



## Autism Spectrum Disorder: Time for a Change

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### Abstract

With the sedentary life style, eating habits, daily irregular routine with less or no physical exercise has led to the development of various diseases either it be genetic or environmental. A lot of genetic diseases or disorders are reported everyday which is completely governed by the genetic makeup of an individual. The following article describes one such genetic disease known as autism spectrum disorder and also discusses the various ways that would help in making a difference in the thinking of the people bringing awareness about the disorder. The article describes the possible causes, signs and symptoms, statistical data, awareness programmes such as conferences, open access, journals, campaigning etc.

**Keywords:** *Autism spectrum disorder; Genetic factors; Neurosciences; Social interaction; Communication; Open access journals*

### Introduction

Autism spectrum disorder is a neurodevelopmental disorder that alters the organisation and functioning of the nerve cells of the brain which leads to the difficulty in autistic people to have social interactions, verbal and nonverbal communications with repetitive behaviours like spinning and flapping of hands [1]. Though the exact cause of autism is still unknown but somehow some research suggests it as a combination of genetic and environmental factors. Some other factors like consumption of cocaine or alcohol during pregnancy or rubella infection also known to contribute for this disorder. Autistic children show less or no response to social stimuli. The early signs of autistic children is delayed babbling, unresponsiveness (does not respond to their name), less eye contact, don't smile back, repeated flapping of hands, spinning round, constantly repeating the same words [2-9].

As per the global records in 2013, about 21.7 million people are affected by autism. It is estimated that about 1 in 100 children is affected by autism [10]. Normally boys are affected four to five times than the girls. In the United States about 1.5 % children are diagnosed with ASD and there is a 30% increase in 2014 as of 2012. The rate of autism in adults of 18 years of age and above is 1.1% in UK. According to reports since 1980 the autistic people has been increasing and the reason is unsolved till date. However some reports suggest children and adult recovering from this disorder [11-15].

Now a day most of the people have started learning about autism. While most people consider ASD as a disorder and burden looking for a cure and prevention, at the same time other people have started looking it at a different perspective and believe in accepting autism as a difference and not as a disorder seeking treatment. The autistic culture movement otherwise called as autism right movement (ARM) encourages the autistic children, their parents and their caregivers autism as special functional

variation rather than a disease seeking cure and prevention. It focuses on the development of social networking sites to allow the autistic people to interact in their own ways, to develop therapies for autistic people to be skilled with skills so that it would help them cope up with other human beings and they also help in making realize to recognise autistic community as a minority group [15-22]. As part from this movement and awareness programmes the open access peer reviewed articles play an important role. The open access articles help the people not to remain ignorant about the autistic people and their care givers and family members. It also increases the visibility because of its easy accessibility. The impact factor provided to these open access articles decides the excellence, quality of the research done and the number of citations received for the same published articles calculated on the number of articles that undergoes a double blind peer review process guided by the editorial board [23-28].

### **Autism spectrum disorder: change is a must: thinking autism as special functional variation: role of societies**

With the increasing awareness there are various societies those who also work for the awareness campaign for autism. One such society is **Autism Community Network** in South Texas [29, 30]. The board certified professionals provides the service to preliminary screen the children showing the signs of autism or a full interdisciplinary autism diagnosis for the child. It provides hands on training on how to interact with the autistic children, how to make them skilful and to face the day to day challenging behaviours of the autistic child [31-35]. It maintains the record for the autism community and act as an information hub for the people residing in South Texas. OMICS international have an association with another such society known as **Cancellautismo ONLUS** which strongly believes that the disorders in metabolic systems, endocrine system, gastrointestinal system, immune system is the sole responsibility of such disorders and the disease can only be cured if these ailments are cured and not by providing injections and therapies by the doctors [36-40]. As per the research conducted by ' Institute for Research on Autism (ARI-DAN), it has identified effective treatments for autism, showing that Applied Behavioural Analysis (ABA Applied behavioural Analysis), considerable progress can be made leading to complete recovery. **Macedonian Scientific Society for Autism** is a society which deals with the treatment, rehabilitation of autistic patients and also works in cooperating with the parents of the autistic children. It also deals with the coordination between governmental and non-governmental organizations dealing with autism [40-45].

