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EVALUATION OF AUTISM WITH TWO SCREENING METHODS FOR DETECTION OF AUTISM IN CHILDREN OF 24 TO 36 MONTH OF AGE: AN OBSERVATIONAL CROSS SECTIONAL STUDY

Vikram Lodhi[1], Sourabh Baghel[2], Akash Bhadkariya[3]

[1]*Senior Resident, Department of Pediatrics, ABVGMC Vidisha, Madhya Pradesh, India.*
[2]*Consultant Department of Pediatrics, Jeevan Jyoti Hospital Meghnagar, District Jhabua, Madhya Pradesh, India.*
[3]*Senior Resident, Department of Pediatrics, GRMC Gwalior, Madhya Pradesh, India.*

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Corresponding Author:
Dr. Vikram Lodhi,
Senior Resident, Department of Pediatrics , ABVGMC Vidisha, Madhya Pradesh, India.
Email: vikramlodhi368@gmail.com.

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ABSTRACT

Background: Autism spectrum disorder is a neurodevelopmental disorder characterised by impairment in social interaction, communication, play behaviour, and presence of restricted or repetitive behaviours. Early identification during toddler age is important because timely referral and intervention can improve developmental outcomes. Screening tools such as the Checklist for Autism in Toddlers (CHAT) and Trivandrum Autism Behavioural Checklist (TABC) are useful for detecting children at risk of autism in outpatient settings. **Aim:** To evaluate autism using two screening methods, CHAT and TABC, for detection of autism in children aged 24 to 36 months.

Materials and Methods: This observational cross-sectional study was conducted in the Department of Pediatrics, Gajra Raja Medical College and Kamla Raja Hospital, Gwalior, Madhya Pradesh. A total of 188 children aged 24 to 36 months attending the outpatient department were included. Children with cerebral palsy, global developmental delay, and seizure disorders were excluded. Written informed consent was obtained from parents. All children were screened using CHAT and TABC. Demographic variables including age, gender, immunisation status, family history, parental education, and occupation were recorded. Data were analysed using SPSS version 25.0, and appropriate statistical tests were applied.

Results: Among 188 children, 104 (55.3%) were below 30 months and 84 (44.7%) were above 30 months of age. Males constituted 111 (59.0%) and females 77 (41.0%). CHAT screening identified 5 autism-positive children, while TABC identified 7 autism-positive children. In TABC screening, 181 (96.3%) children had scores between 21–35, 3 (1.6%) had scores between 36–43, and 4 (2.1%) had scores above 44. Autism positivity was higher among children above 30 months, with CHAT positivity of 4 (4.6%) and TABC positivity of 6 (7%). Age showed significant association with CHAT score (p=0.01), while gender, immunisation status, family history, parental education, and occupation showed no significant association. TABC showed sensitivity of 100.00%, specificity of 98.00%, positive predictive value of 71.00%, negative predictive value of 100.00%, and accuracy of 97.87% against CHAT.

Conclusion: TABC was found to be a simple and effective screening tool for early detection of autism in children aged 24 to 36 months. Early screening using parental responses and clinical observation can help in timely referral and intervention.

Keywords: Autism spectrum disorder, CHAT, TABC, Early screening, Toddlers.

