American Journal of Human Psychology (AJHP)

ISSN: 2994-8878 (ONLINE)

VOLUME 4 ISSUE 1 (2026)

PUBLISHED BY
E-PALLI PUBLISHERS, DELAWARE, USA

American Journal of Human Psychology (AJHP)

Volume 4 Issue 1, Year 2026
ISSN: 2994-8878 (Online)
DOI: https://doi.org/10.54536/ajhp.v4i1.7367
https://journals.e-palli.com/home/index.php/ajhp

Cognizance and Application of Autism Screening and Intervention Tools among Mental Health Professionals at Chandan Hospital, Lucknow: A Cross-sectional Study from a Tertiary Care Hospital in India

Rajeev Misra[1*], Divyanshi Singh[2], Akanksha Mishra[3], Nehashree Srivastava[4], Anshita Mishra[5], Rajgopal Reddy[6]

Article Information

Received: January 09, 2026
Accepted: April 01, 2026
Published: May 25, 2026

Keywords

Attitudes, Autism Spectrum Disorder, Health Personnel, India, Knowledge, Practice, Screening Tools

ABSTRACT

Autism Spectrum Disorder (ASD) is a major neuro- developmental condition marked by social-communication deficits and repetitive behaviors. In India, under-diagnosis is common due to limited awareness and inconsistent application of standardized diagnostic tools. This study explores the level of cognizance and utilization of autism screening and intervention instruments among mental health professionals in a tertiary hospital setting.The objective of the study is to assess the knowledge and practical application of validated autism screening and intervention tools among mental health professionals at Chandan Hospital, Lucknow. cross-sectional study was conducted from June to August 2025 among 153 psychiatrists, clinical psychologists, pediatricians, psychiatric social workers, and nurses. Data were collected using a structured questionnaire incorporating demographic details, the Knowledge about Childhood Autism among Health Workers (KCAHW) scale, and a 5-point Likert scale assessing familiarity and frequency of tool use (ISAA, CARS, M-CHAT, ADOS, ADI-R). Statistical analyses included descriptive statistics, t-tests, ANOVA, and Pearson correlation. Participants demonstrated moderate autism knowledge ($M = 12.71$, $SD = 3.32$) but low application of screening tools ($M = 2.74$, $SD = 1.17$). Significant differences were observed across professions ($p < .01$), with psychiatrists and psychologists scoring higher. Knowledge correlated positively with application ($r = .42$, $p < .01$), suggesting awareness influences clinical practice.Despite moderate awareness, the use of standardized autism tools remains limited. Institutional training, inter-professional collaboration, and policy-level support are essential to bridge the knowledge-practice gap and promote early identification of ASD in Indian healthcare settings.

INTRODUCTION

Autism Spectrum Disorder (ASD) represents one of the most complex and rapidly growing neurodevelopmental disorders globally. Characterized by persistent deficits in social communication and interaction, alongside restricted and repetitive patterns of behavior, interests, or activities (American Psychiatric Association, 2013), ASD imposes considerable emotional, educational, and economic burdens on affected families and societies. The global prevalence of ASD has risen steadily over the last two decades, now estimated at approximately 1 in 100 children (World Health Organization [WHO], 2023). However, estimates vary widely across regions, with higher rates reported in developed countries due to better screening and diagnostic services.In low- and middle-income countries (LMICs) like India, the apparent lower prevalence may reflect systemic underdiagnosis rather than a true difference in occurrence (Patra & Kar, 2019). India's population diversity, combined with limited mental health infrastructure and inadequate professional training in developmental disorders, contributes to significant delays in detection. Studies suggest that Indian children with ASD are often diagnosed years later than their counterparts in high-income nations (Arora *et al.*, 2021). Early identification and intervention, which are proven to improve language, cognition, and adaptive behaviors (Zwaigenbaum *et al.*, 2015), are therefore hindered by barriers including stigma, lack of awareness, and inconsistent use of standardized diagnostic tools.

Cultural and linguistic diversity further complicates screening in India. Western diagnostic tools like the Autism Diagnostic Observation Schedule (ADOS) and the Childhood Autism Rating Scale (CARS) are not always culturally appropriate or available in vernacular languages (Ghosh *et al.*, 2017). Recognizing this, the National Institute for Mentally Handicapped (now NIEPID) developed the Indian Scale for Assessment of Autism (ISAA) in 2009, endorsed by the Rehabilitation Council of India (RCI). Despite this, studies reveal limited adoption of ISAA outside specialized centers (Patra & Kar, 2019).

