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Original Research Article

Awareness among paediatricians in South India about symptoms and screening of autism spectrum disorders

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ABSTRACT

Background: Autism spectrum disorder (ASD) is a neurodevelopmental disorder with a complex clinical presentation and rising frequency. When it comes to early detection and intervention, pediatricians are essential. This study evaluated the Awareness Among Pediatricians in South India About Symptoms and Screening of Autism Spectrum Disorders.
Methods: Using a semi-structured questionnaire and the Knowledge about Childhood Autism among Health Workers (KCAHW) survey, 204 pediatricians from five South Indian states participated in a cross-sectional study. Using SPSS software, awareness was examined across professional experience, training exposure and demographic characteristics.
Results: Most participants were under 45 years (52.9%), with female pediatricians constituting 54.4%. High awareness was noted for treatment modalities (91.7%), but misconceptions existed about screening tools 35.3% misclassified tools like M-CHAT and TABC as diagnostic. Those with 11–20 years of experience and those with autism-related training had significantly higher awareness scores. Participants over 60 and those with more than 30 years of practice had significantly lower awareness.
Conclusions: There are still significant gaps in screening information, even though overall awareness of ASD therapy was sufficient. Awareness was greatly raised by taking part in autism-specific training, underscoring the necessity of ongoing professional development aimed at managing and identifying ASD.

Keywords: Autism spectrum disorder, Awareness, Knowledge about childhood autism among health workers instrument, Modified checklist for autism in toddlers, Pediatricians, Screening tools, South India, TABC

INTRODUCTION

Autism spectrum disorder (ASD) is a complex neurodevelopmental condition characterized by deficits in social interaction, verbal and nonverbal communication and repetitive restrictive behaviors that profoundly impact the lives of affected individuals and their families. The word "spectrum" emphasizes how each autistic individual has a vast range of strengths and struggles. These symptoms can affect a child's capacity to function socially, academically and professionally and usually first manifest in early childhood, before the age of three.[1] ASD has attracted a lot of interest because of its rising prevalence in light of recent developments in medical knowledge and worldwide surveillance. ASD affects 1 in 65 Indian children between the ages of two and nine.[4] It is estimated that between 1.8 and 2 million youngsters in India suffer with ASD. ASD prevalence among children ages 0–17 in South Asian nations (Bangladesh, India, Sri Lanka) ranges from 0.09% to

1.07%, per recent studies.[1,2] Early diagnosis and intervention can improve outcomes for autistic people, but many do not receive early support. Early diagnosis of ASD is difficult in many parts of the world, particularly in low and middle-income nations like India, despite the disorder's high prevalence and profound effects on individuals and their families.[3,4]

In India, pediatricians play a pivotal role in child health and are often the first health professionals approached by concerned parents regarding delayed milestones or behavioral anomalies.[5-7] The Indian Academy of Pediatrics (IAP) and the American Academy of Pediatrics (AAP) recommend routine screening for autism at 18 and 24 months using standardized tools.[2,8] Early detection allows timely referral for intervention, which is critical in improving outcomes in communication, social skills, cognition and adaptive behaviors. Research has consistently shown that early intervention ideally started before the age of three takes advantage of the brain's plasticity and leads to better long-term outcomes.[9,10]

Due to a lack of training, many pediatricians in India may fail to identify the early indicators of ASD, mistake them for other developmental disorders or wait until the child's symptoms worsen before sending them for assessment.[11] To aid with early detection, a number of screening instruments are available, including the Trivandrum Autism Behavior Checklist (TABC) and Modified Checklist for Autism in Toddlers Revised with Follow-up (M-CHAT-R/F).[9,12,13] Among these, M-CHAT-R/F and TABC are straightforward to administer in clinical and community settings respectively and are designed to signal children at risk who should be referred for comprehensive evaluation.[14,15] However, a fundamental issue remains: these tools are often misunderstood or misclassified by health workers, especially when they are viewed as diagnostic instruments rather than screening aids. This misunderstanding may result in missed diagnosis, postponed referrals or unwarranted family comfort.