INTRODUCTION

Autism spectrum disorder is a neurodevelopmental condition characterised by persistent difficulties in social communication and social interaction, along with restricted, repetitive patterns of behaviour, interests, or activities. The term "spectrum" reflects the wide variation in clinical presentation, functional ability, language development, cognitive profile, sensory responses, and adaptive behaviour among affected children. In early childhood, symptoms may appear as poor eye contact, limited response to name, reduced social smile, lack of pointing or showing, delayed speech, absence of pretend play, unusual attachment to objects, repetitive movements, resistance to change, or atypical sensory responses. Since many of these features become more apparent during the second and third years of life, the age group of 24 to 36 months is highly important for early identification and referral.[1] Early detection of autism is clinically important because the developing brain has greater plasticity during the first few years of life. Identification of children at risk during toddlerhood allows timely referral for diagnostic evaluation, speech and language therapy, occupational therapy, behavioural intervention, parent counselling, and developmental stimulation. Delayed recognition may lead to missed opportunities for early intervention and may increase parental anxiety, behavioural difficulties, and later functional impairment. Screening does not establish a definitive diagnosis, but it helps to identify children who require further assessment. Therefore, simple, acceptable, and reliable screening tools are needed in outpatient and community settings, especially where specialist developmental services are limited.[2] Autism screening in toddlers is challenging because early symptoms are variable and may overlap with language delay, hearing impairment, global developmental delay, behavioural problems, or environmental deprivation. Parents may initially report only delayed speech, poor social interaction, excessive activity, or unusual play patterns, while core autistic features may not be recognised without structured questioning. Routine clinical observation alone may miss milder or less obvious cases. For this reason, standardised screening tools are useful because they provide a systematic method to assess social communication, play behaviour, pointing, eye contact, response to name, imitation, and repetitive or sensory behaviours.[3] Several screening instruments have been developed for early identification of autism spectrum disorder. Some tools are based mainly on parental responses, whereas others combine parental interview with direct observation by a health professional. Parent-report tools are easy to administer and can be used in busy outpatient settings; however, their accuracy may be influenced by parental awareness, literacy, cultural beliefs, and understanding of the questions. Observation-based components can improve clinical interpretation by allowing assessment of eye contact, pointing, pretend play, and response to shared attention. Thus, comparison of two screening methods in the same population may help determine which tool is more practical and useful for early detection.[4] The Checklist for Autism in Toddlers is one of the early screening tools designed to identify autism-related behaviours in young children. It includes questions related to pretend play, protodeclarative pointing, social interest, and play behaviour, along with physician observation of eye contact, joint attention, pretend play, pointing, and block-building ability. These domains are important because deficits in joint attention and pretend play are among the earliest social-communication markers of autism. CHAT is relatively simple and can be applied in clinical settings, but its performance may vary depending on the age of the child, the clarity of parental responses, and the skill of the examiner.[5] The Trivandrum Autism Behavioural Checklist is another screening tool that has been used in Indian settings. It assesses four broad areas: social interaction, communication, behavioural characteristics, and sensory integration. This broader structure is useful because children with autism may present not only with social and language concerns but also with repetitive behaviour, unusual body movements, hyperactivity, passivity, sensory intolerance, clumsiness, inappropriate laughing, crying spells, or attachment to objects. Since TABC includes multiple behavioural and sensory features, it may be useful for screening children in outpatient departments where developmental concerns are diverse and parental descriptions may be non-specific.[6] In India, early identification of autism remains a public health and clinical challenge. Many children first visit general paediatric outpatient departments for minor illness, delayed speech, behavioural concerns, poor social interaction, or as accompanying siblings. These visits provide an important opportunity for developmental surveillance and autism screening. However, lack of awareness, stigma, limited developmental services, and late referral may delay diagnosis. Paediatricians and primary care providers therefore play an important role in recognising early warning signs and selecting children who need further evaluation. A screening approach that is simple, low-cost, and feasible in routine outpatient practice can improve early detection and guide timely referral.[6]

MATERIALS AND METHODS

This cross-sectional observational study was conducted in the Department of Pediatrics, Kamla Raja Hospital, Gajra Raja Medical College, Gwalior, Madhya Pradesh. Written informed consent was obtained from the parents of all participating children before inclusion in the study. The present study was designed as an observational cross-sectional study to evaluate autism in children aged 24 to 36 months using two screening methods. Children attending the outpatient department of Pediatrics at Gajra Raja Medical College and Kamla Raja Hospital, Gwalior, were included in the study. The study population consisted of children from the Gwalior Division who visited the outpatient department either for minor illnesses or while accompanying their siblings. A total of 188 children were included in the study. The study was conducted from August 2022 to July 2024.

