

Psychological Comorbidity and Functioning In a Clinically Referred Population of Children with Autism Spectrum Disorders: A Questionnaire-Based Cross-Sectional Study

Dr. Pankaj Singh^{1*}, Dr. Himanshu Dua²

¹ Clinical Psychologist, Ph.D in Clinical Psychology, N. K. P. Salve institute of medical sciences & research centre and Lata Mangeshkar Hospital, Nagpur, India

² Associate Professor, MD in Paediatrics, N. K. P. Salve institute of medical sciences & research centre and Lata Mangeshkar Hospital, Nagpur, India

Email: ¹pankajlakhansingh@gmail.com

ABSTRACT

Aim and Objective - The first aim of the present study was to work out the comorbidity of Autism Spectrum Disorder with other psychological behaviour problems. The second aim was to work out the comorbidity of Autism Spectrum Disorder with intelligence range. Our final aim was parenting counselling and guidance for understanding Autism Spectrum Disorder (ASD) children and therapy, would even have direct clinical implications. For instance, clinicians could use the study's results to proactively counselling parents and their family's members of children's with ASD who are at high risk for behaviour problem and comorbid problem.

Methods – A questionnaire-based cross-sectional study. 93 children from 3-to-6 year's old children who were selected randomly via an easy sampling procedure from clientele children who were identified and diagnosed in N. K. P. Salve institute of medical sciences & research centre and Lata Mangeshkar Hospital, Nagpur. The research conducted from February 2018 to March 2019 (13 Months).

Results -The Current study indicates the presence of internalizing problem, and Externalizing problems among children with Autism Spectrum Disorder, ADHD with Conduct disorder were present in 48.38%. Cognitively 13 children in the borderline range, 67 children with Mild Intellectual disability, and 15 children in Moderate Intellectual disability. As a result, parents with autism children experience mental, emotional, home, and physical adjustment, which may be disruptive and unsettling.

Conclusion – The implication of this study is to emphasize the role of mental and psychological health providers for adequate care delivery for children with autism, along with their parents. It is important to value and respect the individual mental health and coping styles of the parent

Keywords

Childhood Autism Rating Scale-(CARS-2), Vineland Social Maturity Scale (VSMS), Adaptive Behaviour Rating Scale (ABRS-II), parenting counselling

Introduction

Autism Spectrum Disorder (ASD) may be a complex genetic neurodevelopmental disorder that typically appears during the primary three years of life and maybe reliably diagnosed before the age of three. It's characterized by qualitative abnormalities in social interactions, markedly aberrant communication skills, and restricted repetitive behaviours, interests, and activities [1]. Autistic Disorder or "autism" is defined by qualitative impairments in three areas of function:

- (1) Social Interaction,
- (2) Communication (Receptive and Expressive Language), and

- (3) Restricted repetitive and stereotyped patterns of behaviour, interests, and activities.

Common symptoms include poor eye contact, low social, failure to develop peer relationships, lack of social or emotional reciprocity, delayed speech development, difficulty sustaining conversation, lack of make-believe play, repetitive motor mannerisms, and rigid adherence to routines. Symptoms are present before 3 years aged.

When American psychiatrists updated their diagnostic manual in 2013 [DSM 5], "IQ scores in autism spectrum disorder could also be unstable, particularly in children [2]. One in 10 children in Interactive Autism Network (IAN) had been diagnosed with intellectual disability (ID), but quite twice that a lot of had an IQ (IQ) score of 70

or less, consistent with their parents [3]. In 2014, a U.S. study found that nearly half the youngsters with ASD had average or above-average intelligence, that is, an IQ score above 85. but a 3rd of the youngsters with autism had an intellectual disability, and 23% had IQ scores within the "borderline range" from 71 to 85 [4]. Even in ASD children with intellectual disabilities, there could also be isolated skills that are highly developed (such as in music, calculation, or memory). Several researchers have suggested the existence of an intellectual profile that's unique with well-developed nonverbal skills and poorly-developed verbal skills [5,6].

