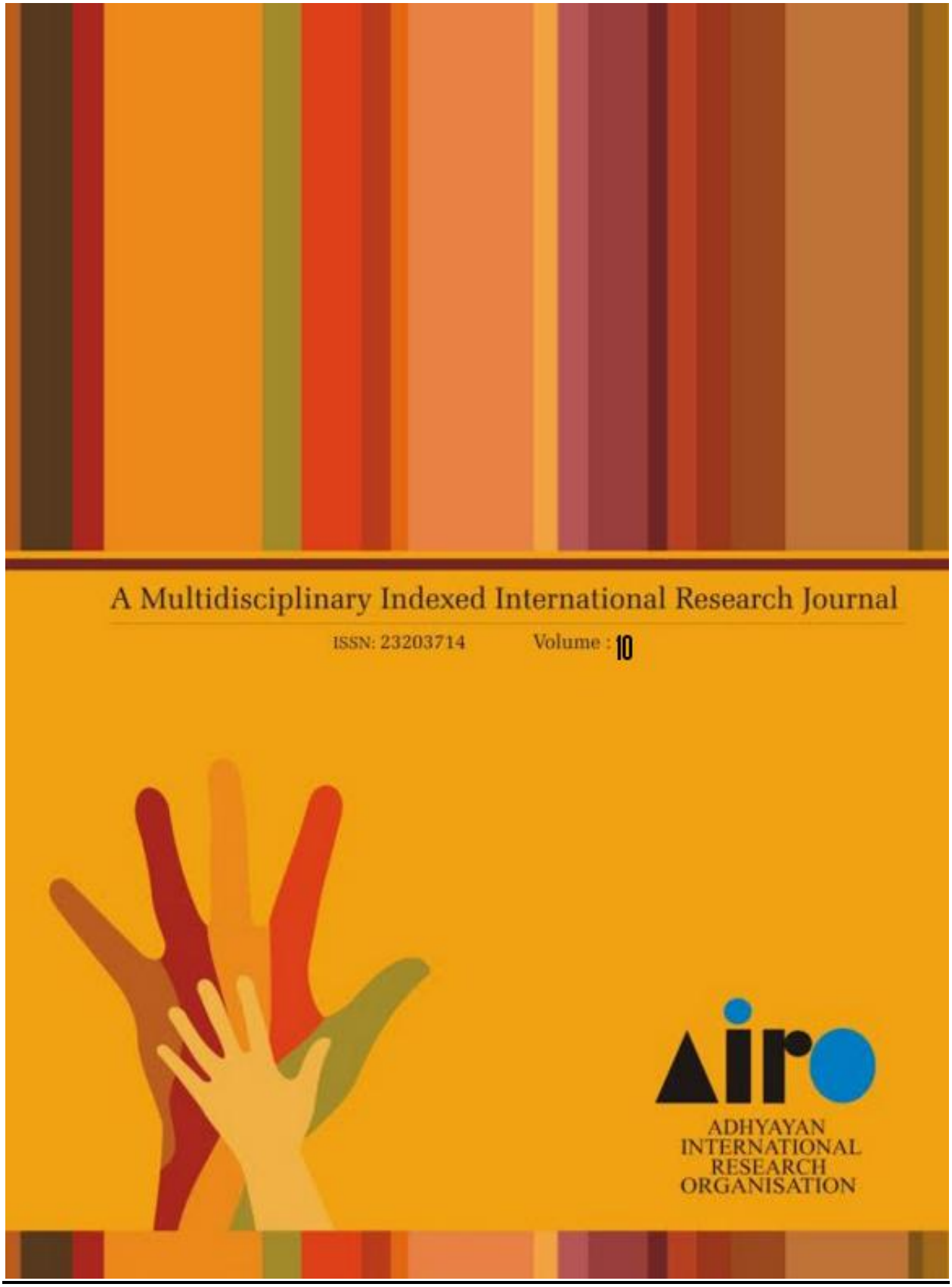
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Autism: A Study

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Autism is a rare developmental disorder affecting at least one in a thousand children and adults. Autism was first noted by Kanner (1943) to a group of eleven children who all shared some common characteristics such as extreme autistic aloneness, anxiously obsessive desire, excellent rote memory, delayed echolalia, poor language ability and oversensitive to stimuli. Wing & Gould (1979) conducted from an epidemiological survey using 35,000 children in South London and suggested that there were three fundamental impairments in autism (lack of social relatedness, poor communicative skills, and an absence of imaginative activity, coupled with repetitive stereotypic behaviour). This is known as Wing's triad which became the basis for the diagnosis of autism spectrum disorder (ASD) in DSM-IV and ICD-101 today. Although the behavioural symptoms of autism have been described extensively in the literature, the core deficit of ASI) remains unclear. In recent years three key cognitive theories have promisingly given us some insights about the primary cognitive deficit of ASD from investigating the autistic symptoms. The most well known is the "theory of mind deficit hypothesis" (Baron-Cohen, 1995), which suggests that people with autism fail to represent the mental stales of others and this account can explain the social impairments in autism. Robust evidence shows that most individuals with autism fail in false belief tasks, such as Sally-Ann Tasks (Wimmeral & Perner, 1983), which requires participants to have second representation. Another account is "weak 1DSM - IV Diagnostic and statistical manual of mental disorders 4rth edition. American Psychiatric Association, 1994. ICD-10-International classification of diseases, 10th revision. World Health Organisation, 1990.2 Sally-Ann task - when Sally leaves her hall in her basket and goes out, Ann moves it to her own box: now Sally returns and wants her ball; where will she look for it? The correct answer is "in the basket", which is based on our representation of her mistaken belief. Most normally developing four-year-olds pass such tests.