Inclusion Criteria: Children aged 24 to 36 months attending the outpatient department were included in the study. Children who attended the outpatient department for minor illnesses or who accompanied their siblings were also included.

Exclusion Criteria: Children with cerebral palsy, global developmental delay, and seizure disorders were excluded from the study.

Methodology

Patients were screened in the outpatient department of Gajra Raja Medical College and Kamla Raja Hospital, Gwalior, using two screening tools, namely CHAT and TABC.

CHAT Screening Tool: CHAT, the Checklist for Autism in Toddlers, developed at the Research Centre, University of Cambridge, was used for screening. It includes two sections. Section A consists of questions asked to the parents regarding the child's behaviour, such as pretend play, pointing with the index finger to indicate interest, interest in other children, enjoyment in games like peek-a-boo or hide-and-seek, bringing objects to show to parents, enjoyment while being swung or bounced, liking for climbing, interest in other children, and ability to play with small toys such as cars or bricks without mouthing, fiddling, or dropping them.

Physician's Observation in CHAT: Section B of CHAT consists of observations made by the physician during the appointment. These include whether the child makes eye contact, follows the physician's pointing towards an interesting object, performs pretend play using a miniature toy cup and teapot, points with the index finger when asked to show the light, and is able to build a tower of bricks. If the answer to two or more of the above items is "No," autism is suspected, except in the presence of severe generalised developmental delay.

TABC Screening Tool: TABC, the Trivandrum Autism Behavioural Checklist, developed by the Child Development Centre, Trivandrum, was also used for screening. It assesses children under four broad headings, namely social interaction, communication, behavioural characteristics, and sensory integration.

Social Interaction in TABC: Under social interaction, children were assessed for inability to establish or maintain eye contact, lack of response when called, appearing to be deaf, difficulty in mixing and playing with other children of the same age, lack of appropriate emotional responses, and ability to do certain tasks well but not tasks involving social understanding.

Communication in TABC: Under communication, children were assessed for difficulty in comprehension or communication, whether they indicated needs by gestures or by leading adults by the hand, echolalia or use of nonsensical words, muttering to self, and lack of pretend play.

Behavioural Characteristics in TABC: Under behavioural characteristics, children were assessed for liking sameness in everyday routine, inappropriate attachment to objects, unusual body movements such as hand flapping, rocking or jumping, extreme restlessness, hyperactivity or passivity, preference to remain alone all the time, and lack of response to normal teaching methods.

Sensory Integration in TABC: Under sensory integration, children were assessed for dislike of being hugged or touched, apparent insensitivity to pain, intolerance or addiction to certain sounds, tastes, odours or visuals, lack of understanding or fear of real dangers, excessive fear of heights or changes in position, enjoyment of spinning or rotating objects, inappropriate laughing and giggling, crying spells with extreme distress without apparent reason, difficulty in fine motor skills, tendency to fall, clumsiness, and resistance to new motor movement activities.

TABC Scoring: Scoring was done by asking questions under all four headings and calculating the total score in each case. A score of 1 was given for "Never," 2 for "Sometimes" or less than 50%, 3 for "Often" or more than 50%, and 4 for "Always" or more than 90%.

Calculation of TABC Score: A total score of 20–35 was considered as no autism, a score of 36–43 was considered as likely autism, and a score of 44 and above was considered as severe autism.

Statistical Analysis

Data were compiled and entered in Microsoft Word and analysed using SPSS version 25.0. Appropriate statistical tests, including the independent t-test, were applied for data analysis. The results for various parameters, including prevalence and correlation with demographic profile, were compared using both screening tools. The prevalence of autism by both screening tools was estimated and compared. The sensitivity and specificity of TABC were calculated in relation to CHAT. Stratification of results was done for various categories, including age, gender, parents' education, and occupation.