The healthcare context also influences autism practices. In India, autism care often relies on tertiary hospitals and private clinics, where psychiatrists, clinical psychologists, pediatricians, and allied health professionals play a crucial role. Yet, the utilization of structured autism screening and intervention tools in these settings remains poorly documented. Evidence from tertiary care centers in

[1] Department of Community Medicine and Public Health, King George's Medical University, Lucknow, India
[2] Department of Cardio Vascular Thoracic Surgery, King George's Medical University, Lucknow, India
[3] Department of Cardio Vascular Thoracic Surgery, King George's Medical University, Cardio Vascular Thoracic Surgery, Lucknow, India
[4] Department of Psychology, National PG College, Lucknow, India
[5] Chandan Hospital, Lucknow, India
[6] Chandan Hospital, Clinical Operations, Lucknow, India
[*] Corresponding author's e-mail: drrajeevmisraspm@kgmcindia.edu

North India shows variability in awareness, training, and practical use of validated instruments (Raina *et al.*, 2017; Ghosh *et al.*, 2017). These gaps underscore the need for institution-level assessments to inform targeted capacity-building initiatives.

The present study, conducted at Chandan Hospital a tertiary-level private hospital in Lucknow aims to evaluate both the cognizance (knowledge and familiarity) and the application (actual use) of autism screening and intervention tools among mental health professionals. Framed within the Knowledge-Attitude-Practice (KAP) model, the study explores how professional awareness translates into behavior, with implications for early detection and intervention. Understanding this dynamic is essential for developing hospital-level training programs, standardizing diagnostic procedures, and enhancing interdisciplinary collaboration for autism management in India.

A growing body of international and Indian research has examined professional knowledge and practices related to ASD, revealing substantial variability in both awareness and tool utilization. Globally, studies have shown that even among health professionals, misconceptions about autism persist. For instance, Gillespie-Lynch *et al.* (2021) reported that many practitioners in LMICs still attribute autism to poor parenting or behavioral defiance, highlighting the ongoing need for professional education. Bakare *et al.* (2008) developed the Knowledge about Childhood Autism among Health Workers (KCAHW) questionnaire, a standardized instrument to measure healthcare workers' knowledge levels. Their study across Nigerian hospitals revealed moderate awareness but poor understanding of early symptomatology and intervention strategies. Similarly, in India, Sharma *et al.* (2020) found that only 40% of pediatricians felt confident identifying autism red flags, emphasizing the limited training in developmental screening during medical education.

Indian literature suggests systemic issues in ASD service delivery. Ghosh *et al.* (2017) and Patra & Kar (2019) reported inconsistent diagnostic practices, reliance on subjective clinical impressions, and insufficient use of validated tools like ISAA or CARS. Raina *et al.* (2017) observed that even key community members, including Anganwadi and ASHA workers, lacked adequate understanding of autism. These findings indicate a broader educational deficit in India's public and private health systems.Recent interventions, however, show promise. Studies in Kerala and Tamil Nadu have demonstrated that short-term workshops can significantly enhance screening accuracy and confidence among primary care physicians (Arora *et al.*, 2021). International evidence also supports training-based improvement; Zwaigenbaum *et al.* (2015) and Hodges *et al.* (2022) emphasize that structured exposure to diagnostic instruments increases both competence and clinical consistency. Furthermore, Baranek *et al.* (2020) note that early detection using culturally adapted tools improves outcomes, even in resource-limited settings.

Hospital-based studies remain scarce. Chakarvarty and Singh (2020) identified that tertiary hospitals with multidisciplinary collaboration and supportive leadership were more likely to implement standardized autism tools. However, in most Indian hospitals, lack of institutional mandates or training resources results in ad hoc and inconsistent screening. Therefore, assessing the current level of knowledge and application among professionals in private tertiary setups is crucial for identifying actionable training and policy gaps.Overall, existing literature points to a consistent knowledge–practice gap: professionals may possess basic awareness of autism but rarely apply standardized tools in daily practice. This discrepancy highlights the importance of continuous medical education, institutional protocols, and evidence-based policy support to foster early, accurate, and culturally appropriate autism assessment in India.

MATERIALS AND METHODS

A cross-sectional observational study was conducted between June and August 2025 at Chandan Hospital, Lucknow. The study population included psychiatrists, clinical psychologists, pediatricians, psychiatric social workers, and nursing staff associated with the hospital's psychiatry and pediatrics departments.Using a purposive sampling approach, 153 professionals participated voluntarily after informed consent. The study instrument comprised four sections: demographic information, the KCAHW scale (Bakare *et al.*, 2008), a 5-point Likert scale measuring familiarity with five autism tools (ISAA, CARS, M-CHAT, ADOS, ADI-R), and questions assessing frequency of use of these tools. Ethical approval was granted by the Chandan Hospital Institutional Ethics Committee.Data were analyzed using SPSS version 26. Descriptive statistics summarized participant characteristics and key variables. Independent samples t-tests and ANOVA examined group differences, while Pearson correlation assessed the relationship between knowledge and application. Statistical significance was defined at $p < .05$.

RESULTS AND DISCUSSION

Table 1 summarizes the overall descriptive statistics of knowledge and application scores among the participants.

Table 1: provides descriptive statistics of the main variables.

