meditation techniques (*Mokuso*), as well as other techniques classified therapeutically as mind-body-energy practices, can promote a state of consciousness such as autism.

The objective of this work was to develop a synthesis document of scientific literature that identifies and summarizes the best available alternative regarding ASD that, allows readers to have important information that is scattered in different sources.

## **Clinical manifestations**

The main symptoms of autism are alterations in social behavior, in verbal and non-verbal communication and in the range of interests and activities of a child (Baldares & Orozco, 2012; Volkmar & McPartland, 2014). Parents are the first one to detect symptoms such as severe deficits in social skills and restricted, repetitive, and stereotyped patterns of behavior in their child.

Language disturbance is a cornerstone for diagnosis. All autistic children show severe language alterations, which can range from a total absence of it, through deficits in the comprehension and communicative use of verbal language and mimicry, to mild dysprosody (Baldares & Orozco, 2012).

Severe language impairment with mutism and inattention can even suggest deafness. When language is present, it is very common to find echolalia, palilalia, neologisms, idiosyncratic language (verbs without meaning for other people), telegraphic language and gross errors in the use of tense and person. Language alterations are so important that they constitute the axis of early diagnosis (Grassi, 2021).

## **Etiopathogenesis**

To date, the etiology of autism remains unknown, however, an increasingly clear and defined picture is beginning to emerge. The reviewed literatures show that genetic risk is associated with a specific number of individual low-risk genes that, when combined with each other, or interact with environmental factors, increase the susceptibility of producing the pathology and are not due so much to a genetic cause as such (Carriedo, 2014; Reynoso *et al.*, 2017; Gil, 2019). It has also been observed that reductions in volumes of the gray matter and cortical thinning increase the probability of producing autism (Rodillo, 2015).

## **Diagnosis**

The diagnosis of autism is established on exclusively clinical grounds. There are no biological markers to date, therefore, the diagnosis is based on a clinical judgment (Oviedoa *et al.*, 2015; Reynoso *et al.*, 2017). However, and based on the various symptoms indicative of ASD, different specialists suggest an understandable, structured and systematic strategy, both for diagnosis and treatment, with the aim of identifying the various capacities and specific limitations in each patient with ASD (Oviedoa *et al.*, 2015). To make a more reliable and complete diagnosis, complete interviews can be included to both patient and parents or teachers, so that all the information from the medical history is collected, a neuropsychological examination, supported by evaluation and self-assessment scales such as EAVA (Adult Self-Assessment Scale) or CAARS (Conners' Adult ADHD Rating Scale), as well as neurophysiological laboratory tests (Reche, 2016; Gil, 2019). The symptoms appear variably from

18 months and are consolidated at 36 months of age (Carriedo, 2014; Oviedoa *et al.*, 2015; Reynoso *et al.*, 2017). Among the most common symptoms we can mention:

- ❖ Hyperactivity (high level of activity)
- ❖ Short attention span
- ❖ Impulsive behaviors (acting without thinking)
- ❖ Irritability
- ❖ Agitation
- ❖ Aggression
- ❖ Self-harm
- ❖ Tantrums
- ❖ Repetitive thoughts, interests, and behaviors
- ❖ Sleep problems
- ❖ Anxiety
- ❖ Depression
- ❖ Mood problems
- ❖ Tics

The diagnosis of autism is confirmed when the individual shows a total of six or more behaviors from the ones mentioned above. (Reynoso *et al.*, 2017). Some of the symptoms present in autistic patients are also present in children with mental disabilities without autism. For example, patients with autism can show different degrees of cognitive deficit and, in turn, patients with intellectual disabilities can develop stereotypies and communication difficulties characteristic of patients with ASD (Oviedoa *et al.*, 2015).

The combination of language alterations, restricted and stereotyped behaviors and alterations in social contact should leave little doubt on the diagnosis, however, it is very common to find children with a clear picture of autism in which the diagnosis it has not been established. Very often the diagnosis is simple psychomotor retardation or attention deficit/hyperactivity disorder (ADHD) (Carriedo, 2014; Gil, 2019; Real, 2022).

