



**Scientific Research  
University of  
Baghdad AL-Kindy  
College of Medicine**

***Knowledge , attitude and practices of medical students regarding  
Autism spectrum disorder (ASD)***

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A project Submitted to AL-Kindy College of Medicine In partial Fulfillment of the  
requirement of a project module/ 3<sup>rd</sup> stage

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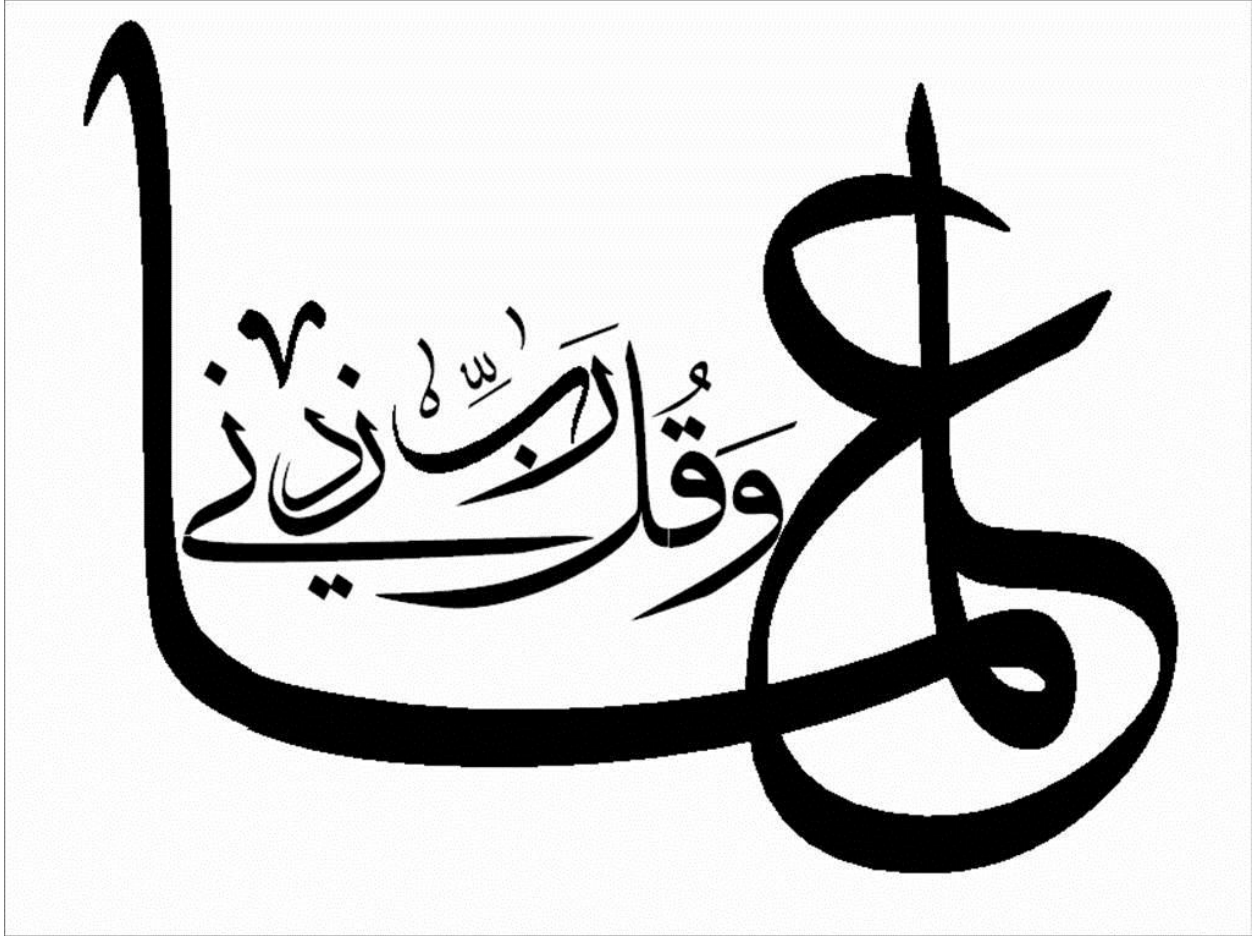
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## **ABSTRACT:**

**Background:** to assess the knowledge about ASD among medical students in AL-kindly medical college.

**Methods:** the cross sectional descriptive study was conducted among AL-kindly medical college students from November to December 2022. Data collection was done by knowledge about autism among one to sixth year medical student. Data was analyzed using SPSS 26 .