Studies worldwide are reporting that more children than ever before are being diagnosed with autism [7, 8,9,10, and 11]. However, there are not any specific community-linked studies on the prevalence or incidence of autism or ASD in India [12]. In 2015 SK Raina et al. study "Prevalence of autism spectrum disorders among children (1-10 years of age) – Findings of a mid-term report from Northwest India" and results showed that prevalence rate of 0.9/1000. The very best prevalence rate was observed within the country [13].

The first aim of the present study was to work out the comorbidity of Autism Spectrum Disorder with other psychological behaviour problems. The second aim was to work out the comorbidity of Autism Spectrum Disorder with intelligence range. Our final aim was parenting counselling and guidance for understanding Autism Spectrum Disorder (ASD) children and therapy, would even have direct clinical implications. For instance, clinicians could use the study's results to proactively counselling parents and their family's members of children's with ASD who are at high risk for behaviour problem and comorbid problem.

Materials and Methods

The present study was purposed to early screenings and identified other behavioural problem in 3-to-6 year's old children.

The total sample of this study is going to be 93 children who were selected randomly via an easy sampling procedure from clientele children who were identified and diagnosed in N. K. P. Salve institute of medical sciences & research centre and

Lata Mangeshkar Hospital, Nagpur. The research conducted from February 2018 to March 2019 (13 Months)

Assessment – this study supported clinical interview and child behaviour assessment author interview all the themes, parents counselling and follow-up. The in take proforma for every subject (Age, Gender, School, Class), case history (Economic background, urban/rural area, Parents education, and any case history of psychiatric illness).

Subjects and Methods- A questionnaire-based cross-sectional study was utilized. Inclusion Criteria - Children with behaviour problem like aloofness, avoiding eye contact, imitation clapping and sounds, repetitive body movements, spinning, figure-wiggling, toe walking, lack of interest for enjoying with other children and with toys, ignoring listening responses, abnormal communication, and unable to precise needs, children's age ranged from 3-6 years, and both genders. Exclusion Criteria- Not Including Children with a behaviour problem, children's age ranged from 6-12 years.

Tools Used:

Early screening and assessment tools are developed to specifically assess for the presence of ASD in children 3 –to- 6-year-old. Use of brief autism screening checklists like the Childhood Autism Rating Scale- CARS-2 ST form , Vineland Social Maturity Scale (VSMS), and Adaptive Behaviour Rating Scale (ABRS-II) at ages 24- 72 months are often very helpful in early identification of an ASD by a psychologist or early educators. Observation tools like the Adaptive Behaviour Rating Scale (ABRS-II) and structured diagnostic interviews went to provide additional rigour to the assessment of ASD.

Procedure:

For the gathering of knowledge from N. K. P. Salve institute of medical sciences & research centre and Lata Mangeshkar Hospital, Nagpur, Maharashtra was chosen. By keeping age and gender requirements in mind the themes were selected quite the specified then the test of Childhood Autism Rating Scale- CARS-2 ST form , Vineland Social Maturity Scale (VSMS), and Adaptive Behaviour Rating Scale (ABRS-II)

.who referred by doctors for behaviour difficulties, N 93 subjects are selected randomly, which consists 93 children (boys 53 and 40 Girls). First of all, a checklist of trails was administered on the themes to induce their original viewpoint. The themes were randomly selected sample in N. K. P. Salve institute of medical sciences & research centre and Lata Mangeshkar Hospital, Nagpur. CARS-2 ST form, Vineland Social Maturity Scale (VSMS), and Adaptive Behaviour Rating Scale (ABRS-II), each subject took around 2 hours to reply on the whole above tools. A period of thirteen months was dedicated to the info collection. Scoring was done consistent with the instructions given within the manual. All the participants were assured that their responses would be kept confidential.

Ethical Statement

Ethical clearance was obtained from an ethical review board N. K. P. Salve institute of medical sciences & research centre and Lata Mangeshkar Hospital, Nagpur. The case file information was de-identified during data collection and was coded.

Statistical Techniques Used-

The obtained data are going to be statistically analyzed by applying descriptive (Average,

percentile, mean, variance, frequency and paired t-test) of the importance of mean differences in term of a various variable. We'll enter all data and further Statistical Analysis is going to be through with the assistance of IBM- SPSS-25 software.

