Screening for Autism Spectrum Disorder Among Toddlers age children visiting Dr. Jamal Ahamed Rashid Pediatric Teaching Hospital in Sulaymaniyah City / Iraq

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ABSTRACT

Background: Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by deficits in social communication and the presence of restricted interests and repetitive behaviors. It is diagnosed by observing deficiencies in behavior in three areas: social interaction, communicative ability and the range of activity and interests.

Aim of the study: This study aims to identify risk of autism spectrum disorder among toddler's age patients visiting pediatric hospital through using screening tools (M- CHAT-R/F).

Methodology: A descriptive study was conducted in Dr. Jamal Ahamed Rashid Pediatric Teaching Hospital during the period 1st February2024 to 30th October 2024. 200 pediatric patients with their mothers were selected to participate in the current study, data collection done by interviewing with each participant through using a questionnaire form consisting of two parts: the first part consist of 4 items related to the child characteristics like (Age of the child, its gender, gestational age and types of delivery), and also 4 items related to the mothers like (age of the mother, the place of residence, level of education and marital status). Second part of questionnaire form is a standard tool for screening autism spectrum disorder among children which consists of 20 questions.

Results: The main findings are majority of children were in the second years of age, related to gender more than half of sample 58.5% were male, highest percentage of children their gestational age was full-term, and proportion of normal delivery and caesarian section approximately equal. Related to mother's characteristics highest percentages of mothers 59.5% their age ranged between 21-30 years old, and lived in inside the city. 55% of mothers were graduated from colleges and 77.5% were married or living together. The current study found that 93.5% of toddlers have low risk of autism spectrum disorder, 5.5% have moderate risk of autism spectrum disorder, and only 1% of children have sever risk of autism spectrum disorder.

Conclusions: based on findings researcher concluded that majority of toddlers in current study were at low risk of autism spectrum disorder (ASD), and high risk for autism spectrum disorder record the lowest percentages.

Recommendation: further studies on larger sample to screening autism spectrum disorder among toddlers and preschool age children for early detection and promoting early intervention and supportive services for children with autism and their families.

Keywords: Autism Spectrum Disorder, ASD, Screening, Toddlers.

1. INTRODUCTION

Autism spectrum disorder (ASD) is a group of heterogeneous neurodevelopmental disorders, which are characterized by deficits in social communication and interaction, and restricted and repetitive patterns of behaviors, interests, or activities (American Psychiatric Association. 2013). The current prevalence is assessed to be about 1.5% in developed countries and 1% in worldwide (Lyall, et al.,2017).

In China, the prevalence of ASD has been reported ranged from a low of 0.2% to as high as 1% (Lai, et al.,2014) . Zhou et al. reported a prevalence of 0.7% among 6- to 12- year-old children in 2019 (Zhou et al.,2020), which is the largest epidemiological study in China to date. ASD tends to be accompanied by a kind of serious neuropsychiatric disorder in adulthood if there is no effective intervention in time, which might become a heavy burden to an individual, a family, or even the whole society (Ten Hoopen, et a., 2020). Studies have shown that early behavioral treatment can largely improve the cognitive and adaptive abilities of children with ASD, and early intensive interventions before age

three can improve the prognosis to a large extent (Dawson, et al.,2012).

Early screening and early diagnosis play a key role in affecting the prognosis of this disease. Signs of ASD can occur very early, even in the first year of life and a diagnosis can be made at as early as 12 months (Pierce, et al.2019). A formal diagnosis may be possibly made only at 18–24 months of age, and the stability of the diagnosis is quite high over time (Guthrie et al. 2013). Therefore, early diagnosis of ASD is possible. However, at present, the diagnosis of ASD is made around the age of 4–5 years on average (Zwaigenbaum & Penner. 2018).

Screening consists of a procedure by which we separate healthy cases from those who present symptoms or suspicions of some type of disorder or disease. Screening is

usually a quick and inexpensive procedure used to identify whether a patient has any of the signs described as symptoms of ASD (Constantino, et al. 2020) . Currently, there are at-risk groups such as siblings of already diagnosed children, children born preterm or children who are developmentally delayed (Loubersac , et al. 2021).

