Kurdistan Regional Government

Council Ministers

Ministry of Higher Education and Scientific Research

University of Sulaimani

College of Nursing

ASSESSMENT OF NURSE'S AWARENESS ABOUT AUTISM SPECTRUM DISORDER IN PEDIATRIC WARDS AT KIRKUK PUBLIC HOSPITALS

A THESIS
SUBMITTED TO THE COUNCIL OF THE COLLEGE OF NURSING/SULAIMANI UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER SCIENCE IN PEDIATRIC NURSING

BY
IDREES HASAN MOHAMMED
B.Sc. (2009)

SUPERVISOR
Lecturer
DR. BAHAR NASRADEEN MAJEED

2016 2716

December **Bafranbar**

بسمِ اللّهِ الرَّحمنِ الرَّحيمِ

قَالُواْ سُبْحَانَكَ لاَ عِلْمَ لَنَا إِلاَّ مَا
عَلَّمْتَنَا إِنَّكَ أَنتَ الْعَلِيمُ الْحَكِيمُ

صدق الله العظيم

سورة البقرة الآية (32)

Language Evaluation Certificate

I hereby certify that the thesis titled "**Assessment of Nurse's Awareness about Autism Spectrum Disorder in Pediatric Wards at Kirkuk Public Hospitals**" has been reviewed linguistically by myself and I acknowledge that it is written in proper and scientific style far from linguistic mistakes.

Signature:

Date:

Department of English ,School of Languages, Faculty of Humanities, University of Sulaimani.

Dedication

To:

my father and mother

my lovely wife (Seror)

dear son, whom I took his precious times (Danial)

Supervisor's Certification

I certify that this thesis entitled "Assessment of Nurse's Awareness about Autism Spectrum Disorder in Pediatric wards at Kirkuk Public Hospitals" was prepared under my supervision at the department of Pediatric Nursing\Collage of Nursing \University of Sulaimani in partial fulfillment for the degree of Master in Pediatric Nursing Science .

Dr. Bahar Nasradeen Majeed
collage of Nursing
University of Sulaimani

26/12/2016

Committee certification

We, the member of the Examining Committee, certify that after reading the thesis entitled "Assessment of Nurse's Awareness about Autism Spectrum Disorder in Pediatric wards at Kirkuk Public Hospitals" which is submitted by student (**Idrees Hasan Mohammed**) from the department of Pediatric Nursing/Collage of Nursing / University of Sulaimani, we have examined the student in its contents and what is related to it, we agree that it is adequate for the award of the Degree of Master Science in Nursing.

Name: Dr. pof Salwa Shaki Alkurwi
Chairman
Date:28/ /2017

Name: Dr. Hewa Sattar Salih
Member
Date: / /2017

Name: Dr. Parya Mohammad Aziz
Member
Date: 28/1 /2017

Approved by the council of the collage of Nursing/ University of Sulaimani.

Name: Dr. Atiya K. Muhammad
Head of Nursing collage
Date: / /2017

ACKNOWLEDGMENTS

Before all, great thanks to "God", the merciful the compassionate for helping me in completing this work.

I wish to express my deepest and grateful thanks to Dr. Atiya K. Muhammad Dean of the College of Nursing / University of Sulaimani for her support and encouragement.

Sincerely I feel a great urge to present my deepest affection and gratitude to my supervisor Dr. Bahar Nasradeen Majeed for her unending support, guidance, encouragement and enlightment, without her this study could not have been presented in the fashion hereunder.

I would like to express my grateful thanks for all nurses who have participated in this study for their patient and cooperation during the interviews.

My deep appreciation and profound thanks to all experts for their cooperation and guidance in constructing the questionnaire of the study.

Special thanks to internet and library staff of the Nursing collage / University of Sulaimani.

Finally, special thanks to my family and all friends for the encouragement, support, and everyone who helped me by word or action.

ABSTRACT

Autism Spectrum Disorder is a spectrum of neurodevelopmental disorders occurring in early childhood period, characterized by persistent deficits in social communication and interaction with restricted, repetitive patterns of behavior, interests, or activities.

Quantitative design descriptive study was used to assess of nurses awareness who work in pediatric ward about Autism Spectrum Disorder at Public Hospitals in Kirkuk city, from Jun 20 to 10 September 2016.

A non–probability / Convenience sampling technique was applied in the present study. All nurses work in pediatric wards in Public Hospitals were involved .Two hundred nurses were participate in the study sample. They were recruited from (47 nurse /Azadi Teaching Hospital , 33 nurse/Kirkuk General Hospital , 120 nurse /Pediatric Hospital)**.**

A questionnaire was designed and constructed by researcher to measure the variables underlying the present study. Data were obtained directly by the researcher through interview technique. Content validity of the instrument was determined through the of panels which involve (15) experts to investigate the clarity.

To test the questionnaire internal consistency reliability was measured using Cronbach's alpha formula on twenty nurses who are excluded from the study sample . The results of pilot study were (0.821), that indicate reliable of the questionnaire. Statistical analysis was done using Statistical Package of Social Sciences software version 22.

The findings in general indicated that nurses level of awareness in all items related to all three domains (information, concepts and facts about autism spectrum disorders),(social interaction and communication in children with autism) and (disorder in behavioral patterns) were in poor level and recorded low total mean of scores (16.5 ± 3.6) ,(16.7 ± 3.8), and (16.4 ± 4.0) respectively . Statistically significant relation were found between nurses level of awareness and nurses who have child or closed relative with this disorders, and nurses who care for child with autism spectrum disorders previously at P. value < 0.05, while no significant relation were found statistically between nurses level of awareness and nurses (age group, gender, work place, level of education, and years of employment at P . value > 0.05).

The findings of the study researcher recommend to construct an educational program about this important issue to enhance nurses level of awareness and information .

LIST OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ABBREVIATIONS AND SYMBOLS

Abbreviation	Words
AAC	Augmentative and alternative communication
ABA	Applied Behavior Analysis
APA	American Psychiatric Association
ASD	Autism Spectrum Disorders
BAP	Broader autism phenotype
CDC	Center for Disease Control and Prevention
CDD	childhood disintegrative disorder
CNV	Copy number variation
DAT	dolphin-assisted therapy
Df	Degree of Freedom
DMG	Dimethylglycine
DNA	Deoxy nucleic acid
DSM-5	Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders Fourth Edition
DTT	Discrete Trial Training
ECT	Electroconvulsive therapy
EIBI	Early Intensive Behavioral Intervention

et al	And others
F	Analysis of Variance
FDA	Food and Drug Administration
FMR1	Fragile X mental retardation 1
H.S	highly significant
HBOT	Hyperbaric Oxygen Therapy
LC-NA	Locus Coeruleus–Noradrenergic System
M.S	Mean of Square
MECP2	Methyl CpG binding protein 2
MGluR	Imetabotropic glutamate receptor
MNS	Mirror neuron system
N.S	No significant
Obs.	Observed
P	Probability
PDD	Pervasive Developmental Disorders
PDD-NOS	pervasive developmental disorder not otherwise specified
PRT	Pivotal Response Training
PUFA	polyunsaturated fatty acids
RBS-R	Repetitive Behavior Scale-Revised
RCTs	randomized controlled trials
RNA	Ribonucleic acid
S	Significant
SD	Standard Deviation
Spss	Statistical Package of Social Sciences

SS	Summation of Square
T	t-test
VBI	Verbal Behavior Intervention
$\overline{\mathbf{X}}$	Mean
%	Percentage

Chapter One

Introduction

Chapter One

Introduction

1.1 Introduction:

Autism spectrum disorder was first described in 1943 by the American child psychologist, Leo Kanner. He presented 11 children whose behaviors' were obviously different from those of others. Kanner suspected that they had an inborn feature which had prevented their regular social contacts (Surmen, et al., 2015).

Autism terms from the Greek word "auto" means "alone" officially presented by Kanner's 1943. Clinical name, autism or autism spectrum disorders (ASD), is a complex disorder involves abnormal nervous system development (Razali, et al., 2013).

Autism is a disorder of neural development, characterized by impaired social interaction and communication, with restricted repetitive behaviors. Onsets of this condition at birth or within the first two and a half years of life (Arif, et al., 2013).

Although behavioral differences in children and become clearer before age 2 years in most of them, usually diagnosed in 3 years old or more (Mandell, et al., 2005).

Even though the etiology and pathogenesis of ASD is not fully recognized and fully clarified, various genetic, prenatal, early postnatal, microbiological, biochemical and environmental factors have been implicated in the etiopathogenesis of autism. (Surmen, et al., 2015).

Autism have behavioral, medical, and psychological effects that found to be connected to nutrition, many children with autism have an

undeveloped gastrointestinal tract leading to feeding behaviors such as constipation, regurgitation, rumination and selective eating. The underdeveloped gastrointestinal tract has thin mucosa lining, allowing food molecules to be absorbed in the blood stream prematurely it also causes inflammation and irritation. Behaviors may be a result of irritability due to inflammation and difficulty digesting food. The most common nutrient deficiencies found in children with Autism include vitamin A, vitamin C, thiamin, riboflavin, niacin, folic acid, vitamin B6, vitamin B12, calcium and iron. These missing vitamins and minerals exacerbate feeding behaviors as well as cause a decline in overall health (Abd El- haliem, et al., 2013).

Autism sufferers may have different signs and symptoms, that's why most of the healthcare provider thinks autism as a spectral disorder . Some autism sufferers use to have no eye contacts and don not like hugs and smile .Children may have varying verbal capabilities, fluctuating between nonverbally to advanced speech as well as intellectuality may vary from mental retardation to superior intellectuality . Some autism sufferers may show typical advancement in specific skills and may even show excel performance in specific areas like music, art and puzzles. However, generally Autistics often spend more time in solitary play (Ullah, et al., 2015).

Autism can present in all races, social status, religions and classes of people. It can occur in any child and family, so far the main causes of this disorder unknown that is why their is no medical cure completely . The number of children with ASDs have increased during the past decade, and prevalence of autism had risen dramatically, based on

(Centers for Disease Control, and Prevention) CDC estimates from 2012 autism is seen in 1 of every 88 children (Murray, et al., 2013).

Not all children with autism are mentally incapable; some of them could be smarter than normal children. However, in many cases, autistic children tend to have behavioral problems. Some of the characteristics among the autistic children can present severe problems for parents (Jiar, and Xi Lu, 2012).

Recently, diagnosis of autism has been more frequently made. Early diagnosis is quiet important with respect to rehabilitation alternatives, and long term responses, nurses awareness and knowledge about Autism spectrum disorders utmost important to identify the early diagnosis of children with ADS (Murray, et al., 2013).

1.2 Importance of the Study :

Though the number of autistic children in the world is quite substantial, yet the levels of awareness about autism is still very low, especially in developing countries . Early detection is important because early intervention services may be more effective in children with Autism than in children with other developmental disabilities (Upendra, 2013).

The prevalence of autism is about (1–2) per 1,000 people worldwide .however, the Centers for Disease Control and Prevention reports approximately (9) per 1,000 children in the United States are diagnosed with autism spectrum disorder , as a development brain disorder in children, is still not getting appropriate attention. There are lots of gaps understanding of autism (Abbas, 2013).

The researcher realizes that nurses must understand the various aspect of autism spectrum disorder because they deal with patients directly, and early detection help to early diagnosis and intervention , that is way it is important to conduct this study among this important segment of population in community and hospital, especially their is no previous study conducted about this important issue in our region in order to high light some aspect of this issue .

1.3 Problem Statement:

Assessment of Nurse's Awareness about Autism Spectrum Disorder in pediatric wards at Kirkuk public hospitals .

1.4 Objectives of the Study:

1.4.1 General Objective:

To assess Nurse's Awareness about Autism Spectrum Disorder in pediatric wards at Kirkuk Public Hospitals

1.4.2 Specific Objectives:

1) To describe the socio-demographic characteristics of nurses who work in pediatric wards.
2) To assess the nurses awareness level about autism spectrum disorder.
3) To find out the relationship between Nurses awareness level about Autism Spectrum Disorder and some related variables such as (age, gender, place of work ,educational level , years of employment in pediatric ward, if he or she has a close relative with autism spectrum disorder ,and number of autistic child that he or she provides care for them) .

1.5 Definitions of Terms:

1.5. 1 Assessment:

1.5.1a.Theoretical Definition:

"The act of judging or deciding the amount value quality or importance of something or the judgment or decision that is made"(Oxford University Press, 2016).

1.5.1b.Operational Definition:

Process of data collection concerning knowledge of nurses who serve in pediatric wards about autism spectrum disorder .

1.5.2 Nurses:

1.5.2a.Theoretical Definition:

"Nurse is a person who has completed a program of basic, generalized nursing education and is authorized by the appropriate regulatory authority to practice nursing in his or her country" (International Council of Nurses, 2015).