**Results:** AL-kindly medical students who completed the study 85(56.7%), and 36 (24%), 95(63.3%) children , 30(20%) adults , 108(72%) ” yes” about if they smart or not and “no” 12 (8%), 106 (70.6%) “yes” about going to school and 25 (16.7%) “no” , 110(73.3%) “yes” about effect of using the phone and 25 (16.7%) “no” .

**Conclusion:** This work tried to discuss in details the published on ASD in Iraq especially that focuses on its frequency, clinical aspects, etiologies, services presented, and outcomes.

**Keywords:** ASD ,attitude ,child, college student, knowledge .

## **INTRODUCTION:**

Autism spectrum disorder (ASD) is a long-term disorder in brain development that is characterized by behavioral and social communication challenges[1].Autism was described for the first time by leo Kanner in 1943 as ‘autistic disturbance of affective contact’. This syndrome has variously been described as autistic disorder, pervasive developmental disorder, childhood autism, childhood psychosis and pseudo- defective psychosis [2].American Psychiatric Association defined Autism or autistic spectrum disorder (ASD) as a pervasive developmental disorder ( PDD). Pervasive developmental disorder (PDD) refers to a group of conditions that include autistic disorder, Rett’s disorder, Asperger’s disorder (it is mild form of autism in many medical research journals).[3,4]. Autism does not refer to a single disorder but a combination of many disorders that differ in both severity and symptoms. In fact, the term autism is used to encompass other medical conditions that were initially treated as separate conditions[4]. Today, the global epidemiological data indicate that 1–2% of the world which corresponds to about 50 million individuals with ‘population is affected by ASD ASD around the world[5].

Autism spectrum disorders (ASD) are disseminated, and lifelong neurodevelopmental disorder that has uncertain etiology[6].But the cause of infantile autism seems to be pre- dominantly biological. Earlier reports of cold, ‘refrigerator’ mothers causing autism in their children have not been substantiated and have unnecessarily lead to undue distress to parents of children with autism. The evidence for biological causation includes a higher than average history of perinatal CNS insult, EEG abnormalities, epilepsy, ventricular dilatation on brain imaging, increased serotonin (5-HT) levels in brain and/or neurophysiological abnormalities in some patients[2].

In few instances, children with autism are able to undergo a normal phase of development within the first year. Afterwards, a regression period is observed between 18 and 24 months when the victims fully begin to develop symptoms of autism [7]. This syndrome is more common (3-4 times) in males and has a prevalence rate of 0.4-0.5 per 1000 population. Although earlier it was thought to be commoner in upper socioeconomic classes, recent studies have failed to confirm this finding[2].

A critical issue concerning ASD is the problem of late diagnosis. In many parts of the world, children with ASD are only being detected after they are three to four years old[8]. Late diagnosis causes delay in treatment, which subsequently leads to increased long-term complications such as special education needs, continual living support, productivity loss, and the medical costs in adulthood. Early diagnosis and intervention are important as there is established evidence that intensive evidence-based early intervention is effective in bringing some positive changes to the communicative and behavioral deficits experienced by young children with ASD, and thus reducing the long-term complications[9]. Many cases are missed and not diagnosed until school age[10].

The characteristic features are:

1. Autism (marked impairment in reciprocal social and interpersonal interaction):
  - i. Absent social smile.
  - ii. Lack of eye-to-eye-contact.
  - iii. Lack of awareness of others' existence or feelings; treats people as furniture.
  - iv. Lack of attachment to parents and absence of separation anxiety.
  - v. No or abnormal social play; prefers solitary games.
  - vi. Marked impairment in making friends.
  - vii. Lack of imitative behaviour.
  - viii. Absence of fear in presence of danger.

## 2. Marked impairment in language and non-verbal communication:

- i. Lack of verbal or facial response to sounds or voices; might be thought as deafinitially.
- ii. In infancy, absence of communicative sounds like babbling.
- iii. Absent or delayed speech (about half of autistic children never develop useful speech).
- iv. Abnormal speech patterns and content.
- v. Presence of echolalia, perseveration, poor articulation and pronominal reversal (I-You) is common.
- vi. Rote memory is usually good.
- vii. Abstract thinking is impaired.

