Kindergartens Teachers Early Detection Knowledge about Autism Spectrum Disorder in Babylon Province

Mahdi Saleh Hadi* and Nuhad Mohammed Kassim

Abstract--- *Autism Spectrum Disorder (ASD) is a complex neurodevelopmental disorder that may cause difficulties with thought, feeling, language, social interaction and communication and the average age of diagnosis of ASD is about 4 to 5 year old. The aims of this study was to assess early detection knowledge of kindergartens teachers towards ASD and to compare between governmental and non-governmental kindergartens in relation to knowledge. A cross-sectional study design was used in Babylon province at kindergartens, on participants consist of (η=204) teachers from two administrative departments that selected randomly by cluster sampling approach as 50% of total administrative departments. The result of this study indicate that the majority of kindergartens teachers having a moderate level of early detection knowledge, which constitute as (70.6%) and there is a significant difference between the governmental and private institution in relation to overall knowledge concerning early detection of ASD (knowledge of private kindergarten teachers higher than governmental). Therefore, the study recommends that: a great importance for educating and training the unusual educators in detecting and managing of children with ASD as a phase of children affected under growing universally, as well as development of continual educational training courses, seminars and workshop that held by the Ministry of Education for teachers focusing on the issue of ASD.*

Keywords--- Kindergartens Teachers, Babylon Province, ASD.

I. INTRODUCTION

"Autism Spectrum Disorder" (ASD) is a complex neurodevelopmental disorder that may make difficulties with thought, feeling, speech, and other child's ability to communicate to others. It is called spectrum, because the severity and type of symptoms experienced by autistic child varies widely. Impairment core areas include relationships and social interaction, imaginative play, communication (verbal and nonverbal) (Emilia & Shivani, 2018).

The Morbidity and Mortality Weekly Report (MMWR) states that "ASDs continue to be a major public health concern in the United States"(Lonnie Zwaigenbaum, MD et al., 2015).

World health organization (WHO, 2019) stated that individuals with autism are often subjected to discrimination or stigma, including unequal excommunication of health, opportunities for involvement, education and participation in their communities.

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The American Academy of Pediatrics(APA) recommends the routinely checkup of all children for ASD as a part of well-baby examinations for (18-24) months. International opinion prefer early diagnosis of ASD as this enables the child to receive early management to achieve their developmental mialstone (Samadi & McConkey, 2015).

Therefore, Beacon Health Options 2019 specified that the estimated care cost for an autism diagnosed child is about $60,000 a year, since the time of diagnosis of the child (usually at the age of 3) until he or she starts school at age of six year. The total fee needed for these 4 years of management is about $240,000.

1.1 Statement of the Problem

Assess knowledge of kindergartens teachers concerning early detection and their attitude toward autism spectrum disorder in Babylon province could improve the child condition which will reduce the possibilities of psychological and behavioral problems.

1.2 Objectives of Study

1. Assess the knowledge of kindergartens teachers toward early detection of autism spectrum disorder in Babylon province.
2. Find out relationship between kindergartens teachers knowledge of early detection and their attitudes.
3. Compare between governmental and non-governmental kindergartens in relation to knowledge and some demographic data.

II. REVIEW OF LITERATURE

2.1 Historical Background of ASD

Kenner (1943), who identified such individuals as having impaired social development, first coined the concept / diagnosis of autism. Some of Kanner's nuclear symptoms, like "autistic aloofness and insistence on sameness" are also portion of the criterion for diagnosing ASD in present categorizations. (Major, Seabra-Santos, & Albuquerque, 2017).

According to the one published recently (DSM-5; APA, 2013), "autistic disorder, Asperger's disorder and pervasive developmental disorder not otherwise specified" are all categorized under a unified ASD diagnosis (Dillenburger, Jordan, McKerr, Devine, & Keenan, 2015).

2.2 Theoretical Concept

ASD is the DSM-5 classification that involves disorders which are manifested by widespread and typically serious impairment of mutual social interaction abilities, deviance in communication and minimal stereotypical behavior patterns. There are multiples of differences between persons diagnosed with ASD, ranging from mild to very extreme behaviors and disabilities that are easier to conceptualize on a spectrum (Sheila l. videbeck, phd, 2017).

