Evaluating Physician Knowledge of Autism Spectrum Disorder: Addressing Diagnostic Challenges, Comorbidities, and the Need for Targeted Education

Keywords

Education, Physicians, Autism Spectrum Disorder, Mental Disorder

Abstract

Introduction

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition with diverse symptoms and frequent comorbidities, posing diagnostic challenges. Despite advances in ASD awareness and diagnostic methods, significant knowledge gaps persist among healthcare professionals. This study assessed physicians' knowledge of ASD, focusing on symptoms, comorbidities, and diagnostic challenges to enhance patient care.

Material and methods

This study, conducted in 2024, involved physicians attending courses at the Centre of Postgraduate Medical Education in Warsaw (CMKP). Participation was anonymous and voluntary. Respondents completed the author's questionnaire and the Knowledge about Childhood Autism among Health Workers (KCAHW) questionnaire to assess autism knowledge across four domains: social interaction impairments, communication issues, obsessive behaviors, and disorder onset and comorbidities. Physicians also provided professional and demographic data.

Results

The study included 395 physicians, primarily young (mean age 31), female (75%), and in early career stages, with most having up to five years of experience. While 75% had some contact with individuals on the autism spectrum, only 28% had close family or acquaintances with ASD. Knowledge about autism was moderate, averaging 74% correct responses, with higher accuracy in recognizing social interaction impairments (80%) and repetitive behaviors (78.5%), but lower accuracy regarding comorbidities (63%). Younger, less experienced physicians, women, and those with personal ASD contact had higher knowledge about autism.

Conclusions

The study highlights the need for targeted ASD education to address specific knowledge gaps among healthcare professionals, essential for providing informed and compassionate care.

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Results. The study included 395 physicians, primarily young (mean age 31), female (75%), and in early career stages, with most having up to five years of experience. While 75% had some contact with individuals on the autism spectrum, only 28% had close family or acquaintances with ASD. Knowledge about autism was moderate, averaging 74% correct responses, with higher accuracy in recognizing social interaction impairments (80%) and repetitive behaviors (78.5%), but lower accuracy regarding comorbidities (63%). Younger, less experienced physicians, women, and those with personal ASD contact had higher knowledge about autism.

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Keywords: Autism Spectrum Disorder; Mental Disorder; Education; Physicians

Introduction

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition characterized by diverse symptoms, including social interaction challenges, atypical sensory responses, and unique behavioral patterns [1,2]. Advances in research have improved understanding of ASD's onset, early signs, and comorbidities, contributing to rising global prevalence rates [3]. Enhanced awareness and better diagnostic tools have increased accuracy, particularly in children, and led many adults to seek assessments for ASD traits [4].

ASD affects individuals and their whole family systems universally, regardless of sociodemographic factors, making it a significant societal concern. Prevalence rates are higher in countries with advanced healthcare systems due to improved screening and standardized diagnostic practices [5,6,7]. However, comorbid conditions such as ADHD, anxiety, and intellectual disabilities complicate diagnosis, as overlapping symptoms can obscure ASD traits. Approximately 70% of individuals with ASD have additional psychiatric conditions, with anxiety disorders often exacerbating symptoms and delaying intervention [8,9]. Early diagnosis is crucial for improving quality of life. Interventions initiated before age three, such as Applied Behavior Analysis (ABA) and the Early Start Denver Model (ESDM), have demonstrated long-term benefits, including enhanced cognitive and social skills and reduced need for special education [10–13].

Healthcare professionals, particularly primary care physicians and pediatricians, arevital in identifying undiagnosed ASD, especially in cases with masking comorbidities. Standardized diagnostic tools like ADOS-2 and ADI-R and professional training are essential for improving diagnostic accuracy [14]. In Poland, studies have highlighted knowledge gaps among physicians, underscoring the need for targeted educational initiatives to enhance support for individuals with ASD and their families [15,16].

This article aims to assess physicians' knowledge of ASD, focusing on symptoms, comorbidities, and diagnostic challenges. It also identifies areas where further education is needed to improve patient care quality.