Results

Sociodemographic Profile -The sample consisted of 93 mothers of children with autism spectrum disorder (ASD) boys 53/93 (56.98%), and girls 40/93 (43.01%). of those 15/93 (16.12%) were age 3 years old, 26/93 (27.95%) were age 4 years old, 39/93 (41.93%) were age 5 years old, and 13/93 (13.97%) were age 6 years old children with their mother participant during this study. 63/93 (67.74%) of mothers were homemakers, and 30/93 (32.25%) mothers are working within the private sector. 46/93 (49.46%) mothers are done a master degree, 18/93 (19.35%) are graduates or some 29/93 (31.18%) are secondary school pass. the standard mean age of children is 4.53. The participant is lived in an urban area of 62/93 (66.66%), and 31/93 (33.33%) are from a rural area. Regarding socioeconomic standard (SES) 78/93 (78.49%) are from average economic status, and 15/93 (16.12%) are from low economic status.

Table no.1. Distribution ASD children with an IQ range

		INTELLIGENCE QUOTIENT RANGE				
		Low Average Intelligence	Borderline Intelligence	Mild Intellectual disability	Moderate Intellectual disability	Total / Percentage
ASD RANGE	>70 Extreme Level	0	0	0	0	0
	60-70 Very High level of ASD	0	0	15	4	19
	55-59 High level of ASD	0	0	21	6	27
	45-54 Average level of ASD	0	7	24	3	34
	40-44 Low level of ASD	0	6	3	2	11
	25-39 Very Low level of ASD	0	0	2	0	2
	<25 Minimal to no Autism	0	0	0	0	0

The mean score of the very high level (T-score 60-70) of autism spectrum disorder was 19 (15 Children with Mild, and 4 Children with Moderate Intellectual disability) (Mean 52.79± SD 8.135),

high level (T-score 55-59) of autism spectrum disorder was 27 (21 Children with Mild, and 6 Children with Moderate Intellectual disability) (Mean 57.30± SD 8.494), Average level (T-score

45-54) of autism spectrum disorder was 34 (7 children with borderline intelligence, 24 are Mild, and three Children with Moderate Intellectual disability) (Mean 61.71± SD 9.262), Low level (T-Score 40-44) of autism spectrum disorder was 11 (6 children with borderline intelligence, 3 are Mild, and 2 Children with Moderate Intellectual disability) (Mean 65.09± SD 13.729), and really low level (T-Score 25-39)

of autism spectrum disorder was 2 (2 Children with Mild Intellectual disability) (Mean 60.50± SD 6.364), 32/93 (34.40%) parents reported seizure disorder. Regarding special education 62/93 (66.66%) of children aren't getting to attending school, and 31/93 (33.33%) are taking training from a special school.

Table No. 2. Shows Mean, Std. Deviation, paired t-value and P -value of behaviour difficulties in ASD Children

Paired Samples Test											
Pair	Areas	Gender	Mean	Std. Deviation	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	Sig. (2-tailed)
								Lower	Upper		
Pair 1	Inattentive	Boys	61.08	8.627	12.825	18.594	2.940	6.878	18.772	4.362	.000
		Girls	48.25	17.367							
Pair 2	Hyperactive	Boys	54.43	13.161	13.125	20.873	3.300	6.449	19.801	3.977	.000
		Girls	41.30	17.945							
Pair 3	Conduct	Boys	58.28	12.519	16.750	28.525	4.510	7.627	25.873	3.714	.001
		Girls	41.53	21.183							
Pair 4	Oppositional	Boys	58.35	8.989	.125	11.069	1.750	-3.415	3.665	.071	.943
		Girls	58.23	9.859							
Pair 5	Depression	Boys	41.23	19.897	10.100	31.102	4.918	.153	20.047	2.054	.047
		Girls	31.13	16.836							
Pair 6	Anxiety	Boys	61.88	9.926	14.425	22.825	3.609	7.125	21.725	3.997	.000
		Girls	47.45	18.719							
Pair 7	OCD	Boys	60.00	8.146	8.650	16.830	2.661	3.267	14.033	3.251	.002
		Girls	51.35	15.998							
Pair 8	Thought	Boys	53.25	14.887	7.900	18.946	2.996	1.841	13.959	2.637	.012
		Girls	45.35	13.524							