## 3. Abnormal behavioral characteristics:

- i. Mannerisms.
- ii. Stereotyped behaviors such as head-banging, body-spinning, hand-flicking, lining-up objects, rocking, clapping, twirling, etc.
- iii. Ritualistic and compulsive behavior.
- iv. Resistance to even the slightest change in the environment.
- v. Attachment may develop to inanimate objects.
- vi. Hyperkinesis is commonly associated.

## 4. Mental retardation:

Only about 25% of all children with autism have an IQ of more than 70. A large majority (more than 50%) of these children have moderate to profound mental retardation. There appears to be a correlation between severity of mental retardation, absence of speech and epilepsy in autism.

## 5. Other features:

- i. Many children with autism particularly enjoy music.
- ii. In spite of the pervasive impairment of functions ,certain islets of precocity or splinter functions may remain (called as Idiot savant syndrome). Example of such splinter functions are prodigious rote memory or calculating ability ,and musical abilities.
- iii. Epilepsy is common in children with an IQ of less than 50.

The course of infantile autism is usually chronic and only 1-2% become near normal in marital, social and occupational functioning. A large majority (about 70% ) lead dependent lives [2].

**While autism cannot be cured**, the administration of treatment therapies at early stages of ASD can effectively limit the behavioral and communication challenges that are often observed among children with the condition[11].

## **Treatment:**

The treatment consists of three modes of intervention which are often used together.

### 1. Behavior Therapy

- i. Development of a regular routine with as few changes as possible.
- ii. Structured class room training, aiming at learning new material and maintenance of acquired learning.
- iii. Positive reinforcements to teach self-care skills.
- iv. Speech therapy and/or sign language teaching.
- v. Behavioral techniques to encourage interpersonal interactions.

## **2. Psychotherapy**

Parental counselling and supportive psychotherapy can be very useful in allaying parental anxiety and guilt, and helping their active involvement in therapy. However, overstimulation of child should be avoided during treatment.

## **3. Pharmacotherapy**

Drug treatment can be used for treatment of autism as well as for treatment of co- morbid epilepsy.

- i. Haloperidol decreases dopamine levels in brain. It is believed to decrease hyperactivity and behavioral symptoms. Risperidone, an atypical antipsychotic, is helpful in some patients and is licensed in some countries for treatment of autism in children aged 5 and above. Both haloperidol and risperidone can cause extra- pyramidal side-effects (EPSE), though usually more with haloperidol. The starting dose for Risperidone is usually 0.25-0.5 mg (based on body weight), with a dose range of 0.02-0.06 mg/kg/day.
- ii. Other drugs such as SSRIs, chlorpromazine, amphetamines, methysergide , imipramine, multi-vitamins and triiodothyronine have been tried with limited success and should be used only by the experts in the field.
- iii. Anticonvulsant medication is used for the treatment of generalized or other seizures, if present [2].

The documented deficit of knowledge about ASD in between health care workers may be due to a flaw in the academic education system with the inadequacy of practical training and insufficient theoretical lectures provided in terms of pediatrics, psychiatry, and psychology [14, 15]. For this reason, the level of knowledge on ASD among final year undergraduate medical, nursing, and psychology students should be well assessed. They will be future members of the multidisciplinary team responsible for taking care of autistic children [16-18].



## **AIMS OF THE STUDY:**

1. This study was conducted to know medical college students knowledge about ASD.
2. Early diagnosis of ASD patients to improve prognosis and how to deal with it.

## **Materials and methods**

- This cross-sectional study was conducted among AL-Kindy medical college students during the academic year 2022/2023 the data were collected during the period from 25<sup>th</sup> of November 2022 to the 10<sup>th</sup> of December 2022.
- The sample size consisted of 150 out of overall number of students in AL-Kindy college of medicine from first year to final year .
- The data collected from students privately and separately within a questionnaire that contain 20 questions.
- The first 2 items assessing personal data( age and sex ) and it included items for assessing the knowledge of medical students about ASD.
- Two items assessing if the AL-kindy medical college students have met person with ASD or heard about autism.
- Two item assessing the ASD person that AL-Kindy medical college students have met (male or female ,adult or child).
- Seven items assessing ASD symptoms in patient that AL-Kindy medical college students have met .one item assessing one of the risk factors of ASD (the relation between using the phone for long period of time in children with ASD).