RESULTS

A total of 188 children aged 24–36 months attending the outpatient department were included in the present study. Among them, 104 (55.3%) children were below 30 months of age, while 84 (44.7%) children were above 30 months of age. Male children constituted the majority of the study population with 111 (59.0%) participants, whereas females accounted for 77 (41.0%) participants. Most of the children, 163 (86.7%), were completely immunised, while only 25 (13.3%) were partially immunised. A positive family history of autism was present in 11 (5.85%) children, whereas 177 (95.2%) children had no family history of autism.

According to CHAT screening, the majority of children, 183 (98.9%), had only one symptom suggestive of autism. Only 1 (1.6%) child had two symptoms, while 4 (2.12%) children had three or more symptoms suggestive of autism. TABC screening showed that most children, 181 (96.3%), had scores between 21–35 indicating no autism. Three (1.6%) children had scores between 36–43 suggestive of likely autism, while 4 (2.1%) children had scores above 44 indicating severe autism.

Analysis of the association between age and autism screening scores revealed that children above 30 months had a slightly higher mean CHAT score (0.76±0.900) compared to children below 30 months (0.75±0.553). CHAT-positive autism cases were more common in children above 30 months, where 4 (4.6%) children screened positive compared to 1 (0.9%) child below 30 months. The association between age and CHAT score was found to be statistically significant (p=0.01). In TABC screening, the mean TABC score was slightly higher in children above 30 months (28.92±5.75) compared to those below 30 months (28.20±5.50). TABC-positive autism cases were also higher among children above 30 months, with 6 (7%) positive cases compared to 1 (0.96%) case in children below 30 months. However, this association was not statistically significant (p=0.923).

Gender-wise analysis showed that male children had a slightly higher mean CHAT score (0.82±0.702) than female children (0.71±0.743). CHAT-positive autism cases were almost similar among males and females, accounting for 4 (3.6%) and 1 (1.3%) cases respectively. The association between gender and CHAT score was not statistically significant (p=0.313). In TABC screening, females had a higher mean TABC score (29.22±5.354) compared to males (27.52±5.885). However, autism-positive cases were equal in both genders, with 3.8% among females and 3.6% among males. No statistically significant association was observed between gender and TABC score (p=0.314).

Assessment according to immunisation status demonstrated that completely immunised children had a mean CHAT score of 0.75±0.704, while partially immunised children had a mean score of 0.76±0.879. CHAT-positive autism cases were observed in 4 (2.5%) completely immunised children and 1 (4%) partially immunised child. Similarly, the mean TABC score was 28.53±5.64 among completely immunised children and 28.44±5.538 among partially immunised children. TABC-positive autism cases were found in 5 (3%) completely immunised children and 2 (8%) partially immunised children. However, no statistically significant association was found between immunisation status and autism screening scores by either CHAT (p=0.265) or TABC (p=0.768).

Regarding family history of autism, among the 11 children with a positive family history, 1 (9%) child screened positive for autism by CHAT. Among the 177 children without family history, 4 (2.2%) children screened positive. However, the association between family history and autism positivity was not statistically significant (p=0.732).

Analysis according to parental education showed that the majority of fathers, 150 (79.8%), and mothers, 158 (84.0%), were illiterate. Among children of illiterate fathers, the mean TABC score was 28.08±5.19 and CHAT score was 0.73±0.61, with autism positivity observed in 5 (3.3%) and 3 (2%) children respectively. Children whose fathers had higher secondary education showed comparatively higher autism positivity rates of 8.3% in both TABC and CHAT screening. Similarly, among children of illiterate mothers, TABC positivity was observed in 5 (3.18%) children and CHAT positivity in 3 (1.9%) children. Children whose mothers had middle-class education showed relatively higher autism positivity rates of 8.3% in both screening tools.

