

RESEARCH ARTICLE**Assessment of Elementary Schools Teachers' Knowledge about Autism Spectrum Disorders**Asmaa Hammoz Hawas¹, Wisam Jabbar Qasim² *

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ABSTRACT

Background: ASDs have become a serious public health concern in Iraq. Cambridge University published a special study in 2011, which revealed that 75 out of every 10,000 Iraqi children were autistic and University of Guilford in 2012 revealed that more than 5,000 Iraqi children are autistic.

Objective(s): This study aims to assess elementary schools' teachers' knowledge about autism spectrum disorders.

Methodology: A quasi-experimental design (purposive study) used to guide this study, it was applied by the use of pre-post- test approach for two groups of samples (case and control) to determine the effectiveness of an educational program on elementary schools' teachers' knowledge about autism spectrum disorder in Al-Diwaniyah Educational Directorate during the period from (25th September, 2021) to (1st April, 2022). A non-probability purposive sample was selected from all the schools' teachers. The total number of teachers who attended to the chosen place during the study period and who fulfilled the study criteria was (50). These (50) teachers were divided into two groups (25) teachers as a group of cases who are exposed to the educational program and (25) teachers who were not exposed to the educational program as a control group.

Results of the study: The results shows that teachers are showing poor level of knowledge during the pre-test time (76%).

Conclusion: The researcher concludes that the teacher's knowledge about Autism spectrum disorders is under the estimated levels.

Recommendations: Educational lectures and workshops should be conducted regularly, updated, and circulated to all teaching staff in elementary schools. Providing elementary schools with an educational booklet prepared by the researcher.

Keywords: Assessment, Elementary Schools, Teachers, Knowledge, Autism Spectrum Disorders.



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INTRODUCTION

Autism Spectrum Disorders (ASD) is defined as lifelong neurodevelopmental disorders that characterized by persistent deficits in social communication and interactions and displays of restricted repetitive behaviors, interests, or activities, these symptoms appear and impair everyday functioning, ASD usually diagnosed during childhood, with an increasing in prevalence worldwide over the last 20 years. ASD is (4-5) times in males than in females, which leads to the , assumption that genetics play an important role, also ASD determined among all groups ethnic, racial and socioeconomic (APA, 2013; Kakkar, 2019; Thomaidis et al., 2020).

Gómez-Marí (2021) is estimated that the prevalence has increased to (1 to 59) in the United states, in the United Kingdom (1 to 64) , in Italy (1 to 87) , in Spain (1 to 100) in children who are (10-11) years old , and in Denmark 1 to 125, the is able to be higher.

The average cost of treatment for a kid diagnosed with autism is \$60,000 per year from the time of diagnosis (typically at the age of 3) until the child begins school at the age of six. The entire cost of treatment for these four years is over \$240,000. Children with ASD have about 40% more specialist visits, seven times more psychiatric visits for children over four years of age, 13 times more psychiatric visits for children between two and four years of age, 12 times more psychiatric hospital days, and 40% more prescription costs than children without ASD (Beacon Health Option, 2019).

ASDs have become a serious public health concern in Iraq. Cambridge University published a special study in 2011, which revealed that 75 out of every 10,000 Iraqi children were autistic and University of Guilford in 2012 revealed that more than 5,000 Iraqi children are autistic (Alnuaamy, 2016; Alshemary, 2019).

There is no local epidemiological study or official statistics on the number of persons with autism, however, experts at the Educational and Psychological Research Center estimate that the number of autistic children ranges from seven to nine thousand children registered in more than twenty centers across the country. In the Iraqi capital, Baghdad, there is only one government center (Baghdad Governmental Center for Autism), while a number of private centers are distributed, the most famous of which are the Rami Center for Autism Care, slow learners and speech difficulties, and Al-Rahman Specialized Institute for Autism and Speech Disorder in the Yarmouk region. In the city of Sulaymaniyah in the Kurdistan region of Iraq, a government

center has about 350 cases. As for the city of Kalar (Sulaymaniyah governorate in the Kurdistan region), there are 200 cases, according to the head of the Autism Association, Azar Othman Aref. (The NEW ARAB, 2020).