2. IMPORTANCE OF THE STUDY

ASD is a lifelong neurodevelopmental disorder, associated with high burden. It was estimated that ASD represented 15.6% of disability-adjusted life years (DALYs) among all DALYs of the Spanish population aged 0 to 14 in 2013 (Lai , et al.,2014). In May 2014, 60 countries supported the resolution adopted during the 67th World Health Assembly on „Comprehensive and coordinated efforts for the management of autism spectrum disorders (ASD)‟ (American Psychiatric Association. 2013).

While there is a global consensus supporting correct diagnosis and comprehensive management of ASD, whether universal screening for ASD should be implemented in all children is still debated. The screening tool to be used is also a matter of debate. An autism screening tool is defined as „a formalized brief questionnaire completed by a parent or provider before an in-depth diagnostic evaluation to identify a child at risk of autism‟ (Ten Hoopen, et al. 2020). There are two types of screening. The first one is the universal screening, or level 1 screening, which consists in screening ASD in the whole population, also referred as unselected population, or low-risk children. The second one is a selective screening, or level 2 screening, which consists of screening children with developmental concern, also referred as selected population or high-risk children.

3. STATEMENT OF THE PROBLEM

Screening for Autism Spectrum Disorder in Toddlers Visits to Dr. Jamal Ahamed Rashid Pediatric Teaching Hospital Sulaymaniyah City – Iraq.

4. OBJECTIVE OF THE STUDY

4.1 General Objective

Screening for Autism Spectrum Disorder Among Toddlers age children visiting to Pediatric Hospital .

4.2 Specific Objective

- To identify the socio-demographic Characteristic of the Study.
- Screening for autism spectrum disorder in toddler visit pediatric hospital.

5. DEFINITION OF THE TERMS

5.1 Screening

5.1.1. Theoretical Definition

Screening is the systematic application of a test or enquiry to identify individuals at sufficient risk of a specific disorder to warrant further investigation or direct preventive action, amongst persons who have not sought medical attention on account of symptoms of that disorder (Morrison. 2012).

5.1.2. Operational Definition

Means the use of one or more diagnostic tools to test a person for the presence or precursors of a particular disease.

5.2 Autism Spectrum Disorder

5.2.1. Theoretical Definition

Is a neurological and developmental disorder that affects how people interact with others, communicate, learn, and behave. Although autism can be diagnosed at any age, it is described as a "developmental disorder" because symptoms generally appear in the first two years of life (Hyman, et al., 2020).

5.2.2. Operational Definition

Autism spectrum disorder (ASD) is a developmental disorder that affects an individual's communication and behavior.

5.3 Toddlers

5.3.1. Theoretical Definition

A 1-3 years of age, physical growth slows, and physical development increases (Dumas .2009).

5.3.2. Operational Definition

Is an infant as a child in the first stage of life but doesn't give any age specifics and describes a baby as "an extremely young child?

Chapter Two - Literature Review

6. OVERVIEW

Autism is a disorder of social development that affects the development of the brain. Autistic people live in their own world. This is a generalized developmental disorder of the so-called autistic spectrum observed for the first time by American psychiatrist . Austrian pediatrician Asperger (1944) observed similar autism clinical symptoms that underlie the Asperger syndrome - another autism spectrum disorder. Autism is often accompanied by extreme behavioral challenges. Autism is diagnosed by observing the deficiencies in behavior in three areas that are the social interaction, communicative ability and the range of activity and interests, which is limited (Al Aoudah, Rema.2014). Some children may appear somewhat different as they develop, either because they avoid eye contact or conversations with their parents or other individuals, demonstrate a particular obsession with certain objects, or become withdrawn and uninterested to social interaction. Well, it is likely that they suffer from infantile autism, a quite common disorder, and that affects their adolescence and even in adulthood. Autism Spectrum Disorders are defined as a set of disorders that affect neurological development (American Psychiatric Association. 2010).

The word "Spectrum" refers to a series of syndromes and stages of detriment that can be experienced by children with autism. The Autism Spectrum range in children from mild to severe symptoms, with many of children with Autism diagnosed with intellectual disabilities (American Psychiatric Association. 2007). Although the main characteristic of autism is a syndrome that affects social interaction and communication in many of its manifestations, other traits are also associated, among which we can mention behavioral problems, anxiety, depression, disorders in sleeping. Also, other disorders could be accompanied such as eating and hyperactive disorders. Additionally, the autistic child usually shows a significant delay in language acquisition, uses words inappropriately and without communicative coherence (Benson. 2018).

