

Validity Study of The Mal-Adaptive Behavior Assessment Checklist for Children with Developmental Disabilities (Mabac-Cdd)

Abhilasha Kaura¹, Sakshi Chand², Chandasmita Das³, Vikas Ray⁴,
Dr Yash Pal Singh⁵

¹Research Associate, Learning Ladder Therapy Centre, New Delhi, India

²Child and Adolescent Psychologist, Learning Ladder Therapy Centre, New Delhi, India

³Special Education Teacher, Govt Girls Senior Secondary School No. 2, New Delhi, India

⁴Director, Learning Ladder Therapy Centre, New Delhi, India

⁵Professor, Department of Education, M.J.P. Rohilkhand University, Bareilly, Uttar Pradesh, India

Abstract:

The MABAC-CDD was developed to address a requirement of an updated, standardized, comprehensive assessment tool in the area of maladaptive behaviors or problem behaviors for use with the Indian population. This study aimed to assess the validity of the MABAC-CDD checklist in order to standardize the tool, which is a 107-item frequency-based checklist with 14 areas or sub-domains that assess maladaptive behavior or problem behaviors for children with developmental disabilities below the age of 18 years. The study found the MABAC-CDD tool to have statistically significant criterion validity established through Pearson coefficient correlation at $r=0.43$ ($p<.001$). The results of the validity of the 14 areas or sub-domains of MABAC-CDD are also discussed. This study helps in standardizing the tool and in establishing the validity of the MABAC-CDD for assessment of maladaptive behaviors among children with developmental disabilities in India.

Keywords: Maladaptive behavior checklist, assessment and evaluation, individuals with developmental disabilities, checklist for problem behaviors, autism spectrum disorder, intellectual disabilities

Introduction

Maladaptive behaviors encompass a broad spectrum of behaviors that are considered socially inappropriate, harmful, or disruptive within a given context. When it comes to children or individuals with developmental disabilities, these behaviors may manifest in various forms, including aggression, self-injury, noncompliance, stereotypic movements, and social withdrawal. While maladaptive behaviors can occur in individuals without developmental disabilities, they are particularly prevalent and

¹Research Associate, Learning Ladder Therapy Centre, New Delhi, India; email id: abhilashakaura@gmail.com

² Child and Adolescent Psychologist, Learning Ladder Therapy Centre, New Delhi, India; email id: sakshic.saini@gmail.com

³Special Education Teacher, Govt Girls Senior Secondary School No. 2, New Delhi, India; email id: rehabshmita@gmail.com

⁴ Director, Learning Ladder Therapy Centre, New Delhi, India; email id: rehabprofvikas@rediffmail.com

⁵Professor, Department of Education, M.J.P. Rohilkhand University, Bareilly, Uttar Pradesh, India; email id: yashpalsingh23@gmail.com

pronounced among children with developmental disabilities due to the unique challenges they face in navigating their environment and interacting with others.

A **problem behavior** is defined as negative, dysfunctional, maladaptive, undesirable or unwanted actions which are age or situation inappropriate, interfering in the learning of new behaviors, harmful to self or others, occurring in a magnitude sufficient to cause stress on others. A problem behavior is different from a full-fledged clinically diagnosable condition like conduct disorder, or opposition defiant disorder. A developmental, socio-cultural perspective is important for identification of problem behaviors in children. Bed-wetting or fear of strangers is age appropriate for a given developmental stage, but becomes problematic at a later age. More than being a passing age-related phenomenon, problem behaviors can persist for long duration if left unresolved early in life (Venkatesan, 2020).

Maladaptive behavior is sometimes generically defined as behavior that is frequent and/or severe enough to limit a person's ability to function in everyday life, to learn new skills, and to gain full access to resources in the environment (Moss, 1999, Sigafos et al., 2003). Cooper et.al (2007) estimated the point prevalence of behavior problems among individuals with intellectual or developmental disabilities across all levels of functioning to be 22.5%.

Problem or Maladaptive Behavior in children with developmental disabilities can manifest as an expression of irritation, mood fluctuation, low emotional capacity or an inability to process or understand or respond to emotions, self-regulation, emotional dysregulation, undesirable environmental conditions, or simply as a mean of communication. For example, a child with autism spectrum disorder (ASD) may engage in repetitive behaviors or sensory-seeking activities as a way of modulating sensory input or alleviating anxiety. Similarly, a child with intellectual disabilities may display noncompliant behaviors or aggression in response to frustration or difficulties understanding instructions. Moreover, maladaptive behaviors in children with developmental disabilities may stem from deficits in social skills, emotional regulation, or impulse control, rendering them more vulnerable to behavioral challenges in social and academic settings.