This study is to address the evident knowledge gap in South Indian paediatric practice concerning autism awareness. By using the KCAHW questionnaire along with a customized demographic pro forma, we aimed to evaluate the awareness levels among pediatricians practicing in Kerala, Tamil Nadu, Karnataka, Andhra Pradesh and Telangana. Our objective was not just to assess the current status of knowledge but to identify specific areas where misconceptions or deficits exist particularly in relation to screening tool usage, understanding of core symptoms and therapeutic approaches. We also sought to determine whether awareness correlates with demographic variables such as age, gender, years of experience, place of practice and participation in autism-related training or workshops. This study also highlights trends, gaps and potential solutions and aims to contribute to national and regional strategies for improving early autism detection and intervention.

METHODS

Study design

This study was performed employing a cross-sectional study design with convenience sampling. The cross-sectional design was chosen to get a snapshot of the present awareness and knowledge about ASD among pediatricians working in South India. Convenience sampling was employed because of logistical limitations and the online format of the survey, enabling rapid distribution and collection of responses without the requirement for complicated sampling frames.

Study setting

The study was conducted in Caritas Matha Hospital Thellakom, Kottayam, Kerala among paediatricians practicing in five South Indian states Kerala, Tamil Nadu, Karnataka, Telangana and Andhra Pradesh from February 2025. The states were selected to provide a wide and varied representation of pediatric practitioners in different healthcare environments. Both urban and rural practitioners being included gave a wider perspective of ASD-related awareness in the region. The study is approved by Ethics Committee of Caritas Hospital (CH/EC/Feb2025/03).

Ethical considerations

Ethical approval for the study was obtained from the Institutional Ethics Committee of Caritas Hospital, Thellakom, Kottayam. All participants were provided with clear information about the purpose of the study, the voluntary nature of their participation and assurances of confidentiality. No personally identifiable data was collected and all responses were anonymized. Data was securely stored and used exclusively for research purposes. Participants retained the right to withdraw from the study at any point without any repercussions.

Study population

The population was active pediatricians in South India who had received formal postgraduate training in pediatrics, like a Doctor of Medicine (MD), Diplomate of National Board (DNB) or Diploma in Child Health (DCH). This ensured the quality of respondents was standardized with respect to clinical training. Pediatricians who gave consent were included voluntarily in the study. Pediatricians who refused to give their consent were not included. This inclusion-exclusion criterion was critical in upholding ethical standards and targeting the intended population with direct participation in pediatric care. Informed consent was obtained from all participants before survey participation.

Sampling procedure and sample size

Participants were recruited through a non-random convenience sampling strategy. The lowest sample size of 202 was determined from the data of an already published paper entitled "Assessment of the knowledge and awareness of pediatric residents and pediatricians about Autism Spectrum Disorder at a single center in Turkey." Calculating using the confidence level at 95% and the relative allowable error as 3%, the sample size was found to be 202 participants. This calculation gave adequate statistical power to identify significant differences in awareness levels between subgroups in the study population.

Recruitment and data collection

The survey data collection was done online. Google Forms were used to present the survey and shared via WhatsApp and Facebook Messenger were the tools used in sharing it with others. This choice was motivated by the two messengers having maximum usage within Indian healthcare providers and thus easier accessibility to access the survey without hassle. Upon accessing the link, respondents forced to read and accept an online informed consent statement before advancing to the primary questionnaire. The process of data gathering spanned a six-month time frame, guaranteeing sufficient space for outreach as well as the accumulation of response within all the targeted states.

Data collection tools

Two major instruments were employed for data collection: a semi-structured pro forma and the Knowledge about Childhood Autism among Health Workers (KCAHW) questionnaire. The semi-structured pro forma was designed by the research team to capture pertinent demographic and professional details, including age, gender, years of practice, state of practice, qualifications. It also gauged self-reported knowledge of certain autism screening tests and management techniques, including M-CHAT, TABC or CBT, speech and occupational therapy.