2.3 Epidemiology

"Centers for Disease Control and Prevention (CDC)" reported in 2014: prevalence of autism has raised dramatically from (1 / 250) newborns, to(1 / 59) newborns in 2014 (table 1.2). This apparent increase can be

explained in many ways, including increased understanding, extension of diagnostic criteria, better screening tools, and increased reporting. (CDC1 2014, Simonstein & Mashiach-Eizenberg, 2016).

2.4 Causes and Risk Factors of ASD

There is no exact cause of ASD but genes can interact with environmental influences to impact development in a ways that may contribute to autism. Certain factors increases the availability of developing autism includes: having a sibling (sister or brother) with autism, having a parents with autism, having assured genetic conditions (fragile X syndrome, Down syndrome) and very low birth weight (Simonstein & Mashiach-Eizenberg, 2016).

2.5 Signe and Symptoms of ASD

Early signs of ASD can be detected earlier in infants in age (6-18) months old, when a child fixes objects or doesn't react to his parents or people. toddlers and older babies may be not react to his names, avoiding of eye contact, lose mutual attention or repetitive movements like arm flapping or rocking. He may playing with the toys abnormally, such as lining the toy up or concentrating on a parts of it more than the whole. If parents or caregiver see these signs, they must be contact the paediatricians or psychologist to make a developmental screening (Chuthapisith & Ruangdaraganon, 2011).

2.6 Diagnosis of ASD

ASD diagnosis is often made later after the third year of life when the affected child was expected to enter the kindergarten; with extraordinary early identification in severe cases which could be easily picked and diagnosed. Despite the efforts to raise awareness of early signs of ASD and encourage early detection, as well as some recent trends in younger children's diagnosis, the mean age of detection in the USA remains around (4-5) years (Eltyeb, 2017; Lonnie Zwaigenbaum, MD et al., 2015).

Diagnosis of young children is often in a two stages procedure, the first stage during well-child checkups in age (18-24) month which includes general developmental screening with an early childhood health care provider or a pediatrician. The child who shows developmental abnormalities thought this assessment phase will be send for the next evaluation phase (Koegel, Koegel, Ashbaugh, & Bradshaw, 2014).

The second evaluation phase requires a team trained in the diagnosis of ASD that includes a child psychologist and/or child psychiatrist, a developmental pediatrician, a neuropsychologist and speech and language pathologist to determine the cognitive skills, thinking skills, speech or language skills and skills that appropriate to his age which required to daily activities accomplishment independently, like dressing, feeding, and toileting. The comprehensive assessment may include blood tests and a hearing test, since ASD considered as a complex condition that may happens alongside with another diseases or learning disability. The outcome of this assessment will result in a formal diagnosis and treatment recommendations (Saxena & Chahrour, 2018).

2.7 Early Screening Tools to ADS in Toddlers and Children

The early screening tools aid for early detection of ASD, but not diagnostic confirmation, is primarily based on clinical evaluation. In general children aged 18 months and more who considered risky for ASD. Some these screening tools includes the Checklist for Autism in Toddlers (CHAT), pervasive Developmental Disorders

Screening Test (PDDST), childhood Autism Rating Scale (CARS), screening Tool for Autism in Two-Year-Olds(STAT), quantitative Checklist for Autism in Toddlers (Q-CHAT) Based on Questionnaires, early Screening for Autistic Traits (ESAT) and Infant Toddler Check List (ICT) (Eltyeb, 2017).

2.8 Treatment of ASD

Early treatment for ASD will minimize challenges for children by encouraging them to learn new skills and improve their strengths.

No single best medication or treatment for ASD, but it is important to work closely with a specialist or health care provider to find the right treatment program. A child with ASD should be referred to specialists who are trained in delivering behavioral, social, skill-building or educational programs. Such services will help autistic children to learn the life skills needed to be independent with life, minimize difficult behaviors improving social skills, communication skills and vocabulary. A specialist may be using drugs to treat those symptoms accompanied with autism (McPheeters et al., 2016).