With respect to parental occupation, most fathers were skilled workers, accounting for 173 (92%) cases. These children had a mean TABC score of 28.54±5.32 and a mean CHAT score of 0.76±0.69, with autism positivity observed in 7 (4%) children by TABC and 5 (2.9%) children by CHAT. Among mothers, the majority, 158 (84%), were unemployed. Their children had a mean TABC score of 28.65±5.35 and a mean CHAT score of 0.77±0.71, with autism positivity observed in 7 (4.4%) and 5 (3.2%) children respectively.

Comparison of TABC screening against CHAT screening demonstrated that TABC identified all 5 CHAT-positive cases, yielding a sensitivity of 100%. Out of 183 CHAT-negative cases, TABC correctly identified 181 cases as negative, resulting in a specificity of 98%. The positive predictive value of TABC was 71%, while the negative predictive value was 100%. The overall diagnostic accuracy of TABC in comparison to CHAT was found to be 97.87%, indicating excellent screening performance of TABC for early detection of autism in children aged 24–36 months.

Table 1: Basic characteristics of study subjects

Demographic variable	Category	No.	%
Age	<30 month	104	55.3%
	>30 month	84	44.7%
Gender	Female	77	41.0%
	Male	111	59.0%
Immunisation status	Partial	25	13.3%
	Complete	163	86.7%
Family history	Positive	11	5.85%

		Negative	177	95.2%

Table 2: Distribution of study subjects according to CHAT and TABC screening

Screening tool	Category	No.	%
CHAT	One symptom	183	97.3%
	Two symptoms	01	0.53%
	Three and above symptoms	04	2.13%
TABC	Score 21–35	181	96.3%
	Score 36–43	03	1.6%
	Score >44	04	2.1%

Table 3: Association of age, gender, immunisation status and family history with CHAT and TABC score

Variable	Category	No. & %	Mean CHAT score ± SD	CHAT autism positive	Mean TABC score ± SD	TABC autism positive	P value
Age	<30 month	104 (55.3%)	0.75±0.553	01 (0.9%)	28.20±5.50	01 (0.96%)	CHAT: 0.01*, TABC: 0.923
	>30 month	84 (44.7%)	0.76±0.900	04 (4.6%)	28.92±5.75	06 (07%)	
Gender	Female	77 (41%)	0.71±0.743	01 (1.3%)	29.22±5.354	03 (3.8%)	CHAT: 0.313, TABC: 0.314
	Male	111 (59%)	0.82±0.702	04 (3.6%)	27.52±5.885	04 (3.6%)	
Immunisation	Complete	163 (86.7%)	0.75±0.704	04 (2.5%)	28.53±5.64	05 (03%)	CHAT: 0.265, TABC: 0.768
	Partial	25 (13.3%)	0.76±0.879	01 (04%)	28.44±5.538	02 (08%)	
Family history	Positive	11 (5.85%)	—	01 (09%)	—	—	CHAT: 0.732
	Negative	177 (95.2%)	—	04 (2.2%)	—	—	

Table 4: Association of study subjects according to father and mother education with TABC and CHAT score

Education variable	Category	No. & %	Mean TABC score ± SD	TABC autism positive	Mean CHAT score ± SD	CHAT autism positive
Father education	Illiterate	150 (79.8%)	28.08±5.19	05 (3.3%)	0.73±0.61	03 (02%)
	Middle class	08 (4.3%)	31.38±3.70	00	0.63±0.52	00
	High school	17 (9.0%)	28.47±5.64	01 (5.88%)	0.76±0.97	01 (5.9%)
	Higher secondary	12 (6.4%)	31.17±5.87	01 (8.3%)	0.92±1.08	01 (8.3%)
	Post graduate	01 (0.5%)	23.00	00	1.00	00
Mother education	Illiterate	158 (84.0%)	28.25±5.17	05 (3.18%)	0.73±0.60	03 (1.9%)
	Primary class	17 (09%)	28.47±5.64	01 (5.88%)	0.76±0.97	01 (5.9%)
	Middle class	12 (6.4%)	31.17±5.87	01 (8.3%)	0.92±1.08	01 (8.3%)
	High school	01 (0.5%)	23.00	00	1.00	00