1.5.2b.Operational Definition:

The provider of nursing care whom serve in the pediatric wards at Public Hospital in Kirkuk city.

1.5.3 Awareness:

1.5.3a.Theoretical Definition:

"Knowledge that something exists or understanding of a situation or subject at the present time based on information or experience" (Cambridge University Press, 2016).

1.5.3b.Operational Definition:

It is appreciation and understanding of nurses who work in pediatric ward about Autism spectrum disorders.

1.5.4 Autism Spectrum Disorders:

1.5.4 a. Theoretical Definition:

"Autism Spectrum Disorders is characterized by impairments in reciprocal social interaction and communication and by the presence of repetitive, inflexible behavior "(Zwaigenbaum, et al., 2009).

1.5.4 b. Operational Definition:

Autism Spectrum Disorders is a deficit of social interaction and communication, with restricted repetitive patterns of behavior.

1.5.5 Pediatric Wards:

1.5.5 a. Theoretical Definition:

A ward is a wing of a Hospital, specialized for a child patient, who is dependent upon the care and support of an appointed guardian (LoveToKnow Corp, 2016).

1.5.5 b. Operational Definition:

A section, department, floor, or room of a Hospital set aside for a particular caring of children.

Chapter Two

Review of Literature

Chapter Two

Review of Literature

This chapter deals with literatures related to the study and it was categorized into two parts as follows:

I: Part one : that focuses on review of literature related to Autism Spectrum Disorders.

II: Part two: that focuses on review of literatures related to previous studies .

I: Part One:

2.1 History of Autism:

The word autism originally comes from the Greek word "autos" meaning (self) the earliest known documented case of autism was in the court case of Hugh Blair in 1747, Blair's younger brother appeared in court for a decision on Hugh's mental capacity to contract a marriage. He successfully petitioned the annulment of his marriage so that he can gain his brothers inheritance. Hugh's argument was that his brother was mentally unstable. There was no proof that Hugh had autism but there was clear evidence that he showed traits of autism (Atkins,2011).

A Swiss psychiatrist, named Eugen Bleuler first used the term in 1911. He described the symptoms of mental illnesses into a category. The term was then confused with emotional problems and schizophrenia until 1943. During the 1940 the two pioneers Leo Kanner and Hans Asperger described children with the characteristics we recognize today as being autistic. Autistic became autism in 1943 when Psychiatrist Leo Kanner

identified it as a distinct neurological condition without a specific cause. At that time Kanner invented a new diagnostic category called (Early Infantile Autism) sometimes referred to as the Kanner Syndrome (Wolff, 2004).

In 1944, Hans Asperger, an Austrian Pediatrician in Vienna, published a 5 doctoral thesis and described patients also using the term "autistic." He and Kanner both described similar characteristics of impaired communication and social interaction. Although both doctors described a broad range of symptoms, it was Kanner's description that became the most widely recognized. The term Asperger's syndrome" became worldwide when it was made public in 1981, as a condition previously described by Hans Asperger (Atkins, 2011).

2.2 Autism Spectrum Disorder (ASD):

Is a complex developmental disorder that can cause problems with thinking, feeling, language and the ability. It is a neurological disorder, which means it affects the functioning of the brain. The effects of autism and the severity of symptoms are different in each person (American Psychiatric Association, 2016).

2.3 Etiology:

The etiology of autism spectrum disorder has been a widely debated issue for several decades. However, the exact cause of autism is still unknown (Russell, et al., 2009) and (Marcdante , and Kliegman , 2014) .

The are many researcher suggested that ASD may be caused by genetic factors or environmental and may be a combination of three factors, genetic factors, environmental factors and neurological development factors (Glasson, et al., 2004).

This wide umbrella of factors has caused uncertainty among parents and family members and led to deduce their own etiology. Some parents believe that ASD is caused by a combination of biological and environmental factors (Kochel and Myers, 2005).

While many others felt that there is a significant relationship between vaccines and autism spectrum disorder although many studies around the world have shown that there is no link between vaccines and autism (Russell , et al., 2009).

However the many risk factors have been identified in the research literature that may contribute to their development. These risk factors include genetics, prenatal and perinatal factors, neuroanatomical abnormalities, and environmental factors. It is possible to identify general risk factors, but much more difficult to pinpoint specific factors. Many other causes have been proposed, such as childhood immunizations, but numerous epidemiological studies have shown no scientific evidence supporting any link between vaccinations and autism (Tager-Flusberg, 2010) .

2.3.1 Genetic :

Genetic factors play a role in the etiology of autism and other pervasive developmental disorders. Studies have consistently found that the prevalence of autism in siblings of autistic children is approximately

15 to 30 times greater than the rate in the general population (Ghaziuddin,2005).

In addition, other research suggests that there is a much higher concordance rate among monozygotic twins compared to dizygotic twins. It appears that there is no single gene that can account for autism. Instead, there seem to be multiple genes involved, each of which is a risk factor for components of the ASD (Chaste and Leboyer,2012).

However, in spite of the strong heritability, most cases of ASD occur sporadically with no recent evidence of family history. It has been hypothesized that spontaneous de novo mutations in the father's sperm or mother's egg contribute to the likelihood of developing autism. There are two lines of evidence that support this hypothesis. Firstly, individuals with autism have significantly reduced fecundity, they are 20 times less likely to have children than average, thus curtailing the persistence of mutations in ASD genes over multiple generations in a family. Secondly, the likelihood of having a child develop autism increases with advancing paternal age, and mutations in sperm gradually accumulate throughout a man's life (Uher,2009).

The first genes to be definitively shown to contribute to risk for autism were found in the early 1990s by researchers looking at gender-specific forms of autism caused by mutations on the X chromosome. An expansion of the CGG trinucleotide repeat in the promoter of the gene FMR1 in boys causes fragile X syndrome, and at least 20% of boys with this mutation have behaviors consistent with autism spectrum disorder. Mutations that inactivate the gene MECP2 cause Rett syndrome, which is associated with autistic behaviors in girls, and in boys the mutation is embryonic lethal (Hatton, et al., 2006).

The role of de novo mutations in ASD first became evident when DNA microarray technologies reached sufficient resolution to allow the detection of copy number variation (CNV) in the human genome. CNVs are the most common type of structural variation in the genome, consisting of deletions and duplications of DNA that range in size from a kilo base to a few mega bases. Microarray analysis has shown that de novo CNVs occur at a significantly higher rate in sporadic cases of autism as compared to the rate in their usually developing siblings and unrelated controls (Seba,et al., 2004).

These early gene and CNV findings have shown that the cognitive and behavioral features associated with each of the underlying mutations is variable. Each mutation is itself associated with a variety of clinical diagnoses, and can also be found in a small percentage of individuals with no clinical diagnosis. thus the genetic disorders that comprise autism are not autism-specific. The mutations themselves are characterized by considerable variability in clinical outcome and typically only a subset of mutation carriers meet criteria for autism. This variable expressivity results in different individuals with the same mutation varying considerably in the severity of their observed particular trait (Stefansson, et al.,2013).

2.3.2 Epigenetics :

The term epigenetics was first coined in the 1940s by British embryologist and geneticist "Conrad Waddington" who described it as: “the interactions of genes with their environment . Epigenetic factors can impact large scale “omics” type cellular processes transcriptome, RNAome, proteome and metabalome (Siniscalco, et al., 2013).

2.3.3 Prenatal Environment:

Autism risk is associated with several prenatal risk factors including advanced age in parent, diabetes, bleeding, and the mother's psychological use of drugs during pregnancy. Autism has been linked to birth defect agents acting during the first eight weeks of pregnancy although these cases are rare (Gardener, et al., 2009).

2.3.3.A Infectious Processes:

Prenatal viral infection has been called the principal non genetic cause of autism. Prenatal exposure to rubella or cytomegalovirus activates the mother's immune response and greatly increases the risk for autism. Congenital rubella syndrome is the most convincing environmental cause of autism. Infection associated immunological events in early pregnancy may affect neural development more than infections in late pregnancy,(Schaefer, and Mendelsohn, 2013).

2.3.3.B Environmental Agents:

Teratogens are environmental agents that cause birth defects. Some agents that are theorized to cause birth defects have also been suggested as potential autism risk factors. These include exposure of the embryo to valproic acid, thalidomide or misoprostol, ethanol (grain alcohol) increases autism risk, as part of fetal alcohol syndrome or alcohol-related birth defects . All known teratogens appear to act during the first eight weeks from conception, and though this does not exclude the possibility that autism can be initiated or affected later, it is strong evidence that autism arises very early in development (Chomiak, et al., 2013).

2.3.3.C Other Maternal Conditions:

Thyroid problems that lead to thyroxine deficiency in the mother in weeks 8–12 of pregnancy have been postulated to produce changes in the fetal brain leading to autism. Thyroxine deficiencies can be caused by inadequate iodine in the diet and by environmental agents that interfere with iodine uptake or act against thyroid hormones. Possible environmental agents include flavonoids in food, tobacco smoke, and most herbicides . This hypothesis has not been tested (Román 2007).

Diabetes in the mother during pregnancy is a significant risk factor for autism a 2009 meta-analysis found that gestational diabetes was associated with a twofold increased risk of autism , also found that maternal diabetes was significantly association with an increased risk of ASD. Although diabetes causes metabolic and hormonal abnormalities and oxidative stress, no biological mechanism is known for the association between gestational diabetes and autism risk. Maternal obesity during pregnancy may also increase the risk of autism, (Gardener, et al., 2009).

2.3.4 Perinatal Environment:

Autism is associated with some perinatal and obstetric conditions. In 2007 review of risk factors of autism found associated obstetric conditions that included (low birth weight) and gestation duration and hypoxia during childbirth . This association does not demonstrate a causal relationship . (Kolevzon, et al., 2007).

2.3.5 Postnatal Environment:

A wide variety of postnatal contributors to autism have been proposed, including gastrointestinal or immune system abnormalities,

allergies, and exposure of children to drugs, vaccines, infection, certain foods, or heavy metals. Proof of these risk factors is anecdotal and not confirmed by reliable studies (Rutter, 2005).

2.3.5.A Amygdala Neurons:

This theory hypothesizes that an early developmental failure involving the amygdala cascades on the development of cortical areas that mediate social perception in the visual domain. The fusiform face area of the ventral stream is implicated. The idea is that it is involved in social knowledge and social cognition, and that the deficits in this network are instrumental in causing autism (Schultz, 2005).

2.3.5.B Autoimmune Disease:

The auto antibodies that target the brain or elements of brain metabolism may cause or exacerbate autism. It is related to the maternal infection theory, except that it postulates that the effect is caused by the individual's own antibodies, possibly due to an environmental trigger after birth. It is also related to several other hypothesized causes; for example, viral infection has been hypothesized to cause autism via an autoimmune mechanism (Ashwood , and Van de Water, 2004).

Interactions between the immune system and the nervous system begin early during embryogenesis, and successful neurodevelopment depends on a balanced immune response. It is possible that aberrant immune activity during critical periods of neurodevelopment is part of the mechanism of some forms of ASD. A small percentage of autism cases are associated with infection, usually before birth. Results from immune studies have been contradictory. Some abnormalities have been found in specific subgroups, and some of these have been replicated. It is not

known whether these abnormalities are relevant to the pathology of autism, for example, by infection or autoimmunity, or whether they are secondary to the disease processes. As autoantibodies are found in diseases other than ASD, and are not always present in ASD, the relationship between immune disturbances and autism remains unclear and controversial (Stigler, et al., 2009).

2.3.5.C Endogenous Opiate Precursor Theory:

In 1979, Jaak Panksepp suggested a link between autism and opiates, noting that injecting of minute quantities of opiates in laboratory animals young stimulate similar symptoms to those observed in children with autism (Panksepp, 1979).

Opiate theory hypothesizes that autism is caused by a digestive disorder present from birth which causes gluten (present in wheat-derived foods) and casein (present in dairy products) to be converted to the opioid peptides gliadorphin (aka gluteomorphin) and casomorphin. According to the theory, exposure to these opiate compounds in young children interferes with normal neurological development by dulling sensory input. Lacking sufficient sensory input, the developing brain attempts to artificially generate the auditory, vestibular, visual, and tactile input on its own. This attempt at generating input manifests itself as behaviors common to autism, such as grunting or screaming (auditory), spinning or rocking back and forth (vestibular), preoccupation with spinning objects or waving of the fingers in front of the eyes (visual), and hand flapping or self-injury (tactile) (Shattock, and Whiteley, 2002).