Introduction to the Maladaptive Behavior Assessment Checklist for Children with Developmental Disabilities (MABAC-CDD)

The 'Mal-Adaptive Behaviour Assessment Checklist for Children with Developmental Disabilities' (MABAC-CDD) has been developed to assess 'mal-adaptive behaviours' in children with developmental disabilities across different areas. For assessment of mal-adaptive behaviours, different mal-adaptive behaviours have been listed against each area. The tool is designed to assess various mal-adaptive behaviours those are present in a child with its frequency of occurrence. In view of non-availability of modern mal-adaptive behaviour checklist for children with developmental disabilities; the MABAC-CDD can be used by special educators, psychologists, behavioral therapist and other allied professionals working for children with developmental disabilities. The checklist will be able to guide them to assess mal-adaptive behaviours with the frequency of occurrence to enable the professionals to plan effective behaviour management programme and help in objective evaluation. The MABAC-CDD in its present form has 14 areas or sub-domains and 107 mal-adaptive behaviours or items in total.

The 14 sub-domains or dimensions of the maladaptive or problem behavior that are assessed by the MABAC-CDD are as follows:

1. Aggressive Behavior: Actions or behaviors intended to cause harm, injury, or distress to others, su-

ch as hitting, kicking, biting, or verbal threats.

2. **Mood Outbursts:** Sudden and intense displays of emotion that may include crying, yelling, or expressions of frustration, anger, or sadness, often disproportionate to the situation.
3. **Self-Hurting Behavior:** Actions or behaviors directed towards oneself that result in physical harm or injury, such as self-hitting, head-banging, or scratching.
4. **Unusual Behavior:** Behaviors that deviate significantly from typical or expected patterns of behavior, including odd or idiosyncratic actions, repetitive movements, or unusual preoccupations.
5. **Hyperactive Behavior:** Excessive levels of motor activity, restlessness, or impulsivity, characterized by difficulty staying still, fidgeting, or constantly moving.
6. **Inattentive Behavior:** Difficulty sustaining attention, maintaining focus, or following through on tasks, often accompanied by distractibility, forgetfulness, or disorganization.
7. **Non-Cooperative Behavior:** Resistance or refusal to comply with rules, instructions, or requests from others, resulting in defiance, opposition, or defiance.
8. **Asocial Behavior:** Withdrawal or avoidance of social interaction or engagement with others, characterized by isolation, indifference, or disinterest in social activities.
9. **Fears:** Excessive or irrational anxiety or apprehension in response to specific situations, objects, or stimuli, often resulting in avoidance or distress.
10. **Solitary Behavior:** Preference for or tendency towards solitary activities or play, with limited interest or engagement in social interactions or peer relationships.
11. **Self-Assessment:** Evaluation or judgment of one's own abilities, attributes, or performance, including self-perceptions of competence, worth, or satisfaction.
12. **Stereotypical Behavior:** Repetitive, ritualistic, or ritualized actions or movements, often lacking in functional purpose or goal-directed behavior, such as hand-flapping, rocking, or pacing.
13. **Carnal Expression Behavior:** Inappropriate or socially unacceptable sexual behaviors or expressions, including touching oneself inappropriately, making sexual comments, or engaging in sexualized play.
14. **Screen Time Misuse:** Excessive or inappropriate use of electronic screens, such as smartphones, tablets, computers, or television, leading to neglect of other activities, disrupted sleep patterns, or impaired social functioning.

Scoring and Administration of MABAC-CDD

In order to test the administration of the tool, this pilot study was conducted on 20 children. The checklist is given in simple English language wherein the administrator observes the child's behaviors or refers to information provided by the child's parents regarding the presence, absence and frequency of the particular behavior as observed within the past month, as applicable.

The administrator starts by collecting demographic information of the child i.e., their name, age, gender, diagnosis, followed by small introduction and basic instructions for the test that is given on top of each booklet.

As this checklist is a frequency-based checklist, a child will be scored on a range of 0-3 wherein a score of 0=never, 1=occasionally, 2=frequently and 3=excessively is marked for the child as applicable for the particular behavior.

The scores may be marked as per the behavioral frequency observed in the child for the behavior, as observed or marked by the administrator/ special educator/ psychologist/ teacher/ allied professional, or

as reported by the parents of the child. The frequency may be decided as per observations and expertise of the administrator. The frequencies are defined as:

0=Never: The child never displays the behavior or it is not applicable for the child as per their age or disability or the information is not available for the particular behavior.