- Four items assessing the knowledge of AL-kindly medical college students about dealing with ASD person , if they face any difficulties dealing with them and if they can recognize person with ASD .
- Two items assessing the ability of ASD person to integrate into society.
- One item assessing if the AL-kindly medical college students believe in psychiatry.
- The participation of students was voluntary. consent was taken from each student that the data will only be used for research purposes.
- The Data were analyzed using the statistical package for social sciences (SPSS) version 26.0. We use Excel, SPSS and tables for numbering and make a percentage for description and use chi square test for analysis of data. Statistical significance was considered whenever the P- value was less than 0.05.

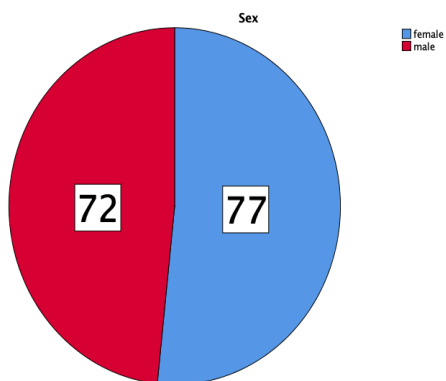
## **RESULTS :**

A total of 150 students participated in the study with 77 female (51.7%) and 72 male (48.3) .The main age of participants was 18-24.The demographic characteristics of the study group are shown in table 1 and figure 1&2.

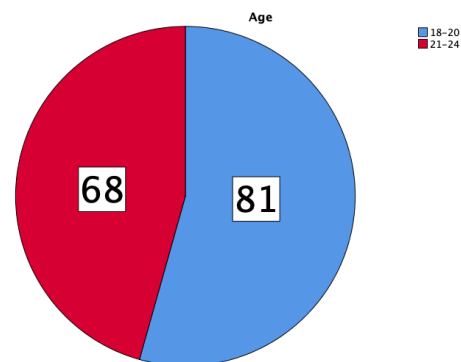
*Table 1:Demographic criteria of the study group.*

### **Sex**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	female	77	51.7	51.7	51.7
	male	72	48.3	48.3	100.0
	Total	149	100.0	100.0	



*Figure 1 : Gender ratio of the participants*



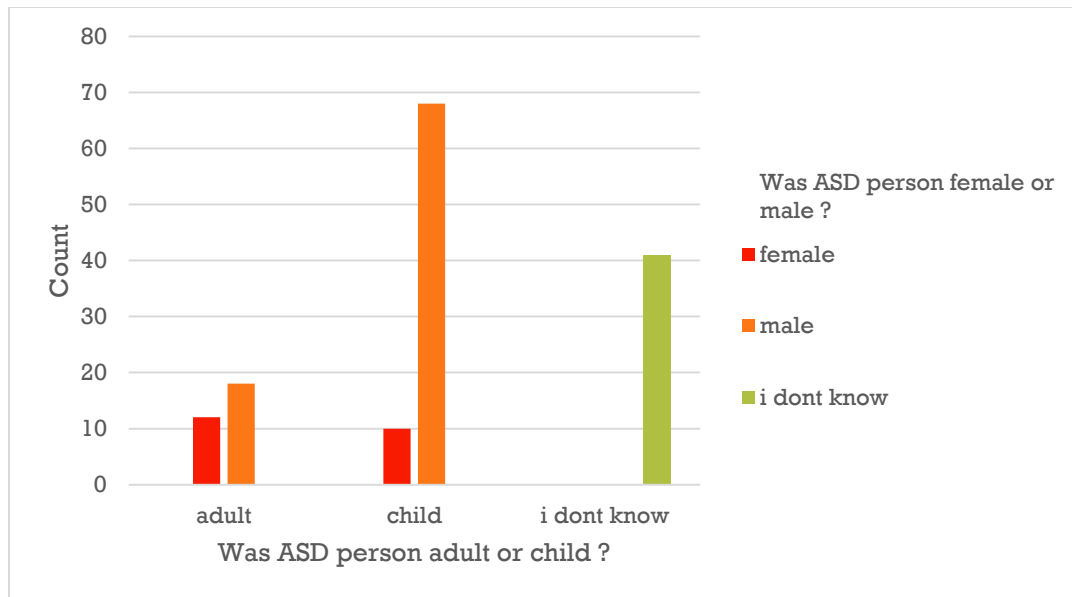
*Figure 2 : Age ratio of the participants*

**Table 2: Shows that overall 89.3% of students have heard about autism. Medical students responses were that male ASD patients are (56.7%) while female ASD patients are (24%) .Adult ASD (20%) while children with ASD are (63.3%). (34%) were aggressive .(72%) were smart .(74%) were emotional.**