2.9 Role of Kindergartens Teachers and Family in Treatment of Children with ASD

Teachers and families of young autistic children play several roles in the child's life. Parents are also the first ones to recognize a developmental disorder and must follow their concern before they are identified satisfactorily and locate or improve appropriate resources for their children. When parents find an appropriate treatment plan, they are usually active participants in their kid's learning to ensure the skills acquired in the education program are translated into the home environment and teaching other behaviors for their kid better practiced at home and in the community. Parents may also engage as child advocates as "members of the Individualized Education Plan" (IEP) team, ensuring that the educational course moves on properly (Chandran, Jayanthi, Prabavathy, Renuka, & Bhargavan, 2019).

III. METHODOLOGY

3.1 Design of the Study

Descriptive cross -sectional study design determined to study the kindergarten teachers early detection knowledge toward ASD in Babylon province.

3.2 Sample of the Study

A total of 204 kindergarten teachers from two administrative departments that selected randomly by cluster sampling that represent about (50%) from total administrative departments.

3.3 The Study Instrument

A questionnaire was designed by the researcher after extensive articles and literature revisions to assess the kindergarten teachers early detection knowledge toward ASD in Babylon province. The questionnaire is composed of (2) sections. The first part include the socio demographic data which is consist of 10 items and the second part that include early detection knowledge of kindergarten teachers regarding ASD which is consist of 27 items.

3.4 Study Instrument Reliability

Reliability is concerned with a testing instrument being consistent and reliable in calculating a variable (Rebar, C. R., Gersch, C. J., Macnee, C. L., & McCabe, 2011). The assessment of the questionnaire's reliability is based on the internal accuracy, split half-technique .Alpha cronbach used as a statistical tool to achieve the reliability of the questionnaire, the outcome was(0.71) which is statistically acceptable.

3.5 Methods of data Collection

Data were collected after acquiring an official agreement from the department of development and a training / branch of studies and educational research in Babylon education directorate. kindergartens used as an area for data collection from the preschool teachers. Part of data collected as a face-to-face interview with kindergarten teachers after explaining the objectives and importance of the study. While the other part collected by giving the questionnaires to the manager of kindergartens as an intermediary for delivering it to the kindergarten teachers and returned it back to the manager. The duration of answering the questionnaire takes approximately (20-25) minutes.

3.6 Analysis of Data

Data was electronically analyzed by using descriptive statistical methods "Statistical Package for the Social Sciences (SPSS) version 24".

3.7 Research Limitations

1. Difficulty in reaching kindergarten places due to the distance between them and the lack of accurate evidence of their location.
2. Most kindergarten management refused to cooperate with the researcher due to security causes and social traditions.
3. Lack of local references, especially in Iraq related to current study's topic.

IV. RESULT AND DISCUSSION

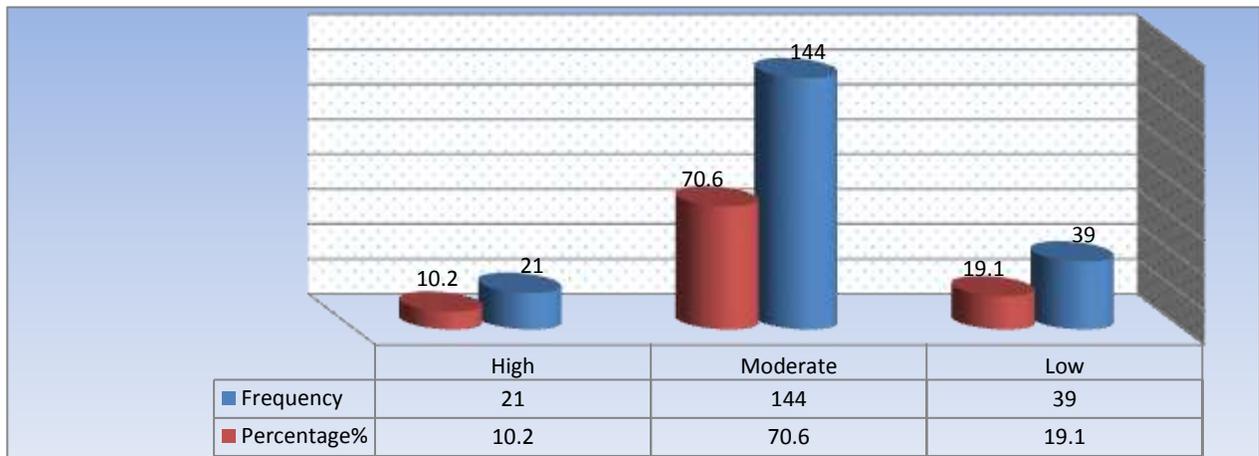|	High	Moderate	Low
■ Frequency	21	144	39
■ Percentage%	10.2	70.6	19.1