2.3.5.D Gastrointestinal Disturbances:

Parents have reported gastrointestinal (GI) disturbances in autistic children, and several studies have investigated possible associations between autism and the gut, but the results so far are inconclusive. There is some research evidence that autistic children are more likely to have GI symptoms than typical children. After a preliminary 1998 study of three children with ASD treated with secretin infusion reported improved GI function and dramatic improvement in behavior. (McElhanon, et al., 2014).

2.3.5.E Lack of Vitamin D:

There is limited evidence for that vitamin D deficiency plays a role in autism, and it may be biologically plausible, (Eyles, et al., 2013).

2.3.5. F Lead:

Lead poisoning has been suggested as a possible risk factor for autism, as the lead blood levels of autistic children has been reported to be significantly higher than typical .The atypical eating behaviors of autistic children, along with habitual mouthing and pica, make it hard to determine whether increased lead levels are a cause or a consequence of autism (Zafeiriou, et al., 2007).

2.3.5.G Locus Coeruleus–Noradrenergic System:

The theory assumed that autistic behaviors depend at least in part on a developmental dysregulation that results in impaired function of the locus coeruleus–noradrenergic (LC-NA) system. The LC-NA system is heavily involved in arousal and attention ,e.g it is related to the brain's acquisition and use of environmental cues (Mehler and Purpura, 2009) .

2.3.5.H Mercury:

This theory assumed that autism is associated with mercury poisoning, based on perceived similarity of symptoms and reports of mercury or its biomarkers in some autistic children. This view has gained little traction in the scientific community as the typical symptoms of mercury toxicity are significantly different from symptoms seen in autism (Nelson , and Bauman 2003).

The principal source of human exposure to organic mercury is via fish consumption and for inorganic mercury is dental amalgams. Other forms of exposure, such as in cosmetics and vaccines, also occur. The evidence so far is indirect for the association between autism and mercury exposure after birth, Also the meta-analysis published in 2007 concluded that there was no link between mercury and autism (Ng, et al., 2007) .

2.3.5.I Oxidative Stress:

The toxicity and oxidative stress may cause autism in some cases. Evidence includes genetic effects on metabolic pathways, reduced antioxidant capacity, enzyme changes, and enhanced biomarkers for oxidative stress; however, the overall evidence is weaker than it is for involvement oxidative stress with disorders such as schizophrenia (Ng, et al., 2008).

One theory is that stress damages Purkinje cells in the cerebellum after birth, and it is possible that glutathione is involved. Autistic children have lower levels of total glutathione, and higher levels of oxidized glutathione. Based on this theory antioxidants may be beneficial for the treatment of autism (Kern and Jones, 2006).

2.3.5.J Refrigerator Mother:

The terms refrigerator mother were coined around 1950 as a label for mothers and parents of children diagnosed with autism or schizophrenia. When Leo Kanner first identified autism in 1943, he noted the lack of warmth among the parents of autistic children. Parents, particularly mothers, were often blamed for their children's atypical behavior, which included rigid rituals, speech difficulty, and self-isolation. Kanner later rejected the "refrigerator mother" theory, instead focusing on brain mechanisms. Instrumental in framing the refrigerator mother theory, it was "Bruno Bettelheim" a University of Chicago professor and child development specialist, facilitated its widespread acceptance both by the public and by the experts in the medical establishment in the 1950s and 1960s. In the absence of any biomedical explanation of autism's cause after the telltale symptoms were first described by scientists, Bettelheim and other leading psychoanalysts championed the notion that autism was the product of mothers who were cold, distant and rejecting, thus depriving their children of the chance to "bond properly" (Millon, et al., 2010).

2.3.5 K Vaccines:

Scientific studies refuted a causal link between vaccines and autism However, some parents believe that vaccinations cause autism and therefore delay or avoid immunizing their children under the "vaccine overload" hypothesis that giving many vaccines at once may overwhelm a child's immune system and lead to autism, even though this hypothesis has no scientific evidence and is biologically implausible. Because diseases such as measles can cause severe disabilities and death, the risk

of death or disability for an unvaccinated child is higher than the risk for a child who has been vaccinated (Fombonne, et al., 2006), (Paul, 2009).

2.3.5.L MMR Vaccine:

The initial concerns that vaccines may cause autism were related to the measles, mumps, and rubella vaccine and thimerosal-containing vaccines. In 2004, a comprehensive review by the Institute of Medicine concluded that the evidence favors rejection of possible causal associations between each of these vaccine types and autism. Nonetheless, concerns about a possible link between vaccines and autism, with the latest concern centering on the number of vaccines administered to infants and young children. A recent survey found that parents top vaccine-related concerns included administration of too many vaccines during the first 2 years of life, administration of too many vaccines in a single doctor visit, and a possible link between vaccines and learning disabilities, such as autism (DeStefano, et al., 2013).

2.4 Classification:

A revision to autism spectrum disorder (ASD) was presented in the Diagnostic and Statistical Manual of Mental Disorders version 5(DSM-5), released May 2013 The new diagnosis encompasses previous diagnoses of autistic disorder, Asperger's disorder, childhood disintegrative disorder, and PDD-NOS. Compared with the DSM-4 diagnosis of autistic disorder, the DSM-5 diagnosis of ASD no longer includes communication as a separate criterion, and has merged social interaction and communication into one category (Kulage, et al., 2014).

Rather than categorizing these diagnoses, the DSM-5 has adopted a dimensional approach to diagnosing disorders that fall underneath the

autism spectrum umbrella. Some have proposed that individuals on the autism spectrum may be better represented as a single diagnostic category. Within this category, the DSM-5 has proposed a framework of differentiating each individual by dimensions of severity, as well as associated features (i.e known genetic disorders, and intellectual disability). Another change to the DSM includes collapsing social and communication deficits into one domain. Thus, an individual with an ASD diagnosis will be described in terms of severity of social communication symptoms, severity of fixated or restricted behaviors or interests, and associated features. (Lord, et al., 2014).

Asperger syndrome is closest to autism in signs and likely causes. unlike autism, child with Asperger syndrome have no significant delay in language development, according to the older DSM-4 criteria. (Pervasive Developmental Disorder, Not Otherwise Specified PDD-NOS) is diagnosed when the criteria are not met for a more specific disorder. Some sources also include Rett syndrome and childhood disintegrative disorder, which share several signs with autism but may have unrelated causes; other sources differentiate them from ASD, but group all of the above conditions into the pervasive developmental disorders. Autism, Asperger syndrome, and PDD-NOS are sometimes called the autistic disorders instead of ASD, whereas autism itself is often called autistic disorder, childhood autism, or infantile autism (Freitag, 2007).

Although the older term pervasive developmental disorder and the newer term autism spectrum disorder largely or entirely overlap the former was intended to describe a specific set of diagnostic labels, whereas the latter refers to a postulated spectrum disorder linking various

conditions ASD is a subset of the broader autism phenotype (BAP), which describes individuals who may not have ASD but do have autistic-like traits, such as avoiding eye contact (Klin,2006).

2.5 Pathophysiology:

Autism affects the amygdala,cerebellum, and many other parts of the brain.Unlike many other brain disorders, such as Parkinson's, autism does not have a clear unifying mechanism at either the molecular, cellular, or systems level; it is not known whether autism is a few disorders caused by mutations converging on a few common molecular pathways, or is (like intellectual disability) a large set of disorders with diverse mechanisms. Autism appears to result from developmental factors that affect many or all functional brain systems, and to disturb the timing of brain development more than the final product (Geschwind, 2008).

Neuroanatomical studies and the associations with terato-gens autism's mechanism includes alteration of brain development soon after conception . This anomaly appears to start a cascade of pathological events in the brain that are significantly influenced by environmental factors . Just after birth, the brains of children with autism tend to grow faster than usual, followed by normal or relatively slower growth in childhood. It is not known whether early overgrowth occurs in all children with autism. It seems to be most prominent in brain areas underlying the development of higher cognitive specialization. Hypotheses for the cellular and molecular bases of pathological early overgrowth include the following:

- An excess of neurons that causes local overconnectivity in key brain regions.

- Disturbed neuronal migration during early gestation.
- Unbalanced excitatory–inhibitory networks.
- Abnormal formation of synapses and dendritic spines, for example, by modulation of the neurexin–neuroligin cell-adhesion system, or by poorly regulated synthesis of synaptic proteins. Disrupted synaptic development may also contribute to epilepsy, which may explain why the two conditions are associated(Casanova, 2007).

The immune system is thought to play an important role in autism. Children with autism have been found by researchers to have inflammation of both the peripheral and central immune systems as indicated by increased levels of pro-inflammatory cytokines and significant activation of microglia. Biomarkers of abnormal immune function have also been associated with increased impairments in behaviors that are characteristic of the core features of autism such as deficits in social interactions and communication (Onore, et al., 2012).

Interactions between the immune system and the nervous system begin early during the embryonic stage of life, and successful neurodevelopment depends on a balanced immune response. It is thought that activation of a pregnant mother's immune system such as from environmental toxicants or infection can contribute to causing autism through causing a disruption of brain development. This is supported by recent studies that have found that infection during pregnancy is associated with an increased risk of autism (Lee, et al., 2014).

The relationship of neurochemicals to autism is not well understood; several have been investigated, with the most evidence for the role of serotonin and of genetic differences in its transport. The role of group I metabotropic glutamate receptors (mGluR)in the pathogenesis

of fragile X syndrome. Some data suggests neuronal overgrowth potentially related to an increase in several growth hormones or to impaired regulation of growth factor receptors. Also, some inborn errors of metabolism are associated with autism, but probably account for less than 5% of cases (Manzi, et al., 2008).

The mirror neuron system (MNS) theory of autism hypothesizes that distortion in the development of the MNS interferes with imitation and leads to autism's core features of social impairment and communication difficulties. The MNS may contribute to an individual's understanding of other people by enabling the modeling of their behavior via embodied simulation of their actions, intentions, and emotions (Williams, 2008) .

Study have tested this hypothesis by demonstrating structural abnormalities in MNS regions of individuals with ASD, delay in the activation in the core circuit for imitation in individuals with Asperger syndrome, and a correlation between reduced MNS activity and severity of the syndrome in children with ASD. (Hamilton, 2008).

From studies based on event-related potentials, transient changes to the brain's electrical activity in response to stimuli, there is considerable evidence for differences in autistic individuals with respect to attention, orientation to auditory and visual stimuli, novelty detection, language and face processing, and information storage several studies have found a preference for nonsocial stimuli e.g, magneto encephalography studies have found evidence in children with autism of delayed responses in the brain's processing of auditory signals (Jeste and Nelson, 2009).

2.6 Clinical Feature:

Autism is a highly variable neurodevelopmental disorder that first appears during infancy or childhood, symptoms gradually begin after the age of six months, become established by age two or three years, and tend to continue through adulthood, although often in more muted form. It is distinguished not by a single symptom, but by a characteristic triad of symptoms impairments in social interaction; impairments in communication and restricted interests and repetitive behavior. Other aspects, such as atypical eating, are also common but are not essential for diagnosis. (Rapin and Tuchman,2008) .

2.6.1 Social Development:

Social deficits distinguish autism spectrum disorders from other developmental disorders. children with autism have social impairments and often lack the intuition about others that many people take for granted. Noted autistic Temple Grand in described her inability to understand the social communication of neurotypicals, or people with normal neural development. Unusual social development becomes apparent early in childhood. Autistic infants show less attention to social stimuli, smile and look at others less often, and respond less to their own name. Autistic toddlers differ more strikingly from social norms e.g, they have less eye contact and turn taking, and do not have the ability to use simple movements to express themselves, such as pointing at things. Three- to five year old children with autism are less likely to exhibit social understanding, approach others spontaneously ,imitate and respond to emotions, communicate nonverbally, and take turns with others. (Sigman, et al., 2004).

Most children with autism display moderately less attachment security than neurotypical children, although this difference disappears in children with higher mental development or less severe ASD. Older children and adults with ASD perform worse on tests of face and emotion recognition although this may be partly due to a lower ability to define a person's own emotions (Bird and Cook, 2013).

Children with high functioning autism suffer from more intense and frequent loneliness compared to non-autistic peers, despite the common belief that children with autism prefer to be alone. Making and maintaining friendships often proves to be difficult for those with autism. For them, the quality of friendships, not the number of friends, predicts how lonely they feel. Functional friendships, such as those resulting in invitations to parties, may affect the quality of life more deeply. There are many anecdotal reports, but few systematic studies, of aggression and violence in individuals with ASD. The limited data suggest that, in children with intellectual disability, autism is associated with aggression, destruction of property, and tantrums (Burgess and Gutstein, 2007).

2.6.2 Communication

About a third to a half of individuals with autism do not develop enough natural speech to meet their daily communication needs. Differences in communication may be present from the first year of life, and may include delayed onset of babbling, unusual gestures, diminished responsiveness, and vocal patterns that are not synchronized with the caregiver. In the second and third years, children with autism have less frequent and less diverse babbling, consonants, words, and word combinations their gestures are less often integrated with words. (Ghaziuddin, 2005).