Material and methods

Study design

The study was conducted online between May-June 2024 using the LimeSurvey platform in the Centre of Postgraduate Medical Education (CMKP) in Warsaw, Poland. A personalized link to the survey was distributed via email to 1029 physicians enrolled in mandatory specialization courses offered by CMKP. These courses, delivered by a public institution responsible for the majority of postgraduate medical training in Poland. Participation in the study was voluntary, and the survey was presented as an optional component of the training. A total of 395 physicians completed the questionnaire, yielding a response rate of 38,4 %.

To ensure anonymity and data confidentiality, no identifying information was collected. Participants were informed about the anonymous nature of the survey and the intended use of the data for research purposes, as detailed in the informed consent statement displayed at the beginning of the questionnaire. The distribution process involved sending a unique survey link to each participant via email. To enhance response rates, reminder emails were issued; however, the anonymity of the participants was preserved throughout the process. Data were collected and aggregated automatically by the LimeSurvey system, ensuring both data integrity and confidentiality.

The research tool was a standardized questionnaire Knowledge about Childhood Autism among Health Workers (KCAHW) [17]. The KCAHW questionnaire comprises 19 item questions, each offering three response options, with only one correct answer. A correct answer to each question is awarded a score of one, while each of the two incorrect answers receives a score of zero. The total score of KCAHW is the number of correct answers to 19 questions and it ranges from 0 to 19. The higher the total score is, the better the respondent's knowledge about ASD is. The KCAHW questionnaire is divided into four domains:

Domain 1. This domain comprised eight item questions focusing on the social interaction impairments typically observed in children with childhood autism. Scores in this domain can range from a minimum of 0 to a maximum of 8.

Domain 2. This domain included one item question that assessed impairments in communication and language development, which are part of the symptomatic presentation in children with childhood autism. The possible scores in this domain range from 0 to 1.

Domain 3. This domain consisted of four item questions that addressed obsessive and compulsive behavioral patterns in children with childhood autism. These behaviors are characterized as restricted, repetitive, and stereotyped. Scores in this domain can range from a minimum of 0 to a maximum of 4.

Domain 4. This domain included six item questions that provided information about the nature of childhood autism, potential comorbid conditions, and the onset of the disorder in affected children. The scoring in this domain ranges from a minimum of 0 to a maximum of 6.

The higher the score in a particular domain is, the better the respondent's knowledge about ASD in this domain is.

We also used an author's questionnaire on autism – a questionnaire consisting of 10 questions regarding knowledge about the autism spectrum, including 8 closed, 1 semi-open and 1 open-ended question. Additionally, the doctors were asked about professional and sociodemographic data such as professional experience (as a doctor), specialization, place of work, year of birth, gender, marital status, place of residence.

The study was approved by the Bioethics Commission of Center of Postgraduate Medical Education in Warsaw on April 10, 2024 (Decision No 25/2024).

Statistical analysis

The statistical analyses were conducted using STATISTICA software. Minimum and maximum values as well as mean (M) and standard deviation (SD) were estimated for numerical variables, while absolute numbers (n) and percentages (%) of the occurrence of category for categorical variables.

Two sample unpaired Student t test was used to compare numerical scores of KCAHW between women and men, between the respondents who had a contact with a person on the autism spectrum and those who did not have it, between the respondents who had a person on the autism spectrum in own family or environment and those who did not have such a person. Analysis of variance (ANOVA) F test was used to compare numerical scores of KCAHW between age groups, professional experience, between places of residence, between the respondents who thought that autism spectrum disorders occurred very often, those who thought they occurred often and those who thought they occurred rarely in society. Due to a large sample size, the central limit theorem was used to analyze numerical scores of KCAHW. This theorem states that sampling distribution of the sample means can be approximated using a normal probability distribution when sample size is large. The significance level was assumed at 0.05.

All the figures were generated using MS Excel.