1=Occasionally: The child displays this behavior sometimes, it is infrequent or irregular. You can say the child displays the behavior now and then.

2=Frequently: The child displays this behavior often or frequently. You can say the child displays the behavior not all the time but most of the time.

3=Excessively: The child displays this behavior regularly or consistently. You can say the child displays the behavior all the time.

Once the administrator marks these scores for each item, the scores of each dimension need to be summed and totaled against each dimension. The total maximum score for Maladaptive Behavior is 321. The maximum score for each dimension is as follows:

Aggressive Behavior = 14 items = 0 – 42

Mood Outburst = 8 items = 0 – 24

Self-Hurting Behavior = 9 items = 0 – 27

Unusual Behavior = 13 items = 0 – 39

Hyperactive Behavior = 6 items = 0 – 18

Inattentive Behavior = 7 items = 0 – 21

Non-Cooperative Behavior = 5 items = 0 – 15

Asocial Behavior = 4 items = 0 – 12

Fears = 8 items = 0 – 24

Solitary Behavior = 4 items = 0 – 12

Self-Assessment = 8 items = 0 – 24

Stereotypical Behavior = 8 items = 0 – 24

Carnal Expression Behavior = 7 items = 0 – 21

Screen Time Misuse = 6 items = 0 – 18

Individual dimension percentage calculation:

$$\text{Dimension \%} = \frac{\text{Raw score}}{\text{Max Score}} \times 100$$

Grand total percentage calculation:

$$\text{Total \%} = \frac{\text{Raw score}}{\text{Max Score (321)}} \times 100$$

Methodology

This is a validity study in which the criterion validity of the checklist was investigated by examining the correlation of the Maladaptive Behavior Assessment Checklist for Children with Developmental Disabilities (MABAC-CDD) overall as well as its various sub-domains with Behavioral Assessment Scales for Indian Children with Mental Retardation (BASIC-MR [Part-B]) overall as well as its various sub-domains.

A total of 20 items were modified and/or removed when reviewing the items of BASIC-MR Part-B and the rest of 55 items match the MABAC-CDD's item, albeit for a few items, the wording, grammar has

been altered to fit a broader group or meaning.

To assess the criterion validity of the MABAC-CDD and its various domains, a sample of children with developmental disabilities were tested on both the BASIC-MR (Part-B) and the MABAC-CDD and their results were compared.

Sample details

For this study, a sample of 25 children with developmental disabilities including children with intellectual disabilities, autism spectrum disorder, as well as multiple disabilities, from a rehabilitation centre in New Delhi, Learning Ladder Therapy Centre, with age below 18 years.

Results

Criterion validity was established by examining the correlation between sample’s performance on BASIC-MR and MABAC-CDD. The values are presented below.

Table 1. Criterion Validity for MABAC-CDD

		BASIC-MR (Part-B)
MABAC-CDD	Pearson Correlation	0.43**
	Significance (1-tailed)	0.007

**Statistically significant at 0.01 level

The values presented are Pearson’s correlation analysis values.

Table 1 presents the overall validity of the checklist MABAC-CDD, which is found to be statistically significant at 0.01 level when correlated with BASIC-MR (Part-B) using Pearson Correlation, hence, the MABAC-CDD is found to be statistically valid.

Table 2. Criterion validity for sub-scales of MABAC-CDD and BASIC-MR Part-B

		Violent & Destructive Behavior {BASIC-MR (Part-B)}
Aggressive Behavior (MABAC-CDD)	Pearson Correlation	0.71**
	Significance (1-tailed)	<.001

**Statistically significant at 0.01 level

Table 2 presents the validity of the sub-domain, Aggressive Behavior, of the checklist MABAC-CDD, which is found to be statistically significant at 0.01 level when correlated with sub-domain, Violent & Destructive Behavior, of the BASIC-MR (Part-B) using Pearson Correlation, hence, the first sub-domain of MABAC-CDD, Aggressive Behavior, is found to be statistically valid.

Table 3. Criterion validity for sub-scales of MABAC-CDD and BASIC-MR Part-B

		Temper Tantrums {BASIC-MR (Part-B)}
Mood Outbursts (MABAC-CDD)	Pearson Correlation	0.31 ^{ns}
	Significance (1-tailed)	0.069

^{ns} Not statistically significant

Table 3 presents the validity of the sub-domain, Mood Outbursts, of the checklist MABAC-CDD, which is found to be not statistically significant when correlated with sub-domain, Temper Tantrums, of the BASIC-MR (Part-B) using Pearson Correlation, hence, the second sub-domain of MABAC-CDD, Mood Outbursts, is not found to be statistically valid.

