

Repetitive Behaviours in Children and Adolescents of Autism Spectrum Disorder

Prof. Pradeep Kr. Saha¹, Dr. Abhijit Chakraborty^{2*}

¹Institute of Psychiatry, Kolkata,

²Calcutta National Medical College, Kolkata, India

Original Research Article

*Corresponding author

Dr. Abhijit Chakraborty

Article History

Received: 01.11.2018

Accepted: 07.11.2018

Published: 30.11.2018

DOI:

10.36347/sjams.2018.v06i11.048



Abstract: Several types of repetitive behavior seen in patients of autism spectrum disorder (ASD). Four subtypes of restrictive and repetitive behavior (RRB) are identified in DSM 5 namely repetitive motor movements (RMM), Insistence on sameness (IS), Preoccupation with restricted patterns of interest (PRPI), unusual sensory interest (USI). In this study we tried to explore the frequency and patterns of these repetitive behaviours in ASD in respect to intellectual functioning and severity of Autism. Consecutive patients of ASD attending child clinic with CARS score more than 30 were included in the study. Their IQ was measured by MISIC or obtained from VSMS. To measure repetitive behaviour we used Repetitive behaviour questionnaire (RBQ-2), a 20 question parent rated questionnaire. Result showed marked presence of repetitive behaviours in children with ASD. Highest prevalence of repetitive behaviour noted in item of repetitive hand and/or finger movements (63% marked or notable). Individual items of repetitive motor movement subscale have much higher score than others. We found significant difference in repetitive behaviour in relation to IQ. Co-morbid MR in autism has more repetitive motor movements, preoccupation with restricted patterns of interest and unusual sensory interest from their non-MR counterpart. The result shows that RRBs are an important predictor of autism spectrum disorder. IQ, severity of autism both affects the frequency of repetitive behavior.

Keywords: Autism spectrum disorders, RRBs, IQ, severity of autism.

INTRODUCTION

Repetitive behavior is one of the two core features of Autism Spectrum Disorder according to DSM-5 [1]. These includes stereotyped motor movements like repetitive flapping of hands, repetitive use of objects like spinning toys, preoccupation with certain objects like a specific toy; restricted interests like wearing certain clothes all the times; unusual sensory interests like mouthing objects and an insistence that things be 'just same' like becoming upset if a toy was missing or if the furniture in a room was rearranged [2]. These repeated behaviours have been grouped into four major subtypes in DSM 5 namely repetitive motor movements (RMM), insistence on sameness (IS), preoccupied or restricted patterns of interests (PRPI), unusual sensory interest (USI).

Though repetitive behaviours are considered a core feature of ASD they have received far less attention than social interaction and communication [3]. This might be because lack of social reciprocity is thought of as basic or fundamental to ASD whereas repetitive behaviours often being proposed as by-products of the core deficits of ASD. But we know that

RRBs cannot be fully explained from social communicative problems. Often repetitive behaviours are far more distressing to parents than problems in the areas of social communication.

Repetitive behaviours may also found in children in their normal development particularly in younger age, but they are more prevalent and persistent in children with ASD [4].

RRB encompasses a wide range of behavior [5, 6]. On one end it consists of high order behaviours like insistence on sameness and on other end it consists lower order behaviour like repetitive movements of body parts [7, 8]. It has found that higher order behaviour is usually found in children with high functioning autism [9-11]. They are usually absent in children with lower intellectual abilities [12].

There is practically no literature from our country regarding RRBs in Autism Spectrum disorder. In this study an attempt has been made to highlight the prevalence, frequency, severity of restrictive repetitive behaviours in children and adolescents having ASD.

MATERIALS AND METHODS

It was a Cross sectional observational study carried out in a tertiary care centre of Eastern India. Ethical clearance was taken from Institute Ethics committee. Written consent was from parents of the children having ASD. Written ascent was taken from children who are more than seven years of age. Consecutive patients of ASD attending child clinic with CARS score more than 30 and willing to give consent was included in the study. Patients having Cerebral palsy or other neuromotor disorders, Known genetic or chromosomal abnormality, severe vision or hearing impairment were excluded from this study. Their IQ was obtained from DQ (Developmental Quotient) which was measured by Developmental Screening test (DST). To measure repetitive behaviour we used Repetitive behaviour questionnaire 2 (RBQ-2). RBQ -2 is a 20 question parent rated questionnaire specifically developed for measurement of repetitive behaviour. It has good interred rater reliability and validity.

RESULTS AND DISCUSSION

Among 44 patients examined 31 were male (70.5%) and 13(29.5%) were female. Mean age was 7.23 years. Mental retardation (MR) was present (IQ<70) in 32 (72.73%) patients. 72.72% were in mild to moderate autism group(CARS<36) and 27.27% in severe autism group. 22.7%were from urban background, 40.9%semiurban,36.4%from rural background. 69.80% belonged to Hindu religion and rest 30.20%were Muslim. 40.58% had a family income more than Rs. 10000. Patients with low IQ also have more CARS score (p<0.001).