Results

Study Group Characteristics

The study involved 395 physicians aged 25–69 years (mean age 31 ± 6.3 years), with 63% aged 25–29. The group was predominantly female (75%), and most participants were either married or in partnerships (55.7%). The majority lived in urban areas (45%), had up to five years of professional experience (79%), were in the process of specialization (86%), and worked in hospitals (84%).

Perceptions of ASD

Most respondents (75%) reported contact with individuals on the autism spectrum, with 28% having contact within their family or close circle. Around half believed ASD is a frequent societal condition, while 37% considered it rare. Nearly all respondents (96%) agreed that ASD's causes are largely unknown, though 50% cited genetic factors, while smaller proportions attributed it to parent-child bond disturbances (15.7%), maternal alcohol use (14%), GMO foods (1.5%), and vaccines (1%).

ASD was recognized as a socially relevant issue by 93% of participants, but only 23.5% saw tangible impacts from government or institutional efforts. Critical areas for improvement included education (20%) and access to diagnostic and therapeutic services (7%). The internet (85%) and social media (60%) were the most common sources of ASD information, followed by TV/radio (24%) and print media (18%). Most respondents (72%) believed public awareness of ASD had increased in recent years.

Knowledge of Autism (KCAHW) Results

Physicians answered 74% of KCAHW questions correctly on average (mean score 14.1 \pm 3.0), with only 1.3% achieving perfect scores. The most correctly answered questions concerned non-verbal behavior impairments, peer relationship failures, and the perception of children with ASD as "deaf or dumb" (over 90% correct). In contrast, questions on intellectual impairment (18% correct) and childhood onset of ASD (29% correct) had the lowest accuracy.

Performance across the four KCAHW domains varied:

- Social Interaction Impairments: Participants averaged 6.4±1.7 out of 8 questions (80% accuracy).
- Communication Impairments: The single question in this domain was correctly answered by 71%.
- Repetitive Behaviors: Respondents averaged 3.1±1.1 out of 4 questions (78.5% accuracy).
- Types of Disorder and Comorbidities: The weakest domain, with an average score of

3.8±1.0 out of 6 questions (63% accuracy). Only 10% of respondents answered all questions correctly.

Correlations Between Knowledge and Demographics Features

Female physicians scored higher than males across all domains and in total KCAHW scores (p<0.05). Younger participants showed significantly better overall knowledge (p=0.024), particularly in the "Types of Disorder and Comorbidities" domain (p=0.05).

Physicians with up to five years of professional experience also outperformed more experienced colleagues, especially in understanding comorbidities and onset (p=0.006). Place of residence showed no significant impact on knowledge (p>0.05).

Personal or familial contact with individuals on the autism spectrum was associated with higher total KCAHW scores and better performance in three domains: social interaction impairments, communication and language development, and repetitive behavior patterns (p<0.05). Additionally, respondents who viewed autism as a frequent societal condition scored higher in communication-related knowledge than those who considered it rare (p=0.044).

Discussion

This study evaluated ASD knowledge among Polish physicians using the Knowledge about Childhood Autism among Health Workers (KCAHW) questionnaire, providing a comprehensive analysis and enabling comparisons with international research [17,18]. Physicians demonstrated a solid understanding of core ASD concepts, with an average score of 74%, aligning with global findings [19]. However, varying knowledge levels across domains revealed gaps that may hinder patient care, highlighting the urgent need for targeted educational interventions [20,21].

Direct contact with individuals on the autism spectrum correlated with higher knowledge scores, reflecting the benefits of experiential learning. This finding supports integrating hands-on components into ASD training programs to foster empathy and practical understanding, ultimately improving diagnostic accuracy and communication with patients [19,22].

Significant knowledge gaps were noted in understanding ASD onset and intellectual impairment, with only 29% accuracy in these areas. Misconceptions here could lead to delayed diagnoses and missed early interventions, emphasizing the need for more rigorous education on ASD comorbidities and development [23,24].