The KCAHW questionnaire, which was first created by Bakare et al, is a validated tool to measure knowledge regarding childhood autism objectively. It is an open-access article that has been published under a Creative Commons Attribution License and can be freely used and reproduced in an academic environment. The KCAHW is comprised of 19 multiple-choice questions that are distributed over four areas of knowledge: social interaction impairments (8 questions), communication impairment and language development (1 question), restrictive repetitive behaviour (4 questions) and general information related to ASD, including co-morbidities (6 questions). There are three possible responses to each question, with only one being correct. A correct response is worth 1 point and incorrect or blank items are worth 0. The highest possible score is 19 and the lowest is 0. High scores indicate greater knowledge and awareness of ASD.

The psychometric properties of the KCAHW instrument have been established well. In the initial validation study, test-retest reliability had a correlation coefficient of 0.99 and internal consistency as measured by Cronbach's alpha was 0.97. These are excellent reliability values and render the KCAHW an appropriate instrument for use in the current study.

Data analysis

Following data collection, all responses were exported from Google Forms and imported into Microsoft Excel for preliminary cleaning and sorting. Incomplete responses and duplicates were deleted to maintain data quality. Cleaned data was subsequently exported to IBM SPSS Version 25 for statistical analysis. Descriptive statistics were employed to summarize demographic variables and response patterns. Categorical variables were expressed as percentages and frequencies, whereas continuous variables like years of experience and knowledge scores were expressed as means and standard deviations.

To compare differences in scores for awareness and knowledge between groups (e.g., state, years of experience or type of qualification), the correct inferential statistical tests were employed. For comparisons involving categorical data, chi-square tests were performed and for continuous variables, independent t-tests and ANOVA were employed. A p value of less than 0.05 was used as statistically significant, as per standard biomedical research practice.

Study duration

The study was conducted over a six-month period. This timeline allowed for comprehensive participant recruitment, survey dissemination across five states, follow-ups and adequate response time for busy pediatricians.

RESULTS

The study surveyed a total of 204 pediatricians across five South Indian states. The age distribution reveals a relatively young cohort, with 52.9% of participants under 45 years of age and 34.3% aged between 45–60 years, indicating that the majority of respondents were early- to mid-career professionals. Only a small fraction (2.0%) were above 75 years, suggesting limited input from the senior-most tier of practicing pediatricians.

The gender distribution was slightly skewed towards females, with 54.4% female and 45.6% male respondents. This gender balance may reflect either actual workforce demographics or a greater engagement with academic surveys among female pediatricians.

In terms of state-wise representation, the highest number of responses came from Kerala (40.7%), followed by Tamil Nadu (18.6%), Karnataka (16.2%), Telangana (12.7%) and Andhra Pradesh (11.8%). This uneven distribution could be influenced by varying pediatrician densities across states or differences in digital outreach and networking. While this strengthens regional insight for Kerala, caution is needed when generalizing state-wise conclusions.

Looking at years of professional experience, 38.7% had 0–10 years of experience, while 35.3% had 11–20 years, reflecting a healthy spread of early and mid-career practitioners. Interestingly, only 2.9% of respondents had over 40 years of experience, suggesting a lower response rate from more senior pediatricians, possibly due to less familiarity with digital tools or lower engagement in surveys.

When examining educational qualifications, nearly half (48.5%) held an MD in Paediatrics, indicating a strong representation from academically oriented institutions. D.Ch holders made up 30.4% and DNB pediatricians accounted for 21.1%. This spread highlights the diversity in postgraduate pediatric training pathways in India and suggests that the findings are broadly representative across credential types.

Notably, only 34.8% had pursued a sub-specialty or additional fellowship training beyond general pediatrics. This indicates that while there is a reasonable percentage of super-specialized pediatricians, the majority (65.2%) remain general paediatricians emphasizing the importance of ASD knowledge at the generalist level where first contact often occurs.

Lastly, when asked about professional development, 54.9% of participants had attended training, conferences or workshops related to autism, whereas 45.1% had not. This is a critical finding, as nearly half of practicing pediatricians have not received any formal update or exposure to evolving ASD-related knowledge despite being frontline providers. This points to a substantial gap in continuing medical education (CME) uptake and suggests an area ripe for policy intervention or integration of mandatory CME modules on neurodevelopmental disorders (Table 1).