METHOD

Design

A quasi-experimental design (purposive study) used to guide this study, it was applied by the use of pre-post- test approach for two groups of samples (case and control) to determine the effectiveness of an educational program on elementary schools' teachers' knowledge about autism spectrum disorder in Al-Diwaniyah Educational Directorate during the period from (25th September, 2021) to (1st April, 2022).

Setting of the Study

The current study was conducted in elementary schools affiliated with the Diwaniyah Education Directorate, the sample was collected from Dar al_salam elementary, Khadija elementary School, Al-ebaa elementary school, Al-resafa elementary school, AL-Zaytoon elementary school, and the program was presented in Dar al_salam elementary school.

Sample of the Study

A non-probability purposive sample was selected from all the aforementioned schools' teachers. The total number of teachers who attended to the chosen place during the study period and who fulfilled the study criteria was (50). These (50) teachers were divided into two groups (25) teachers as a group of cases who are exposed to the educational program and (25) teachers who were not exposed to the educational program as a control group.

RESULTS

Table 1 shows that teachers in the study group are showing poor level of knowledge during the pre-test time (76%) while they show good level of knowledge during the post-test time after applying the educational program (100%).

The teachers in the control group show poor level of knowledge during the both time: pre-test (100%) and post-test (96%).

Table 2 indicates that teachers in the study group show poor level of knowledge among all items during pre-test except items 7, 12, 18, and 20 that show fair level and they show good level during post-test among all items except items 1

and 5 that show fair level. The teachers in the control group show poor level during pre-test among all items except items 7, 12, 23, and 26

that show fair level and during post-test they also show poor level among all items except items 12, 20, and 25 that show fair level.

Table 1. Assessment of Teachers' Knowledge about Autism Spectrum Disorders among Study and Control Group.

9	Study Group (N= 25)								Control Group (N= 25)							
	Pre-test				Post-test				Pre-test				Post-test			
	f	%	M	SD	f	%	M	SD	f	%	M	SD	f	%	M	SD
Poor	19	76	7.00	3.916	0	0	28.56	1.158	25	100	6.24	2.006	24	96	6.20	2.449
Fair	6	24			0	0			0	0			1	4		
Good	0	0			25	100			0	0			0	0		
Total	25	100			25	100			25	100			25	100		

Table 2. Mean and Standard Deviation for Items of Teachers' Knowledge about Autism Spectrum Disorders among Study and Control Group.

List	Items	Study Group (N=25)						Control Group (N=25)					
		Pre-test			Post-test			Pre-test			Post-test		
		M	SD	Ass.	M	SD	Ass.	M	SD	Ass.	M	SD	Ass.
1	Autism Spectrum Disorder is A complex condition that develops in early childhood and affects a child's speech and social relationships	.32	.476	Poor	.52	.510	Fair	.16	.374	Poor	.16	.374	Poor
2	Autism spectrum disorder be detected d During the first three years	.08	.277	Poor	1.00	.000	Good	.20	.408	Poor	.24	.436	Poor
3	Male gender is most susceptible to autism spectrum disorder	.20	.408	Poor	1.00	.000	Good	.16	.374	Poor	.04	.200	Poor
4	Anomalies in the anatomy of the brain is the neurological cause of autism spectrum disorder	.24	.436	Poor	.96	.200	Good	.20	.408	Poor	.16	.374	Poor
5	The child's ability decreased to start and continue a sentence	.20	.408	Poor	.44	.507	Fair	.16	.374	Poor	.12	.332	Poor
6	The language of a child with autism is completely absent, distinguished by an immature form	.20	.408	Poor	1.00	.000	Good	.24	.436	Poor	.24	.436	Poor
7	Social communication with peers is non-existent	.56	.507	Fair	1.00	.000	Good	.40	.500	Fair	.32	.476	Poor
8	Stereotypic Movement is repetitive movement of a part of the body such as the back or hand	.16	.374	Poor	.96	.200	Good	.16	.374	Poor	.12	.332	Poor
9	A child with autism spectrum disorder be disturbed from lifestyle change	.12	.332	Poor	.96	.200	Good	.24	.436	Poor	.16	.374	Poor
10	The important skills that child lose during dialogue is eye contact	.44	.507	Fair	.92	.277	Good	.16	.374	Poor	.28	.458	Poor
11	Expressing needs to the mother or others is in the form of referring to the place of need	.28	.458	Poor	1.00	.000	Good	.08	.277	Poor	.00	.000	Poor
12	The communication skills of a child with autism are non-existent	.56	.507	Fair	1.00	.000	Good	.56	.507	Fair	.40	.500	Fair
13	A child with autism spectrum disorder plays alone	.28	.458	Poor	1.00	.000	Good	.20	.408	Poor	.28	.458	Poor

