A study on impairment in cognitive shifts among children with Autism leading to the underlying social and behavioral issues among them

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Abstract **- Background: Autism is a developmental disorder with symptoms that appear within the first three years of life. Its formal diagnostic name is autism spectrum disorder. The word "spectrum" indicates that autism appears in different forms with varying levels of severity. That means that each individual with autism experiences their own unique strengths, symptoms, and challenges. These symptoms appear early in a child's development—although diagnosis may occur later. Autism is diagnosed when symptoms cause developmental challenges that are not better explained by other conditions.**

Objective: The objective of this research is to find out that how impairment in cognitive shifts among Autistic children leads to the social and behavioral issues among them.

Methods: I conducted this research as an experiment type by observing the social and behavioral changes after any sort of cognitive shift was done. It was an Observant Research method. 15 ASD children from 2 different special schools of Pune were taken as subjects for completion of this research survey. 8 were from one school and 7 were from another. The age- group of the children was from 7 to 12yrs of age.

Results: The above experiment clearly defines the aim of the research that was to identify how people with Autism takes cognitive shifts in such a hyper way, this survey proved how children show social and behavioral changes in them if they face a slight of a change in their routine

Discussion: The need to develop the children's ability to perform cognitive shifts is very important which can be and needs to be done properly. Proper Training, Learning and improving the issues can help us to see mild to extreme changes in a child's cognition. Regular brain exercises and training can make slight changes. Lacking the adjustability in a change can be very difficult to be surviving, therefore it needs to be properly taken care of, this is known as cognitive flexibility

INTRODUCTION

Autism is a developmental disorder with symptoms that appear within the first three years of life. Its formal diagnostic name is autism spectrum disorder. The word "spectrum" indicates that autism appears in different forms with varying levels of severity. That means that each individual with autism experiences their own unique strengths, symptoms, and challenges. These symptoms appear early in a child's development—although diagnosis may occur later. Autism is diagnosed when symptoms cause developmental challenges that are not better explained by other conditions.

Autism spectrum disorder (ASD) is a developmental disability caused by differences in the brain. Some people with ASD have a known difference, such as a genetic condition. Other causes are not yet known.

People with ASD may behave, communicate, interact, and learn in ways that are different from most other people. There is often nothing about how they look that sets them apart from other people. The abilities of people with ASD can vary significantly. For example, some people with ASD may have advanced conversation skills whereas others may be nonverbal. Some people with ASD need a lot of help in their daily lives; others can work and live with little to no support. ASD begins before the age of 3 years and can last throughout a person's life, although symptoms may improve over time.

People with ASD often have problems with social communication and interaction, and restricted or repetitive behaviors or interests. People with ASD may also have different ways of learning, moving, or paying attention. Diagnosing ASD can be difficult since there is no medical test, like a blood test, to diagnose the disorder. Doctors look at the child's behavior and development to make a diagnosis. ASD can sometimes be detected at 18 months of age or

younger. By age 2, a diagnosis by an experienced professional can be considered reliable. However, many children do not receive a final diagnosis until they are much older.

Symptoms of Autism can be the following:-

- Reduced eye contact
- Differences in body language
- Lack of facial expressions
- Not engaging in imaginative play
- Repeating gestures or sounds
- Closely focused interests
- Indifference to temperature extremes

COGNITIVE SHIFT

Cognitive Shifting is the brain's ability to adapt your behavior and thoughts to new, changing, or unexpected events. In other words, shifting is the ability to see that what you're doing isn't working, and make the appropriate changes
to adapt to new situations. Mental shifting is the main component in cognitive flexibility, and is so closely related that they are often referred to as the same concept. However, cognitive flexibility refers to the ability to adapt to a change, while mental shifting is the process that makes it possible to adapt to the change. Shifting plays an important role in learning and problem solving. It allows you to choose a strategy and carry it out to adapt to the changing situation in which you find yourself. It helps capture information from the environment and respond to it flexibly and effectively, adjusting your behavior to the changes that the situation requires.

It allows you to make goals, plan, and carry out the plan, supervises your own actions, and corrects your behavior depending on the results. Cognitive flexibility is related to fluid intelligence, fluid reasoning, and the ability to problem solve easily and efficiently. Proper mental shifting and cognitive flexibility allow you to think about other ideas, values, and ways of thinking, which will help understand other people's points of view and value other's opinions. This is why mental flexibility is strongly related to empathy and social interaction.