This finding highlights a critical knowledge gap among pediatricians regarding autism screening tools. More than one-third (35.3%) of respondents incorrectly believed that MCHAT and TABC are diagnostic tools rather than screening instruments. This misunderstanding is concerning, as misidentification can delay accurate diagnosis, early referral and initiation of intervention. It also suggests a need to reinforce the diagnostic pathway in ASD training. On a more positive note, 91.7% of pediatricians reported awareness of treatment modalities such as speech therapy, occupational therapy and behavioural therapy indicating better familiarity with post-diagnosis management (Figure 1).

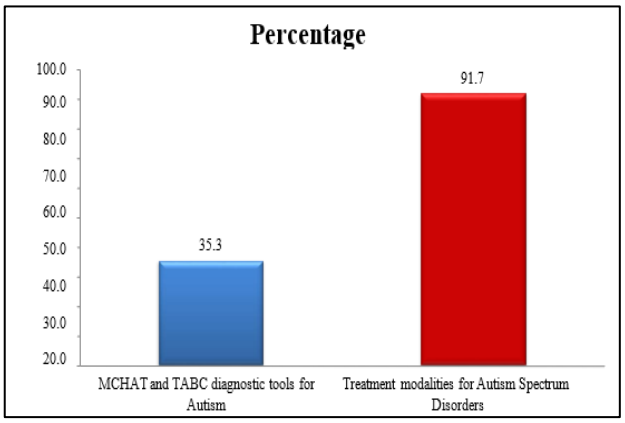

Figure 1: Awareness of ASD screening tools and treatment modalities among paediatricians (N=204).

Table 2 shows the association between sociodemographic variables and knowledge of social interaction deficits in ASD (Domain 1 of the KCAHW tool). The findings revealed that years of experience and autism-related training significantly influenced knowledge scores, while age, gender, state and qualification type did not. Pediatricians with 11–20 years of experience had the highest Domain 1 scores (mean=7.47±0.77), whereas those with over 30 years of experience scored lowest (mean=6.70±1.26), with a statistically significant difference (p=0.007). This suggests that without continuous learning, experienced clinicians may lag in updated ASD knowledge. Similarly, pediatricians who had attended autism-specific training scored significantly higher (mean=7.38±0.83) than those who had not (mean=7.03±1.13), with a p value of 0.011, confirming the positive impact of structured training programs on clinical knowledge.

No significant associations were found with age (p=0.052), gender (p=0.569), state of practice (p=0.716) or educational background (p=0.852). However, the trend indicated that older pediatricians (>60 years) had slightly lower scores. Overall, these findings highlight the importance of continuing medical education (CME) in enhancing early identification skills in ASD, especially focusing on social interaction deficits, which are often the earliest and most critical signs.

The comparison of mean awareness scores in Domain-2 (likely related to a particular aspect of autism knowledge) across different demographic and work-related variables like age, gender, state, years of experience, education and training. The outcomes show no statistically significant differences in Domain-2 awareness scores among any of the variables that are measured. Age wise, the score of awareness were somewhat greater for participants between ages 45-60 (mean=0.93) than those with an age lower than 45 (mean=0.89), albeit a non-significant

difference (p=0.646). Likewise, males (mean=0.91) and females (mean=0.90) had only infinitesimal disparities from each other and there can be no denial of it, as corroborated by a p-value (0.750). Among states, Kerala achieved the highest (mean=0.96) and Andhra Pradesh the lowest (mean=0.79), but this difference was marginally non-significant (p=0.056). Scores for awareness from experience, education and attendance at training also indicated no statistically significant difference. On the whole, the results indicate a homogenous distribution of awareness in Domain-2 regardless of age, gender, geographical area, clinical experience or formal training exposure (Table 3).

Table 1: Demographic characteristics of study participants (n=204).