Due to the diverse signs and symptoms of autism from one child to another, each of two different children, with the same medical diagnosis, is likely to behave in very different ways and have different skills. However, severe symptoms of autism are characterized, by the total absence to communicate or to establish reciprocal relationships with other people (Broder, et al.,2018). The symptoms of autism appear in most children in infancy, while other children may develop and develop quite naturally during the first months or years of their lives, but they suddenly lose the language skills they have acquired up until that moment (Campbell, et al., 2018).

6.1 Prevalence of Autism Spectrum Disorder

The degree to which rising ASD prevalence is due to a true increase in cases is not yet known. Improved detection and diagnosis, and the broadening of diagnostic criteria with successive versions of the DSM, are likely contributors to changes in prevalence estimates (Baio, et al.,2018). Evidence suggests that ASD can be reliably diagnosed by 2 years of age in some children, though subtler cases may not present fully until later. Despite increasing awareness of early signs, the mean age of diagnosis remains 4 to 5 years of age (Daniels & Mandell .2014). While males are diagnosed with ASD four times more frequently than females, the sex gap may be narrowing. Recognition is growing that some girls present with more subtle signs than boys (Kirkovski, et al., 2013).

6.2 Etiology and risk factors

The etiology of ASD is not completely understood, though recent findings suggest an interplay among genetic, epigenetic, and environmental factors (Fett-Conte, et al.,2015). Strong risk factors for ASD include male sex and positive family history. Recurrence risk estimates for younger siblings of children with ASD range from 7% to 19% versus 1.5% in the general population (Fett-Conte, et al.,2015).

6.2.1. Genetic/familial

- Specific genetic syndromes/risk variants
- Male sex
- First-degree relative or other family history of ASD

6.2.2. Prenatal

- Older parental age (≥35 years)
- Maternal obesity, diabetes, or hypertension
- In utero exposure to valproate, pesticide, or traffic-related air pollution
- Maternal infections (e.g., rubella)
- Close spacing of pregnancies (<12 months)

6.2.3. Postnatal
- Low birth weight
- Extreme prematurity

6.3 Signs and Symptoms of Autism Spectrum Disorder
- Doesn''t point to show others things he/she is interested in.
- Inconsistent or reduced use of eye contact with people outside the family.
- Rarely smiles when looking at others or does not exchange back and forth warm, joyful expressions.
- Does not spontaneously use gestures such as waving, reaching or pointing with others.
- Does not respond to gestures and facial expressions used by others.
- More interested in looking at objects than at people''s faces.
- May be content to spend extended periods of time alone.
- Doesn''t make attempts to get parent''s attention; doesn''t follow/look when someone is pointing at something; doesn''t bring a toy or other item to parent to show them.
- Inconsistent in responding when his or her name is called
- Seems to be in his/her "own world".
- Doesn''t respond to parent''s attempts to play, even if relaxed.
- Avoids or ignores other children when they approach or interact.
- No words by 16 months or no two-word phrases by 24 months.
- Any loss of previously acquired language or social skills.
- Odd or repetitive ways of moving or holding fingers, hands or whole body (rocking, pacing) Walks on toes. (Choque, et al., 2016).

6.4 Diagnosis of Autism Spectrum Disorder

Autism Spectrum Disorder (ASD) can be diagnosed accurately in children from two years of age with early intervention helping these patients (Giangaspro, et al.,2007). The average diagnostic age, however, is between 3 and 6 years. It was thought that one of the reasons for this delay is the immense difficulty in diagnosing these disorders at an early age, a variety of factors contribute to this: A) language delays and social deficits that cannot be detected until the child starts to relate to pre-school peers, and B) the appearance of symptoms is very complex and varies in age (Kim. 2015).

The detection and diagnosis of ASD, by the American Academy of Neurology (AAN) emphasize the need for a double approach. To discover any changes in the children''s neurodevelopment for strict monitoring or deviations from typical, it is significant that specialists stay alert from the child''s birth, which is the first stage. To identify the child''s clinical characteristics is the second level diagnosis of ASD and then perform three assessment phases , there are three main phases of diagnosis autism spectrum disorder (Alvarez, et al.,2007) :

First phase: possible cases identification: The goal is "to check the parents observations" or "to identify the manifestations regarding the social interaction and the child''s communication and behavior .