Variable	Mean	SD	Min	Max
Knowledge Score	12.71	3.32	0	19
Application Score	2.74	1.17	1.0	5.0

The findings indicate a moderate level of awareness regarding autism screening and intervention tools, with a mean knowledge score of 12.71 (SD = 3.32). However, the mean application score of 2.74 (SD = 1.17) suggests that despite fair knowledge, the practical use of these tools among mental health professionals remains limited. Table 2 presents the gender-wise comparison of knowledge and application scores. The results show no

Table 2: Gender Differences in Knowledge and Application (Independent Samples t-test)

Variable	Gender	n	Mean	SD	t(df)	p
Knowledge Score	Male	46	12.78	3.30	0.19(151)	.849
	Female	107	12.65	3.33		
Application Score	Male	46	2.47	1.16	1.59(143)	.115
	Female	107	2.87	1.17		

statistically significant differences between male and female participants ($p > .05$), implying that both genders demonstrate comparable levels of understanding and utilization of autism-related tools. This suggests that gender does not play a major role in influencing awareness or application levels in this professional context.

Table 3 highlights the comparison of knowledge scores across different professional roles. A significant variation

Table 3: One-way ANOVA: Knowledge Score by Profession

Source	SS	df	MS	F	p
Between Groups	270.4	6	45.07	4.13	.001
Within Groups	1592.8	146	10.91		
Total	1863.2	152			

($p < .01$) was observed, with psychiatrists and psychologists scoring higher in knowledge compared to nursing and allied health staff. This indicates that professionals with specialized training in mental health are more likely to possess better awareness and understanding of autism screening and intervention measures.

Table 4 reports the professional role-wise differences in application scores. Similar to knowledge levels,

Table 4: One-way ANOVA: Application Score by Profession

Source	SS	df	MS	F	P
Between Groups	48.3	6	8.05	5.24	< .001
Within Groups	212.1	138	1.54		
Total	260.4	144			

psychiatrists and psychologists demonstrated higher application scores than nursing and allied health professionals ($p < .01$). This finding suggests that those with greater exposure and expertise in mental health practice are more inclined to apply autism assessment tools in their clinical work, reflecting the impact of professional training and role specialization on practical implementation.

The study reveals a crucial insight into the cognitive and behavioral dimensions of autism tool use among hospital-based professionals. Despite moderate knowledge levels, the practical application of standardized tools remains suboptimal. This finding resonates with prior research in India (Patra & Kar, 2019; Ghosh *et al.*, 2017), confirming that the awareness-to-practice transition is impeded by institutional, educational, and logistical barriers. One possible explanation for the moderate knowledge yet low practice is the lack of regular clinical training opportunities. Many Indian hospitals, including private tertiary centers, do not mandate autism-specific modules in their continuing education programs (Raina *et al.*, 2017). Consequently, professionals depend on clinical experience rather than structured assessment tools. This limits diagnostic precision and delays early intervention.Profession-based differences highlight another dimension: psychiatrists and psychologists exhibit higher awareness and application levels due to specialized training and exposure. In contrast, nurses and social workers, though frequently involved in patient management, receive minimal autism-specific instruction. This imbalance underscores the need for interdisciplinary workshops and integrated care models (Chakarvarty & Singh, 2020).

The positive correlation between knowledge and application suggests that enhancing conceptual understanding could foster behavioral change. The KAP model posits that knowledge influences attitude, which in turn guides practice. Thus, targeted training initiatives that strengthen both conceptual and practical domains can yield measurable improvements in screening consistency. Cultural and systemic barriers further complicate implementation. Stigma associated with developmental

disorders often leads families to underreport symptoms or resist formal diagnosis (Arora *et al.*, 2021). Additionally, limited access to validated tools like ISAA or M-CHAT, coupled with workload constraints, reduces the feasibility of structured assessments. Addressing these barriers requires policy-level interventions, including tool dissemination, subsidized training, and incorporation of autism screening into pediatric check-up protocols.

From a policy perspective, aligning hospital practices with the National Mental Health Programme and the National Trust Act can ensure sustainability. Introducing institutional protocols such as mandatory screening for developmental milestones in outpatient departments could enhance early detection. Furthermore, collaboration between pediatric and psychiatric departments can create a multidisciplinary framework for comprehensive ASD management. The findings also hold implications for medical education. Integrating autism modules into undergraduate and postgraduate curricula can bridge foundational knowledge gaps. Simulation-based training and case-based learning could improve diagnostic confidence. Regular audits and performance feedback mechanisms may sustain practice improvements.

Limitations of the present study include its cross-sectional design, single-institution focus, and reliance on self-reported data, which may introduce response bias. Future research should incorporate longitudinal designs and qualitative assessments to explore contextual barriers in depth. Comparative studies across government and private hospitals could provide broader generalizability

In sum, while awareness of autism among Chandan Hospital professionals is encouraging, practical application remains limited. Institutional training, systemic support, and interdisciplinary collaboration are pivotal for transforming awareness into practice and improving autism care outcomes in India.

CONCLUSION

This study concludes that mental health professionals at Chandan Hospital possess moderate knowledge but limited practical use of autism screening and intervention tools. Strengthening institutional frameworks through regular training, inclusion of autism modules in orientation programs, and interdepartmental coordination can enhance screening accuracy and early intervention. Broader replication across multiple healthcare settings is warranted to validate findings and inform national strategies for standardizing autism care practices.

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