Behavioural Intervention for Children with Intellectual Disability having Autism

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ABSTRACT *The purpose of the study was to find out the effectiveness of behavioural intervention on children with Intellectual Disability having Autism. In the present study pre & post design has been used .The main objective of the study was to study the efficacy of behavioural interventions on an identified group of children with Intellectual Disability having autism. They were identified after thorough screening of children with a population of 500. Developmental screening test (DST- Dr.J. Bharath Raj (1983)),Vineland Social Maturity Scale (VSMS- Dr. A .J .Malin (1965)) and Binet Kamat Test of Intelligence (BKT- Dr.V.V.Kamat (1958)) were used for this screening. Compiling the scores of DST, VSMS, and BKT, the IQ was obtained .Children below IQ 70 were subsequently administered Indian Scale For Assessment Of Autism (ISSA- NIMH (2008)). Thus, total 13 children with mild and moderate intellectual disability having ASD belonging to the local area were included in the study. Children with profound and severe intellectual disability having autism belonging to the non local were excluded from the study. Behavioural intervention using (behavioral techniques) was planned and executed for select target group.The intervention was provided individually to each subject with age wise distribution of sample (N-13, M-11, F-2) of which 8 under the age group of 6-9 years, 5 under the age group of 9 to 12 years at general services Block at NIMH, Secunderabad, along with home based training; within a duration of 3 months 35 sessions were conducted, each session lasted for 35 to 45mts. To ascertain the effectiveness of intervention the raw scores that were obtained were statistically paired and t-test was used for finding the statistical significance of the intervention .The results demonstrated the effectiveness of behavioural intervention for children with intellectual disability having autism. Behavioural intervention for children having intellectual disability with autism was noted to be effective as main finding of the study.*

Autism spectrum disorder (ASD) is a developmental disorder characterised and diagnosed by behavioural symptoms that mark impairments in social and communication behaviour along with a restricted range of activities and interests. ASD is considered a heterogeneous and complex disorder impacting many areas of development including intellectual, communication, social, emotional, and adaptive(Makrygianni & Reed, 2010) .This disorder can present considerable challenges to both the individual and their family across their lifespan.

The Autism Spectrum Disorders (ASD) can often be reliably detected by the age of 3yrs, and in some cases as early as 18 months. Studies suggest that many children eventually may be accurately identified by the age of 1yr or even younger. The appearance of any of the warning signs of ASD is reason to have a child evaluated by the professional specializing in these disorders.

Although autism has probably always been part of the human condition, its discrete identification is relatively recent. In 1943, Leo Kanner, child psychiatrist in the USA, described 11 children who had in common a peculiar pattern of behaviour. "Autism is a neuro behavioral syndrome marked by qualitative impairments of social interaction, communication and restricted repetitive and stereotyped patterns of behavior".

Paul (2003) studied social communication interventions developed for students with autism at the pre-school /school age & adolescent level. Findings of the study provided programs that would seem to be most appropriate for students with Asperger syndrome.

Banerjee,M. (2006) made an attempt to investigate the effect of speech therapy on the development of communication skills. It was observed that when parental empowerment along with speech therapy was introduced, better improvement in communication skills were noted.

Bellini,S. (2007) examined the effectiveness of school-based social skills interventions for children and adolescents with ASD. The results suggest that social skills intervention have been minimally effective for children with ASD.

Bock (2007) examined the effects of social behavioral learning strategy intervention (SODA) on the social initiation skills of four elementary school students with Asperger syndrome (AS) which was proved to be beneficial for the participants.

Wilson, Brock & Palerm (2010) made an attempt to test a link between attention to social stimuli and facial identity recognition skill in autism spectrum disorder. Results indicated that behavioral data of participants with ASD were impaired on both face and object matching tasks. Eye tracking data revealed that both groups showed a strong bias to orient towards people.

This study was conducted to see the efficacy of behavioural intervention programme for these children in the Indian context.

Objectives of the Study
· To study the efficacy of behavioural interventions on a select sample of children with intellectual disability having ASD.