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14	Lack of empathy is seen in children with autism spectrum disorder	.12	.332	Poor	.96	.200	Good	.24	.436	Poor	.04	.200	Poor
15	The child with autism spectrum disorder when called doesn't respond to his name	.20	.408	Poor	1.00	.000	Good	.16	.374	Poor	.04	.200	Poor
16	A child with autism spectrum disorder don't feel afraid	.24	.436	Poor	1.00	.000	Good	.12	.332	Poor	.20	.408	Poor
17	The tool used to detect a child with autism spectrum disorder between the ages of 4 and 11 years is Autism Screening Questionnaire	.16	.374	Poor	1.00	.000	Good	.28	.458	Poor	.28	.458	Poor
18	The Autism Diagnostic Observation Schedule is used to detect autism spectrum disorder for children aged 5 to 12 years	.36	.490	Fair	1.00	.000	Good	.24	.436	Poor	.12	.332	Poor
19	Autism Screening Questionnaire consist of 27 items	.24	.436	Poor	1.00	.000	Good	.08	.277	Poor	.16	.374	Poor
20	Several complications occur in a child with autism spectrum disorder over time include physical and psychological complications, as well as other problems	.20	.408	Poor	1.00	.000	Good	.12	.332	Poor	.36	.490	Fair
21	The physical problems are weight uncontrolled	.24	.436	Poor	1.00	.000	Good	.16	.374	Poor	.16	.374	Poor
22	Treatment methods that used to reduce the complications of autism are treatment based on medication, food, and exercise	.12	.332	Poor	1.00	.000	Good	.08	.277	Poor	.20	.408	Poor
23	The results of the medicines given to the child are for reducing complications, signs and symptoms	.16	.374	Poor	1.00	.000	Good	.40	.500	Fair	.20	.408	Poor
24	The US Food and Drug Administration (FDA) has approved two medications to treat irritability associated with autism are: Risperidone and Aripiprazole (Abilify)	.08	.277	Poor	1.00	.000	Good	.16	.374	Poor	.16	.374	Poor
25	The Basic steps for treatment is use of nutritional supplements reduces the symptoms of autism	.28	.458	Poor	1.00	.000	Good	.24	.436	Poor	.40	.500	Fair
26	Exercise-based therapies is yoga therapy	.20	.408	Poor	1.00	.000	Good	.36	.490	Fair	.24	.436	Poor
27	Multiple programs and their explanation for parents does a teacher do to help his autistic students	.12	.332	Poor	.92	.277	Good	.24	.436	Poor	.28	.458	Poor
28	Hyperactivity is a physical condition in which the child is abnormally active	.12	.332	Poor	.96	.200	Good	.24	.436	Poor	.08	.277	Poor
29	The useful programs to reduce	.16	.374	Poor	1.00	.000	Good	.04	.200	Poor	.20	.408	Poor

	activity inside the house are assign him some simple household chores that help him unload his energy												
30	Program to increase the attention of the child is drawing straight line on the ground using adhesive tape of a certain color and helping the child to walk on it so that he can walk on his own	.36	.490	Fair	.96	.200	Good	.16	.374	Poor	.16	.374	Poor

DISCUSSION

The results of the present study show that two thirds of teachers in the study group are showing poor level of knowledge during the pre-test time while all of them showed good level of knowledge during the post-test time after applying the educational program Table (1).