Second phase: global evaluation: Attempts to observe the significance and the consistency of the child''s behavioral and neurological manifestations to validate the findings from the physicians who referred the child to the specialist or parents'' concerns .

Third phase: specific diagnosis: sets out the definitive ASD diagnosis and describes its type. To this end, the knowledge provided by the specialists and the parents who have seen the patient are contrasted and the required tests are applied to correlate the evidence with the DSM-5 diagnostic manual criteria .

6.5 Intervention of Autism Spectrum Disorder

Until now, no medication has been found that allows the cure of any of the autistic spectrum disorders. However, there are many therapies aimed at improving the quality of life of children with autism (Green,et al. 2017):

Behavioral therapy: is also known as the method of Lovaas, ABA or Skinner and is based on behaviorism, encouraging the development of skills in the child through the reinforcement and punishment system.

Teach Method: Focuses on communication through images that constitute concepts and has been used in some special education centers.

Picture Exchange Communication System: It is a learning strategy through visual elements, reading and writing, whose application has been quite successful in states of the American states and other countries.

Chemical / Drug: It consists of the intervention of autism in early ages through medications. Although it has been discussed for a long time, it cannot be denied that certain children with autism need drugs because of some dysfunction. Either way, medications should not be given unless you have a prescription.

Diet without gluten and casein: With this treatment the child is deprived of the consumption of foods rich in gluten and casein, which are part of some products such

as wheat flour and dairy. This diet does not generate side effects, so, although it is effective in very few cases, it is still considered as a possible alternative.

Vitamins: Involves providing the child with a series of vitamins to cover the deficiency of some of them. Studies have corroborated that some children with autism in children lack vitamins such as those of the B complex.

Method Tomatis and Berard: It consists of teaching the child auditory, managing to open some channels in his brain. This method can be applied in those cases in which the child shows great sensitivity to sound.

Music therapy: This treatment seeks to train the child through music and rhythm, and has proven to be effective in certain cases.

Dolphin therapy, equine therapy: Animal therapies such as dolphins and horses are always an option, since they can improve the symptoms of autistic spectrum disorder in children, as well as provide a very pleasant experience.

6.6 Screening of Autism Spectrum Disorder

Early screening and early diagnosis play a key role in affecting the prognosis of this disease. Signs of ASD can occur very early, even in the first year of life and a diagnosis can be made at as early as 12months (Pierce, et al., 2019). A formal diagnosis may be possibly made only at 18 24 months of age, and the stability of the diagnosis is quite high over time (Guthrie, et al.,2013). Therefore, early diagnosis of ASD is possible. However, at present, the diagnosis of ASD is made around the age of 4–5 years on average (Loubersac, et al., 2013). There is a significant delay between the onset of ASD symptoms and diagnosis, which means that young children miss the opportunity for intervention during the optimal period of neuroplasticity. The American Academy of Pediatrics (AAP) recommends that children be screened for ASD at the 18- and 24 month checkups (Johnson, et al.,2007). There are many studies of early screening for ASD in developed countries (Zwaigenbaum, et al. 2015). In a large early screening study, Robin et al. reported a diagnostic rate of 0.67% in toddlers , in another screening

study of low-risk young children, the diagnostic rate of ASD was 0.65% , the initiative of early ASD screening starts much later in China than that in the developed countries (Robins, et al., 2014).

In worldwide 95-99% of children are reported to be followed up at the CHCs during their first years. Despite regular health check-ups, in recent years, the symptoms of autism have not been noticed, or if noticed, not led to referral for autism diagnostic assessment until several years later ,the observed delay in diagnosis was the background for the development of a new screening programme for autism at the CHCs around the globe (Constantino, et al., 2020).

M-CHAT-R/F is one of the tools used a two-stage screening questionnaire consisting of 20 questions on a scale of 0–20. The M CHAT-R refers to the initial screening, while the M-CHAT-R/F refers to the second-stage screening process with follow-up, positive screening for the M-CHAT-R includes 3 or more high-risk responses (total score: 3–7, moderate risk; total score: 8–20, high risk). If children receive a score of "high risk" (total score 8) on M-CHAT-R, they would bypass the follow-up and are considered positive on M CHAT-R/F. If with a score of "moderate risk" (total score: 3– 7), a screening process for follow-up is required. Positive screening for follow-up (M- CHAT-R/F) includes 2 or more risky reactions (Bradbury, et al.,2020).