Variable	Category	Frequency (N)	%
Age (in years)	<45	108	52.9
	45–60	70	34.3
	61–75	22	10.8
	>75	4	2.0
Gender	Male	93	45.6
	Female	111	54.4
State	Kerala	83	40.7
	Tamil Nadu	38	18.6
	Karnataka	33	16.2
	Telangana	26	12.7
	Andhra Pradesh	24	11.8
Years of experience	0–10 years	79	38.7
	11–20 years	72	35.3
	21–30 years	30	14.7
	31–40 years	17	8.3
	41–50	6	2.9
Educational qualification	D.Ch	62	30.4
	DNB Paediatrics	43	21.1
	MD Paediatrics	99	48.5
Specialization beyond paediatrics	Yes	71	34.8
	No	133	65.2
Attended autism training	Yes	112	54.9
	No	92	45.1

The majority of variables like age, sex, state, experience and education revealed no statistically significant difference in awareness scores. Training attendance, however, was found to be a statistically significant variable (p=0.035). Participants who had received autism-related training had higher awareness scores (mean=3.71, SD=0.58) than those who had not received such training (mean=3.52, SD=0.72).

Although not statistically significant, females trended towards being more aware than males (mean=3.69 vs. 3.55, p=0.125) and awareness appeared to rise a little with increasing levels of education. Interestingly, the 21–30 years' group had the highest score (mean=3.83), but this was not significant (p=0.207). These results indicate that training is a key factor in raising awareness, while other demographic or professional variables may not significantly affect Domain-3 awareness. It highlights the importance of ongoing professional education to enhance understanding and practices in autism-related areas (Table 4).

This table assesses Domain-4 awareness scores in relation to demographic and professional variables. Statistically significant differences were found across age, sex and training attendance. Participants under 45 years had the highest mean awareness (4.50), followed by those aged 45–60 (4.33), with a notable drop in those over 60 years (3.58), indicating age-related decline in autism-related awareness (p=0.003).

Females demonstrated significantly higher awareness (mean=4.51) compared to males (mean=4.10), with p=0.017. Most importantly, those who attended training had significantly higher awareness (mean=4.60, p<0.001), highlighting the positive impact of targeted education.

While differences among states and educational levels were not statistically significant, Kerala reported the highest mean (4.51) among states and DNB paediatrics showed slightly better scores compared to other qualifications. Experience did not show significant differences, though a slight decline was noted in

professionals with more than 30 years of experience. These findings imply that younger, trained and female professionals are more aware in Domain-4 and that formal training remains a powerful tool to enhance awareness (Table 5).

Table 2: Association of sociodemographic variables with knowledge on social interaction deficits in autism spectrum disorder (Domain 1 of KCAHW).

Variables	N	Domain 1		F / t alvue	P value
		Mean	SD		
Age (in years)					
<45	108	7.24	0.93	2.995	0.052
45-60	70	7.36	0.93		
>60	26	6.81	1.30		
Sex					
Male	93	7.27	0.93	0.570	0.569
Female	111	7.19	1.04		
State					
Andhra Pradesh	24	7.46	0.66	0.528	0.716
Karnataka	33	7.24	1.15		
Kerala	83	7.14	1.00		
Tamil Nadu	38	7.18	1.06		
Telangana	26	7.31	0.93		
Experience					
0-10	79	7.13	1.04	4.180	0.007
11-20	72	7.47	0.77		
21-30	30	7.30	0.95		
>30	23	6.70	1.26		
Education					
D.Ch	62	7.27	1.07	0.160	0.852
DNB paediatrics	43	7.16	1.00		
MD paediatrics	99	7.22	0.94		
Training Attended					
Yes	112	7.38	0.83	2.552	0.011
No	92	7.03	1.13		

Table 3: Comparison of awareness score (Domain-2) across study variables.

Variables	N	Domain 3		F / t value	P value
		Mean	SD		
Age (in years)					
<45	108	3.61	0.67	0.271	0.763
45-60	70	3.67	0.65		
>60	26	3.58	0.58		
Sex					
Male	93	3.55	0.77	1.544	0.125
Female	111	3.69	0.52		
State					
Andhra Pradesh	24	3.58	0.78	0.150	0.963
Karnataka	33	3.70	0.77		
Kerala	83	3.61	0.60		
Tamil Nadu	38	3.61	0.59		
Telangana	26	3.65	0.63		
Experience					
0-10	79	3.63	0.72	1.533	0.207
11-20	72	3.58	0.64		

Continued.