<b>1. Participants gender:</b>						
Total	Female	Percentage	Male	Percentage		
150	78	52%	72	48%		
<b>2. Participants age:</b>						
Total	18-20	Percentage	21-24	Percentage		
150	92	61.33%	58	38.67%		
<b>3. Belief in psychiatry:</b>						
Total	Yes	Percentage	No	Percentage		
150	144	96%	6	4%		
<b>4. Hearing about autism:</b>						
Total	Yes	Percentage	No	Percentage		
150	134	89.3%	16	10.7%		
<b>5. Meeting person with autism:</b>						
Total	Yes	Percentage	No	Percentage		
150	86	57.3%	64	42.7%		
<b>6. ASD age group:</b>						
Total	adult	Percentage	Child	Percentage	I don't Know	Percentage
150	30	20%	95	63.3%	25	16.7%
<b>7. ASD gender:</b>						
Total	Female	Percentage	Male	Percentage	I don't Know	Percentage
150	36	24%	85	56.7%	29	19.3%
<b>8. Facing difficulties with ASD patients :</b>						
Total	Yes	Percentage	No	Percentage	I don't Know	Percentage
150	70	46.7%	29	19.3%	51	34%
<b>9. Aggression:</b>						
Total	Yes	Percentage	No	Percentage	I don't Know	Percentage
150	51	34%	59	39.3%	40	26.7%
<b>10. Relation between phone and autism:</b>						
Total	Yes	Percentage	No	Percentage	I don't Know	Percentage
150	110	73.3%	25	16.7	15	10%
<b>11. Ability of ASD patients to go school:</b>						

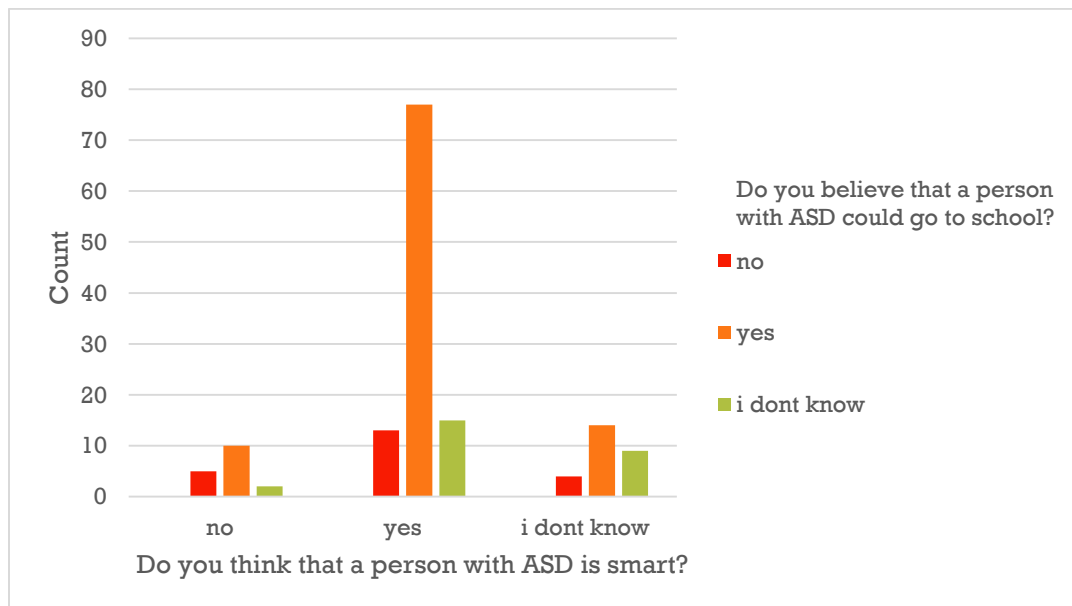
Total	Yes	Percentage	No	Percentage	I don't Know	Percentage
150	106	70.6%	25	16.7%	19	12.7%
<b>12. Participants knowledge for dealing with ASD patients:</b>						
Total	Yes	Percentage	No	Percentage		
150	46	30.7%	104	69.3%		
<b>13. Avoiding direct eye contact:</b>						
Total	Yes	Percentage	No	Percentage	I don't Know	Percentage
150	107	71.3%	19	12.7%	24	16%
<b>14. Touch acceptance:</b>						
Total	Yes	Percentage	No	Percentage	I don't Know	Percentage
150	40	26.7	85	56.7%	25	16.6
<b>15. Friendship with ASD patients:</b>						
Total	Yes	Percentage	No	Percentage	I don't Know	Percentage
150	68	45.3%	46	30.7%	36	24%
<b>16. Learning to deal with ASD patients:</b>						
Total	Yes	Percentage	No	Percentage	I don't Know	Percentage
150	125	83.3%	16	10.7%	9	6%
<b>17. Intelligence:</b>						
Total	Yes	Percentage	No	Percentage	I don't Know	Percentage
150	108	72%	12	8%	30	20%
<b>18. Emotion:</b>						
Total	Yes	Percentage	No	Percentage	I don't Know	Percentage
150	111	74%	22	14.7%	17	11.3%
<b>19. Getting attach:</b>						
Total	Yes	Percentage	No	Percentage	I don't Know	Percentage
150	84	56%	37	24.7%	29	19.3%
<b>20. ASD patients recognition:</b>						
Total	Yes	Percentage	No	Percentage	I don't Know	Percentage
150	101	67.3%	27	18%	22	14.7%