7. METHODOLOGY

Design of the Study: Quantitative approach, descriptive study design has been carried out in pediatric teaching hospital from period of 1st February2024 to 30th October 2024 in order to achieve the objectives of the present study.

Setting of Study: The study was carried out in Dr. Jamal Ahmad Rashid Pediatric Teaching Hospital in Sulaymaniyah City / Iraq, the largest and oldest public pediatric hospital in the city .

Sample of the Study: A non –probability/ convenient sampling technique was applied to conduct this study. According to

inclusion criteria 200 toddlers with their mothers were selected to participate in the present study

Inclusion Criteria:

- Mothers who agree to participate in the study
- Pediatric patients at toddlers age (1-3 years old)
- Mothers whom native language is Kurdish

Study instrument:

In order to collect the proper data, questionnaire form was developed by researcher based on related review of literature and previous studies to identify the risk of Autism Spectrum Disorder among toddler's patients visiting hospital ,it consists of two main parts:-

Part one: Socio-demographic characteristics of sample include both mothers and their toddler children, (4) items related to the child which are child age, gender of the child, gestational age, and type of delivery. As well as 4 items related to mothers which are mother's age, residence, mothers' education level, and marital status.

Part Two: screening tool designed to assess risk of autism spectrum disorder among children, it consist of 20 questions related to this issue (M-CHAT-R/F) . The questionnaire was designed in English and then translated into Kurdish language.

Data collection done by interview after taking mother's agreement to participate in the study through using the questionnaire form, each interview took about 30 minutes .

Rating and scoring of the scale:

M-CHAT-R/F is one of the screening tools used to identify risk of autism spectrum disorder, consisting of 20 questions, positive screening includes 3 or more high-risk responses (total score: 3–7 indicate to moderate risk, total score: 8–20 indicate to high risk of autism spectrum disorder).

The answers were rated and scored to items as: (0) for No, and (1) for Yes.

Method of Data Collection:

Data were collected through interview technique; the investigators had demonstrated objectives and the significance of research and the benefit of the study to the participant. Verbal consent obtained from Children"s Mothers each woman spend approximately (20- 30 min) to respond to the questionnaire.

Statistical analysis

Data were analyzed in several steps. First, descriptive statistics, which includes frequency and percentages. Data are prepared, organized and entered into the computer file; Statistical Package for Social Science (SPSS) (24 version) is used for data analysis.

Limitations of the Study:

The study experienced the following limitations:

The absence of local statistical and research studies that support the results of the current study.

Some uncooperative women who were not willing to answer the questionnaire.

Chapter Four: Results of the Study

Table (1) : Distribution of sample according to pediatric patients Socio-Demographic Characteristics (No = 200).

Child characteristics		Frequency	Percentages
Child Age \ Months	18-24	38	19.0
	25-30	91	45.5
	31-36	71	35.5
	Total	200	100%
Gender of Child	Male	117	58.5
	Female	83	41.5
	Total	200	100%
Gestational Age	Premature	41	20.5
	Full Term	127	63.5
	Post Mature	32	16.0

	Total	200	100%
Mode of Delivery	Normal Vaginal Delivery	101	50.5
	Cesarean	99	49.5
	Total	200	100%

Table (1) demonstrates demographic characteristics of toddlers age children vesting pediatric hospital. It shows that majority of children (45.5%) their age ranged between (25-30 months), and 35.5 % their age ranged between (31-36 months). (58.5%) of pediatric patients were male ,and the rest of children were female which accounts (41.5%) . highest percentage of sample (63.5%)were born as full term of gestational age , (20.5%)were born as premature ,and proportion of post mature records the lower percentages of sample (16%) . in regard to type of delivery proportion of normal vaginal delivery and caesarian section approximately equal account. 50.5% ,and 49.5% respectively .

Table (2) : Distribution of sample according to mothers Socio-Demographic Characteristics (No = 200).