### **Open access journals: accessibility, visibility and its importance**

With the changing modern era internet has become a necessity for all human beings. People become aware and knowledgeable through videos, ad campaigns shown in the internet. Open access journals and articles is one such platform to make people knowledgeable about the changing trends and updates [46-50]. It increases the visibility and accessibility without any financial and legal barriers. It helps in exchanging and acquiring ideas regarding new research advances, development of modern techniques and technologies, new ideas for conducting research, recent updates and advances on on-going stigma. **Journal of Psychological Abnormalities** is an open access journal that publishes articles on psychological disorders like learning disorders, communication disorders, difficulty in social interaction, eating disorders etc. The main objective of the journal is to motivate the masses through its publications where the experts and scientists share, exchange and produce their ideas in the field of psychological and mental disorders [51-57]. It publishes the current findings and research on mental disorders in the form of original articles, case reports, research findings, new techniques and therapies to cure mental disabilities. **Journal of Psychology & Psychotherapy** publishes the recent findings and research on the mental disabilities and the therapies needed to resolve the difficulties of the psychiatric patients in the form of therapies called

psychotherapy to make their and their well-wishers life somehow manageable and sustainable [58-62]. It publishes articles on Clinical psychology, Developmental psychology, Neuropsychology, and this journal offers is the source for the latest findings in behavioural, developmental, cognitive, health and educational psychology. **Autism – open access** is an academic journal which publishes recent advancements and research in the developmental disorders in children. It is an open access journal which makes it freely available without any financial and legal constraints throughout the world. The main motive of this journal is to make the caregivers and parents of the autistic children aware about the growing day to day challenges faced by them and make them learn about the therapies through which they can deal with the situation in every possible way making the autistic patient learn, adapt and communicate [63-66]. One such journal, known as **Journal of Communication disorders, deaf studies and hearing aids** also publishes articles on communication disorders and covers mental disorders like Autism spectrum disorders, Communication impairments, Expressive language disorders, Language disorders, learning disabilities, speech disorders and speech language pathology. **Journal of Child and Adolescent Behaviour** is one such open access journal which focuses on the publication of the article on child and adolescent mental behaviour and the disabilities. A special issue on **Autism spectrum Disorder, the past, the present and the future** is going to be released by the journal in April, 2017. The special issue will cover all the aspects on the children learning, communication and interaction, speech and adaptation disabilities. Moreover the journal would publish the recommendations, therapies and new research findings provided by the researchers in the following special issue. Being an open access it would provide knowledge as well awareness among various people facing the difficulty every day. In an article entitled **“Using Eye-Tracking as Support for the TEACCH Program and Two Teenagers with Autism-Spectrum Disorders”** published in the **Journal of Neuroscience & Clinical Research** the author, Fabienne Giuliani has suggested that mobile eye-tracking can be a powerful tool to design the strategies to improve learning disabilities in autistic patients [67-72]. According to the author two teenagers were taken as the experimental individuals and after one year of individualized treatment, the teenagers’ competencies in eye contact with target points were noted to be improved. These preliminary results showed that the intervention should take place in ecological conditions and the evaluation by Mobil eye-tracker, bypasses language deficits which could be integrated into clinical routines to increase generalization [73-75].

### **Conferences involving speakers and editors and their innovative ideas on autism spectrum disorder**

Conferences have helped a lot in imparting proper knowledge, new research findings and innovations on account of ASD. **2<sup>nd</sup> International conference on Autism** was conducted in Arizona, USA on September 15-16, 2016. The theme of the conference was **“Understanding Autistic Mind and Accelerating Recovery”**. The conference was flooded with eminent speakers from across the globe [76]. There was an exchange of ideas among the notable speakers, delegates and scientists who enlightened the gathering with their research findings and therapies. **2<sup>nd</sup> International Conference on Psychiatry and Psychiatric Disorders** was held in Chicago, Illinois, USA on May 02-04, 2016 with a motive of analysing and triggering therapeutic approaches for psychiatric disorders. **3<sup>rd</sup> International Conference on Psychiatry & Psychosomatic Medicine** Conference was held in Dubai, UAE in December 05-06, 2016 with a motive of assessment of human behaviour with mental illness and diagnosing the mentally disabled patients with the application of psychosomatic medicine to achieve the mental wellness. **13<sup>th</sup> International Conference on Psychiatric-Mental Health Nursing** was conducted in London, UK in October 03-04, 2016 which focuses on achieving mental wellness by understanding human minds by psychiatric approaches [77-82]. This conference invited participants from all leading universities, research institutes and diagnostic institutes to share their experience on the development of mental health and its wellbeing through psychiatric approaches by understanding the

human mind and human behaviour. One such conference called **International Conference on Psychology, Autism and Alzheimer's Disease** was held in San Antonio, USA in September 30<sup>th</sup> – October 1<sup>st</sup>, 2013 to understand the increasing trend of the psychological disorders with time and its global perspectives and current trends in psychology. **1st-annual-cyprus-international-conference-on-autism-treatment** was conducted in Paphos, Cyprus with the research entitled “Magic Always Happens through our interdisciplinary approach to autism”. It had invited professionals and dignitaries and conducted various workshops regarding autism [83-89].