Socio-demographic factors influenced knowledge levels. Female physicians scored higher, particularly in behavioral and social interaction domains, possibly reflecting their specialization in pediatrics and psychiatry, where ASD knowledge is more relevant. Younger physicians demonstrated greater awareness of ASD comorbidities, likely due to updated curricula. However, the need for continuous education remains critical for those who did not receive formal ASD training during their education [25].

A concerning finding was the high reliance on internet and social media as primary information sources. This trend raises the risk of misinformation, especially in a complex condition like ASD, where nuanced understanding is essential. Educational efforts should include critical appraisal skills to help healthcare providers navigate digital sources effectively and apply evidence-based practices [26,27].

The study highlights the importance of combining theoretical knowledge with experiential learning to address knowledge gaps and improve empathy and diagnostic skills. Cross-disciplinary training and evidence-based digital education resources could further enhance healthcare providers' ASD knowledge, supporting a more holistic approach to diagnosis and management.

Strengths of the study include its large, diverse sample and use of the validated KCAHW tool, enabling reliable international comparisons. Demographic analysis provided valuable insights for developing targeted educational initiatives. However, limitations include potential biases due to the digital format, reliance on self-reported data, and the focus on theoretical knowledge, leaving practical clinical understanding unmeasured. These factors should be addressed in future research to optimize ASD education and support for healthcare providers.

Conclusions

In conclusion, this study highlights the urgent need for continuous, targeted ASD education to address specific knowledge gaps across demographic and professional groups. However, the findings should be interpreted with caution due to the small sample size and the potential lack of representativeness of the broader population. These limitations underscore the need for further research using larger, more diverse samples. Future studies should also examine the impact of experiential and digital learning modules on improving practical ASD knowledge and diagnostic skills, aiming to enhance care quality as ASD prevalence rises. Ensuring informed, evidence-based, and compassionate ASD care remains essential for healthcare systems striving to meet the needs of individuals with ASD effectively.

Acknowledge

None.

List of abbreviations ABA – Applied Behavior Analysis ANOVA – Analysis of variance ASD – autism spectrum disorder CAWI - Computer-Assisted Web Interview ESDM – Early Start Denver Model GMO – Genetically Modified Organism KCHAW – Knowledge about Childhood Autism among Health Workers

Ethics approval and consent to participate

The study was approved by the Bioethics Commission of Center of Postgraduate Medical Education in Warsaw on April 10, 2024 (Decision No 25/2024). The study was conducted in accordance with the Declaration of Helsinki. The informed consent to participate in the study was obtained from all participants.

References

1. Singhi P, Malhi P. Early Diagnosis of Autism Spectrum Disorder: What the Pediatricians Should Know. Indian J Pediatr. 2023; 90: 364-68.

2. Kodak T, Bergmann S. Autism Spectrum Disorder: Characteristics, Associated Behaviors, and Early Intervention. Pediatr Clin North Am. 2020; 67: 525-35.

3. Underwood JF, DelPozo-Banos M, Frizzati A, John A, Hall J. Evidence of increasing recorded diagnosis of autism spectrum disorders in Wales, UK: An e-cohort study. Autism. 2022; 26: 1499-1508.

4. Howlin P. Adults with Autism: Changes in Understanding Since DSM-11. J Autism Dev Disord. 2021; 51: 4291-4308.

5. Samadi SA. Overview of Services for Autism Spectrum Disorders (ASD) in Low- and Middle-Income Countries (LMICs) and among Immigrants and Minority Groups in High-Income Countries (HICs). Brain Sci. 2022; 12: 1682.

6. McConkey R. Responding to Autism in Low and Middle Income Countries (LMIC): What to Do and What Not to Do. Brain Sci. 2022;12: 1475.

7. Akhtayeva N, Kosherbayeva L, Imamatdinova A, Šmigelskas K.Wellbeing of parents raising children with autism spectrum disorder and the role of psychologists. Archives of Medical Science. 2024. doi:10.5114/aoms/190772

 Antshel KM, Russo N. Autism Spectrum Disorders and ADHD: Overlapping Phenomenology, Diagnostic Issues, and Treatment Considerations. Curr Psychiatry Rep. 2019; 21: 34.