Children with autism are less likely to make requests or share experiences, and are more likely to simply repeat others' words (echolalia) or reverse pronouns. Joint attention seems to be necessary for functional speech, and deficits in joint attention seem to distinguish infants with ASD for example, they may look at a pointing hand instead of the pointed at object, and they consistently fail to point at objects in order to comment on or share an experience. Children with autism may have difficulty with imaginative play and with developing symbols into language (Landa, 2007).

The high functioning children with autism aged 8–15 performed equally well as, and adults better than, individually matched controls at basic language tasks involving vocabulary and spelling. Both autistic groups performed worse than controls at complex language tasks such as figurative language, comprehension and inference. As people are often sized up initially from their basic language skills, these studies suggest that people speaking to autistic individuals are more likely to overestimate what their audience comprehends (Williams, Goldstein and Minshew, 2006).

2.6.3 Repetitive Behavior:

Autistic individuals display many forms of repetitive or restricted behavior, which the Repetitive Behavior Scale-Revised(RBSR) categorizes as follows.

- Stereotypy is repetitive movement, such as hand flapping, head rolling, or body rocking.
- Compulsive behavior is intended and appears to follow rules, such as arranging objects in stacks or lines. e.g arranged his toys in a row

- Sameness is resistance to change; for example, insisting that the furniture not be moved or refusing to be interrupted.
- Ritualistic behavior involves an unvarying pattern of daily activities, such as an unchanging menu or a dressing ritual. This is closely associated with sameness and an independent validation has suggested combining the two factors (Johnson and Myers, 2007).
- Restricted behavior is limited in focus, interest, or activity, such as preoccupation with a single television program, toy or game.
- Self-injury includes movements that injure or can injure the person, such as eye-poking, skin-picking, hand-biting and head-banging.

No single repetitive or self injurious behavior seems to be specific to autism, but autism appears to have an elevated pattern of occurrence and severity of these behaviors (Bodfish, et al., 2000).

2.6.4 Other Symptoms:

Autistic individuals may have symptoms that are independent of the diagnosis, but that can affect the individual or the family. An estimated 0.5% to 10% of individuals with ASD show unusual abilities, ranging from splinter skills such as the memorization of trivia to the extraordinarily rare talents of prodigious autistic savants (Treffert, 2009).

Many individuals with ASD show superior skills in perception and attention, relative to the general population. Sensory abnormalities are found in over 90% of those with autism, and are considered core features by some, although there is no good evidence that sensory symptoms differentiate autism from other developmental disorders. Differences are greater for under responsivity (for example, walking into things) than for over responsivity (for example, distress from loud noises) or for sensation

seeking (e.g, rhythmic movements) An estimated 60%–80% of autistic child have motor signs that include poor muscle tone (Geschwind, 2009) .

Unusual eating behavior occurs in about three quarters of children with ASD, to the extent that it was formerly a diagnostic indicator. Selectivity is the most common problem, although eating rituals and food refusal also occur; this does not appear to result in malnutrition. Although some children with autism also have gastrointestinal symptoms, there is a lack of published rigorous data to support the theory that children with autism have more or different gastrointestinal symptoms than usual. studies report conflicting results, and the relationship between gastrointestinal problems and ASD is unclear (Buie, et al., 2010).

Parents of children with ASD have higher levels of stress. Siblings of children with ASD report greater admiration of and less conflict with the affected sibling than siblings of unaffected children and were similar to siblings of children with Down syndrome in these aspects of the sibling relationship. However, they reported lower levels of closeness and intimacy than siblings of children with Down syndrome; siblings of individuals with ASD have greater risk of negative well-being and poorer sibling relationships as adults (Orsmond, and Seltzer, 2007).

2.7 Diagnosis:

Some children with autism are diagnosed by the time they are two years of age. For others, the symptoms are not recognized until they are older. Autism is a medical diagnosis that requires a full examination by a qualified physician. The medical evaluation may be completed by a pediatrician, psychiatrist, or a team of medical providers. This evaluation will determine if the child meets the medical or psychological criteria for autism. While many physicians are hesitant to diagnose a child younger

than two, there are benefits to an early diagnosis. The sooner a child starts receiving treatment, the better his prognosis is likely to be. A second evaluation, given by educational personnel will determine if the child is eligible for services, such as early intervention services or speech therapy. Most states provide services to children with special needs from birth through age 21(Willis, 2006).

There is no single test available to diagnose autism spectrum disorder (ASD). Instead, diagnosis is based on watching how a child plays and interacts with others (current development), interviewing parents, and reviewing the child's developmental history (past development). By using a combination of tools, professionals can diagnose a child with ASD, and determine where on the spectrum the child falls. When diagnosing ASD, professionals like psychiatrists and psychologists will refer to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). This tool breaks down the signs and symptoms of ASD into categories. It also states how many of these must be present in each category to confirm a diagnosis of ASD in children (Appendix E)(Barton, et al., 2013).

2.7. 1 Current Diagnostic Criteria for ASD and Main Changes Between DSM-IV-TR and DSM-5 :

Some limitations of the DSM-IV-TR included the lack of reliability and robustness of the autism subtypes. One of the most notable concerns was the validity of the PDD subcategories; separate diagnoses (e.g., high functioning autistic disorder vs. Asperger's disorder) were inconsistently applied across different clinics and centers The validity of some diagnoses, such as (Childhood Disintegrative Disorder CDD), was another weakness of the DSM-IV-TR whether CDD should be considered

a distinct category had been debated. Vague criteria could lead to a high false positive rate and decrease specificity of the criteria (Worley and Matson, 2012).

In response to such criticism, the fifth edition of the DSM (DSM-5) published in May 2013 included significant modifications to the diagnostic criteria for ASD with the hope of making the autism diagnosis more specific, reliable, and valid. One major change was the merging of a set of PDD (e.g., autistic disorder, Asperger's disorder, and PDD-NOS) into one umbrella term, "Autism Spectrum Disorder." The DSM-5 committee reasoned that this change would help clinicians be more precise in their diagnoses and prevent different clinicians from giving different diagnoses to the same person . They also reasoned that autism should have a single name since it is characterized by a common set of behaviors .Rett syndrome was removed as a separate disorder with the reasoning that ASD is defined by a set of behaviors, not by etiology (Barton, et al., 2013).

Moreover, CDD was subsumed under a broader ASD category. Another critical change was that the new criteria were divided into two domains, social communication/interaction and restricted and repetitive behaviors, instead of three domains in the DSM-IV-TR. To diagnose an individual with ASD, all of the following symptoms must be present in the social communication/interaction domain:(1) difficulties in reciprocating social or emotional interaction (e.g., maintaining conversations and interaction; initiating an interaction; sharing attention, emotions, or interests with others); (2) problems maintaining relationships(e.g., pretend play); and (3) nonverbal communication problems (e.g., eye contact, abnormal posture, facial expressions, tone of voice, and gestures (Worley and Matson, 2012).

Two of the four symptoms in the restricted and repetitive behavior domain must be present: (1) stereotyped or repetitive speech or motor movements; (2) excessive adherence to routines, ritualized behavior, or resistance to change; (3) abnormal restricted interest; and (4) abnormal reactivity to sensory input or atypical sensory interest (a new diagnostic symptom). In addition, the new criteria do not specify the age of onset in ASD that qualify for a diagnosis other than to state "early in developmental period (McPartland, et al., 2012).

The DSM-5 specifies the severity levels within the ASD based on the individual's perceived need for support: level 1 (requiring support), level 2 (requiring substantial support), and level 3 (requiring very substantial support). In addition specifiers, such as with or without intellectual impairments with or without language impairments associated with a known medical or genetic condition or environmental factor associated with another neurodevelopmental, mental or behavioral disorder and with catatonia were included in the DSM-5. Although the DSM-5 may result in increased specificity, even before the changes were finalized, researchers were concerned about its reduced sensitivity. Researchers reported that 30- 47% of individuals diagnosed based on the DSM-IV-TR criteria would lose their ASD diagnosis with the DSM-5 changes (Barton, et al., 2013).

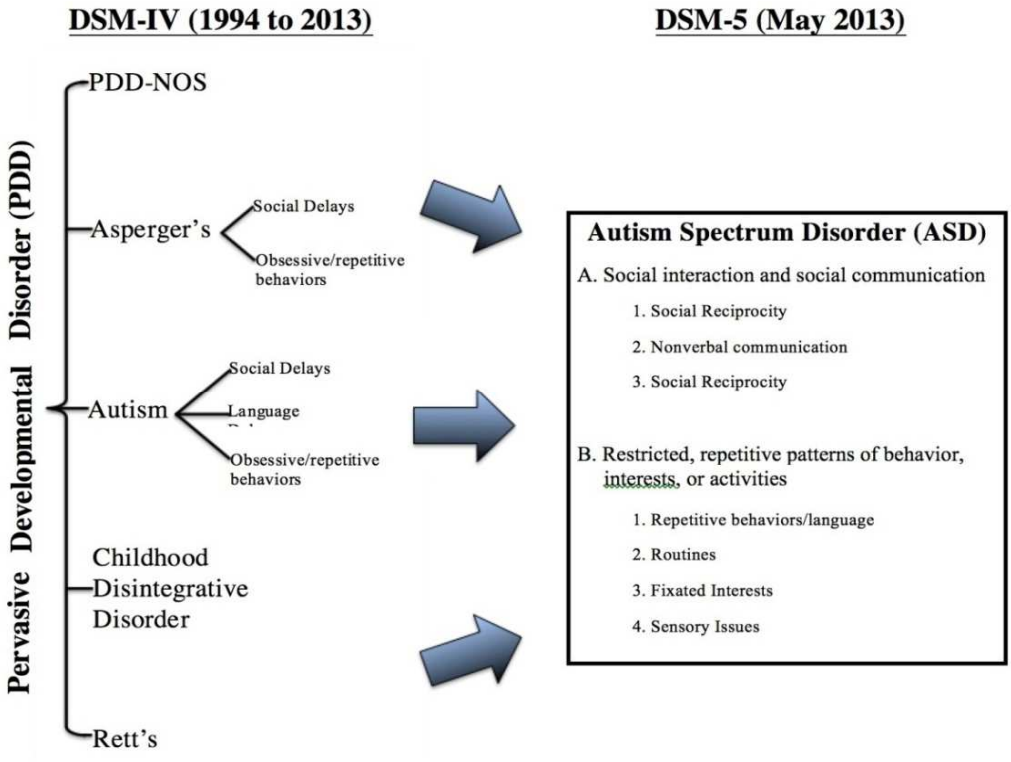


Figure (2.1) The Maim Changes Between DSM-IV-TR and DSM-5 (Great Plains Skeptic, **2016) .**

2.8 Treatment:

There is no cure for ASD until know, however, treatment of ASD is indicative and multimodal. At present there are no treatments for the core symptoms of ASD. Antipsychotics are used for aggression, agitation, irritability, hyperactivity, and self-injurious behavior, Anticonvulsants and lithium can be used for aggression (Marcdante and Kliegman, 2014).

Management training for parents is useful in teaching protocols to help their child learn appropriate behavior. Special educational services should be individualized for the child. Occupational, speech, and physical therapy are often required (Ghaziuddin, 2005).

2.8.1 Types of Treatments:

There are many different types of treatments available. They are categorized as follows :

2.8.1.A Educational Interventions:

2.8.1.A.1 Applied Behavior Analysis (ABA)

According to reports by the American Academy of Pediatrics and the National Research Council, behavior and communication approaches that help children with ASD are those that provide structure direction and organization for the child in addition to family participation (Dillenburger, Keenan, 2009).

A notable treatment approach for child with an ASD is called applied behavior analysis (ABA). ABA has become widely accepted among health care professionals and used in many schools and treatment clinics. ABA encourages positive behaviors and discourages negative behaviors in order to improve a variety of skills. The child's progress is tracked and measured. There are different types of ABA. as shown in Table(2.1):-

Table (2.1) Different Types of ABA. Following are some examples.

N	**Type of ABA**	**Explains**
1-	Discrete Trial Training (DTT)	DTT is a style of teaching that uses a series of trials to teach each step of a desired behavior or response. Lessons are broken down into their simplest parts and positive reinforcement is used to reward correct answers and behaviors. Incorrect answers are ignored.
2-	Early Intensive Behavioral Intervention (EIBI)	This is a type of ABA for very young children with an ASD, usually younger than five and often younger than three.
3-	Pivotal Response Training (PRT)	PRT aims to increase a child's motivation to learn, monitor his own behavior, and initiate communication with others. Positive changes in these behaviors should have widespread effects on other behaviors.
4-	Verbal Behavior Intervention (VBI)	VBI is a type of ABA that focuses on teaching verbal skills

(Eikeseth, 2009)

2.8.1.A.2 Communication Interventions:

The inability to communicate, verbally or non-verbally, is a core deficit in Autism. Children with Autism are often engaged in repetitive activity or other behaviors because they cannot convey their intent any other way. They do not know how to communicate their ideas to caregivers or others. Helping a child with Autism learn to communicate their needs and ideas is absolutely core to any intervention. Children with Autism require intensive intervention to learn how to communicate their intent. Communication interventions fall into two major categories.