***Table 2: overall responses to questionnaire related to the knowledge of AL-kindy medical college students about ASD.***



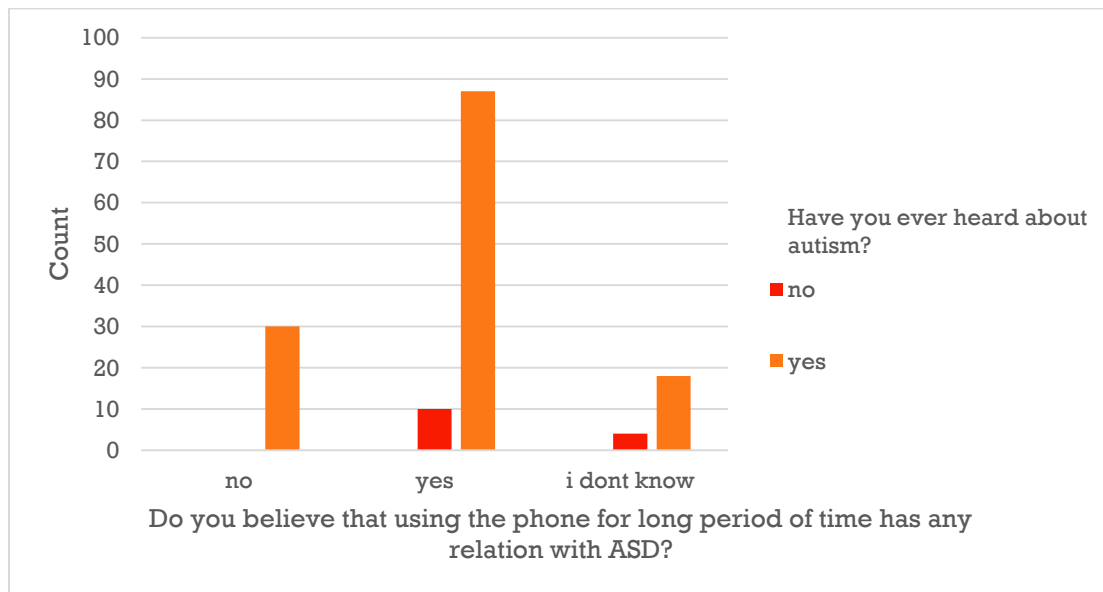
**FIGURE 3: SHOWS THE RELATION BETWEEN AGE AND GENDER OF ASD PATIENTS.**

The result shows ALkindy medical college believe that most ASD patients are male children.



**FIGURE 4 : SHOWS THE RELATION BETWEEN GOING TO SCHOOL AND IF THEY ARE SMART OR NOT.**

The result shows ALkindy medical students believe that most ASD patients are smart and they have ability to go to school.



**FIGURE 5 : SHOWS MEDICAL STUDENTS WHO BELIEVE THAT ASD IS REALTED TO PHONE USE.**

The result shows ALkindy medical students believe that using phone for long period of time has relation with ASD while there are many other causes.

## **DISCUSSION :**

Whereas there is increasing worldwide awareness and research on autism, after a thorough literature search we found only one study done in Duhok city assessing knowledge and attitude about ASD. targeting the primary health care physicians, junior doctors and medical college students. The study didn't focus on medical students.