Variables	N	Domain 3		F / t value	P value
		Mean	SD		
21-30	30	3.83	0.46		
>30	23	3.48	0.59		
Education					
D.Ch	62	3.52	0.70		
DNB Paediatrics	43	3.72	0.45	1.461	0.234
MD Paediatrics	99	3.66	0.69		
Training attended					
Yes	112	3.71	0.58	2.124	0.035
No	92	3.52	0.72		

Table 4: Comparison of awareness of autism (Domain-4) among study variables.

Variables	N	Domain 4		F / t Value	P value
		Mean	SD		
Age (in years)					
<45	108	4.50	1.23		
45-60	70	4.33	1.16	6.047	0.003
>60	26	3.58	1.27		
Sex					
Male	93	4.10	1.27	2.409	0.017
Female	111	4.51	1.20		
State					
Andhra Pradesh	24	4.42	1.35		
Karnataka	33	4.30	1.26		
Kerala	83	4.51	1.17	1.665	0.160
Tamil Nadu	38	4.24	1.20		
Telangana	26	3.81	1.36		
Experience					
0-10	79	4.41	1.34		
11-20	72	4.44	1.16		
21-30	30	4.17	1.15	1.529	0.208
>30	23	3.87	1.22		
Education					
D.Ch	62	4.08	1.32		
DNB Paediatrics	43	4.44	1.28	1.710	0.184
MD Paediatrics	99	4.42	1.17		

Table 5: Comparison of awareness score (domain-4) across study variables.

Variables	N	Overall		F / t Value	P value
		Mean	SD		
Age (in years)					
<45	108	16.24	1.92		
45-60	70	16.29	2.07	5.453	0.005
>60	26	14.88	2.01		
Gender					
Male	93	15.83	1.98	1.655	0.100
Female	111	16.30	2.05		
State					
Andhra Pradesh	24	16.25	1.78		
Karnataka	33	16.18	2.11		
Kerala	83	16.23	1.96	0.591	0.669
Tamil Nadu	38	15.89	2.33		
Telangana	26	15.62	1.92		

Continued.

Variables	N	Overall		F / t Value	P value
		Mean	SD		
Experience					
0-10	79	16.08	2.16	3.587	0.015
11-20	72	16.42	1.90		
21-30	30	16.23	1.87		
>30	23	14.87	1.77		
Education					
D.Ch	62	15.76	2.20	1.171	0.312
DNB Paediatrics	43	16.28	1.94		
MD Paediatrics	99	16.20	1.94		
Training					
Yes	71	16.65	1.84	2.963	0.003
No	133	15.78	2.06		

DISCUSSION

This study showed a varied level of understanding among pediatricians in South India concerning ASD, especially in relation to symptom identification and screening methods. Though a notable 91.7% of those surveyed showed strong understanding of treatment methods like speech therapy and cognitive behavioral approaches, 35.3% wrongly recognized that M-CHAT and TABC function as diagnostic rather than screening tools. These results align with international trends in ASD awareness but also reveal ongoing deficiencies, particularly in essential screening knowledge that is vital for early identification and intervention.

Compared to a study in Turkey, where pediatricians exhibited marginally better performance than pediatric residents in recognizing diagnostic criteria but still showed insufficient knowledge, South Indian pediatricians demonstrated comparable inconsistencies. Though numerous participants possessed postgraduate degrees and clinical experience, their understanding of standardized screening tools such as M-CHAT-R/F and TABC was insufficient. The Turkish research highlighted that possessing advanced qualifications does not correlate with improved awareness, a finding supported by this study, which revealed no significant difference in awareness scores linked to degree (MD, DNB or DCh), but instead related to autism-specific training exposure.[16]

The absence of variation in awareness scores related to gender or location highlights the systemic character of this knowledge disparity, suggesting a necessity for consistent training programs throughout all areas and populations. Notably, pediatricians over 60 years old and those with over 30 years of experience exhibited statistically lower awareness scores in various areas. This may indicate a generational divide in familiarity with advancing neurodevelopmental science, considering autism was previously under acknowledged in India. Conversely, the top scores were seen in individuals with 11–20 years of experience, indicating that mid-career professionals might be more involved in continuous professional growth or have undergone more recent training in their medical education.