Social skills have been shown to be effective in treating children with autism. Interventions that attempt to improve communication are commonly conducted by speech and language therapists, (Schlosser and Wendt, 2008).

2.8.1.B Environmental Enrichment:

Environmental enrichment is concerned with how the brain is affected by the stimulation of its information processing provided by its surroundings including the opportunity to interact socially. Brains in richer more-stimulating environments, have increased numbers of synapses and the dendrite arbors upon which they reside are more complex. This effect happens particularly during neurodevelopment, but also to a lesser degree in adulthood. With extra synapses there is also increased synapse activity and so increased size and number of glial energy-support cells. Capillary vasculation also is greater to provide the neurons and glial cells with extra energy (Chisholm, et al., 2015).

2.8.1.B.1 Massage Therapy

A review of massage therapy as a symptomatic treatment of autism found limited evidence of benefit. Few high quality studies, concluded that their is no efficacy of massage of therapy (Lee, et al., 2013).

2.8.1.B.2 Music:

Music therapy uses the elements of music to let people express their feelings and communicate. A study review found that music therapy may help in social interactions and communication (Gold, et al., 2006).

2.8.1.C Parent Mediated Interventions:

Parent mediated interventions offer support and practical advice to parents of autistic children. Parent training can lead to reduced maternal depression, improved maternal knowledge of autism and communication style, and improved child communicative behavior. Early detection of ASD in children can often occur before a child reaches the age of three years old. Methods that target early behavior can influence the quality of life for a child with ASD. Parents can play important role for this detection by learn methods of interaction and behavior management to assist their child's development (McConachie and Diggle, 2007).

2.8.1.D Medical Management:

Drugs supplements or diets are often used to alter physiology in an attempt to relieve common autistic symptoms such as seizures sleep disturbances irritability and hyperactivity that can interfere with education or social adaptation. There is plenty of anecdotal evidence to support medical treatment many parents who try one or more therapies report some progress, and ability to return to mainstream education after treatment, with dramatic improvements in health and wellbeing. (Levy and Hyman, 2005).

2.8.1.D. 1 Prescription Medication:

Many medications are used to treat problems associated with ASD. More than half of U.S. children diagnosed with ASD are prescribed psychoactive drugs or anticonvulsants, with the most common drug classes being antidepressants stimulants and antipsychotics. Only the antipsychotics have clearly demonstrated efficacy. Research has focused on atypical antipsychotics especially risperidone, which has the largest amount of evidence that consistently shows improvements in

irritability self injury aggression and tantrums associated with ASD. Risperidone is approved by the Food and Drug Administration (FDA) for treating symptomatic irritability in autistic children and adolescents. In short term trials up to six months most adverse events were mild to moderate with weight gain drowsiness and high blood sugar requiring monitoring long term efficacy and safety have not been fully determined.It is unclear whether risperidone improves autism's core social and communication deficits. The FDA's decision was not recommended for autistic children with mild aggression and explosive behavior (Posey, et al., 2008).

2.8.1.D. 2 Dietary Supplements:

Many parents give their children dietary supplements in an attempt to treat autism or to alleviate its symptoms. . A some studies support the use of vitamin B6 in combination with magnesium at high doses but the evidence was equivocal and there view noted the possible danger of fatal hypermagnesemia (Rossignol, 2009).

Dimethylglycine (DMG) is hypothesized to improve speech and reduce autistic behaviors, and is a commonly used supplement. Two double blind placebo controlled studies found no statistically significant effect on autistic behaviors, and reported few side effects. No peer reviewed studies have addressed treatment with the related compound trimethylglycine. Vitamin C decreased stereotyped behavior. (Levy and Hyman, 2005).

Melatonin is sometimes used to manage sleep problems in developmental disorders. Adverse effects are generally reported to be mild including drowsiness, headache, dizziness and nausea. however an increase in seizure frequency is reported among susceptible children.

Several small randomized controlled trials (RCTs) have indicated that melatonin is effective in treating insomnia in autistic children (Malow, et al., 2012).

Although omega-3 fatty acids, which are polyunsaturated fatty acids (PUFA) are a popular treatment for children with ASD there is very little high quality scientific evidence supporting their effectiveness (Bent, et al., 2009).

2.8.1.D. 3 Diets:

Atypical eating behavior occurs in about three-quarters of children with ASD to the extent that it was formerly a diagnostic indicator. Selectivity is the most common problem, although eating rituals and food refusal also occur this does not appear to result in malnutrition.(Erickson, et al., 2005).

In the 1990s it was hypothesized that autism can be caused or aggravated by opioid peptides like casomorphine that are metabolic products of gluten and casein. Based on this hypothesis, diets that eliminate foods containing either gluten or casein or both are widely promoted, and many testimonials can be found describing benefits in autism related symptoms notably social engagement and verbal skills. (Millward,et al., 2008).

However the Other elimination of diets have also been proposed targeting salicylates ,food dyes ,yeast ,and simple sugars. No scientific evidence has established the efficacy of such diets in treating autism in children. An elimination diet may create nutritional deficiencies that harm overall health unless care is taken to assure proper nutrition (Angle, et al., 2007).

2.8.1.D.4 Electroconvulsive Therapy:

Studies indicate that 12–17% of adolescents and young adults with autism satisfy diagnostic criteria for catatonia which is loss of or hyperactive motor activity. Electroconvulsive therapy (ECT) has been used to treat cases of catatonia and related conditions in people with autism. However no controlled trials have been performed of ECT in autism, and there are serious ethical and legal obstacles to its use (Dhossche, et al., 2009).

2.8.1.D.5 Hyperbaric Oxygen Therapy:

One small 2009 study of autistic children found that 40 hourly treatments of 24% oxygen at 1.3 atmospheres provided significant improvement in the children's behavior immediately after treatment sessions but this study has not been independently confirmed (Rossignol, et al., 2009).

More recent, relatively large-scale controlled studies have also investigated HBOT using treatments of 24% oxygen at 1.3 atmospheres and have found less promising results. in 2010 double study compared HBOT to a placebo treatment in children with autistic disorder. Both direct observational measures of behavioral symptoms and standardized psychological assessments were used to evaluate the treatment. No differences were found between the HBOT group and the placebo group on any of the outcome measures (Granpeesheh, et al., 2010).

A second 2011 single-subject design study also investigated the effects of 40 HBOT treatments of 24% oxygen at 1.3 atmospheres on directly observed behaviors using multiple baselines across 16 participants. Again no consistent outcomes were observed across any

group and further no significant improvements were observed within any individual participant. Together these studies suggest that HBOT at 24% oxygen at 1.3 atmospheric pressure does not result in a clinically significant improvement of the behavioral symptoms of autistic disorder. Nonetheless, news reports and related blogs indicate that HBOT is used for many cases of children with autism. HBOT can cost up to $150 per hour with individuals using anywhere from 40 to 120 hours as a part of their integrated treatment programs (Jepson, et al., 2011).

2.9 Prevalence

Most reviews tend to estimate a of 1–2 per 1,000 for autism and close to 6 per 1,000 for ASD (Newschaffer, et al., 2007).

The 11 per 1,000 children in the United States for ASD as of 2008. because of inadequate data, these numbers may underestimate ASD's true rate. (Caronna, et al., 2008).

The Centers for Disease Control and Prevention (CDC) recognizes that ASD is an urgent public health concern, as its prevalence rate has dramatically increased in the last several decades The prevalence study reported that autism now affects approximately 1 in 68 children in the United States The ASD is almost five times more common among boys than girls: 1 in 42 boys versus 1 in 189 girls. White children are more likely to be identified as having ASD than are black or Hispanic children. (CDC, 2014).

In Baghdad the prevalence rate of Autism among all childhood psychiatric disorders has reached 15.8% (AL- Shimery, et al., 2011).

2.10 Co-morbidity:

Autism spectrum disorders tend to be highly co-morbid with other disorders. Co-morbidity may be increase with age and may worsen the course of youth with ASD and make intervention or treatment more difficult. Distinguishing between ASD and other diagnoses can be challenging because the traits of ASDs often overlap with symptoms of other disorders, and the characteristics of ASD make traditional diagnostic procedures difficult .The most common medical condition occurring in individuals with autism spectrum disorders is seizure disorder or epilepsy, which occurs in 11-39% of individuals with ASD. Tuberous sclerosis, a medical condition in which non-malignant tumors grow in the brain and on other vital organs, occurs in 1-4% of individuals with ASD (Underwood, et al., 2010).

Intellectual disabilities are some of the most common co-morbid disorders with ASD. Recent estimates suggest that 40-69% of individuals with ASD have some degree of an intellectual disability, with females more likely to be in the severe range of an intellectual disability. A number of genetic syndromes causing intellectual disability may also be co-morbid with ASD including Fragile X syndrome, Down syndrome , Prader - Willi and Angelman syndromes and Williams syndrome (Zafeiriou, et al., 2007).

Anxiety disorders tend to occur with autism spectrum disorders, with overall comorbidity rates of 7-84%. Rates of comorbid depression in individuals with an ASD range from 4–58%. The relationship between ASD and schizophrenia remains a controversial subject under continued investigation. Genetic, environmental, infectious, and immune risk factors that may be shared between the two conditions. Deficits in ASD

are often linked to behavior problems, such as difficulties following directions, being cooperative. Symptoms similar to those of Attention Deficit Hyperactivity Disorder (ADHD) can be part of an ASD diagnosis (Chisholm, et al., 2015).

2.11 Nursing Roles :

More children with this ASD are requiring hospitalization and have an extended length of stay once hospitalized. The pediatric nurse is often unaware of or unprepared to offer the care that this special population requires. Sharing information obtained through repeated encounters with this population may lead to a less stressful and safer hospital stay for the child with autism, the family, and the pediatric nurse. Items about which the nurse should be aware when caring for a child with autism include the symptoms of autism spectrum disorder, the importance of family involvement, identifying the best way to communicate with the child, minimizing change, incorporating the child's home routine into the stay, creating a safe environment, identifying emotional disturbances, involving a multi disciplinary team of experts on admission, listening to the family, and creating a record of this information to be shared among staff members.

2.11.A Assessment

The assessment of children with a developmental disorder should follow the mental health assessment. Biologic assessment should include a review of physical health and neurologic status, giving particular The nurse should assess sleep, appetite and activity patterns because they may be disturbed in these children. Lack of adequate sleep can increase irritability. Co-morbid seizure disorders are common in those with autism and depression, the nurse should consider these conditions in the

assessment. The child's behavior, need for structures, & communication style can effect family functioning. Having a child with an autism spectrum disorder is bound to influence family interaction, and responding to the child's needs may adversely affect family functioning. For example, sleep disruption in family members who care for these children may increase family stress (Boyd, 2012).

Communication, behaviors, and flexibility are critical assessment areas. Direct behavioral observation is important to evaluate the child's ability to relate to others, to verify the selection of age appropriate activities, & to watch for stereotypic behaviors (Scarpinato et al., 2010).

2.11.B Nursing Diagnoses

Assessment data generate a variety of potential nursing diagnosis, including Anxiety and Disturbed Thought Process. Because of the longterm nature of these disorders, outcomes may change with time (Scarpinato et al, 2010).

Assessment data generate a variety of potential nursing diagnoses, including self care deficits, delayed growth and development, & disturbed sleep pattern. Treatment outcomes need to be individualized to the child, family and social environment (Boyd, 2012).

2.11.C Planning and Outcome:

After determining nursing diagnosis, identify outcomes that are important for the child and/or family to achieve specific to each diagnosis. These outcomes are behaviors or skills that are necessary to bring about positive mental health changes. For instance, the nurse may have identified a diagnosis of disturbed sensory perception in a young child with autism who is highly sensitive to being touched. The nurse

could then work with child parents to identify specific outcomes they would like to achieve, such as the child being able to receive an affectionate stroke from the parent or have hair cut with becoming agitated and emotionally distressed (Kneisl and Trigoboff, 2009)**.**

2.11.D Implementation (Interventions):

Implementation of nursing care depends on the nursing diagnosis for the child and the family. Children with autism spectrum disorders often need specific behavioral interventions to reduce the frequency of inappropriate or aggressive behavior. For example, a child may exhibit angry outbursts in response routine transition. If the tantrum is dramatic, the consequence may be that the transition does not take place. By structuring the environment and using visual cues to signal the end of one activity & the start of another, it may be possible to reduce the number and intensity of response to transitions. Safety is always a concern and children may need to protect from hurting themselves and others (Scarpinato et al, 2010).