What Does Autism Mean?

Autism (say: aw-tih-zum**)** causes kids to experience the world differently from the way most other kids do. It's hard for kids with autism to talk with other people and express themselves using words. Kids who have autism usually keep to themselves and many can't communicate without special help.

They also may react to what's going on around them in unusual ways. Normal sounds may really bother someone with autism so much so that the person covers his or her ears. Being touched eyen in *a* gentle way, may feel uncomfortable.

Kids with autism often can't make connections that other kids make easily. For example, when someone smiles, you know the smiling person is happy or being friendly. But a kid with autism may have trouble connecting that smile with the person s happy feelings.

A kid who has autism also has trouble linkins: words to their meanings. Imagine trying to understand what your mom is saying if you didn't know what her words really mean. It is doubly frustrating then if a kid can't come up with the right words to express his or her own thoughts.

Autism causes kids to act in unusual ways. They might flap their hands, say certain words over and over, have temper tantrums or play only with one particular toy. Most kids with autism don't like changes in routines. They like to stay on a schedule that is always the same. They also may insist that their toys or other objects be arranged a certain way and get upset if these items are moved or disturbed.

If someone has autism, his or her brain has trouble with an important job: making sense of the world. Every day, your brain interprets the sights, sounds, smells, and other sensations that you experience. If your brain couldn't help you understand these things, you would have trouble functioning, talking, going to school, and doing other everyday stuff. Kids can be mildly affected by autism, so that they only have a little trouble in life, or they can be very affected, so that they need a lot of help.

What Causes Autism?

Autism affects about 1 in every 150 kids, but no one knows what causes it. Some scientists think that some kids might be more likely to get autism because it or similar disorders run in their families. Knowing the exact cause of autism is hard because the human brain is very complicated.

The brain contains over 100 billion nerve cells called **neurons** (say: **nur-**ahns). Each neuron may have hundreds or thousands of connections that carry messages 10 other nerve cells in the brain and body. The connections and the chemical messengers they send (called **neurotransmitters)** let the neurons that help you see, feel, move, remember, and work together as they should.

For some reason, some of the cells and connections in the brain of a Kid with autism—especially those that affect communication, emotions, and senses—don't develop properly or get damaged. Scientists are still trying to understand how and why this happens.

The cause of autism is not known. Autism lasts throughout a person's lifetime. There is no cure, but treatment ca1 help. Treatments include behavior and communication therapies and medicines to control symptoms.

Executive Functions (EF)

"Executive Functions" is an umbrella term used by psychologists to refer to goal-directed, future oriented behaviour which involves planning, flexible strategy employment, inhibition and "organized search. (Welsh & Pennington, 1988 cited m Bennetto et al. 1996) It is usually associated with patients who have damaged frontal lobe. However, it has been proposed that executive dysfunction is a potential underlying deficit of autism as well, because the symptoms demonstrated by patients with prefrontal cortical dysfunction are strikingly similar to autistic behaviour (Damasio & Maurer, 1978; Ozonoff et al., 1991). Both groups often appear to be rigid and inflexible, perseverative, narrowly focusing on details and deficient in the ability to inhibit familiar or over-learned responses. The executive deficits in autism have been found in cross-section al studies relative to both matched normal and developmentally disabled controls

with IQ and it is pervasive within the whole spectrum of all age of autistic individuals. However of the many components of EF, such as planning, organisation, flexibility, Inhibition, working memory, it is not yet clear which may be specific to cognitive dysfunction in autism by using the standard executive tasks.

Executive Functioning Tasks

One of the standard EF tasks is Wisconsin Card Sorting Tests (WCST) which is generally considered to be a test of cognitive flexibility. In this task, are individual must sort cards on one of three possible dimensions (colour, number, shape) according to a non-spoken rule, and is then required to shift rules to sort cards along a different dimension. The experimenter tells the participants whether s/he has placed the card correctly (followed the correct rule) but does not give the participant the rule explicitly It is the most robust finding that subjects with autism perform more poorly and are highly perseverative in their responses compared to the controls on the WCST.

Component Process Approach

Autism as well as other neurodevelopment delay disorders like Attention Deficit Disorder, Obsessive Compulsive Disorder, Tourette syndrome, phenylketonuria and schizophrenia have also been diagnosed as executive dysfunction, the component process approach thus 'permits(s) more precise identification of the cognitive operations dysfunctional in autism.' (Ozonoff & Strayer, 1997). Therefore, such

techniques may be able to suggest which components of EF are parts of the cognitive phenotype of autism and which are not.

Interaction between working memory and proponent inhibition

Collectively, the inconsistent findings from all these studies of inhibition and working memory challenge executive dysfunction hypothesis. However, Roberts et al. (1994) proposed that the close relationship between working memory and the ability to inhibit preportent

responses may be the reason for the inconsistency. Roberts et al. (1994) using prepotent-alternative response analysis to identify the common processing dynamics across different executive tasks such as WCST, TOH and GoNot-Go tasks etc. They suggest that all these tasks 'place a subject in a context in which a preportent response tendency is directly opposed to the activity or activities that lead to correct responding , A successful response therefore must involve 1) WM, keeping transient information in mind and performing explicit computations to guide upcoming action; 2) Inhibition of prepotent response. Roberts et al. (1994) used an anti - saccade paradigm and found that when WM load increases, the ability to inhibit preportent responses decreases. Therefore, the inconsistent results of the EF studies autism may be due to the lack of sensitivity of interaction between working memory and proponent inhibition.