The training significantly influenced awareness in all four KCAHW domains: social interaction, communication impairment, repetitive behaviors and general characteristics of autism, reinforcing that focused education greatly enhances competency. This aligns with the results from another study, revealing that professionals participating in autism-focused workshops demonstrated significantly enhanced comprehension. In contrast to the setting in Pakistan, where non-physician experts (psychologists, speech therapists) surpassed physicians, in current study the South Indian group was made up solely of pediatricians, eliminating the possibility of inter-professional evaluation while emphasizing the importance of promoting collaborative, interdisciplinary educational settings.[17]

A similar investigation conducted involving medical students revealed inadequate knowledge (average score: 11.85/19), especially concerning repetitive behaviors and associated conditions such as epilepsy. These particular areas also exhibited lower scores in the current study, particularly among older participants and individuals without specialized training. In a similar vein, a study examined second and sixth-year students revealed considerable knowledge enhancement with advancing education (mean scores: 6.44 vs. 8.99), emphasizing the necessity of incorporating ASD education early and consistently within medical programs.[18]

The importance of ongoing professional development is highlighted by another study which discovered that although 40% of physicians shared extra ASD information after diagnosis, an alarming 18% provided no advice whatsoever. This is reflected in South India, where attendance at training rather than formal qualifications is most strongly linked to higher awareness scores. Remarkably, trained pediatricians achieved considerably higher scores in identifying social communication

impairments and repetitive behaviors, which are key characteristics of ASD as per DSM-5.[19] Another study confirmed the KCAHW tool and noted a mean score of 12.35, pinpointing the most significant deficiencies in recognizing obsessive behaviors and comorbidities, which are precisely the areas where South Indian pediatricians also received the lowest scores.

Notably, psychiatric healthcare workers in Nigeria outperformed their pediatric counterparts, indicating that specialization may provide an edge in knowledge regarding ASD. Since pediatricians in India frequently act as the initial point of contact, improving their frontline diagnostic skills is essential.[20] The literature further shows that regional and systemic barriers such as outdated curricula, lack of structured continuing education and cultural perceptions of ASD as a "Western disease" persist in countries like India and Pakistan. A study challenges this misconception, highlighting the rising prevalence of ASD in India (1 in 68 children) and the urgent need to dispel myths that hinder early diagnosis.

Consistent with WHO and CDC data, early detection improves outcomes, yet diagnosis in India is often delayed due to lack of primary-level screening and referral protocols.[21] Additionally, this study's use of the KCAHW tool originally developed for Sub-Saharan Africa proves its cross-cultural applicability and relevance in developing country settings. The Indian pediatricians' overall mean score (16.2/19) appears relatively high, but domain-level analysis reveals critical blind spots. This supports the results of another study where even modest average scores masked key deficits in clinical readiness and patient interaction strategies.[22]

Finally, this study underlines the need to integrate ASD education into both undergraduate and postgraduate medical training in India and to implement mandatory CME (continuing medical education) credits in neurodevelopmental disorders. Future policies should prioritize large-scale, structured training modules ideally hybrid (online and offline) that are accessible to pediatricians in both urban and rural settings. These should emphasize hands-on training in the use of screening tools like M-CHAT-R/F and create referral pathways integrated with India's primary healthcare system.

CONCLUSION

In conclusion, while awareness about autism treatment modalities among paediatricians in South India is relatively high, critical knowledge gaps in screening and early identification persist. These findings mirror trends across other low- and middle-income countries and reinforce the role of structured, frequent and mandatory training programs to bridge these gaps. Paediatricians' pivotal role in early diagnosis mandates that they be equipped not only with clinical tools, but also with the conceptual clarity to differentiate between screening and diagnostic processes. Addressing this will require policy interventions, curricular reforms and sustained professional development efforts without which, the goal of early ASD detection and intervention will remain a distant reality.

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