Recent evidence that the prevalence of diagnosed ASD may be increasing and that early diagnosis and intervention are likely associated with better long-term

outcomes has made it imperative that medical students should increase their fund of knowledge regarding the disorder.

According to table 2 results we found that the percentage of medical students awareness about ASD and how to deal with it is **49.7%** which is really low and this correlate with[20].Also the responses show high percentage in nonverbal impairment such as eye to eye contact and body posture during social interaction which highly correlate with[19].

### Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	162.613 <sup>a</sup>	4	.000
Likelihood Ratio	184.387	4	.000
Linear-by-Linear Association	92.671	1	.000
N of Valid Cases	149		

a. 1 cells (11.1%) have expected count less than 5. The minimum expected count is 4.43.

\*the chi-square is significant at the .05 level.

### **TABLE 3.3 RELATION BETWEEN AGE AND GENDER OF ASD PATIENTS.**

Our study shows, AL-kindly medical students responses based on ASD patients that they have met ,most of the ASD patients were males more than female and most of them were children more than adults, so we made this relation between the gender and age to confirm that ASD occurs in **YOUNG MALES** .

\*its approved that this syndrome is more common (3-4) times in male more than female [2].



## Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.385 <sup>a</sup>	4	.052
Likelihood Ratio	8.188	4	.085
Linear-by-Linear Association	4.263	1	.039
N of Valid Cases	149		

a. 4 cells (44.4%) have expected count less than 5. The minimum expected count is 2.51.

\*the chi-square is significant at the .05 level.

### ***TABLE 4.4 THE RELATION BETWEEN GOING TO SCHOOL AND IF THEY ARE SMART OR NOT.***

Our study shows, AL-kindy medical students believe that most of ASD patients are smart and they have ability to go to school.

\*This is not really true because there are different types of ASD and their mental behavior varies from one patient to another .[4]

## Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.201 <sup>a</sup>	2	.074
Likelihood Ratio	7.622	2	.022
Linear-by-Linear Association	5.108	1	.024
N of Valid Cases	149		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 2.07.

\*the chi-square is significant at the .05 level.

### ***TABLE 5.5 MEDICAL STUDENTS WHO BELIEVE THAT ASD IS REALTED TO PHONE USE.***

Our study shows,AL-kindy medical students believe that phone use for long period of time is one of the causes that lead to increase the incidence of ASD.

\*this is a mistaken belief because the etiology of ASD is still uncertain.[6]

## **CONCLUSION :**

1. The result shows that the awareness about the etiology of ASD of AL-kindly medical students regarding the autism spectrum disorder is really low.
2. The awareness of AL-kindly medical students about the symptoms including the non-verbal impairment in social interaction with ASD patients is nearly good.
3. Dealing of AL-kindly medical students with ASD patients was not good enough.

## **RECOMMENDATION :**

1. Increase awareness of medical students about ASD etiology , risk factors and symptoms by organize conferences, seminars and lectures.
2. Shed light on the volume of these disorders in Iraq.
3. Focus on the researches conducted on this subject.
4. Discuss on the applied services for these patients with their families.

## **REFERENCES :**

- 1\_[Chatkewitz M, Losonczy-Marshall M. Awareness of autism and perceptions of the disorder. Psychology and social behavior research, 2014; 2 (2): 46-52.].
- 2\_Ahuja N. A Short Textbook of psychiatry, 2011, Seventh edition 163-165.
- 3\_(Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). 4th Ed. Washington (DC): American Psychiatric Association; 2000.)
- 4\_ [Griffith GM, Totsika V, Nash S, Hastings RP. ‘I just don’t fit anywhere’: support experiences and future support needs of individuals with Asperger syndrome in middle adulthood. Autism. 2012 Sep;16(5):532-46.].
- 5\_[Baxter, A. J., Brugha, T. S., Erskine, H. E., Scheurer, R. W., Vos, T. and introduction to ASD can be done through health research Scott, J. G. 2015. The epidemiology and global burden of autism training which emphasized inquiry-based learning. With spectrum disorders. Psychological Medicine, 45, 601–613].
- 6\_[American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 5th ed. Arlington, VA: American Psychiatric Association; 2013].
- 7\_ [Sharif SI, Bughaigis LM, Salah M, Kariem N, Mohamed A. Childhood autism: knowledge and perception. among university students in United Arab Emirates. International Journal of Basic & Clinical Pharmacology. 2016 Jul;5(4):1499.].
- 8\_[Rhoades, R. A., Scarpa, A. and Salley, B. 2007. The importance of physician knowledge of autism spectrum disorder: results of a parent survey. BMC Pediatrics, 7, 1–10].
- 9\_[Koegel, L. K., Koegel, R. L., Ashbaugh, K. and Bradshaw, J. 2014. The importance of early identification and intervention for children with

or at risk for autism spectrum disorders. *International Journal of Speech-Language Pathology*, 16, 50–56.].