Table 5: Association of study subjects according to father and mother occupation with TABC and CHAT score

Occupation variable	Category	No. & %	Mean TABC score ± SD	TABC autism positive	Mean CHAT score ± SD	CHAT autism positive
Father occupation	Semi-profession	11 (5.9%)	25.73±4.61	00	0.45±0.52	00
	Skilled worker	173 (92%)	28.54±5.32	07 (04%)	0.76±0.69	05 (2.9%)
	Semi-skilled worker	04 (2.1%)	31.00±2.00	00	1.00	00
Mother occupation	Semi-skilled worker	03 (1.6%)	25.00±2.65	00	0.33±0.58	00
	Unskilled worker	27 (14.4%)	27.48±4.93	00	0.67±0.48	00
	Unemployed	158 (84%)	28.65±5.35	07 (4.4%)	0.77±0.71	05 (3.2%)

Table 6: Sensitivity and specificity of TABC score against CHAT score

TABC score	CHAT positive	CHAT negative	Total	Sensitivity	Specificity	PPV	NPV	Accuracy
TABC positive	05	02	07	100.00%	98.00%	71.00%	100.00%	97.87%
TABC negative	00	181	181					
Total	05	183	188					

DISCUSSION

In the present study, a total of 188 children aged 24–36 months were screened for autism. Among them, 104 (55.3%) children were below 30 months and 84 (44.7%) were above 30 months. Male children were more common, 111 (59.0%), than females, 77 (41.0%). This male predominance is consistent with the pattern reported by Chauhan et al. (2019), who reviewed Indian studies on autism spectrum disorder and reported that autism prevalence in Indian children varies across regions and study methods, with differences also influenced by case identification and screening approaches. The present study detected autism-positive cases in an OPD-based toddler population, whereas Chauhan et al. reviewed population-based Indian data; therefore, the higher screening positivity in the present study should be interpreted as screening yield rather than community prevalence.[7] In this study, CHAT screening detected 5 autism-positive children out of 188, giving an approximate CHAT-based screening positivity of 2.65%, while TABC detected 7 positive children, giving a TABC-based screening positivity of 3.72%. These findings are higher than the prevalence reported by Raina et al. (2017), who diagnosed 43 children with ASD among 28,070 children aged 1–10 years, giving a prevalence of 0.15%. This difference may be due to the present study being conducted in a hospital outpatient setting among 24–36-month-old children, while Raina et al. conducted a larger rural, urban, and tribal community-based study using diagnostic evaluation.[8] Age-wise analysis showed that autism positivity was higher among children above 30 months. In CHAT screening, 4 (4.6%) children above 30 months were positive compared with 1 (0.9%) child below 30 months, and this association was statistically significant (p=0.01). In TABC screening also, positivity was higher above 30 months, 6 (7%), compared with below 30 months, 1 (0.96%), although it was not statistically significant (p=0.923). Pandey et al. (2008) reported that the positive predictive value of M-CHAT differed by age and was better in older low-risk toddlers than younger low-risk toddlers, supporting the observation that autism screening may perform better as social-communication features become clearer with age.[9] Gender-wise distribution in the present study showed male predominance in the overall sample, with 111 (59.0%) males and 77 (41.0%) females. However, CHAT positivity was 1 (1.3%) in females and 4 (3.6%) in males, while TABC positivity was also 3 (3.8%) in females and 4 (3.6%) in males. The association of gender with CHAT and TABC scores was not statistically significant (p=0.313 and p=0.314 respectively). Adak et al. (2017) reviewed epidemiological studies and found that ASD prevalence varies by gender, socioeconomic status, geography, and screening methods, with many studies reporting male predominance. The present study did not show marked male excess among positive cases, probably because the number of autism-positive children was small.[10] Immunisation status did not show a significant association with autism screening positivity in the present study. Among completely immunised children, CHAT positivity was 4 (2.5%) and TABC positivity was 5 (3%), while among partially immunised children, CHAT positivity was 1 (4%) and TABC positivity was 2 (8%). The p values for CHAT and TABC were 0.265 and 0.768 respectively, indicating no statistically significant association. Madsen et al. (2002), in a large Danish population-based study, provided strong evidence against an association between MMR vaccination and autism. Thus, the present findings are in agreement with previous evidence that immunisation status is not significantly related to autism.