Figure 4.1: Overall Assessment level of Early Detection Knowledge among Kindergarten Teachers Toward ASD

(N= 204)

*Scale used as: "Low = (1-1.66), Moderate = (1.67-2.33), High = (2.34-3)".

The finding presented in figure 4.1 displayed that the majority of the sample (70.6%) has a moderate knowledge of early detection about ASD, justified this level by as long as the few number of the participants exposed to special college courses concerning ASD. This result approved to a results of two studies:

The first study conducted by (Juber, Reneva Peterson, & Shea, 2018) in Libya regarding "level of knowledge and perceived challenges to early diagnosis and intervention among general practitioners about ASD" who identified that 62.9% of Participants had a moderate knowledge.

While in a qualitative study that directed in Jordan to assess the early identification knowledge of kindergarten teachers about ASD who stated that kindergarten teachers have the ability to indicate symptoms or related characteristics of ASD according to APA 2013 (Al-Zyoud, 2018).

Table 4.1: Association between Kindergarten Teacher's Overall Knowledge Concerning Early Detection and their Demographic Data

Ranking & intervals	Overall knowledge			Chi-Square Tests			
Age\ year	Low %	Moderate %	High %	X^2	D.F	P value	Assessment
20-25	3.4	9.8	1.0	16.3	14	0.290	N.S
26-31	4.4	21.1	4.4				
32-37	1.5	7.8	2.0				
38-43	3.4	7.4	1.0				
44-49	4.4	8.8	0.0				
50-55	2.0	7.4	1.0				
56-61	0.0	6.9	1.0				
62-63	0.0	1.5	0.0				
Total	19.1	70.6	10.3	100.0%			
Gender	Low %	Moderate %	High %	X^2	D.F	P value	Assessment
Male	0.5	0.0	0.0	4.25	2	0.119	N.S
Female	18.6	70.6	10.3				
Total	19.1	70.6	10.3	100%			
Educational level	Low %	Moderate %	High %	X^2	D.F	P value	Assessment
Diploma or less	9.8	39.7	3.4	11.9	4	0.018	Sig
Bachelor	9.3	30.9	6.4				
Postgraduate	0.0	0.0	0.5				
Total	19.1	70.6	10.3	100%			
Kindergarten teacher's experience	Low %	Moderate %	High %	X^2	D.F	P value	Assessment
1-6	9.8%	45.1%	5.4%	21.4	12	0.044	Sig
7-12	2.5	4.9	2.9				
13-18	1.5	4.9	0.0				
19-24	2.9	6.4	0.5				
25-30	2.5	2.9	1.0				
31-36	0.0	3.4	0.5				
37-39	0.0	2.9	0.0				
Total	19.1	70.6	10.3	100%			
Teacher having a relative or friend with ASD	Low %	Moderate %	High %	X^2	D.F	P value	Assessment

