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Skill Development in Children with Autism Spectrum Disorder- Comparison of Children at Special School And Regular School

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ABSTRACT

The present study focussed on analysing the impact of early detection of ASD, age of admission to school and progress of ASD children in special school as compared to regular school by comparing the development of different skills in these ASD children. Subjects studied were divided into two groups based on whether they went to regular school or attended regular school prior to joining special school (Group A) or whether they were directly admitted to special school (Group B). We observed considerable progressive improvement of social and academic skills in children when sent to regular school with special care section, rather than a special school for ASD children. It was also observed that early schooling enables ASD children to develop social skills, independent learning skills, preacademic skills and academic skills better. Based on our observations we suggest that early detection is the key to early intervention, which cannot cure autism but definitely enables them to positively develop important skills. Also, collaborative initiatives in the special school or special section of regular school will cater to the needs of ASD children to improve their capacities depending on the severity of autism. It was observed that ASD children with IQ of 40 and above, showed better improvement of most skills in a regular school, with special care section that helps to address their unique needs and cultivate their talents as compared to those studying in a special school.

KEYWORDS ASD, Special school, social skills.

INTRODUCTION:

Autism spectrum disorders (ASDs) are developmental disabilities where language development is absent or delayed, rote or repetitive behaviours typically emerge, and nonverbal communication, imagination, and social interactions are profoundly hindered. Symptoms usually start before age three and can cause delays or problems in many different skills that develop from infancy to adulthood. The severity of impairment in each of these dimensions can be quite variable, as can individual cognitive functioning (*Fombonne E et al., 1999*). Proper management of ASD can be planned when there is early diagnosis. For early diagnosis early identification is needed. Since these children have poor skills, education should be focussed on fostering these skills. Therefore education has been defined as the fostering of acquisition of skills and knowledge to assist a child to develop independence and personal responsibility. The present study was undertaken to analyse the impact of age of admission to school (early and late) and to compare the skills developed at regular school and special school.

SUBJECTS AND METHOD:

ASD cases studied included students from five different schools in Goa. A total number of 92 individuals were surveyed. A Proforma was designed for achieving the objectives of the study. The process of collecting information included structured interview sessions for filling up the proforma. Information on skills was collected from the teachers of the ASD subjects. Intelligence quotient of the ASD subjects, place of study, growing up environment. Skills of the ASD children before and after joining school at different ages using various assessment tools were also studied. The data given by the teachers and medical record furnished by parents was recorded in the proforma. The information collected was tabulated and analyzed. Mean and Standard deviation (SD) were computed for quantiative data. The statistical significance of associations between the various qualitative parameters was evaluated through Fisher's exact test (two tail) whereever necessary. Online calculators of statistics were used for standard deviation at *www.easycalculation.com* and fisher's test at *www.graphpad.com.*

RESULT:

The mean age of detection of ASD was 2.69 ± 1.77 yrs with variance of 3.11. Most of the ASD cases were diagnosed at the age of 2.6 – 3.0yrs of age. The mean average IQ of the subjects studied was 43.57 ± 12.96. The 92 subjects with autism spectrum disorder (ASD) were grouped into two based on the type of school attended.

i) GROUP 'A': Admitted to regular School and then transferred to Special School: Group 'A' constituted 45.22% of the ASD group, who went to regular school prior to joining special school. These children were admitted to the regular school at the mean age of 3.6 ± 0.9 yrs with variance of 0.7. The average duration spent in the regular school was 2.7 ±1.6 yrs with variance of 2.53. These children were then admitted to the special school at the mean age of 6.1 ± 2.09 yrs with variance of 4.3. These students were assessed for the following skills: Social skills, Play skills, Motor skills, Preacademic skills, Academic skills and Independent Living skills. We observed difference in the rate of development of skills, based on the duration of studying in the special/regular school. Students who studied in regular school before joining special school had good social skills and academic skills which then showed further improvement at the special school (Table 1). These subjects showed considerable improvement of play skills and motor skills at the special school. However at the special school, the improvement in social, academic and preacademic skill was marginal.

ii) GROUP 'B': Directly admitted to special school: 54.78% of ASD subjects included in this group were those who directly joined special school. These children were directly admitted to the special school at the mean age of 5.12± 2.46 yrs with variance of 6.05. The average duration of time spent in the special school was 3.64±2.05. Most of the skills of these children were very poor or poor at the time of joining the special school, as they were admitted to the school at a late age with no exposure to any formal schooling. ASD students who were admitted to special school showed considerable improvement in motor skills and independent learning skills (Table 1). However there was slow improvement of social, motor, preacademic and academic skills.