OBJECTIVE

The objective of this research is to find out that how impairment in cognitive shifts among Autistic children leads to the social and behavioral issues among them.

METHOD

- Total number of subjects
  15 children with ASD were used as subjects for conducting this experiment based research.
- Type of research
  I conducted this research as an experiment type by observing the social and behavioral changes after any sort of cognitive shift was done. It was an Observant Research method
- Population Type and survey
  15 ASD children from 2 different special schools of Pune were taken as subjects for completion of this research survey. 8 were from one school and 7 were from another. The age- group of the children was from 7 to 12yrs of age.

I observed these children for a month, formed rapport with them and as they felt comfortable with me I started conducting the experiments with them. Their parents were clearly informed about the research and the confidentiality clause about their child's identity being safe with me.

The Experiment Technique

The first week I formed rapport with them and familiarized myself with them and then started with the experiment i.e. when I tried to do a slight change in the routine, which they did regularly, or they knew about it already, or had a certain meta-cognition about it before, made them hyper and triggered their Autism. This certainly resulted in increased social and behavioral issues among them instantly. The detailed result of the research is as follows:-

Name and Sex	Age	Cognitive shift	Behavioral change	Social Change
RS (M)	8yrs	Wrote the spelling jonny jonny instead of Johny Johny, yes papa	Instantly cried out loud, yelling and crying till it wasn't changed back	Started throwing tantrums at the teacher
SP(F)	7yrs	Instead of playing out at 8am, stayed inside class due to rain	Cried out loud, started beating everyone	Lessened eye contact

OH(M)	9yrs	Gave a sum difnt than usual	Started biting and scratching	Remained aloof
KL(F)	8yrs	Corner of a room being changed for study	Instantly started throwing tantrums and scratched	Repeated words like Go, come down
SS(M)	10yrs	5mins change in time of going home from school	Crying and yelling loudly, continuous to and fro moment	No facial response till sat on the bus
AY(M)	12yrs	Gave a word difnt from what he knew	Instantly got irritated and scratched himself	Obsessive behavior of washing hands
AD(M)	10yrs	Change in Tiffin box color	Kicking, biting everyone	Staying aloof
KJ(M)	11yrs	Change in biscuit shape in Tiffin	Threw the Tiffin and bottle and yelling loud	Repeating words like chi chi
DR(M)		His table of study being changed	Biting and scratching, masturbating signs started	Hostile towards the teacher
VS(M)	7yrs	Change in school bus	Didn't speak for whole week	No interaction with peers
SM(F)	8yrs	Home routine changed due to guests at home	Masturbating signs and kicking everyone, unnatural laughing	Not listening to any instructions passed to her
SW(M)	12yrs	Change in voice of teacher due to cold	Threw tantrums and pointed at the voice box	Lessened eye contact
DM(F)	9yrs	Going for outing	Started hurting himself if insisted to come out of house	Remained hostile towards parents
JN(F)	7yrs	Slight change in day's schedule	Making high pitch sounds whole day till schedule was back to normal	Not interacting with teachers and peers
SK(M)	9yrs	Change in outfit due to season change	Removing his shirt repeatedly and yelling	Repeatedly rubbing his fingers

RESULT

The above experiment clearly defines the aim of the research that was to identify how people with Autism takes cognitive shifts in such a hyper way, this survey proved how children show social and behavioral changes in them if they face a slight of a change in their routine, which is very difficult in today's time which is all about cognitive shifts each second of an individual's life. Cognitive flexibility and shifting the depends on the prefrontal lobe of the brain, which is the brain structure that takes longest to mature.

DISSCUSSION

The need to develop the children's ability to perform cognitive shifts is very important which can be and needs to be done properly. Proper Training, Learning and improving the issues can help us to see mild to extreme changes in a child's cognition. Regular brain exercises and training can make slight changes. Lacking the adjustability in a change can be very difficult to be surviving, therefore it needs to be properly taken care of, this is known as cognitive flexibility. It is important also because :-

- Cognitive flexibility is important both on a micro and a macro scale in the workplace. It allows you to juggle multiple concepts at once and improve your cognitive function.
- You use cognitive flexibility without realizing it on a daily basis. This happens when you multitask or when you switch from task to task.
- It also happens when you interact with other people and when you go from talking to a customer to your peers.
- Without mental flexibility, you'd be unable to 'switch' your brain from situation to situation.
- It'd be difficult to concentrate on a task and perform it adequately. It's a necessary cognitive process for productivity.

REFERENCE

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