Table 4. Criterion validity for sub-scales of MABAC-CDD and BASIC-MR Part-B

		Self-injurious behavior {BASIC-MR (Part-B)}
Self-hurting behavior {MABAC-CDD}	Pearson Correlation	.61**
	Significance (1-tailed)	<.001

**Statistically significant at 0.01 level

Table 4 presents the validity of the sub-domain, Self-hurting Behavior, of the checklist MABAC-CDD, which is found to be statistically significant at 0.01 level when correlated with sub-domain, Self-injurious Behavior, of the BASIC-MR (Part-B) using Pearson Correlation, hence, the third sub-domain of MABAC-CDD, Self-hurting Behavior, is found to be statistically valid.

Table 5. Criterion validity for sub-scales of MABAC-CDD and BASIC-MR Part-B

		Repetitive behaviors	Odd behaviors
		{BASIC-MR (Part-B)}	
Unusual behavior {MABAC-CDD}	Pearson Correlation	.45*	.24 ^{ns}
	Significance (1-tailed)	.012	.128

^{ns} Not statistically significant

*Statistically significant at 0.05 level

Table 5 presents the validity of the sub-domain, Unusual Behavior, of the checklist MABAC-CDD, which is found to be statistically significant at 0.05 level when correlated with sub-domain, Repetitive Behavior, of the BASIC-MR (Part-B) using Pearson Correlation. Further, when the sub-domain Unusual Behavior (MABAC-CDD) was correlated with sub-domain Odd Behavior (BASIC-MR [Part-B]), it was found to be not statistically significant. This domain was tested with two different sub-domains as different items matched or were derived from both of the sub-domains of BASIC-MR (Part-B). Hence, the fourth sub-domain of MABAC-CDD, Unusual Behavior, is found to be statistically valid.

Table 6. Criterion validity for sub-scales of MABAC-CDD and BASIC-MR Part-B

		Hyperactivity	Rebellious behaviors
		{BASIC-MR (Part-B)}	
Hyperactive behavior {MABAC-CDD}	Pearson Correlation	.21 ^{ns}	.47**
	Significance (1-tailed)	.163	.009

**Statistically significant at 0.01 level

^{ns} Not statistically significant

Table 6 presents the validity of the sub-domain, Hyperactive Behavior, of the checklist MABAC-CDD, which is found to be statistically significant at 0.01 level when correlated with sub-domain, Rebellious Behavior, of the BASIC-MR (Part-B) using Pearson Correlation. Further, when the sub-domain Hyperactive Behavior (MABAC-CDD) was correlated with sub-domain Hyperactivity (BASIC-MR [Part-B]), it was found to be not statistically significant. This domain was tested with two different sub-domains as different items matched or were derived from both of the sub-domains of BASIC-MR (Part-B). Hence, the fifth sub-domain of MABAC-CDD, Hyperactive Behavior, is found to be statistically valid.

Table 7. Criterion validity for sub-scales of MABAC-CDD and BASIC-MR Part-B

		Hyperactivity	Rebellious behaviors
		{BASIC-MR (Part-B)}	
Non-cooperative behavior {MABAC-CDD}	Pearson Correlation	.35*	.52**
	Significance (1-tailed)	.041	.004

**Statistically significant at 0.01 level

*Statistically significant at 0.05 level

Table 7 presents the validity of the sub-domain, Non-cooperative Behavior, of the checklist MABAC-CDD, which is found to be statistically significant at 0.01 level when correlated with sub-domain, Rebellious Behavior, of the BASIC-MR (Part-B) using Pearson Correlation. Further, when the sub-domain Non-cooperative Behavior (MABAC-CDD) was correlated with sub-domain Hyperactivity (BASIC-MR [Part-B]), it was found to be statistically significant at 0.05 level. This domain was tested with two different sub-domains as different items matched or were derived from both of the sub-domains of BASIC-MR (Part-B). Hence, the seventh sub-domain of MABAC-CDD, Non-cooperative Behavior, is found to be statistically valid.

Table 8. Criterion validity for sub-scales of MABAC-CDD and BASIC-MR Part-B

		Antisocial behaviors {BASIC-MR (Part-B)}
Asocial behavior + Carnal expression behavior {MABAC-CDD}	Pearson Correlation	.54**
	Significance (1-tailed)	.003

**Statistically significant at 0.01 level

Table 8 presents the validity of two sub-domains, Asocial Behavior summed with Carnal Expression Behavior, of the checklist MABAC-CDD, which is found to be statistically significant at 0.01 level when correlated with sub-domain, Antisocial Behaviors, of the BASIC-MR (Part-B) using Pearson Correlation, hence, the eighth and thirteenth sub-domains of MABAC-CDD, Asocial Behavior and Carnal Expression Behavior respectively, are both found to be statistically valid.