Child characteristics		Frequency	Percentages %
Mother Age	≤ 20 Years	14	7.0
	21-30 years	119	59.5
	31-40 y ears	59	29.5
	41-50 years	8	4.0
	Total	200	100%
Residence	Outside city	33	16.5
	Inside city	167	83.5
	Total	200	100
Education Level	Illiterate	3	1.5
	Primary School	9	4.5
	Secondary School	25	12.5
	Diploma	37	18.5
	Bachelor	110	55.0
	Master	16	8.0
	Total	200	100
Marital Status	Married	155	77.5
	Widow	12	6.0
	Divorced	22	11.0
	Separated	11	5.5
	Total	200	100

Table (2) demonstrates demographic characteristics of mothers of toddlers age children vesting pediatric hospital. It shows that highest percentages of mothers (59.5%) their age ranged between (21-30) years old, followed by age group (31-40 years old) which account 29.5 %. majority of them (83.5%) living in inside the city, and the rest were living outside the city. related to mothers education level (55%) of women's were graduated from colleges and most of them were married (77.5%).

Table (3): Mother's response to screening tool (M-CHAT-R/F), related to their child's behaviors.

No.	Items	Yes		No		M.S
		F	%	F	%	
1	If you point at something across the room, does your child look at it? (FOR EXAMPLE, if you point at a toy or an animal, does your child look at the toy or animal?)	97	48.5	103	51.5	.515
2	Have you ever wondered if your child might be deaf?	91	45.5	109	54.5	.545
3	Does your child play pretend or make-believe? (FOR EXAMPLE, pretend to drink from an empty cup, pretend to talk on a phone, or pretend to feed a doll or stuffed animal?)	92	46.0	108	54.0	.540
4	Does your child like climbing on things? (FOR EXAMPLE, furniture, playground equipment, or stairs)	85	42.5	115	57.5	.575

5	Does your child make unusual finger movements near his or her eyes? (FOR EXAMPLE, does your child wiggle his or her fingers close to his or her eyes?)	90	45.0	110	55.0	.550
6	Does your child point with one finger to ask for something or to get help? (FOR EXAMPLE, pointing to a snack or toy that is out of reach)	83	41.5	117	58.5	.585
7	Does your child point with one finger to show you something interesting? (FOR EXAMPLE, pointing to an airplane in the sky or a big truck in the road)	83	41.5	117	58.5	.585
8	Is your child Interested in other children?(FOREXAMPLE, does your child watch other children, smile at them, or go to them?)	70	35.0	130	65.0	.560
9	Does your child show you things by bringing them to you or holding them up for you to see – not to get help, but just to share? (FOR EXAMPLE, showing you a flower, a stuffed animal, or a toy truck)	77	38.5	123	61.5	.615
10	Does your child respond when you call his or her name? (FOR EXAMPLE, does he or she look up, talk or babble, or stop what he or she is doing when you call his or her name?)	77	38.5	123	61.5	.615
11	When you smile at your child, does he or she smile back at you?	59	29.5	141	70.5	.705
12	Does your child get upset by everyday noises? (FOR EXAMPLE, does your child scream or cry to noise such as a vacuum cleaner or loud music?)	59	29.5	141	70.5	.705
13	Does your child walk?	60	29.5	140	70.5	.700
14	Does your child look you in the eye when you are talking to him or her, playing with him or her, or dressing him or her?	56	28.0	144	72.0	.720
15	Does your child try to copy what you do? (FOR EXAMPLE, wave bye-bye, clap, or make a funny noise when you do)	82	41.0	118	59.0	.590
16	If you turn your head to look at something, does your child look around to see what you are looking at?	80	40.0	120	60.0	.600
17	Does your child try to get you to watch him or her? (FOR EXAMPLE, does your child look at you for praise, or says "look" or "watch me"?)	76	38.0	124	62.0	.620
18	Does your child understand when you tell him or her to do something? (FOR EXAMPLE, if you don't point, can your child understand "put the book on the chair" or "bring me the blanket"?)	66	33.0	134	67.0	.670
19	If something new happens, does your child look at your face to see how you feel about it? (FOR EXAMPLE, if he or she hears a strange or funny noise, or sees a new toy, will he or she .look at your face?)	74	37.0	126	63.0	.630
20	Does your child like movement activities? (FOR EXAMPLE, being swung or bounced on your knee)	71	35.5	129	64.5	.645

Table (3) explores the mother's responses about their child's behaviors according to the screening tools (M-CHAT-R/F) which consist of 20 items. It reveals that highest percentages of mothers responses were present among no answers which indicate to no risk of autism spectrum disorders were present , especially in items number 14,11,12,and 13 accounts (72%,70%,70%,70%) respectively .followed by items number (18,and 8). While highest percentages of yes answer were present in items number 1, 3, 2, and 5 accounts (48.5%, 46.0%, 45.5%, and 45%) respectively.