In teaching self-care skills, the nurse needs to consider the child's current adaptive skills and Language Limitations. Development a list of activities for the child to post in his or her bedroom may be effective for some children. Drawings or symbols may be useful for nonverbal children. Physical safety is an important concern for children who are cognitively delayed and may have impaired Judgment (Boyd, 2012).

Part Two:-

2.12 Previous Studies:

Many studies discussed the issues of ASD all over the world, only few studies were available and mentioned the Awareness of Nurses

, below are some of the studies that are related in a way or another.

(Surmen, et al., 2015): (exploring knowledge, attitudes andbehaviours towards autism among adults applying to Family Health Center in Istanbul) to assess knowledge, awareness, behavior and attitudes towards autism among applicants to a Family Health Center. The result shows that 38.8% of the sample had heard the word autism. They suggested that increase awareness, and knowledge towards autism .

(Ullah, et al., 2015) : (Awareness Regarding Autism in Schools' Teachers at District Lower Dir, Khyber Pakhtunkhwa, Pakistan) to assess the knowledge and perceptions of schools teacher regarding autistics, in public and private schools. the result shows that only 47.5% teachers know about autism. so that there is a lack of awareness regarding autism among teachers from both the sectors,. They recommended School implemented proper training, workshops and seminars are suggest to train teachers for autism diagnosis and teaching .

(Shaukat, et al., 2014): (Assessment of knowledge about childhood autism among medical students from private and public universities in Karachi) The aim of this study is to assess the knowledge about childhood autism among fourth year medical students in public and private medical universities of a metropolitan city. The result shows that (53.5%) students had knowledge above the mean score and (46.6%) had lower scores. They recommended that knowledge about childhood autism among the study population in order to bridge knowledge deficit, and provide education programs.

(Arif, et al., 2013): (Awareness of Autism in Primary School Teachers) were assessed the knowledge and perception of primary school teachers regarding autism in private and public schools in their study The

result shows that 55% of the teachers knew about Autism through the media and only 9% had formal training through workshops on Autism. They recommended to give formal training to teachers regarding the differentiating features of Autism, which in turn will aid in early diagnosis of the disease.

(Luleci, et al., 2012): (Autism awareness of first grade nursing and medical students in Istanbul, Turkey) .The aim of this study is to assess the level of awareness about childhood autism among first-grade nursing and medical students. The result shows (78.9%) of sample were aware of autism, (8%) of them being highly aware and (70.9%) moderately aware, whereas (21.1%) were not aware. They recommended to First-grade medical and nursing students could be considered relatively well aware of autism as their awareness level was in between that of the general public and healthcare professionals.

(Igwe, et al., 2011): (Assessment of knowledge about childhood autism among paediatric and psychiatric nurses in Ebonyi state, Nigeria**)** The aim of this study is to assess knowledge about childhood autism among paediatric and psychiatric nurses in Ebonyi state, Nigeria and determine the factors that could influence such knowledge. The result shows that (22.5%) paediatric nurses had previous experience nursing children with childhood autism while (77.5%), had not been involved in managing children with autism psychiatric nurse, (45%) have participated in managing children with childhood autism while, (55%) had previously not been involved. They suggested that Education on childhood autism is needed and can be provided through continuing medical education and emphasizing childhood autism in their training curriculum. This will enhance early identification and diagnosis of childhood autism .

Chapter Three

Methodology

Chapter three

Methodology

This chapter described methods and the consequence procedures that are used and followed for implementing this study.

3.1 Design of the Study:

Quantitative design, descriptive study have been carried out in Kirkuk Public Hospitals from period of 20/April to 15/ December 2016. To find out level of nurses Awareness who are working in pediatric ward about Autism Spectrum Disorder.

3.2 Administrative Arrangements:

After getting the approval of the Nursing Colleges Council University of Sulaimani upon the study (Appendix D-1) .

The researcher has submitted a detailed description including the objective and methods of the study to Kirkuk Health Directorate in order to obtain an official permission to carry out the study (Appendix D-2).

Later the permission was present to Pediatric Hospital , Azadi Teaching Hospital and Kirkuk General Hospital in Kirkuk to ensure their agreement and cooperation for collected data (Appendix D-3,D-4,D-5).

Ethical approval : ethical committee permission of School of Nursing/Faculty of Medicine Sciences/University of Sulaimani (Appendix B).

3.3 Setting of Study:

The study was carried out in pediatric ward of three public hospitals in Kirkuk city (Pediatric Hospital ,Azadi Teaching Hospital and Kirkuk General Hospital) .

1) **Azadi Teaching Hospital**

Azadi Teaching Hospital is considered as one of the major hospital which is established in 1983, and located to the north of the city, The building of hospital consists of (6) floors with (400) beds, pediatric wards consist of (64) beds.

2) **Kirkuk General Hospital**

Kirkuk General Hospital is one of the oldest and major hospital in Kirkuk city, the building is constructed in 1945 , located in the center of the city, it is consists of many departments and have (350) beds, pediatric department is one of them which includes (20) beds.

3) **Pediatric Hospital**

Pediatric Hospital also consider as one the old and major hospital in Kirkuk city, That is established in 1972, It is a special hospital for pediatric that includes 120 beds , which offers to services exclusively to children.

3.4 Sample of the Study:

A non –probability / Convenience sampling technique was applied in the present study. All nurses who work in pediatric wards in Public hospitals of Kirkuk city were involved. Two hundred nurses were constituted the study sample that they were recruited from (Azadi Teaching Hospital 47 nurses , Kirkuk General Hospital 33 nurses, Pediatric Hospital 120 nurses).

According to the last statistics done in (2016) by Kirkuk Health Directorate/ Nurse Department, the number of nurses in three public hospital mentioned above in Kirkuk city is (1793). proportion of male and female (54%) and (46%) respectively.

The target population in Pediatric Hospital was comprised form nurses who work in pediatric ward are 175; Actually 120 nurses have been selected randomly out of 175 nurses and this represent (68.5%) ,while in Azadi Teaching Hospital 65 nurses work in pediatric ward actually 47 nurses have been selected randomly out of 65 nurses and this represents (72.3). Finally the target population in Kirkuk General Hospital also comprised form nurses who work in pediatric ward that are 45; Actually 33 nurses have been selected randomly out of 45 nurses and this represents (73.3%) .

Inclusion Criteria

- Nurses who have interest and agree to be involved in the study .
- Nurses who work in pediatric ward .
- Both genders (male and female).

Exclusion Criteria

- Less than one years experience

- Nurses who do not participate in the study

3.5 Tools of Data Collection:

Data was collected from period of 20/ Jun to 10/ September 2016. In order to collect the proper information of study, the questionnaire was designed and constructed by the researcher to measure the variables underlying the present study. Which consist of the following parts (Appendix C-1,C-2,C-3).

Part One :-

The nurses socio demographic characteristics such as (nurses age ,gender , place of work ,educational level , marital status , Years of employment in pediatric ward). In Addition , questions such as (Do you have a child with autism spectrum disorder, Do you have a close relative with autism spectrum disorder, Do participate in any training course or workshop related to (ASD) inside the country, Are you attended any training course or workshop related to (ASD) outside the country ,During your time working in pediatric ward , how many children care with who have autism spectrum disorder) .

Part Two:-

This part is considered as the vital issues of the study regarding the level of the nurses awareness toward Autism Spectrum Disorders, which consists of (30) items and has been divided on three domains :

First Domain : Information, Concepts and Facts about Autism Spectrum Disorders (10) items.

Second Domain: Signs of impairment in social interaction and communication in children with Autism (10) items.

Third Domain: Disorder in behavioral patterns (10) items.

3.6 Rating Scales and Scores:

In order to measure the previous items accurately and statistically , the researcher has followed scale and scores rating in part two of the questionnaire as the following patterns;

Each item has been scaled by three level of Likert scales and scored respectively as follow:

Scales	Scores
Yes	3
Don't know	2
No	1

3.7 Patterns of Means of Scores Calculation

3.7.1 Total Means of Scores for each Domains

The total mean scoring in each domain regarding to the following patterns:

The maximum scoring for 10 questions in each domain is (30) while minimum score is (10) .

The mean score of 10 questions if equal to (10-16) the nurses have poor Awareness

The mean score of 10 questions if equal to (17-23) the nurses have Fair Awareness.

The mean score of 10 questions if equal to (24-30) the nurses have good Awareness.

3.7.2 Total Means of Scores of all Three Domains .

The overall mean scoring for 30 questions the maximum mean score is (90) while minimum score is (30).

The mean score of 30 questions if equal to (30-49) the nurses have poor Awareness

The mean score of 30 questions if equal to (50-69) the nurses have Fair Awareness.

The mean score of 30 questions if equal to (70-90) the nurses have good Awareness

3.8 Validity:

Once the questionnaire for the study is prepared it must be validated. This validation aims at assessing questionnaire according comprehension, relevance to their intended topics, effectiveness in providing useful information and the degree to which the questions are interpreted and understood by different individuals.

Content validity of the instrument was determined through the use of panels (15) experts (Appendix A) to investigate the clarity of the questionnaire.

relevancy and adequacy of the questionnaire are required in order to achieve the present study objectives . Their responses indicated that all of them had agreed upon the questionnaire content clarity, relevancy, and adequacy. Then the questionnaire was considered valid after taking into consideration their suggestions and recommendations for modification (Appendix C-1).

3.9 Pilot Study:

A pilot study was conducted on (20) nurses in Azadi Teaching Hospital ,Kirkuk General Hospital and Pediatric Hospital / pediatric ward . It was carried out between 25 May 2016 for test and 10 June 2016 for retest. The selected nurses for pilot study were excluded from the study sample. Objectives of the pilot study include the following:

1- To identify the barriers that may face the researcher during data collection .

2- To examine the cooperation of study sample

3- To estimate the time required for each nurse interview

4- To determine the stability and clarity of questionnaire or study tool

Before data collection began, pilot test was conducted to assess the general of administering the instrument, and conciseness of the questions.

3.10 Reliability:

To test the questioner reliability internal consistency was measured using Cronbach's alpha formula on twenty nurses who is excluded from the original study sample . The result of pilot study was (0.821), that indicate reliable of the questionnaire and it is acceptable and adequately to measure and assessment of these nursing awareness level . The following formula was used for reliability estimate of stability of a measure (polite and hungler, 1999).

$$r = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{[(n\sum x"-(\sum x)"][n\sum y"-(\sum y)"]}}$$

r = the correlation coefficient for variable x and y

n = number of sample

x = an individual score for variable x

Y = an individual score for variable y

$\sum$ = the summation of.

3.11 Method of Data Collection:

Researcher made interviews with mangers of each public hospital to get his cooperation and to facilitate the process of data collection, The interviewing was done by the researcher with each selected nurse who work at pediatric ward in all three public hospital mentioned above to get his /her response and to clarify the items mentioned in the questionnaire form of the study . Each interview took

approximately (20-30) minutes with each nurse. All participants were informed that the information will be kept confidential and used just for a scientific purpose. Data was collected between 20 June /2016 to 10 September of 2016.

3.12 Statistical Analysis:

All the data were coded and entered to the computer and using Spss software version 22. In this study the data were analyzed by using the basic statistical methods which include:

3.12.1 Descriptive statistics:

This approach is employed through:

a- Frequency Distribution

b- Percentage

$$\text{Percentage } \% \equiv \frac{Frequencies}{sample\ size} x100$$

c- Mean of Score

$$M.S = \frac{\sum_{i=1} Fi\, x\, si}{\sum_{i=1} Fi}$$

Mean of score were calculated from the ordinal data according to the three levels scales as (3,2, and 1) the highest of the score indicated the severity of the problem .

According to level

Good level = 2.5-3

Fair level = 1.8- 2.49

Poor level = 1-1.79

(polite and Hungler, 1999).

d- Independent T. test.

e-Standard Deviation

$$S.D = \sqrt{\frac{\sum \left(Xi - \overline{X}\right)^2 fi}{\sum fi}}$$

3.12.2 Inferential Statistical Methods:

It was used to determine the significant differences between the level of Awareness and sociodemographic data of the study population, the most appropriate measure is:

- **Independent T. test.**
- **One Way Analysis of Variance (ANOVA).**

3.13 limitation of the Study:

1- Time was critical for the researcher.

2- Shortage of the research studies on this topic.

Chapter Four

Results

&

Discussion

Chapter Four

Results and Discussion

This chapter discusses and interprets the results of the study and compare it logically with international study findings if present .