Highest prevalence of repetitive behaviour noted in item of repetitive hand and/or finger movements (63%marked or notable). Individual items of repetitive motor movement subscale have much higher score than others. No significant difference in respect to gender except preoccupation and restricted patterns of interest (PRPI) was more among boys.

Table-1: Table showing various repetitive behaviour in respect to mental retardation

Variables	ASD with MR	ASD without MR	p-value
RRM	2.80	1.65	0.001
IS	1.53	1.42	0.304
PRPI	2.03	1.73	0.049
USI	1.55	1.29	0.012

Table-2: Table showing various repetitive behaviour in respect to severity of ASD

Variables	Mild to moderate ASD	Severe ASD	p-value
RMM	2.30	2.97	<0.001
IS	1.40	1.53	0.268
PRPI	1.71	2.14	0.042
IS	1.34	1.65	0.024

As predicted, motor and sensory behaviors were highly prevalent in the ASD group, whereas rigidity, routine, preoccupation with restricted interests were less common. Our findings suggest that several RMM behaviours particularly to a severe degree are a strong indicator of ASD.

We also found significant difference in repetitive behaviour in relation to IQ [13]. Comorbid MR in autism have more repetitive motor movements, preoccupation with restricted patterns of interest and unusual sensory interest from their non-MR counterpart but no significant difference observed in insistence on sameness behaviour.

Frequency of Repetitive behaviour increases with severity of autism except in the IS subtype, conforming to the existing literature. Presently there is scarcity of literature in this aspect in our country and should be a concern for further research. It was a clinic based study, the behaviours more troubling to the parents might produce a bias in this study.

CONCLUSION

Repetitive behaviours are an essential part of the diagnosis of ASD. Repetitive Motor behaviours are strong predictors of ASD. Moderate to severe mental retardation if associated with ASD the frequency and prevalence of repetitive sensory motor behaviour increases significantly. Frequency of repetitive behaviours increases with severity of ASD.

REFERENCES

1. American Psychiatric Association. Diagnostic and Statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing. 2013.
2. Richler J, Bishop SL, Kleinke JR, Lord C. Restricted and repetitive behaviors in young children with autism spectrum disorders. Journal of autism and developmental disorders. 2007 Jan 1;37(1):73-85.
3. Lai MC, Lombardo MV, Baron-Cohen S. Autism. Lancet. 2014; 383:896-910.
4. Leekam S, Tandos J, McConachie H, Meins E, Parkinson K, Wright C, Turner M, Arnott B, Vittorini L, Couteur AL. Repetitive behaviours in

- typically developing 2-year-olds. *Journal of Child Psychology and Psychiatry*. 2007 Nov;48(11):1131-8.
5. Bishop SL, Richler J & Lord C. Restricted and repetitive behaviors and nonverbal IQ in children with autism spectrum disorders. *Child Neuropsychology*. 2006; 12: 247-267
 6. Bodfish JW, Symons FJ, Parker DE, Lewis MH. Varieties of repetitive behavior in autism: Comparisons to mental retardation. *Journal of autism and developmental disorders*. 2000 Jun 1;30(3):237-43.
 7. Militerni R, Bravaccio C, Falco C, Fico C, Palermo MT. Repetitive behaviors in autistic disorder. *European Child & Adolescent Psychiatry*. 2002 Oct 1;11(5):210-8.
 8. Matson JL, Dempsey T, Fodstad JC. Stereotypies and repetitive/restrictive behaviours in infants with autism and pervasive developmental disorder. *Developmental Neurorehabilitation*. 2009 Jan 1;12(3):122-7.
 9. South M, Ozonoff S, McMahon WM. Repetitive behavior profiles in Asperger syndrome and high-functioning autism. *Journal of autism and developmental disorders*. 2005 Apr 1;35(2):145-58.
 10. Evans DW, Leckman JF, Carter A, Reznick JS, Henshaw D, King RA, Pauls D. Ritual, habit, and perfectionism: The prevalence and development of compulsive-like behavior in normal young children. *Child development*. 1997 Feb;68(1):58-68.
 11. Gabriels RL, Agnew JA, Miller LJ, Gralla J, Pan Z, Goldson E, Ledbetter JC, Dinkins JP, Hooks E. Is there a relationship between restricted, repetitive, stereotyped behaviors and interests and abnormal sensory response in children with autism spectrum disorders?. *Research in Autism Spectrum Disorders*. 2008 Oct 1;2(4):660-70.
 12. Turner M. Annotation: Repetitive behaviour in autism: A review of psychological research. *The Journal of Child Psychology and Psychiatry and Allied Disciplines*. 1999 Sep;40(6):839-49.
 13. Banach R, Thompson A, Szatmari P, Goldberg J, Tuff L, Zwaigenbaum L, Mahoney W. Brief report: Relationship between non-verbal IQ and gender in autism. *Journal of Autism and Developmental Disorders*. 2009 Jan 1;39(1):188.