TABLES:

TABLE: 1 - SKILL DEVELOPMENT IN REGULAR AND SPECIAL SCHOOL				
SKILL ASSESSED	Average score *(SCORING OF SKILLS: VP = 1, P=2, A=3 AND G=4)*			
	GROUP A : Regular to special School		GROUP B: Directly to special school	
	At regular school	After joining special school	Before joining school	After joining school
Social Skill (SS)	3.03	3.65	1	1.75
Play skills (PS)	1.99	3.8	1.3	2.1
Motor Skills(MS)	2.93	3.65	1	3.0
Pre Academic skills(PAS)	2.41	3.2	1.2	1.9
Academic Skills (AS)	2.41	2.85	1	1.85
Independent Living skills(ILS)	1.7	2.3	1	2.6

iii) Development of Skills in Group A and Group B: When ASD subjects from group A and group B were compared, there was considerable improvement of Social, Play and Academic skills in ASD subjects who had exposure to regular school before joining special school (Table 2). Studying at regular school enabled the ASD subjects to attain good social skills and academic skills. Education at special school, enabled enhancement of motor skills, preacademic skills and independent learning skills. Also the subjects in Group A were admitted to school at early age. When Group A subjects were compared with Group B subjects, we observed that early schooling enables ASD children to develop social skills, preacademic skills and academic skills better. ASD subjects who joined special school directly at later age, showed slow development of most skills as compared to those in Group A.

TABLE: 2 - SKILL IMPROVEMENT IN ASD SUBJECTS AFTER 3 YRS OF SCHOOLING			
SKILL ASSESSED	Group A (Regular to Special school)	Group B (Special school)	Improvement at Regular school (Grp A) compared to Special school(Grp B)
Social Skill (SS)	6.2%	7.5%	Group A- 19.4%
Play skills (PS)	18.1%	8%	Group A- 17%
Motor Skills(MS)	7.2%	20%	Group B- 6.5%
Pre Academic skills(PAS)	7.9%	7%	Group B- 07%
Academic Skills (AS)	4.4%	5.5%	Group A- 13%
Independent Living skills(ILS)	6%	16%	Group B- 03%

Another notable observation was that, the overall development of the child with mild autism. Individuals in Group 'A' who had mild autism, showed remarkable improvement of most skills at regular school as compared to mild autism cases in Group B.

DISCUSSION:

In the present study, the mean age of detection of ASD was 2.69 ± 1.77 yrs. Research findings of *Lemon A, 2007*, suggest that ASD can be detected in boys and girls when they much younger at about 18 months old if parents and autism experts can examine the child for early symptoms. The age at which it can be detected also depends on the general awareness of the parents (*Crais, et al., 2006)* and their early initiative in adopting the appropriate methods and tests for detection. *Baron-Cohen et al., (2011*) demonstrated that the absence of symbolic play in infants and toddlers is highly predictive of the later diagnosis of autism. Therefore, screening for the presence of symbolic play is a key component of the routine assessment of babies. The absence of normal pretend play indicates the need for referral of specialized developmental assessment for autism and other developmental disabilities. Early detection is possible if the parents take initiative in recognising the early symptoms of autism and then get it confirmed from the paediatrician. The paediatrician, can then recommend the necessary tests to be down to rule out isolated MR, fragile X etc. Some means of detecting ASD include checklist for Autism in Toddlers (CHAT), the modified Checklist for Autism in Toddlers (M-CHAT), the Screening Tool for Autism in Two-Year-Olds (STAT), and the Social Communication Questionnaire (SCQ) for children 4 years of age and older. The integrated early detection programme appears to be clinically relevant and led to the earlier detection of ASD, mainly in children with a low IQ (*Oosterling IJ et al., 2010*). Benefit of early detection and intervention is also stated in the study of *Nadel S and Poss JE (2007)* which indicates that early detection enables children with suspected ASD to be evaluated by specialists and entered into treatment programs at the earliest possible opportunity. Child development research has established that the rate of human learning and development is most rapid in the pre-school years *(Landa R and Garrett-Mayer E, 2006).* Thus early detection will enable the parents to plan the education for their child with emphasis on skill development for addressing the overall unique needs of the ASD children.