9. Mosner MG, Kinard JL, Shah JS, McWeeny S, Greene RK, Lowery SC, Mazefsky CA, Dichter GS. Rates of Co-occurring Psychiatric Disorders in Autism Spectrum Disorder Using the Mini International Neuropsychiatric Interview. J Autism Dev Disord. 2019; 49: 3819-32.

10. Waizbard-Bartov E, Ferrer E, Young GS, Heath B, Rogers S, Wu Nordahl C, Solomon M, Amaral DG. Trajectories of Autism Symptom Severity Change During Early Childhood. J Autism Dev Disord. 2021 Jan;51(1):227-242.

 Dawson G, et al. Early behavioral intervention is associated with normalized brain activity in young children with autism. J Am Acad Child Adolesc Psychiatry 2019; 58: 39-47.
 Walton KM, Borowy AR, Gordon RA, Wainer AL. Enhancing stakeholder roles in autism early interventions in the United States: A stakeholder-driven research agenda. Autism. 2024 May;28(5):1120-1134.

13. Wieckowski AT, Ramsey RK, Coulter K, Eldeeb SY, Algur Y, Ryan V, Stahmer AC, Robins DL. Role of Primary Care Clinician Concern During Screening for Early Identification of Autism. J Dev Behav Pediatr. 2024 May-Jun 01;45(3):e187-e194.

14. Clarke L, Fung LK. The impact of autism-related training programs on physician knowledge, self-efficacy, and practice behavior: A systematic review. Autism. 2022; 26: 1626-40.

15. Lenart A, Pasternak J. Resources, Problems and Challenges of Autism Spectrum Disorder Diagnosis and Support System in Poland. J Autism Dev Disord. 2023; 53: 1629-41.

16. Kostiukow A, Poniewierski P, Strzelecki W, Samborski W. Assessment of student's knowledge and awareness of autism spectrum disorder. Pol Merkur Lekarski. 2020; 48: 87-92.

17. Bakare MO, Ebigbo PO, Agomoh AO, Menkiti NC. Knowledge about childhood autism among health workers (KCAHW) questionnaire: description, reliability and internal consistency. Clin Pract Epidemiol Ment Health. 2008; 4: 17.

Ozdemir M, Ilgin C, Karavus M, Hidiroglu S, Luleci NE, Ay NP, Sarioz A, Save D.
 Adaptation of the Knowledge about Childhood Autism among Health Workers (KCAHW)
 Questionnaire: Turkish version. North Clin Istanb. 2019; 7: 40-48.

19. Corsano P, Cinotti M, Guidotti L. Paediatric nurses' knowledge and experience of autism spectrum disorders: An Italian survey. J Child Health Care. 2020; 24: 486-95.

20. Kilicaslan F, Karatas H, Kulu H, Solmaz A. Knowledge about childhood autism among nurses in family health centers in southeast Turkey. Int J Dev Disabil. 2022; 70: 824-32.

21. Ellias SD, Shah HR. A Study of Assessment of Knowledge of Childhood Autism among Medical Students in Mumbai. Ann Indian Acad Neurol. 2019; 22: 164-69.

22. Zarokanellou V, Papagiannopoulou E, Gryparis A, Siafaka V, Tafiadis D, Ntre V, ZiavraN. Healthcare Students' Perceptions and Attitudes Towards Peers with Autism Spectrum Disorders. J Autism Dev Disord. 2024 May 3.

23. Navarro-Pardo E, Alonso-Esteban Y, Alcantud-Marin F, Murphy M. Do Savant Syndrome and Autism Spectrum Disorders Share Sex Differences? A Comprehensive Review. J Korean Acad Child Adolesc Psychiatry. 2023 Apr 1;34(2):117-24.

24. Yu L, Stronach S, Harrison AJ. Public knowledge and stigma of autism spectrum disorder: Comparing China with the United States. Autism. 2020; 24:1531-45.