Findings indicates that teachers in the study group show poor level of knowledge among all items during pre-test except four items include; Social communication with peers is non-existent; The communication skills of a child with autism are non-existent; The Autism Diagnostic Observation Schedule is used to detect autism spectrum disorder for children aged 5 to 12 years; and several complications occur in a child with autism spectrum disorder over time include physical and psychological complications, as well as other problems. That show fair level, and they show good level during post-test among all items except items one and five which include: Autism Spectrum Disorders is A complex condition that develops in early childhood and affects a child's speech and social relationships; and the child's ability decreased to start and continue a sentence, that show fair level Table (2).

All teachers in the control group show poor level of knowledge during both time: pre-test and post-test Table (1). They show poor level during pre-test among all items except in: Social communication with peers is non-existent; The communication skills of a child with autism are non-existent; The results of the medicines given to the child are for reducing complications, signs and symptoms; and exercise-based therapies is yoga therapy. Show fair level and during post-test they also show poor level among all items except in: The communication skills of a child with autism are non-existent; Several complications occur in a child with autism spectrum disorder over time include physical and psychological complications, as well as other problems; and the basic steps for treatment is the use of nutritional supplements reduces the symptoms of autism that show fair level Table (2).

The findings in this context agree with those of Lu and his colleagues (2020) who declared that numerous studies have demonstrated that the

majority of in-service instructors lack ASD understanding. In one interview, pre-service teachers expressed the widespread worry that they have gotten significantly less training on autism spectrum disorder than on attention deficit hyperactivity disorder. Even after on-the-job training, mainstream school instructors had less awareness of ASD than special education teachers, according to research (Lu et al., 2020). The result of the present study is confirmed by Majin et al. (2017) who provided insight into the present data about teachers' knowledge, perceptions of their interest in dealing with children with ASD. As for the results, although two thirds of respondents said they had heard the term ASD, not all truly understood its features, and some still mistook it with hyperactive youngsters. Furthermore, it was discovered that the results of the current study are almost identical to those of a previous preliminary study conducted in Malaysia, and even though the study examined knowledge and awareness among people regarding children with ASD, the results showed a similar score and definitions, as only one quarter recognize the children with autism, forty percent were unsure, and one third did not recognize them at all (Majin et al., 2017).

Nonetheless, there is a notable gap in the study literature on the identification of tactics employed by individual teachers to assure the academic and social involvement of children with ASD. This would help determine if teachers' positive attitudes toward the inclusion of students with ASD are translating into positive action to ensure successful integration, or if they are simply a reflection of changes in ideological attitudes aligned with the standards and expectations of the current educational system (Garrad et al., 2019).

This is consistent with recent study such as that conducted by (Ballantyne et al. (2021), who discovered that despite the fact that teachers in China were extremely eager to learn more and obtain stronger abilities in dealing with children with ASD, they lacked enough information regarding the disease. In addition, the majority of the instructors in our China sample submitted inaccurate responses to over one half of the ASD knowledge tasks (Ballantyne et al., 2021).

Another recent study conducted by Hadi (2020) in Iraq demonstrates that more than two-thirds of the sample has a moderate understanding of

ASD early detection, which can be attributed to the small number of participants who took particular college courses on ASD. This conclusion was consistent with the findings of a study performed in Libya on degree of knowledge and perceived difficulties to early diagnosis and intervention among general practitioners concerning ASD. They found that less than two-thirds of participants had a moderate level of awareness. While in qualitative research conducted in Jordan to evaluate kindergarten teachers' early identification knowledge of ASD, kindergarten teachers were able to identify symptoms or relevant features of ASD (Hadi, 2020).

Several studies that have examined teachers' levels of understanding to date indicate that mainstream instructors of students with ASD frequently report lacking particular training, preparedness, confidence, and awareness of the disease (Gómez-Mar et al., 2020). In contrast, according to a research conducted in Turkey on teachers' awareness of ASD, Preschool instructors appeared to have somewhat better knowledge of ASD, which justifies exposing teachers to many courses on child behavioral disorders (Hadi, 2020).

Supportive evidence also found in the literature for our findings by Alharbi et al. (2019) who stated that the teachers did not appear to have appropriate information and comprehension of the condition. School teachers, who are seen as crucial team members in autism rehabilitation programs, are required to participate in ongoing professional development programs in their field. Over the past three decades, Arab nations have made numerous steps to build special education programs and services; nonetheless, considerable problems remain regarding the extension of these programs and the improvement of their quality (Alharbi et al., 2019).