[11] Family history was positive in 11 (5.85%) children in the present study. Among these children, 1 (9%) was CHAT positive, while among 177 children with negative family history, 4 (2.2%) were CHAT positive. Although the proportion of CHAT positivity was higher among children with positive family history, the association was not statistically significant (p=0.732). Sandin et al. (2014) reported that familial risk of autism increases with genetic relatedness, with higher risk among siblings and relatives of affected individuals. The lack of statistical significance in the present study may be due to the small number of children with positive family history and the limited total number of autism-positive cases.[12] Parental education in the present study showed that most fathers, 150 (79.8%), and mothers, 158 (84.0%), were illiterate. Among children of illiterate fathers, TABC positivity was 5 (3.3%) and CHAT positivity was 3 (2%), while among children of illiterate mothers, TABC positivity was 5 (3.18%) and CHAT positivity was 3 (1.9%). Children whose mothers had middle-class education showed higher positivity, 1 (8.3%) by both tools, but the number was very small. Dong et al. (2022) found that maternal education was significantly associated with ASD severity (p=0.030), and concluded that low maternal education may be one of the predictors related to severity. In contrast, the present study did not show a consistent association between parental education and autism positivity, possibly because most parents were concentrated in the illiterate category.[13] Regarding parental occupation, most fathers in this study were skilled workers, 173 (92%), and most mothers were unemployed, 158 (84%). Among children of skilled-worker fathers, TABC positivity was 7 (4%) and CHAT positivity was 5 (2.9%). Among children of unemployed mothers, TABC positivity was 7 (4.4%) and CHAT positivity was 5 (3.2%). No clear association between parental occupation and autism screening positivity was observed. Dickerson et al. (2014) studied parental occupation and ASD diagnosis/severity and suggested that parental occupation may have a joint association with ASD severity and diagnosis. The present study differs because the occupational distribution was highly skewed, with most fathers being skilled workers and most mothers unemployed, reducing the ability to detect occupational differences.[14] In the present study, TABC showed high agreement with CHAT. TABC detected all 5 CHAT-positive children, giving a sensitivity of 100%, and correctly identified 181 out of 183 CHAT-negative children, giving a specificity of 98%. The positive predictive value was 71%, negative predictive value was 100%, and overall accuracy was 97.87%. Dutt et al. (2017) compared CHAT and TABC among children aged 24–36 months and reported that CHAT detected 28 cases while TABC detected 11 cases; the sensitivity of TABC was 39.2% and specificity was 99.4%. Compared with Dutt et al., the present study showed higher TABC sensitivity but similar high specificity, suggesting that TABC performed well in this study population, although confirmation with diagnostic assessment is required.[15]

CONCLUSION

TABC showed excellent screening performance against CHAT, with sensitivity of 100.00%, specificity of 98.00%, PPV of 71.00%, NPV of 100.00%, and accuracy of 97.87%. Most demographic factors such as gender, immunisation status, family history, parental education, and occupation did not show significant association with autism screening positivity. Age showed a significant association with CHAT score, with higher autism positivity observed among children above 30 months. The findings support the usefulness of TABC as a simple and reliable screening tool for early detection of autism in outpatient settings. Early screening using both parental responses and clinical observation can help in timely referral, diagnosis, and intervention for children at risk of autism.

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