When a child is diagnosed with autism, parents and other family members often experience a variety of uncomfortable emotions that are considered a grief reaction. It's easy to feel uncomfortable with your emotions and worries about what the future may hold. Painful emotions are natural. By accepting their reactions and acknowledging their feelings, you can move on and start standing up for your child. Emotions are powerful. If you deny your feelings or ignore them, they will often come out in unpleasant ways.

In their book "On Grief and Grieving", Kübler-Ross and Kessler (2005) describe five (5) stages or types of grief reactions that make sense of what most people experience.

**Shock:** *"I don't remember how I drove home after hearing the diagnosis for the first time. How can this be happening to my son?"*

Immediately after diagnosis you may feel groggy. The reality of the diagnosis can be so overwhelming that you may feel confused and unable to accept it.

**Sadness or grief:** *"I have no energy. I can't do what I normally do for my family. I realize that I cry a lot. I feel overwhelmed with sadness."*

Before they can move on, many parents cry over the hopes and dreams they had for their child. There will probably be times when you feel extremely sad. It is important to remember that there is a difference between sadness and depression. Depression often gets in the way of moving forward. Allowing yourself to feel sad can help you grow. You have every right to feel sad and express it in a comfortable way.

**Anger:** *"We didn't deserve this. It makes me so angry that this is happening to the ones I love. I wish my neighbor wouldn't get in the way."*

Anger is a natural part of the grieving process, and you may find that it is directed at those closest to you: your child, your spouse, or a close friend. Anger is a healthy and expected reaction to the feelings of loss and stress that come with your child's diagnosis. Expressing your anger is natural and sometimes healthy.

**Denial:** *"He'll get over it. I can fix it".*

You may go through periods when you refuse to believe that this is happening to your child. During this time, you may not be able to hear the facts about your child. Denial is a way of coping. It may be that he pulls you through a particularly difficult period. It is important to realize that you may be experiencing denial so that it does not interfere with making good decisions about your child's treatment.

**Soledad:** *"I have never felt so alone. I wish I had a friend who understood my situation. It's so hard to get close to other people."*

You may feel isolated and alone. These feelings come from a variety of sources when experiencing loss. Loneliness can also be due to the fact that you just don't feel like you have time to seek out the company of friends or family. You may also feel that if you approach other people, they may not understand or support you.

**Acceptance:** *"I feel like we can get through this. My family will be fine."*

Finally, you will likely feel a sense of acceptance. It is helpful to distinguish between accepting that your child has been diagnosed with autism and accepting autism. Accepting the diagnosis simply means that you are ready to be an advocate for your child.

When your child is first diagnosed, you may find yourself in many roles: care coordinator, therapist, parent, teacher, etc. One of the most important roles you will have to do is to be your child's supporter. Acting like one will be a lifelong journey that will require different skills depending on your child's needs.

## **Treatment**

It's important to know that most families find a way to work together, grow stronger, and learn ways to reduce the negative impact of the diagnosis and foster a positive future for their children and families.

Until now, there is no cure for ASD, but early intervention, including therapy and education, can improve the quality of life of people living with ASD (Oviedoa *et al.*, 2015; Gasteiz, 2022). The existing treatments can be classified into pharmacological, psychopedagogical (Oviedoa *et al.*, 2015) and psychosocial (Gasteiz, 2022). It is important to be as connected as possible with your spouse and to keep the lines of communication open (Rapin, 1997; Vicente *et al.*, 2016; Gasteiz, 2022).

All pharmacological treatments are symptomatic. There are many drugs that have been used in the management of this painful condition and there is not one that is unanimously accepted or useful in all patients, or perhaps, not all medications are suitable for all children (Reza, 2012; Oviedoa *et al.*, 2015). It is important to highlight that each medication has its side effects and the high attention and care of family members is required. Of course, medications don't help with thinking or learning problems, but if symptoms that can be improved with medication are treated, a child may do better in school or in therapy, which in return can help to learn better.

People with ASD require a personalized and permanent multidisciplinary treatment plan throughout their life cycle, in constant review and monitoring, which favors the full development of their potential, and their social integration and quality of life (Oviedoa *et al.*, 2015; Gil, 2019). Psychopedagogical and psychosocial therapy play a central role in the treatment of autistic people. Currently, the most accepted management is the beginning of the treatment as early as possible, intensive and of a multimodal type: language therapy, socialization programs such as educational and behavioral programs, which focus on the development of social skills, multiple sensory stimulation, recreational therapy, and treatments based on the needs of each child, since it cannot be generalized because each case has particular characteristics and needs (Oviedoa *et al.*, 2015; Gil, 2019; Ntiembou, 2020; Gasteiz, 2022).