25. Alyami HS, Naser AY, Alyami MH, Alharethi SH, Alyami AM. Knowledge and Attitudes toward Autism Spectrum Disorder in Saudi Arabia. Int J Environ Res Public Health. 2022; 19: 3648.

26. Penner M, Senman L, Andoni L, Dupuis A, Anagnostou E, Kao S, Solish A, Shouldice M, Ferguson G, Brian J. Concordance of Diagnosis of Autism Spectrum Disorder Made by Pediatricians vs a Multidisciplinary Specialist Team. JAMA Netw Open. 2023; 6: e2252879.
27. Price JR, Cooper-Duffy K, Ogletree BT, Campbell JM, Rose AJ, Cathey M, Chen K. Interprofessional education on autism and intellectual disabilities: Program description and initial evaluation. Sch Psychol. 2024 Jul;39(4):419-32.



Tables and figures

Variable, parameter	Variable, parameter Category or unit				
Age, min-max, M±SD	year	25-69, 31.0±6.3			
	25-29	247 (62.53)			
A as aroun $n(0/)$	30-34	87 (22.03)			
Age group, II (%)	35-39	26 (6.58)			
	40+	35 (8.86)			
Gender n (%)	female	296 (74.94)			
	male	99 (25.06)			
	single	165 (41.77)			
Marital status, n (%)	married or in partnership	220 (55.70)			
	divorced	10 (2.53)			
	village	36 (9.11)			
Place of residence $n(0/)$	small town (up to 100,000 inhabitants)	64 (16.20)			
Flace of festdelice, if (%)	big town (101,000–500,000 inhabitants)	119 (30.13)			
	city (above 500,000 inhabitants)	176 (44.56)			
	up to 5 years	311 (78.73)			
Professional experience as dector $n(0/)$	5-10 years	34 (8.61)			
FIOLESSIONAL EXperience as doctor, II (%)	11-20 years	34 (8.61)			
	>20 years	16 (4.05)			
Specialization $n(0)$	completed	55 (13.92)			
Specialisation, II (%)	ongoing	340 (86.08)			
	hospital	333 (84.30)			
Workplace $n(\%)$	general practice	85 (21.52)			
workprace, if (70)	outpatient specialized healthcare	25 (6.33)			
	other	62 (15.70)			

Table 1. Demographic and professional characteristics of the study group (N=395).

Table 2. Answers to questions regarding autism spectrum disorders, in the study group (N=395).

Question	Answer	n (%)
1. Have you had contact with a person on the autism spectrum?	Yes	298 (75.44)
	No	68 (17.22)
	I don't know	29 (7.34)
2. Is there a person on the autism spectrum in your family or in your	Yes	112 (28.35)
environment?	No	256 (64.81)
	I don't know	27 (6.84)
3. According to your knowledge, how common are the autism	Very often	8 (2.03)
spectrum disorders in the society?	Often	215 (54.43)
	Rarely	146 (36.96)
	I don't know	26 (6.58)
4. Autism spectrum disorders are caused by:	Vaccines	4 (1.01)
	GMO foods	6 (1.52)
	Alcohol used by mother	57 (14.43)
	during pregnancy	
	Disturbed bond between parents and child	62 (15.70)
	Genetic factors	193 (48.86)
	Causes not fully	381 (96.46)
	understood	
5. Do you consider the problem of autism spectrum disorders to be	Yes	367 (92.91)
socially relevant?	No	10 (2.53)
	I have no opinion	18 (4.56)
6. Do you notice activities of state, local government and other	Yes	144 (36.46)
institutions for the benefit of people with autism spectrum disorders?	No	208 (52.66)
	I have no opinion	43 (10.89)
7. Do these activities, if they occur, have a real impact on improving	Yes	93 (23.54)
the situation of people with autism spectrum disorders?	No	99 (25.06)
	I have no opinion	203 (51.39)
8. What opportunities do you see for action in relation to improving	Education	81 (20.51)
the situation of people with autism spectrum disorders?	Diagnosis and therapy based actions	27 (6.84)
	Silent hours and other ad	
	hoc forms of assistance	
	No answer	
9. Where do you encounter information on autism spectrum	Internet	335 (84.81)
disorders?	Social Media	232 (59.73)
	TV/radio	95 (24.05)
	Press	73 (18.48)
	Other	38 (9.62)
10. How would you rate the frequency of dissemination of	I encounter more	281 (71.68)
information on autism spectrum disorders compared to information from the last users (e.g. 5 user)?	Information that before	22 (9 1 ()
nom me last years (e.g. 5 year)?	information that before	32 (8.10)
	I see no difference	79 (20 15)
		(20.10)