As regards the separate syndromes according to present study result 45 (48.38%) of children experienced ADHD with Conduct disorder. Inattention 63 (67.74%) of whom was included in the clinical range, 21 (22.58%) are from risk range, and 9 (9.67%) are from the normal range. The paired t-test outcomes obtained from pair 1 ADHD Inattention revealed the mean difference in the level of ADHD Inattention problem was 12.825 (t 4.362, statistically significant at p<0.05 level). Experienced ADHD Hyperactive 57 (61.29%) of whom was included in the clinical range, 34 (36.55%) are from risk range, and 2

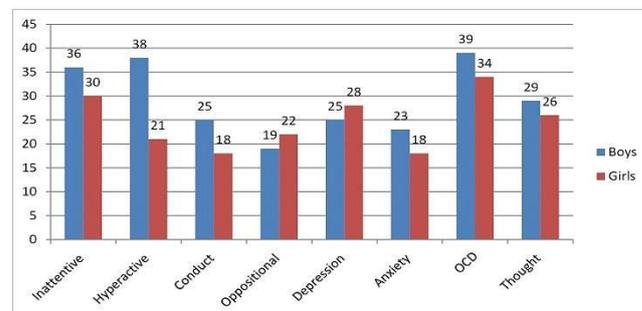
(2.15%) are from the normal range. The paired t-test outcomes obtained from pair 2 ADHD Hyperactive revealed the mean difference in the level of ADHD Hyperactive problem was 13.125 (t 3.977), statistically significant at p<0.05 level). Conduct disorder 45 (48.38%) of whom were included in the clinical range, 36 (38.70%) are from risk range, and 12 (12.90%) are from the normal range. The paired t-test outcomes obtained from pair 3 (Conduct disorder) revealed the mean difference in the level of Conduct disorder problem was 16.750 (t 3.714), statistically significant at p<0.05 level), and Oppositional

defiant problem 37 (39.78%) of whom was included in the clinical range, 46 (49.46%) are from risk range, and 10 (10.75%) are from the normal range. The paired t-test outcomes obtained from pair 4 Oppositional defiant problem revealed the mean difference in the level of Oppositional defiant problem was .125 (t .071), statistically not significant at $p > 0.05$ level). Many other studies Results indicated that the majority of diagnostic groups experienced elevated levels of both inattention and hyperactivity/impulsivity [14, 15, 16, and 17]. Conduct disorder [18], and Oppositional defiant problem [19].

As regards the separate syndromes according to present study ASD children experienced depression 46 (49.46%) of whom was included in the clinical range, 24 (25.80%) are from risk range, and 23 (24.73%) are from the normal range. The paired t-test outcomes obtained from pair 5 (Depression) revealed the mean difference in the level of depression problem was 10.100 (t 2.054), statistically significant at $p < 0.05$ level). Nora Gold 1993 study showed that siblings of autistic boys scored significantly higher on depression than the comparison group [20]. Anxiety 59 (63.44%) of whom was included in the clinical range, 29 (31.18%) are from risk range, and 5 (5.37%) are from the normal range. The paired t-test outcomes obtained from pair 6 (Anxiety) revealed the mean difference in the level of Anxiety problem was 14.425 (t 3.997), statistically significant at $p < 0.05$ level). Obsessive-Compulsive Problems 66 (70.96%) of whom was included in the clinical range, 21 (22.58%) are from risk range, and 6 (6.45%) are from the normal range. The paired t-test outcomes obtained from pair 7 Obsessive-Compulsive Problems revealed the mean difference in the level of Obsessive-Compulsive Problems was 8.650 (t 3.251), statistically significant $p < 0.05$ level), and thought disorder 48 (51.61%) of whom was included in the clinical range, 34 (36.55%) are from risk range, and 11 (11.82%) are from the normal range. The paired t-test outcomes obtained from pair 8 thought disorder revealed the mean difference in the level of thought disorder problem was 7.900 (t 2.637), statistically significant $p < 0.05$ level). Other researcher found Mood disorder and anxiety disorders, and substance dependence [21, 14, and 22], and OCD [22]. The

present study shows boys also exhibit at a risk level of internalizing problem. But most of the studies show boys exhibit a lower rate of internalizing problem. See Figure no.1.