CONCLUSIONS

Teachers' knowledge is under the estimated level as the results of the present study show that two thirds of teachers in the study group are showing poor level of knowledge.

RECOMMENDATIONS

Providing elementary schools with an educational booklet prepared by the researcher. The importance of conducting further studies in the different settings of Iraq with consideration to wide-range study to be representative.

ETHICAL CONSIDERATIONS COMPLIANCE WITH ETHICAL GUIDELINES

After gaining the approval by the Department of Community Health Nursing in the College of Nursing - University of Baghdad and Ethical Research Committee to conduct the study. The researcher submitted a detailed description of the study including objectives and methodology

(questionnaire) of the study to the Ministry of Planning (Central Statistical Organization) and to General Directorate of Diwaniyah Education - Department of Preparation and Training - Division of Research and Studies to have official permissions to perform the study, then, the permission was sent to Al-Diwaniyah governmental schools in order to ensure the agreement and cooperation.

The researcher obtained verbal informed consent from each teacher. And explained the purpose of the study before participation, told the participants that their participation in this study is voluntary and they can withdraw from this study at any time they want, and also assured them that he will safeguard the confidentiality of the data and they will be securely maintained during and after conducting the study according to the subject's agreement sheet.

REFERENCES

- American Psychiatric Association (2013) Diagnostic and statistical manual of mental disorders, 5th ed., Arlington, VA: American Psychiatric Publishing.
- Kakkar, D. (2019). Diagnostic assessment techniques and non-invasive biomarkers for autism spectrum disorder. *Int. J. E-Health Med. Commun.* 10, 79-95. doi:10.4018/IJEHMC.2019070105.
- Thomaidis, L., Mavroeidi, N., Richardson, C., Choleva, A., Damianos, G., Bolias, K., & Tsolia, M. (2020). Autism spectrum disorders in Greece: nationwide prevalence in 10-11 year-old children and regional disparities. *Journal of clinical medicine*, 9(7), 2163.
- Gómez-Marí, I., Sanz-Cervera, P., & Tárraga-Mínguez, R. (2021). Teachers' Knowledge Regarding Autism Spectrum Disorder (ASD): A Systematic Review. *Sustainability*, 13(9), 5097.
- Beacon Health Options, National Business Group on Health and American Academy of Pediatrics 2019, Autism's Cost (<https://www.beaconhealthoptions.com/autism-cost/>).
- Alnuaamy. (2016). Autism kidnapped Iraqi children from their families. *Al-Araby Al-Jaded*. Retrieved from <https://www.alaraby.co.uk/society/2016/4/28>
- Majin, M., Hashmi, S. I., & Sombuling, A. (2017). TEACHERS' KNOWLEDGE AND PERCEPTION TOWARDS CHILDREN WITH AUTISM SPECTRUM DISORDER (ASD): A PRELIMINARY STUDY.
- Garrad, T. A., Rayner, C., & Pedersen, S. (2019). Attitudes of Australian primary school teachers towards the inclusion of students with autism spectrum disorders. *Journal of Research in Special Educational Needs*, 19(1), 58-67. <https://doi.org/10.1111/1471-3802.12424>

- Ballantyne, C., Gillespie-Smith, K., & Wilson, C. (2021). A comparison of knowledge and experience of autism spectrum disorder among teachers in the United Kingdom and China. *International Journal of Disability, Development and Education*, 68(2), 160-171.
- Hadi, M. S. (2020). Kindergartens Teacher's Knowledge and Attitudes Toward Early Detection of Autism Spectrum Disorders in Babylon Province.
- Alharbi, K., Alharbi, A., Thunayyan, F., Alsuhaibani, K., Alsalameh, N., Alhomaïd, M., ... Hamid, P. (2019). School's Teachers Knowledge About Autism in Al-Badaya city, Al-Qassim Region, Kingdom of Saudi Arabia. *Materia Socio Medica*, 31(1), 4-9. <https://doi.org/10.5455/msm.2019.31.4-9>.