1 Maded immeries of sublide and such al	answer	correct answers
1. Marked impairment in use of multiple non-verbal	Yes	381 (96.46)
behaviours such as eye to eye contact, facial		
expression, body postures and gestures during social		
2 Failure to develop peer relationship appropriate for	Ves	366 (92 66)
developmental age?	105	500 (72.00)
3. Lack of spontaneous will to share enjoyment, interest	Yes	293 (74.18)
or activities with other people?		
4. Lack of social or emotional reciprocity?	Yes	315 (79.75)
5. Staring into open space and not focusing on any	Yes	231 (58.48)
thing specific?		
6. The child can appear as if deaf or dumb?	Yes	368 (93.16)
7. Loss of interest in the environment and	Yes	283 (71.65)
surroundings?	X 7	200 (72.14)
8. Social smile is usually absent in a child with	Yes	289 (73.16)
0. Delay or total lack of development of speken	Vas	282 (71 30)
language?	103	202 (71.59)
Tungungo.		
10. Stereotyped and repetitive movement (e.g. hand or	Yes	300 (75.95)
finger flapping or twisting)?		
11. Autism is related to abnormal eating habit?	Yes	250 (63.29)
12. Persistent preoccupation with parts of objects?	Yes	339 (85.82)
13. Love for regimented routine activities?	Yes	353 (89.37)
14. Autism is Childhood Schizophrenia?	No	346 (87.59)
15. Autism is an auto-immune condition?	No	354 (89.62)
16. Autism is a neuro-developmental disorder?	Yes	319 (80.76)
17. Autism could be associated with Mental	Yes	71 (17.97)
Retardation?		
18. Autism could be associated with Epilepsy?	Yes	293 (74.18)
19. Onset of Autism is usually in	Childhood	115 (29.11)
	behaviours such as eye to eye contact, facial expression, body postures and gestures during social interaction? 2. Failure to develop peer relationship appropriate for developmental age? 3. Lack of spontaneous will to share enjoyment, interest or activities with other people? 4. Lack of social or emotional reciprocity? 5. Staring into open space and not focusing on any thing specific? 6. The child can appear as if deaf or dumb? 7. Loss of interest in the environment and surroundings? 8. Social smile is usually absent in a child with Autism? 9. Delay or total lack of development of spoken language? 10. Stereotyped and repetitive movement (e.g. hand or finger flapping or twisting)? 11. Autism is related to abnormal eating habit? 12. Persistent preoccupation with parts of objects? 13. Love for regimented routine activities? 14. Autism is Childhood Schizophrenia? 15. Autism is an auto-immune condition? 16. Autism is a neuro-developmental disorder? 17. Autism could be associated with Mental Retardation? 18. Autism could be associated with Epilepsy? 19. Onset of Autism is usually in	behaviours such as eye to eye contact, facial expression, body postures and gestures during social interaction? 2. Failure to develop peer relationship appropriate for developmental age? 3. Lack of spontaneous will to share enjoyment, interest Yes 4. Lack of spontaneous will to share enjoyment, interest yes 4. Lack of social or emotional reciprocity? Yes 5. Staring into open space and not focusing on any thing specific? 6. The child can appear as if deaf or dumb? Yes 7. Loss of interest in the environment and surroundings? 8. Social smile is usually absent in a child with Autism? 9. Delay or total lack of development of spoken language? 10. Stereotyped and repetitive movement (e.g. hand or finger flapping or twisting)? 11. Autism is related to abnormal eating habit? Yes 13. Love for regimented routine activities? Yes 14. Autism is a neuro-developmental disorder? Yes 15. Autism is a neuro-developmental disorder? Yes 17. Autism could be associated w

Та	able 3. Know	ledge about au	tism accor	ding to	КСАНЖ,	in th	e study	group	o (N=39	5).