### **Difficulties and challenges**

Children with disabilities face barriers of misunderstanding on a daily basis due to the lack of information from both, the general population and the professionals who care for them. The peculiarities of autistic children and the general lack of information about this disability make the existence of these barriers even more relevant. For a child with this pathology, social behavior is determined by a certain rigidity or ritualism, which means that one of the main distinctive features of the social does not exist: his spontaneity, his flexibility, his capacity for new interactions, he can perceive the social relationship as an effort, an activity that you can participate in, but that does not bring satisfaction.

Difficulties then arise due to the lack of information, the required advice and the specific support. In some cases, a child's disability may go unrecognized and

people who are not alert to the characteristics of these children can easily misunderstand their difficulties. Likewise, children with autism have difficulties in communication and imagination. Therefore, getting so much information about the opportunities of martial arts activities can be an insurmountable obstacle.

While stress affects all parents, single mothers and fathers who have a child with autism can experience even more challenges. Single mothers and fathers often face multiple challenges and are forced to take on multiple roles or in some cases give up on a child care. They may be responsible for both the emotional and financial needs of their families, while also caring for a child with special needs. Parents of children with autism can be under tremendous stress. It would seem that there is never enough time to do everything that needs to be done. So much attention and energy is given to the child with autism that it is common for parents to have little time or energy left to focus on their other children.

Brothers and sisters of children with autism often face their own challenges. Too much could be expected of them. They often need help to understand the emotional reactions they have as a result of the many changes that occur in their lives. This support is essential to their future well-being.

Parents, remember that your child with autism is part of a family and a community. Family and friends are more likely to participate in your support network if they understand your needs and those of your child. Do your best to keep family and friends informed and up to date on your child's progress.

### **Definition of Aikido**

Aikido is a Japanese martial art created by O Sensei (Grand Master) Morihei Ueshiba. On a completely physical level it is an art that mixes some of jiu-jitsu and kenjutsu techniques. Aikido is based, not on hitting the opponent, but on using his own energy and dominating him. It is not a static art, but it puts a great emphasis on dynamic movements.

It can be said that, from a dynamic point of view, the Aikido techniques are rationally structured. This point of view could be summarized as follows: The human body in motion is similar to a spinning top, and when it is not in motion it maintains the stable posture of a regular tetrahedron (Ueshiba, 1988).

The great difference with other martial arts is that it is identified as one of the most refined where both physical and emotional aspects are included (Hidalgo *et al.*, 2019; Saz-Peiró and Solanas-Laguna, 2021). Unlike most martial arts, Aikido discredits all forms of competitive contests in which strength is most important, while at the same time striving for the thorough training of both mind and body (Ueshiba, 1988) and can be practiced by anyone according to their age, sex and physical condition. It incorporates elements of learning and development of the moral values and physical well-being of its practitioners.

Aikido techniques allow us to reach a state in which we can change the opponent's center by means of its own spherical movement around our center

in order to wrap him in it and be able to handle him (Saz-Peiró and Solanas-Laguna, 2021). Aikido is a vehicle to preserve and encourage human life, a means to prevent violence... all we need are the techniques of harmony, not confrontation. All what is needed is the art of peace, and not the art of war. Based on its universal vision, the Aikido should be perceived as nothing more than the martial art of love (Ueshiba, 1988; Aldana, 2020). It can never be violent. The purpose of Aikido is to teach people not to be violent and to lead them to a higher path. It is a means to establish universal peace. In Aikido we practice not to learn how to win; we practice to learn how to emerge victorious in any situation.

In Aikido there is an important aspect that is lacking in any of the traditional martial arts that constituted its sources, as well as in the modern ones, practiced today throughout the world (Judo, Karate, Kendo, etc.): it is what constitutes its principle, aiki, to harmonize or, more explicitly, to unify ki (= mental and physical energy). From its definition, Aikido is the path of harmony of the universe with energy. Aikido is a path in which, when one door opens, we can find others to choose from and some of those doors can take us back to the original. In essence, Aikido is a modern exponent of Japanese martial arts (Ueshiba, 1988).