Figure no.1 –Externalizing and Internalizing problem in children with ASD.



The presence of children with Autism within the family could have negative effects on the family. Mother plays a crucial role. Providing a friendly social environment with proper clinical support to monitoring the mental, physical, academic, and social development. The current study noted mother with autism spectrum disorder children perceived negative from social also as from home. Every single mother faced social adjustment issues. Financial stressors perceived by all mothers were financial stressors [23, 24, and 25]. Even the current study noted mother facing financial problem not regular for follow –up. Parents with autism many parents feel and facing social adjustment like –reducing social interaction with neighbours, communication and not even taking interest to travel outside with children with an autism spectrum disorder. Most of the parents don't help the development of social skills or good conduct of the siblings [26, 27]. Even they avoiding family fun activities or less paid attention to social activities [28]. Parents with Autism children facing emotional adjustment issues like- Depression [29, 27], anxiety, sadness, guilty feeling, anxiety towards self or other relations, once they didn't get the right and positive support. Even 44/93 (47.31%) mothers reported home adjustment issues like husband support, disturbed marital life, 75/93 (80.64%) months face affective disorder like- self-blaming, sadness, aloofness, withdrawal from social activities [30, 31, and 32], and 68/93 (73.11%) mothers face physical adjustment difficulties like- sleeping disturbance, physical day and night check the child's status and satisfy their needs and ignoring self-health.

Conclusion

The Current study indicates the presence of internalizing problem, and Externalizing problems among children with Autism Spectrum Disorder, ADHD with Conduct disorder were present in 48.38%, as assessed on the ABRIS-II. Cognitively 13 children with autism intelligence quotient in the borderline range, 67 children with autism intelligence quotient in Mild Intellectual disability, and 15 children with autism intelligence quotient in Moderate Intellectual disability. The current study noted mother with autism spectrum disorder children perceived negative from social also as from home like- lack of family support, and disturbed marital life Financial stressors, social adjustment, physical adjustment difficulties like- sleeping disturbance, ignoring self-health issues, and emotional adjustment like-depression, anxiety, sadness, guilty feeling, anxiety towards self or other relations. As a result, parents with autism children experience mental, emotional, home, and physical adjustment, which may be disruptive and unsettling.

The current study showed early intervention can make a big difference in improving cognitive and social development for children with Autism spectrum disorder, and structured educational programs supported the principles of applied psychotherapy and behaviour analysis are the quality for early autism treatment. A national consensus has been reached that structured programming should be provided throughout the year at an intensity of a minimum of 2-3 hour per day. Medication cannot cure ASD, but it can help provide control externalizing problems. Medical care can also be needed to manage associated problems with seizures, gastrointestinal problems, dietary imbalances, or other physical issues.

The implication of this study is to emphasize the role of mental and psychological health providers for adequate care delivery for children with autism, along with their parents. It is important to value and respect the individual mental health and coping styles of the parent. Comprehensive mental and emotional health care can include screening parents for psychological distress, psychoeducation regarding the appropriate use of coping styles for managing distress, developing awareness in social for supporting children with special needs, peer support, and provision of

support for parents of children with Autism Spectrum Disorder.

Limitation of the research

- Limited sample size
- Areas based research

Future research is required to further delineate and characterize the prevalence, frequency, and psychosocial correlates related to the ASD. Future prospect study should be developed in cooperating large sample size and mass study with appropriate methodology to capture the frequency and prevalence of Psychological Comorbidity and Functioning of Children with Autism Spectrum Disorders.

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Conflict Of Interest- The authors declare that they have no conflict of interest.

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