Method of data collection
The study was conducted at National Institute of the Mentally Handicapped Manovikas Nagar, Secunderabad. Simple random technique was used .Total 13 children with mild and moderate intellectual disability having ASD was included belonging to local area. Children who were non local and having severe and profound intellectual disability having ASD were excluded from the study. The sample (N-13) included 11 males and 2 females out of which 8 in the age group of 6-9yrs, 5 were 9yrs-12yrs, and they all belonged to urban area. There were 3 children with Mild Intellectual Disability having Mild autism, 1 with Mild ID having Moderate Autism,

8 with Moderate ID having Mild Autism and 1 with Moderate ID having Moderate Autism.

The Inclusion Criteria
A child with mild and moderate Intellectual Disability having autism of both sexes in the age range of 6 to 12 years from local area.

The Exclusion Criteria
- Children with other disabilities like learning disability, cerebral palsy, ADHD and other illness.
- With any previous exposure to any intervention program and with severe and profound intellectual disability.

Tools Used
As per objectives of the study tools used for data collection were:
➢ Personal data sheet
➢ Developmental screening Test (DST, Dr.J. Bharath Raj (1983)
➢ Vineland Social maturity Scale (VSMS, Dr. A .J .Malin (1965)
➢ Binet Kamat Test Of Intelligence (BKT, Dr.V.V.Kamat (1958)
➢ Indian Scale For Assessment Of Autism (ISSA, NIMH (2008)

Procedure and Administration
(a) Screening Stage:
➢ It took about 5 to 6 months to screen sample for the study .The consent of each parent and their convenience to participate in the testing was obtained to include them in the sample.
➢ The data was collected in General Services Block at National Institute for the Mentally Handicapped, Secunderabad after taking permission from the authorities of the institute. Children who were newly registered cases at general services block at NIMH were identified.
➢ Simple random technique was used for data collection and a semi structured interview was conducted.
➢ In the first phase total 500 cases were screened out to identify cases with Intellectual Disability by administering Developmental screening test (DST) and Vineland Social Maturity Scale (VSMS), Binet Kamat Test of Intelligence (BKT). Compiling the scores of DST, VSMS, and BKT the IQ was obtained.
➢ Each interview with individual lasted for 10-15mts and children above IQ 70 were ruled out.

(b) Testing Stage :
➢ In the second phase children below IQ 70 were administered Indian Scale For Assessment Of Autism (ISSA; NIMH,2008), the interview with individual lasted for 10-15mts and 35 ID children having ASD were identified consisting 30 males and 5 females, 20 cases belong to Local area and 15 cases belong to Non-local area .

➢ Total 13 children with mild and moderate ID with ASD were included in the sample belonging to local area.
➢ Children with Intellectual Disability having ASD who were non local and having severe and profound ID and ASD were excluded from the study. The sample consisted (N-13) of 11 males and 2 females. Out of which 8 were in the age group of 6-9yrs and 5 were 9yrs-12yrs, all belonged to urban area. Among them 3 were taken with Mild ID having Mild autism,1 with Mild ID having Moderate Autism and 8 with Moderate ID having Mild Autism,1 with Moderate ID with Moderate Autism .

Ethical issues
Parents were explained about the nature and objective of the present study and their written informed consent was obtained. Confidentiality as assured to all the parents Confidentiality was ensured throughout the study. They were given freedom to drop out of the intervention program at any time.

Interventional Stage
↟ After identifying children with ID having ASD, domains from ISSA were selected and behavioural intervention was carried out by using behavioral techniques like (Restructuring of environment, extinction, scheduling of activities, modeling, response cost, differential reinforcement techniques like differential reinforcement for incompatible behaviour, differential reinforcement for other behaviour, differential reinforcement for alternate behaviour) etc. The intervention was implemented individually with the help of parents, siblings, and family members at general services block at NIMH along with home based training. The intervention was implemented for a period of 3 months carried out in 35 sessions, each session lasted for 35-45mts.

Results and Discussion
Based on the main objectives of the study ,the pre and post test scores were analysed using paired "t" test after the intervention .