### **Children in Aikido**

Children with disabilities are generally less likely to start school, and when they do, retention and promotion rates are lower. Disability should not be a barrier to success.

The foundation of Aikido, as an internal martial art, is the development of self-control to harmonize with the opposite through the regulation of Space, Time and Energy, regardless of mass, gender, age or physical strength of practitioners and opponents.

In my opinion as an instructor, the training that children who practice this martial art can be very good, since in addition of encouraging psychomotor capacity in a very beneficial way, very positive values are inculcated, such as respect for people, friendship, concentration and attention, discipline, etc...

Once they start training they realize that Aikido is a repeated practice that requires the unity of mind and body and the cultivation of the power of ki, and the fact that it can be beneficial to health and beauty or self-defense is simply a consequence unrelated to the spirit of Aikido (Ueshiba, 1988). Aikido brings together the young and the old people, youth and maturity. Transcending the differences of age and sex, everyone equally, children, adults, men and women, practice and encourage each other in training. Each group of Aikido practitioners has, depending on their age, their respective ways of achieving the unity of ki-mind-body, but all can come together and learn from each other (Ueshiba, 1988).

Therefore, it seems clear that the practice of Aikido is more than feasible for children, and even enriching for adults who practice with them. Doing a deeper

analysis shows us that practitioners find in Aikido what they are looking for, an art for self-defense, spiritual enlightenment, physical health or inner peace.

### **Aikido and its therapeutic contributions**

Although many people associate martial arts with violence, the end of Aikido and other similar disciplines is precisely the opposite. Among other advantages, its training helps improve mental health.

The main foundation of the ancient practice called Aikido is the control of all conflict situations in a peaceful manner (Ueshiba, 1988). Nowadays, Aikido is present in many environments, due to the usefulness of applying its teachings in any type of problem, whether of an individual or group nature.

Aikido lessons go beyond the physical skills and abilities that are acquired with each practice, and that are also useful as control strategies. These teachings are also linked to the mental and spiritual part, and have key foundations that allow the essence of art to be maintained without distorting its purpose (Ueshiba, 1988).

Balance is a complex function that integrates the processing of movement mechanics with sensory and motor stimuli. Systems that influence postural control such as visual, proprioceptive (muscular response) and vestibular (balance and orientation) organization are also involved (Valenzuela, 2019).

The benefits of Aikido are not only physical, as it also contributes to harmony and mental balance. In order to know some of them, the most important ones are highlighted below: Aikido immerses you in a peaceful mentality, generates improvements on a physical level, enhances breath control, improves mood and reduces stress.

Other benefits found are:

- Hyperactivity decreases in a general way after the interventions, being the trait that is reduced the most and shows the best values.
- After the interventions, improvements are obtained in the levels of attention of the participants.
- Regarding aggressiveness, a decrease in aggressive behavior is obtained, especially when the subjects were older.
- General improvements in behavior are produced by improving behavior and reducing the appearance of inappropriate emotions, as well as learning to manage their appearance. There are increases in tolerance levels and better coping with uncomfortable moments.
- Likewise, in social skills, after the interventions improvements are achieved in relationships with their parents, peers and siblings, in the same way that they reinforce their self-understanding and their communication with them.
- Regarding anxiety, a decrease in anxiety levels and a greater sense of calm is achieved.

First of all, Aikido teaches how to use the opponent's strength to your advantage. To achieve this, it is important to previously know the functioning of each of the joints in order to use them naturally and without causing any damage or fracture. Likewise, it is a discipline that increases levels of self-confidence, something that greatly influences people's quality of life.

## **Conclusions**

Early detection in the child population with ASD is essential, allows referral to diagnostic and intervention services, and is likely to lead to better functionality in adulthood.

The treatment is presented differentiated by pharmacological interventions and non-pharmacological interventions.

In the face of disruptive experiences, such as those of aggression, the practice of martial arts in general and Aikido, in particular, has notable effects such as greatly minimizing the consequences of confronting this type of behavior.

Those who practice this type of discipline defend the fact that they are really useful when it comes to increasing self-confidence and psychological well-being.

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