Part One :- Socio Demographic Characteristics of the Study Sample

Table (1) Distribution of the Sample According to Socio-Demographic Characteristics.

Socio- Demographics Characteristics	Frequency	Percentages
Gender		
Male	85	42.5 %
Female	115	57.5 %
Total	**200**	**100 %**
Age groups		
20-29 Years	75	37.5 %
30-39 Years	77	38.5 %
40-49 Years	39	19.5 %
50 and above	9	4.5 %
	Mean = 33.28	SD = ± 1.71
Marital status		
Single	59	29.5 %
Married	132	66%
Divorce	6	3 %
Widow	3	1.5%
Total	**200**	**100 %**
Place of working		
Azadi Teaching Hospital	47	23.5 %
Kirkuk General Hospital	33	16.5 %
Pediatric Hospital	120	60 %
Total	**200**	**100 %**

Continue Table (1)

Educational level .		
Bachelor in Nursing	21	10.5%
Diploma in Nursing	94	47 %
Secondary in Nursing	85	42.5%
Total	**200**	**100%**
Years of employment.		
Less than one years	41	20%
1-5 years	75	37%
6-10 years	39	19%
11-14 years	23	11%
14-and more	22	11%
Total	**200**	**100%**
	Mean = 8.6	SD ±1.24
Are you participate in the training course or workshop related to (ASD) inside /outside the country.		
Not participate	**200**	**100 %**
Total	**200**	**100 %**
Nurses have close relative child with autism.		
Yes	24	12 %
No	176	88 %
Total	**200**	**100** %
Care for child with autism.		
no one	174	87 %
1-4chlidren	23	11.5 %
5-9 children	3	1.5 %
Total	**200**	**100 %**

Table (1) demonstrates that majority of the sample are females (57.5 %).while the rest were male and represent (42.5%).

According to age groups, the greatest percentages of the sample present among (30-39),(20-29) years old which accounts (38.5%),(37.5%) respectively, with Mean and SD (33.2,±1.71), The smallest proportions of the sample (4.5%) their age ranged between (50-69) years old, and most of them (66%) were married. In the same table the finding reveals that the study sample of nurses who work in pediatric wards in Kirkuk city, more than half of the sample (60%) were from pediatric hospital, While (23.5%) of the sample were from Azadi Teaching hospital, and the rest which account (16.5%) were from Kirkuk General hospital .

About (10.5%) of our sample has higher degree / Bachelor in Nursing ,while majority of sample (47%) were graduated from Technical institutes / Diploma in Nursing, followed by (42.5%) of the sample finished Secondary School of Nursing .Relative to the years of employments highest percentage of sample represent (37%) have (1-5)years of employments, followed by (20%) of sample have less than one year of employments. Only 11% of sample have either (11-14) the lower percentage of sample (11%) in the (11-14) year of employments or 14 and more years of employments .

The same table represents that all of the sample does not enroll or participate in any nursing training courses or workshops which related to ASD, vast majority of sample (88%) have no close relative child with ASD, only (12%) of sample have close relative child with ASD. Regarding caring for child with autism, the highest proportions of sample (87%) does not provide nursing care to any child with ASD during their services in hospital , only (11.5%) of sample caring for (1-4) patient with

ASD ,and (1.5%) of sample caring and for (5-9) child have Autism Spectrum Disorders.

Part Two:- Distribution of the Sample Regarding level of Awareness.

Table (2) Distribution of the Sample according to level of Awareness in terms (Information, Concepts and Facts about Autism Spectrum Disorders)/Domain One

N	Items	Yes		Don't Know		No		Mean	Level
		F	%	F	%	F	%		
1-	Autism is a neurodevelopmental disorders characterized by impaired socialinteraction, verbal and non-verbal communication, and restricted and repetitive behavior	14	7	120	60	66	33	1.74	P.L
2-	Autism spectrum disorders is unknown causes	15	7.5	105	53.5	80	40	1.69	P.L
3-	Four to five times more common in males than females	12	6	119	59.5	69	34.5	1.72	P.L
4-	Teaches autistic child in special education classes	13	6.5	115	57.5	72	36	1.71	P.L
5-	Autism is not treatable using medication alone	14	7	88	44	98	49	1.58	P.L
6-	Signs of Autism show between 1- 3 years	11	5.5	89	44.5	100	50	1.56	P.L
7-	Autism is defined as a Childhood Schizophrenia	15	7.5	86	43	99	49.5	1.58	P.L
8-	Autism could be associated with Attention Deficit Hyperactivity Disorder(ADHD)	14	7	87	43.5	99	49.5	1.58	P.L
9-	Autism is hereditary causes	12	6	99	49.5	89	44.5	1.62	P.L
10-	Autism could be associated with Mental Retardation or Epilepsy	12	6	125	62.5	63	31.5	1.75	P.L
Total Mean & S.D								16.5 ± 3.6	

F = Frequency, % =Percentages , P.L=Poor level, F.L=Fair level, G.L = Good level.

Table (2) reveals level of awareness of nurses who work at pediatric wards regarding Information, Concepts and Facts about Autism Spectrum Disorders. It shows that the mean of scores was poor level in

all items related to domain one which includes 10 items that ranged between (1.56-1.75) M.S with total M.S (16.5 ± 3.6) . This indicated that nurses awareness regarding Information, Concepts in Autism Spectrum Disorders were insufficient and poor .

Item number (10) which states Autism could be associated with Mental Retardation or Epilepsy, has got the highest mean of scores (1.75) and it was in the first order of the rank , followed by item number (1) the second order of the rank which has got the mean of scores (1.74) ,Item number (3 and 4) becomes third and forth order of the rank which got (1.72) and (1.71) mean of scores respectively. While item number (2) come in the fifth order of the rank and it got the mean of scores (1.69) which states that Autism spectrum disorders is unknown causes. It is worth to mention that item number (6) recorded the lowest mean of scores (1.56), which states signs of Autism show between 1- 3, years ,followed by items number (5,7,8) which accounts (1.58) means of scores for each one of them .

In addition, to item number (10) has got highest percentage of respondents (62.5%) they do not know the (co-morbidity of Autism could be associated with Mental Retardation or Epilepsy), followed by item number (1) they do not know the meaning of Autism it is a neuro-developmental disorders characterized by impaired social interaction, verbal and non-verbal communication, and restricted and repetitive behavior (60%) of respondent , it is worth to mention that unfortunately very few percentages of sample were aware or have knowledge about all items that include domain one in general with ranged between (5.5% - 7.5 %) .

Results of our present study disagree with result study done by (Eseigbe, et al., 2015) " Knowledge of childhood autism and challenges

of management among medical doctors in Nigeria" who indicate that only (31.1%) of respondent do not know the (co-morbidity of Autism could be associated with Mental Retardation or Epilepsy), while in our finding (62.5%) of respondents do not know (co-morbidity of Autism could be associated with Mental Retardation or Epilepsy)

A study has done by (Luleci, et al., 2012) aimed to assess the level of awareness about childhood autism among first grade nursing and medical student in Istanbul, Turkey, mentioned that (40.6%) of respondent do not know the definition of the Autism Spectrum Disorders is a neurodevelopmental disorders characterized by impaired social interaction, verbal and non-verbal communication, and restricted and repetitive behavior , which disagrees with our finding that (60%) of our respondents were not aware about this item .

(Muhammad et al 2013) in the study conducted among care providers which is highly incompatible with the finding in the present study that only (56.5%) of our respondents were aware that the correct age of the appeared of autism signs and symptoms is between 1-3 years.

The researcher found only one previous study that agrees with the result of present study regarding item (6) , which carried out by (Ullah, et al., 2015) who found that the Minority (17.2%) were aware and have knowledge about that Signs of Autism appear between 1- 3 years.

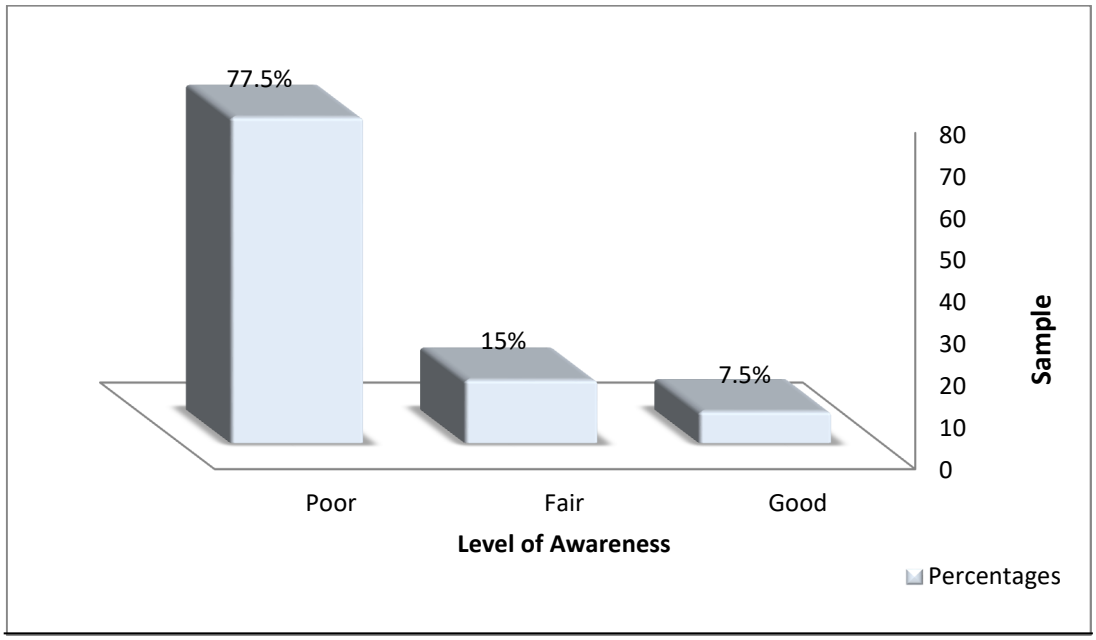


Figure (1)) Distribution of the Sample according to total level of Awareness in terms of Information, Concepts and Facts about Autism Spectrum Disorders /Domain One

The figure (1) shows overall Nurses Awareness level Regarding Information, Concepts and Facts definitions and about Autism Spectrum Disorders in three level good, fair and poor . More than three quarters of sample (77.5%) had poor level of awareness ,and only (7.5%) of sample had a good awareness about total items that includes domain one. This current result tends to be nurses total level of awareness is poor rather than fair or good , and can be explained as the deficiency of nurses awareness and knowledge regarding Information, Concepts and Facts about Autism Spectrum Disorders.

Table (3) Distribution of the Sample according to Nurses level of Awareness in terms (Signs of Impairment in Social Interaction and Communication in Children with Autism) / Domain Two

N	Items	Yes		Don't Know		No.		Mean	Level
		F	%	F	%	F	%		
1	Doesn't make eye contact with those around him	16	8	123	61.5	61	30.5	1.78	P.L
2	Laughing in a strange way	19	9.5	103	51.5	78	39	1.71	P.L
3	Doesn't want to be cuddling	18	9	102	51	80	40	1.69	P.L
4	Not responding to his name	17	8.5	97	48.5	86	43	1.66	P.L
5	Acting like a deaf or dumb	14	6	117	58.5	69	34.5	1.73	P.L
6	Isolated from the others.	15	7.5	110	55	75	37.5	1.70	P.L
7	Angry and unknown reasons	18	9	92	46	90	45	1.64	P.L
8	Child fails to develop peer relationship appropriate for developmental age	20	10	71	35.5	109	54.5	1.56	P.L
9	Delays in speech or in development of spoken Language	16	8	87	43.5	97	48.5	1.60	P.L
10	Repeats the same words or phrases and does not know its meaning	19	9.5	98	49	83	41.5	1.68	P.L
	Total Mean & S.D							16.7 ± 3.8	

F = Frequency, % =Percent , P.L=Poor level, F.L=Fair level, G.L = Good level.

This table demonstrates the nurses level of awareness regarding impairment in social interaction and communication in children with ASD.

In general the findings show that most of the sample were in poor level of awareness in all items related to domain number two ,which consists of (10) items that ranged between (1.56-1.78) means of scores with total M.S 16.7 ± 3.8 .This indicates that nurses who work in pediatric wards in all three public hospitals had a very poor level of awareness regarding ASD in terms of (impairment in social interaction and communication in children with ASD). Mean of scores item in number (1) which states that autistic child does not make eye contact with those around him, recorded the highest mean of scores followed by item number (5) gots (1.78,1.73) mean of scores respectively.