Effectiveness of Behavioural intervention as measured on ISAA
I). Indian Scale For assessment Of Autism (ISAA) consist six domains (a) Domain (D1)- Social Relationship and Reciprocity(SRR) (b).D2- Emotional Responsiveness (ER) (c). D3-Speech - Language and Communication(SLC) (d).D4- Behaviour Patterns(BP) (e).D5-Sensory Aspects(SA) (f).D6- Cognitive Component(CC).

1). Effectiveness of Behavioural intervention as measured on ISAA
Indian Scale For Assessment Of Autism (ISAA), the Behavioural intervention measures were taken ,and the mean, standard deviation and the t-value were calculated and analyzed.

Table 1: The mean and SD Behavioural intervention scores on measures of Indian Scale For Assessment Of Autism (ISAA).

Domains	Pre, (n=13)		Post , (n=13)			
	Mean	Std. Deviation	Mean	Std. Deviation	t–Value (df=12)	Significance level
Is_d1SRR	26.62	5.839	24.62	5.140	6.67	P<0.01
Is_d2ER	11.92	3.174	11.62	3.203	2.309	P<0.05
Is_d3SLC	17.85	6.162	17.15	6.026	5.196	P<0.01
Is_d4BP	17.23	5.732	16.00	5.339	7.407	P<0.01
Is_d5SA	9.08	3.402	8.77	3.345	2.309	P<0.05
Is_d6CC	9.54	1.450	8.31	1.316	7.407	P<0.01
Is_GT	92.23	21.378	86.46	20.313	10.159	P<0.01

Figure 1: The behavioural intervention mean scores on Indian Scale For Assessment Of Autism (ISAA)
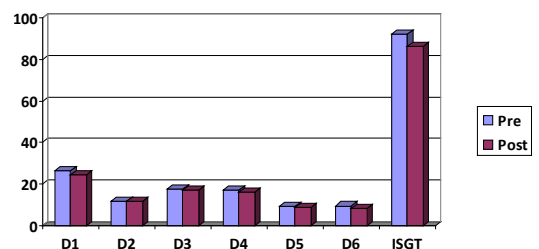
The mean and SD grand total pre test are 92.23 and 21.378 respectively. The mean and SD grand total post test are 86.46 and 20.313 respectively. The t-value is 10.159, which is highly significant at 0.01 level. An analysis of the results show that highly significant levels are observed in D1 (SRR), D3 (SLC), D4 (BP), and D6 (CC) and significant levels in D2(ER) and D5(SR), therefore it states that behavioural intervention will have positive effect on children having intellectual disability with autism is accepted, hence it is concluded that after behavioural intervention the ISAA scores have reduced which indicates positive effect.

Earlier studies support the above results that behavioural interventions have demonstrated success in the treatment of many disorders and not only extended to a broader range of disorder, but also to a primary focus on educating the individual patient (Kaufman & Kaufman 1979; Steinglass 1987). Principles of learning and behaviour modification ,building parenting and communication skills, and the development of problems-solving skills produce effectiveness training (Peshawaria & redid et al. , (1991).

The study by Chung, Kyong-Mee, et al (2008) reported that the social skills training was effective in improving social communication skills for some children with high functioning autism as also shown in the present study.

The efficacy of behavioural intervention has also been noted by Tamara C. Daley, (2004). He has reported that initial recognition of a symptom, sustained awareness of the child's behavior are critical for intervention since they serve as a window for more immediate and more effective treatment . In addition Lovaas(1987) reported behavioral interventions improve cognitive communication, adaptive and social skills in young children with autism.

In consonance with the present study Whalen , C & Schreibman (2003) reported behavior modification procedure have produced positive changes while teaching joint attention behaviors of children with autism .

The above studies support the present findings that ,the effectiveness of behavioural intervention have produced positive effects by using behavioral techniques.

Conclusion
The present study concluded that behavioural intervention program is effective in teaching and enhancing capabilities in social and personal sphere of children having Intellectual Disability having autism.

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