Table 9. Criterion validity for sub-scales of MABAC-CDD and BASIC-MR Part-B

		Fears {BASIC-MR (Part-B)}
Fears {MABAC-CDD}	Pearson Correlation	.09 ^{ns}
	Significance (1-tailed)	.338

^{ns} Not statistically significant

Table 9 presents the validity of the sub-domain, Fears, of the checklist MABAC-CDD, which is not found to be statistically significant when correlated with sub-domain, Fears, of the BASIC-MR (Part-B) using Pearson Correlation, hence, the ninth sub-domain of MABAC-CDD, Fears, is not found to be statistically valid.

Some of the sub-domains of MABAC-CDD were not assessed against sub-domains of BASIC-MR (Part-B), including the sixth, tenth, eleventh, twelfth and fourteenth sub-domains i.e., Inattentive Behavior, Solitary Behavior, Self-Assessment, Stereotypical Behavior and Screen Time Misuse respectively. These were not tested as the items under these sub-domains did not match sub-domains of BASIC-MR (Part-B) as these were derived and modified from observation and expert reviews.

Conclusion

This study aimed to standardize the MABAC-CDD tool by assessing its criterion validity to make it available for assessment and evaluation of children with developmental disabilities including a neurodevelopmental, intellectual or developmental disability or disorder, for use with the Indian population.

The study used criterion validity to assess the validity of the checklist. The criterion validity was established through Pearson coefficient correlation between MABAC-CDD and BASIC-MR (Part-B) and it was found to be highly statistically significant at $r=0.43$ ($p<.001$).

Furthermore, it was found that in the 14 sub-domains or areas of the MABAC-CDD, aggressive behavior ($r=0.71$, $p<.001$), self-hurting behavior ($r=0.61$, $p<.001$), hyperactive behavior ($r=0.47$, $p<.001$), non-cooperative behavior ($r=0.52$, $p<.001$), asocial behavior and carnal expression behavior ($r=0.54$, $p<.001$) were found to be highly statistically significant; unusual behavior ($r=0.45$, $p<.05$) was found to be statistically significant; and lastly, mood outbursts ($r=0.31$, $p>.05$) and fears ($r=0.09$, $p>.05$) was found to be not statistically significant.

This deems the tool, Maladaptive Behavior Assessment Checklist for Children with Developmental Disabilities (MABAC-CDD) as valid for assessing maladaptive or problem behaviors among children with developmental disabilities in India. This checklist contributes towards assessment and intervention planning for these various (14) areas of maladaptive and problem behaviors that are present in individuals with developmental disabilities, post an assessment to gain an understanding of the level, frequency present in an individual with respect to each maladaptive behavior. An intervention based on evaluation of these behaviors will help in planning and moving towards an improvement in social, behavioral, daily and overall functioning and adjustment of a child or individual with developmental disability.

The MABAC-CDD will be further tested with a larger sample size with different types of developmental disabilities to assess and revise the tool, if required, for a variety of developmental disabilities as the current sample is limited to intellectual disability, autism spectrum disorder and mixed disabilities.

Further, the MABAC-CDD may be tested with a wider age range to assess applicability to adults with developmental disabilities.

References

1. Cooper, S.-A., Smiley, E., Morrison, J., Williamson, A., & Allan, L. (2007). Mental Ill-Health in adults with intellectual disabilities: Prevalence and associated factors. *British Journal of Psychiatry*, 190, 27–35.
2. Hays, R., & Revicki, D. A. (2005). Reliability and validity (including responsiveness). In P. Fayers & R. Hays (Eds.), *Assessing quality of life in clinical trials: Methods and practice* (2nd ed., pp. 25–29). New York: Oxford University Press.
3. Moss, S. (1999). Assessment: Conceptual issues. In N. Bouras (Ed.), *Psychiatric and behavioural disorders in developmental disabilities and mental retardation* (pp. 18–37). Cambridge: Cambridge University Press.
4. Sigafos, J., Arthur, M., & O'Reilly, M. (2003). *Maladaptive behavior and developmental disability*. London: Whurr.
5. Venkatesan, S. (2020). *Development and Validation of Problem Behavior Management Checklist*.