### **Recent advancements in treatment and therapies**

Many notable speakers from different research institutes, universities, medical institutes and trusts have expressed their ideas and views on the mental disabilities and the therapies to be undertaken to face the increasing every day challenges. Charmaine Fuller is a mother Mentor, who assists the mothers in developing the life of their special kid and bringing a relief to their life as well beyond the diagnosis of their special kid. She has been an advocate for parents by serving on the Michigan Special Education Action Committee, the Wayne County Regional Educational Service Agency parent board and for the Michigan Early on Interagency Coordinating Council in Wayne County, Michigan. Special parents special care workshop main objective is loving yourself, time management, self-care tips, creating task list for you, setting and applying boundaries [90]. Collen Tryner is the parent of an autistic (nonverbal) teenager of 18 years of age. She started self-schooling her son and adapted autism sign language as a unique way of communication with her son. She recorded all her experiences and shared the video to doctors, parents of the special children, universities, professors and also in her personal web site. This adapted autism sign language takes advantage of a multi-sensory approach. This has helped her son to adapt to school environment, work and family events. The main motive of this approach is to make the child feel safe and not always under guard which will make them tensed [91]. Denis Gris is another speaker belonging to the University of Sherbrook, Canada. His main interest is to discover novel anti-inflammatory pathways within the central nervous system and to design therapies to cure neurological disorders like autism, epilepsy, multiple sclerosis etc [92]. Dr. Alok Sharma is a world renowned neurosurgeon who worked at Karolinska hospital in Stockholm where neural transplantation was performed for the first time. According to his ideas bone marrow stem cells have unique ability to treat autism. According to an experiment performed many patients showed improvement in communication, attention, eye contact, social interaction by administering the autologous bone marrow mononuclear cells intrathecally along with a personalized multidisciplinary neurorehabilitation program after the cellular therapy [93]. Among a list of therapies music therapy clinic plays as an important therapy in treating autism. Dorita S. Berger is the Editor in chief of Journal of Biomusical Engineering whose research interest is rhythmic and movement in music-based sensorimotor eurhythmic treatment of autism and other neurophysiologic diagnoses [94]. Professor Ian M. Evans obtained his PhD at Institute of Psychiatry, Kings College in 1970. He is a fellow of American Psychological Association, the Association for Psychological Sciences and Royal society of New Zealand. He mostly involves himself in studying the behavioural therapy which concerns the emotional development of children, their interaction and support children with disabilities like autism [95]. Jair de Jesus Mari is the professor of Psychiatric Department at Escola Paulista Medical School of the Federal University of São Paulo. He earned his PhD from King's College. He is a lead researcher in the National Research Brazilian Council (CNPq) with studies in the areas of Psychiatric Epidemiology, Systematic Reviews, Schizophrenia, Health Services Evaluation, Violence, and Prevention of Psychiatric Disorders. He has special research interest in Schizophrenia, Autism, Drug Addiction, and Psychiatric Epidemiology [96].

## Discussion and Conclusion

With the sedentary lifestyle and everyday food habits many genetic diseases have cropped up. Autism Spectrum disorder is one such neurodevelopmental disorder which is increasing at an alarming rate. More than 3.5 million Americans are autistic i.e. 1 in 68 births [97]. However this has forced the researchers and scientists to evolve with new ideas and therapies to get rid of this disease which has become very unsustainable for many families. Courage and never ending help must be provided for the parents and caregivers of the autistic children and hands on training must be provided so that they will always be ready for the day to day challenges [98]. Many well-known doctors and researchers have come up with great ideas like bone marrow integration, adaptive autism sign language, the increased intake of Vitamin D which has shown improved signs in the special children like improved interaction, communication, eye contact, concentration etc., [99]. However the exact reason for autism is still unknown. But it's high time to recognise autism as special functional gene variation rather than a disease seeking cure [100].

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