The mean average IQ of the 92 subjects studied was 43.57 ± 12.96. Students who studied in regular school before joining special school had good social skills and academic skills which then showed further improvement at the special school. These subjects showed considerable improvement of play skills and motor skills at the special school. However the improvement in social, academic and preacademic skill was marginal. Education at special school, enabled enhancement of motor skills, preacademic skills and independent learning skills. Also those who attended school early showed better skill development as compared to late schoolers. Therefore we can state that ASD children should be sent to school at the normal age, but care should be taken to see that they are either admitted to special school or special section of the regular school, based on the IQ of the child. Children with more severe ASD often face difficulties in regular educational settings because of their very distinct learning needs. These needs may arise from their uneven profiles of skills and deficits, difficulties in processing of information, difficulties in generalization, and their unusual behaviours. All of these have important implications for educational practices. Such students benefit from education in special school. However those with mild autism, show enhanced skill development in regular school, provided they are given extra attention in special care section to address their unique needs.

Thus teachers in regular school need to be trained to handle ASD skill development. Lovaas method, TEACCH (Treatment and Education of Autistic and Related Communication handicapped Children) and Greenspan method are the some of the approaches used to teach children with ASD. In addition to the teacher, occupational therapists can provide sensory integration treatment. Such services need to be organized for autistic children in all regular schools. Also the ASD children should also be subjected to behaviour management therapy and Speech-language therapy to help in improving their ability to communicate and interact with others. Physical therapists need to design activities and exercises to build motor control and improve posture and balance. Occupational therapists can help people find ways to adjust tasks to match their needs and abilities (*Corsello et al., 2005*).

Tools enabling development and assessment of skills include Applied Behaviour Analysis (ABA), Verbal Behaviour Analysis (VB), Lovaas method and TEACCH. These include social skills, communication, and adaptive living skills such as gross and fine motor skills, and academics TEACCH (Treatment and Education of Autistic and related Communication-handicapped Children). The TEACCH approach makes use of several techniques in various combinations and includes a focus on the person with autism, understanding autism, adopting appropri-

ate adaptations, and development of a program building on existing skills, emerging capabilities, and the individual person's unique needs. Augmentative and Alternative Communication (AAC) refers to ways other than speech that is used to accompany or augment the spoken word to help the person with autism understand spoken information.

Well-trained professionals, special educators, speech language pathologists, occupational and sensory therapists, in collaboration with parents are considered the best persons to provide training for ASD children. Parent-training programs are now used worldwide to increase the communication skills of children with ASD (*Krishnamurthy, 2008*; *Lang et al., 2009*; *Whittingham et al., 2009*). Using parent-child interactions to increase the social and communication abilities of children with ASD is also a viable speech and language service delivery model.

CONCLUSION:

Based on our observations we suggest that early detection is the key to early intervention. If ASD is confirmed, then parents can take next step of sending them to school which can cater to the special needs of ASD children. The decision of where a child with autism should be educated has to be based on the skills and needs of the individual student, as well as the needs of the parent. Some children can work effectively and benefit from regular education programs, while others will need special classrooms for part or all of the day where the physical environment, curriculum, and personnel can be organized and manipulated to reflect individual needs. For a child to be mainstreamed in a regular school, the deciding factor must be the environment of the school and the severity of ASD. The child with autism will benefit from an environment that is inclusive and that which makes accommodations for his/her particular needs. Collaborative initiatives of well-trained professionals, special educators, speech language pathologists, occupational and sensory therapists and parents, in the special school or special section of regular school will cater to the needs of ASD children to improve their capacities, address their unique needs and cultivate their talents.

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