Table 4. Correlations of KCAHW with demographic and professional characteristics of the study group as well as with some questions regarding autism spectrum disorders, in the study group (N=395)

Variable	Category	KCAHW total score (19 items)		Domain 1. Impairments in social interaction (8 items)		Domain 2. Impairment in communication and language development (1 item)		Domain 3. Obsession and compulsive pattern of behaviour (4 items)		Domain 4. Type of disorder and co-morbid conditions and onset (6 items)	
		M±SD	р	M±SD	р	M±SD	р	M±SD	р	M±SD	р
	Total sample	14.1±3.0		6.4±1.7		0.7±0.5		3.1±1.1		3.8±1.0	
Gender	female	14.4±2.8	< 0.001	6.6±1.6	0.001	0.7±0.4	0.013	3.3±1.0	<0.001	3.8±1.0	0.050
	male	12.9±3.5		5.9±2.0		0.6±0.5		2.8±1.2		3.6±1.0	
Age group	25-29	14.4±2.8	0.024	6.5±1.6	0.162	0.7±0.4	0.350	3.2±1.0	0.078	3.9±1.0	0.050
	30-34	13.7±3.1		6.2±1.9		0.7±0.5		3.1±1.1		3.7±0.8	
	35-39	13.4±2.7		6.0±1.5		0.8±0.4		3.2±1.0		3.5±0.8	
	40+	13.0±4.0		6.1±2.0		0.6±0.5		2.7±1.4		3.6±1.1	
Professional experience as doctor	up to 5 years	14.3±2.9	0.028	6.5±1.7	0.094	0.7±0.5	0.987	3.2±1.0	0.066	3.9±1.0	0.006
	5-10 years	13.1±3.4		5.9±2.2		0.7±0.4		3.1±1.1	1	3.3±0.9	
	11-20 years	13.1±3.1		5.9±1.5		0.7±0.5		2.9±1.3		3.6±0.9	
	>20 years	13.3±3.8		6.5±2.2		0.7±0.5		2.6±1.4		3.5±0.9	
Place of residence	village	13.6±3.8	0.834	6.1±2.1	0.701	0.8 ± 0.4	0.857	2.9±1.4	0.514	3.8±1.1	0.939
	small town	14.1±3.0		6.4±1.6		0.7±0.4		3.1±0.9		3.9±1.0	
	big town	14.1±2.9		6.5±1.6		0.7±0.4		3.1±1.1		3.8±0.9	
	city	14.1±2.9		6.4±1.8		0.7±0.5	-	3.2±1.1	_	3.8±1.0	_
1. Have you had contact with	ves	14.5±2.8	<0.001	6.6±1.6	0.008	0.8±0.4	0.002	3.2±1.0	0.010	3.9±1.0	0.075
a person on the autism spectrum?	no	13.1±3.1		6.0±1.9		0.6±0.5		2.9±1.1		3.6±1.0	
2. Is there a person on the	yes	14.9±2.4	<0.001	6.9±1.4	0.001	0.8±0.4	0.002	3.4±1.0	0.006	3.8±0.9	0.681
autism spectrum in your	no	13.8±3.0		6.3±1.7		0.7±0.5		3.1±1.0		3.8±1.0	
family or in your environment?											
3. According to your	often	14.4±3.0	0.084	6.6±1.7	0.185	0.8±0.4	0.044	3.2±1.1	0.280	3.9±0.9	0.378
knowledge, how common are the autism spectrum disorders in the society?	rarely	13.8±3.0		6.3±1.7		0.7±0.5		3.1±1.0		3.8±1.0	



Figure 1. KCAHW total score in the study group (N=395)

Figure 2. KCAHW domains in the study group (N=395)