10\_[Ramaswamy R, Shidhaye R, Nanda S. Making complex interventions work in low resource settings: developing and applying a design focused implementation approach to deliver mental health through primary care in India Background and context. *Int J Ment Health Syst*2018; 12:5] .

11\_ [Cage E, Di Monaco J, Newell V. Understanding, attitudes and dehumanization towards autistic people.*Autism*. 2018;0(0):1362361318811290. pmid:30463431].

12\_ Bernier, R., Mao, A. and Yen, J. 2010. Psychopathology, families, and culture: autism. *Child and Adolescent Psychiatric Clinics of North America*, 19, 855–867.

13\_ Ravindran, N. and Myers, B. J. 2012. Cultural influences on perceptions of health, illness, and disability: a review and focus on autism. *Journal of Child and Family Studies*, 21, 311–319.

14\_[Bakare MO, Ebigo PO, Agomoh AO, Menkiti NC. Knowledge about childhood autism among health workers (KCAHW) questionnaire:Description, reliability and internal consistency.*Clin Pract Epidemiol Ment Heal* 2008;4(1):17]

15\_[ Zwaanswijk M, Verhaak PF, van der Ende J,Bensing JM, Verhulst FC. Consultation for and identification of child and adolescent psychological problems in Dutch general practice.*Fam Pract* 2005; 22(5):498–506]

16\_ Igwe MN,Bakare MO, Agomoh AO, Onyeama GM, OkonkwoKO. Factors influencing knowledge about childhood autism among final year undergraduate Medical , Nursing and Psychology students of University ofNigeria, Enugu State, Nigeria. *Ital J Pediatr* 2010; 36:44

17\_ Khan F, Shehzad R, Chaudhry H. Child and adolescent mental health services in Pakistan: current situation, future directions and possible solutions. *Int Psychiatry* 2008; 5(4):86–8

18\_ Hussein S. A review of global issues and prevalence of child mental health Problems; Where does CAMH stand in Pakistan. J Pakistan Psychiatr Soc 2009; 6(1):5–13.

19\_ Exploratory study of childhood autism among medical students in Mumbai/ India by (Samia D. Elias / Henal R. Shah).

20. the exploratory study in Malaysia by (Hui Min Low/ Farhana Zailan).

# QUESTIONNAIRE

Knowledge , attitude and practices of medical students regarding autism.

please answer the questions below :

1. Sex

-Female

-Male

2. Age

-18-20

-21-24

3. Do you believe in psychiatry?

-yes

-no

4. Have you ever heard about AUTISM?

-yes

-no

5. Have you ever met person with AUTISM?

-yes

-no

6. was ASD person adult or child?

-adult

-child

7. was ASD person female or male?

-female

-male

8. did you face any difficulties dealing with him?

-yes

-no

-I don't know

9-Was that Person who have ASD aggressive?

-Yes

-No

-I don't know

10-Do you believe that using the phone for long period of time has any relation with ASD?

-Yes

-No

-I don't know

11- Do you believe that a person with ASD could go to school?

-Yes

-No

-I don't know

12-Do you have knowledge about how to deal with people how have ASD?

-yes

-No

13-Do you think a person with ASD avoid direct eye contact?

-Yes

-No

-I don't know

14-Do you expect a person with ASD to accept touch?

-Yes

-No

-I don't know

15-Do you think that you ready to have an ASD person as a friend?

-Yes

-No

-I don't know

16-Do you think that you need to learn how to deal with an ASD people?

-Yes

-No

-I don't know

17-Do you think that a person with ASD is smart?

-Yes

-No

-I don't know

18-Do you think that a person with ASD is emotional?

-Yes

-No

-I don't know

19-Do you think a person with ASD has the ability to get attached to someone?

-Yes

-No

-I don't know

20-Can you recognize a person with ASD?

-Yes

-No

-I don't know