Table (4): Distribution of sample according to risk levels of Autism Spectrum Disorder .

Scale Risks	Frequency F	Percentage %
Low Risk	187	93.5
Moderate Risk	11	5.5
High Risk	2	1.0
Total	200	100%

Table (4): findings in this table reveals that (93.5%) of toddlers have low risk of autism spectrum disorder, while (5.5%) of toddlers have moderate risk of autism spectrum disorder, and it also showed that only (1%) have high risk of autism.

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8. CHAPTER FIVE – DISCUSSION OF THE RESULTS

Discussion: Analysis of the present study indicates that the highest percentage of children in the study sample's (45.5%) their age ranged between (25-30) months. the current finding disagree with study done by (Wang, et al.,2012) who mentioned that most of children have autism spectrum disorder in third age and constitute (40.9%), related to gender more than half of children were males, and the rest are female . the present findings agree with the findings of study (Lian, et al., 2008) which indicate that more than half of toddlers were male because of the common belief that male children are more susceptible to autism spectrum disorder. Regarding to gestational age (63.5%) of children were born in full term, , the study is in line with (Dawson,, et al., 2010) who mentioned that (64%) of toddlers were born in full term. The study shows that (50.5%)were delivered with normal vaginal. Our finding agree with (Siu. 2016) who indicate that (50.8%) of toddlers were delivered in normal vaginal condition.

Related to mothers of pediatric patients, the results shows that most of mothers age were ranged between (21- 30) years and constitute (59.5%), our finding disagree with (Biyani, et al.2015) who indicate the majority of mothers ranged between (31-36) years and constitute (61.4%). Regarding to residence (83.5%) of mothers were living in urban areas, the current result agree with (Engelhardt J. 2014) they found that (84%) of mothers were living in urban area. In regard to mothers educational level (55%) of mothers were graduated from college and have bachelor degree, our study agree with (Loukisas, & Papoudi. 2016) who indicate that (58.3%) of mothers graduated from colleges. Related to marital status (77.5%) of mothers were married and living together, this finding agree with (Gau, et al., 2012) who mentioned that (75.6%) of mothers were married.

Concerning the mother's responses about items mentioned in screening tool to identify risk of autism spectrum disorder among toddler's age children, the results of current study indicate that only 1% of the sample were at high risk of autism spectrum disorder, 5.5% of sample were at moderate risks of autism spectrum disorder, and it's worth to mention that vast majority of children (93%) were have a low risk for autism spectrum disorder. The findings agree with study done by (Monteiro SA, et al.,2019) they found that majority of sample were recorded low risk (59%).

The American Academy of Pediatrics recommends that a child should be screened for routine development and autism when the child is 18 to 30 months old or at any time, if the caregiver has concerns about the ASD findings (Greenspan, et al.,2008). Every child with ASD may need to be screened for speech and language development, and every child with these symptoms should be screened for ASD. Lack of language development may differ among children with ASD; some may not speak at all; others may have delayed language development (Boucher J. 2012).

9. CHAPTER SIX – CONCLUSIONS AND RECOMMENDATIONS

Conclusions: based on findings researcher conceded that vast majority of children at low risk of autism, and few percentage of children were at moderate risk of autism, as well as proportion of male were higher than female, and majority of children between age (18-25 months)

In regard to mothers, most of mothers were in age (21-30),

Recommendations

1.Establishing intensive studies on diagnosing autism spectrum disorder in children and giving it the necessary importance, as it may portend other more severe disorders.

2.Promoting the importance and effectiveness of early intervention and supportive services for children with autism, their families and communities, and the need for screening and changing early action practice.

3.Appreciate the differences between these treatment approaches and make informed recommendations to families about what constitutes the optimal treatment for a particular child.

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