	Low %	Moderate %	High %	X^2	D.F	P value	Assessment
Yes	2.0	6.9	1.5	0.413	2	0.813	**N.S**
No	17.2	63.7	8.8				
Total	19.1	70.6	10.3	100%			
Information sources about Autism	**Low %**	**Moderate %**	**High %**	X^2	**D.F**	**P value**	**Assessment**
Attended an In-Service/Presentation	0.5	6.9	0.5	19.9	10	0.030	**Sig**
Read a resource	3.4	10.3	2.0				
Watched a Television Program	2.0	19.1	2.0				
Watched a Movie	1.0	6.9	1.5				
Internet	8.8	21.6	1.5				
College Courses	3.4	5.9	2.9				
Total	19.1	70.6	10.3	100%			
X^2 = Chi-square,Sig = significance, N.S = non significance, P value ≤ 0.05							

A Chinese study on a stratified sampling aimed to detect the "knowledge, attitudes, and perceptions" of preschool teachers about ASD, which conducted through (Liu et al., 2016) who identified that there was no significance relationship between preschool teacher's early detection knowledge and age, gender and teacher experience at P-value ≤ 0.05, this finding approved with current study in relation to age and gender, but differ with teacher experience. Concerning the educational level, the current study exposed that there was a significant correlation between kindergarten teacher's early detection knowledge and educational level. Obviously, there is a direct relationship between some of the relevant demographic information with their knowledge about autism in general and its early detection in particular, and this rational consistent with the chines study above.

Table 4.2: Comparison between Governmental and Private Institution in Relation to Demographic Data

Demographical characteristics	Type of institution	
Age/ year	**Governmental %**	**Private %**
20-25	0.0	24.0
26-31	8.4	**44.6**
32-37	4.8	15.7
38-43	20.5	5.8
44-49	**27.7**	3.3
50-55	20.5	3.3
56-61	18.1	0.8
62-63	0.0	2.5
Total	100%	100%
Educational level	**Governmental %**	**Private %**
Diploma or less	**71.1**	40.5
Bachelor	28.9	**58.7**
Postgraduate	0.0	0.8
Total	100%	100%
Kindergarten teacher's experience	**Governmental %**	**Private %**
1-6	15.7	**90.9**
7-12	14.5	7.4
13-18	14.5	0.8
19-24	**24.1**	0.0
25-30	14.5	0.8
31-36	9.6	0.0
37-39	7.2	0.0
Total	100%	100%

The findings in table 4.2 illustrate that higher percentage (27.7%) of age group (44-49) in governmental kindergartens and higher percentage (44.6%) of age group (26-31) in private one, this may be related to the lack of new appointments of young teachers in governmental kindergartens and reliance on work for those who were previously appointed.

Regarding to kindergarten teacher's experience, the greater percentage (24.1%) in governmental kindergarten were (19-24) year, although the majority (90.9%) of one have (1-6) year, this due to that governmental kindergarten teachers are considered permanent employees, while private teacher's contract can be terminated if they do not perform their duties properly or when there is no urgent need for them. Also, most of the kindergarten teachers are young and still at the beginning of their career

Table 4.3: Comparison between Governmental and Private Institution in Relation to Overall Knowledge Concerning Early Detection

Type of institution	Mean	T-test		
		T	df	Sig
Governmental	64.23	1.9	202	.049
Private	65.34			
Sig = significance, t = T-test, D.F = degree of freedom				

The finding of existing research in table 4.3 exposed that there was a significant difference between the governmental and private institution in relation to overall knowledge concerning early detection of ASD, this due to the employment criteria in private institutions depend on the academic qualification(educational level) of the teachers, so the researchers find that as half of the participants (58.7%) of the private kindergarten teachers in the existing study are a baccalaureate while (71.1%) of governmental institutions were diploma or less.

V. CONCLUSION AND RECOMMENDATION

After all, the majority of kindergarten teachers have a moderate knowledge concerning early detection of ASD. In addition there is a significant difference between the governmental and private institution in relation to overall knowledge concerning early detection of ASD (knowledge of private kindergarten teachers higher than governmental). Therefore, the study recommends for: educating and training the unusual educators in detection and management of children with ASD as a phase of children affected under growing universally and increase and development of educational training courses, seminars and workshop that held by the Ministry of Education for teachers on the issue of ASD.

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