Items number (2,and 6) come in the third and fourth order of the rank and they got means of scores (1.71,1.70) respectively, which states that autistic child laughing in a strange way, and isolated from the others. In addition, item number (3) which states that child with ASD does not want to be cuddling, and items number (10) which states that repeats the same words or phrases and does not know its meaning come in the fifth, and sixth order of the rank in this domain and they got (1.69,and 1.68) means of scores respectively, which indicated to poor level of means of scores and poor awareness of nurses about all this knowledge. Items number (4,7, and 9) come in seventh ,eighth and ninth order of the rank and got (1.66, 1.64, and 1.60) means of scores. Item number (8) which states Child with ASD fails to develop peer relationship appropriate for developmental age, recorded the lowest mean of scores and come last or tenth order of the rank which got (1.56) mean of scores.

The result in the present study disagrees with the results in the previous study done by (Luleci, et al., 2012) it was found that only (13.1%) of the sample Don't know the Autism is impairment of non-verbal behaviors such as eye contact, facial impressions, gestures,

postures and body languages, While in our study (61.5%) of the sample Don't know the Autism is impairment of non-verbal behaviors such as eye contact, facial impressions, gestures, postures and body languages.

Also in the same study done by (Luleci, et al., 2012) conducted on first grade nursing and medical students in Istanbul /Turkey, mentioned that (43.4%) of respondents Don't know the ASD child Acting like a deaf or dumb. While in the present study more than half of sample (58.5%) Don't know the ASD child Acting like a deaf or dumb.

The sample of this study who work in pediatric wards in all three public hospital have poor awareness about the items that mentioned in domain number two.

Based on the findings in the study carried out by (Hartley-McAndrew, et al., 2014) who mentioned that (46%) of respondents agree or aware to ASD child that fails to develop peer relationship appropriate for developmental age in ASD, while in the present study the results in the same item recorded only (10%) who were aware or agree that autistic child fails to develop peer relationship appropriate for developmental age .

According to the researchers' point of view this indicates that nurses who work in pediatric wards in all three public hospital may be familiar with word of Autism, While they do not know the specific characteristics of ASD and that means nurses had a very poor level of awareness regarding ASD in terms of (impairment in social interaction and communication in children with ASD) .

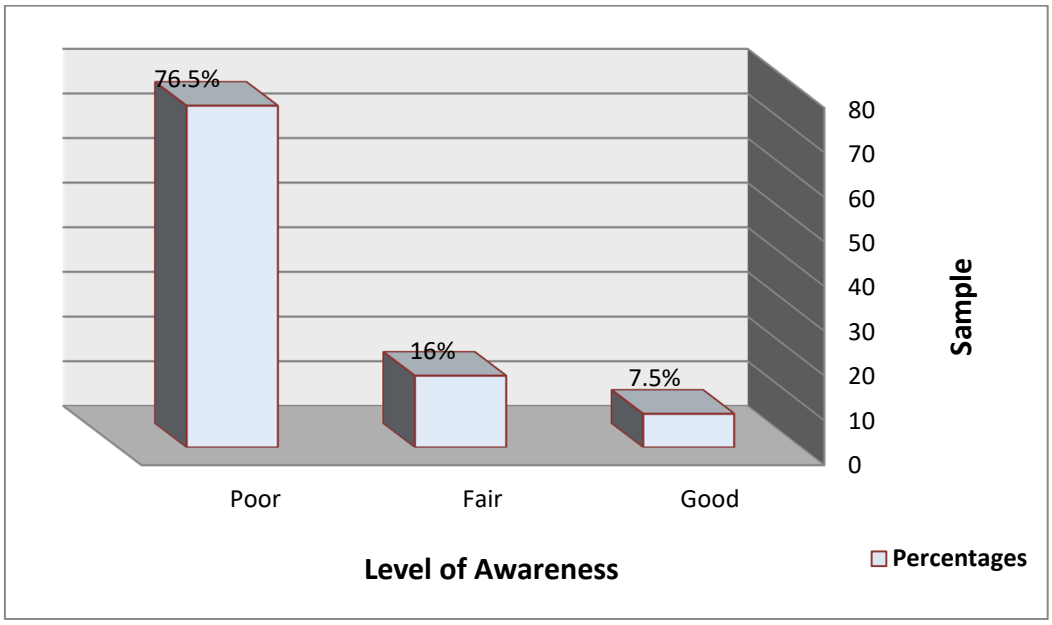


Figure (2))Distribution of the Sample according to total level of Awareness in terms of (Signs of Impairment in Social Interaction and Communication in Children with Autism) /Domain Two .

Figure (2) represents the overall nurses awareness level regarding signs of impairment in social interaction and communication in children with Autism. In three levels (poor, faire , and good), proportion of poor level of awareness regarding items that consist domain two accounts heights percentage (76.5%) as compare to other two levels of awareness. Unfortunately, proportion of good level of awareness record a very few percentage (7.5%), and the rest of sample have a fair level of awareness which consist (16%). This finding can be explained as the lack of nurses

information regarding Signs of impairment in social interaction and communication in children with Autism Spectrum Disorders.

Table (4) Distribution of the Sample according to Nurses level of Awareness in terms (Disorder in Behavioral Patterns) / Domain three.

N	Items	Yes		Don't Know		No		Mean	Level
		F	%	F	%	F	%		
1	Stereotyped and repetitive movement (Hand or finger flapping or twisting).	15	7.5	124	62	61	30.5	1.77	P.L
2	Eating is very restricted	18	9	110	55	72	36	1.73	P.L
3	likes the spin objects	13	6.5	104	52	83	41.5	1.65	P.L
4	Prefers events module	13	6.5	100	50	87	43.5	1.63	P.L
5	Refusing to change the routine	12	6	89	44.5	99	49.5	1.57	P.L
6	have high or low sensitivity of visual, auditory, tactile, or olfactory stimuli	13	6.5	93	46.5	94	47	1.60	P.L
7	Appears aggressive behavior and self injury	14	7	97	48.8	89	44.5	1.63	P.L
8	Hyperactivity and little comfort	20	10	76	38	104	52	1.58	P.L
9	Suffering from a sleep disorder	28	14	74	37	98	49	1.65	P.L
10	Does not appear a sense of pain	27	13.5	82	41	91	45.5	1.68	P.L
Total Mean & S.D								16.4± 4.0	

F = Frequency, % =Percent , P.L=Poor level, F.L=Fair level, G.L = Good level.

Relative to disorder (Behavioral Patterns), items in domain three, Table (4) explores that in general means of scores in all items recorded a very low mean of scores which range between (1.58-1.57) with over all M.S 16.4± 4.0, that indicates to poor level of awareness of sample /nurses who work in pediatric wards in three public hospital in Kirkuk city .

Item number (1) which states Stereotyped and repetitive movement (Hand or finger flapping or twisting),has got the highest mean of scores (1.77) and it was in the first order of the rank. Item (2) which states that Eating is very restricted, account (1.73) means of scores , and item (10) which states that Does not appear a sense of pain, got a (1.68) means of scores come in the third order of the rank. Items (3) and (9) got the same mean of scores (1.65) and take the fourth order of the rank. Also items (4) and (7) got the same mean of scores (1.63) come in the fifth order of the rank . Followed by the last and lowest mean of scores (1.57) which states Refusing to change the routine.

On the other hand the stereotyped and repetitive movement in behavioral patterns two-third 124 (62%) of the respondents do not know the stereotyped and repetitive movement (Hand or finger flapping or twisting). More than half 110 (55%) of the sample do not know the ASD child have very restricted eating ,while only 12 (6%) of the respondents agreement to ASD child Refusing to change the routine ,

Few percentage of sample were aware about the items (9, 10, 8, 2) which accounted (14%, 13.5%, 10%, 9%) respectively, followed by items (1, and 7) which recorded (7.5%, and 7%) respectively. In addition to that, items (3,4,6,5) record nearly the same percentages regarding their awareness which accounts (6.5% , and 6%) respectively . All of the results pointing to poor level of awareness of our sample in the present study . While majority of sample in most items in this domain either have no idea about this disorder or have wrong information about

this disorder. Items (1,2,3,4,and 7) which states Stereotyped and repetitive movement (Hand or finger flapping or twisting), Eating is very restricted, likes the spin objects, Prefers events module, and Appears

aggressive behavior and self injury. Approximately half or more than half of sample which account s (62%, 55%, 52%, 50, and 48.8%) respectively do not know or have no idea , In items (8,5,9,6, and 10), the majority of the sample have a wrong answer which record (52%, 49.5%, 49%, 47%, and 45.5%) respectively.

A study done by (Luleci, et al., 2012) disagrees with our study result among Stereotyped and repetitive movement in behavioral patterns who indicated that 58 (33.1%) of the respondents do not know the Stereotyped and repetitive movement. While the present study (62%) of the respondents do not know the Stereotyped and repetitive movement.

On the other hand (Luleci, et al., 2012) agrees with our result about ASD child eating is very restricted it is more than half (51.4%) of the sample do not the ASD child have abnormal eating and very restricted, while our result recorded (55%) respectively .

A study has done by (Ullah, et al., 2015) to examine the Awareness Regarding Autism in Schools' Teachers in Pakistan , this study disagrees with our present study results who found that nearly half of the sample (37.4%) agree to ASD child Refusing to change the routine ,while our result only (6%) of the sample agree to ASD child Refusing to change the routine.

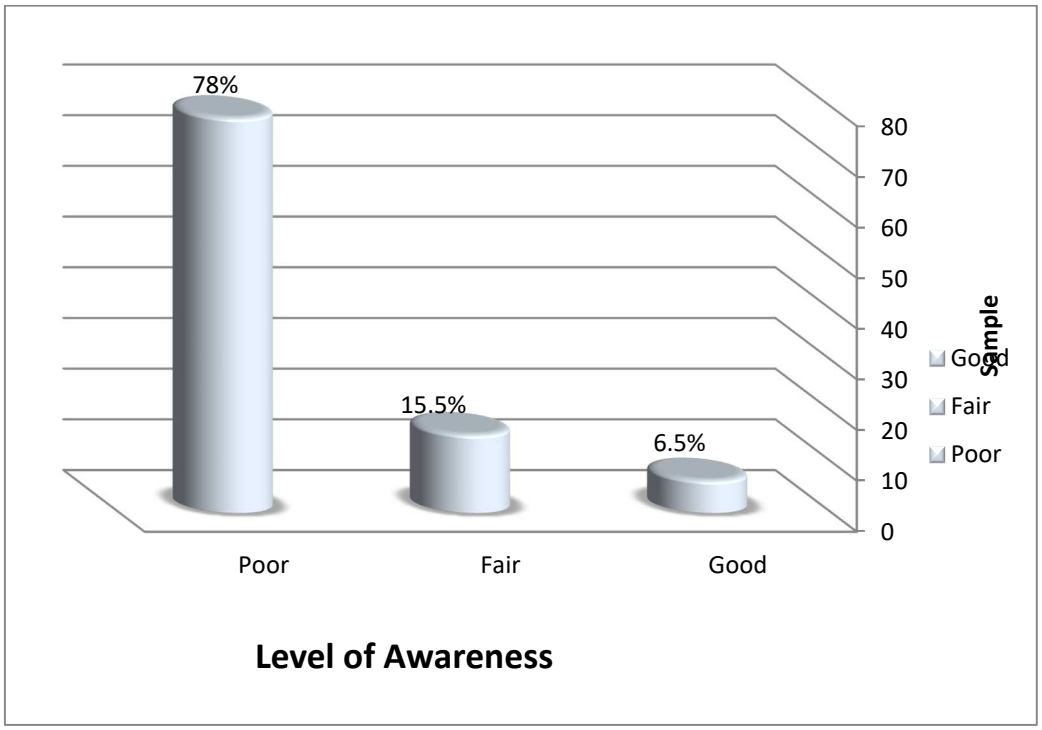


Figure (3) Distribution of the Sample according to total level of Awareness in terms (Disorders Behavioral Patterns in ASD) /Domain three.

Figure (3) represents the overall Nurses Awareness level Regarding Disorder Behavioral Patterns in children with Autism. more than three quarter (78%) of the sample have poor of awareness . While (15.5%) of the respondents have fair level of awareness ,and the rest of the sample / nurses who are working in pediatric ward in three public hospital in Kirkuk city have good level of awareness which accounts only (6.5%). This finding to that in general nurses awareness regarding items that consist the domain three ware poor .

Table (5) Disturbance of Sample according to total mean scores Patterns in all Three Domains regarding Nurses level of Awareness .

Domain possible score	Number of Items	Mean ± SD	Awareness Level
Domain 1 (10-30)	10	16.5 ± 3.6	Poor
Domain 2(10-30)	10	16.7 ± 3.8	Poor
Domain 3(10-30)	10	16.4± 4.0	Poor
Total mean score (30-90)	30	49.7± 10.38	Poor

Table (5) explains the total mean scores for each domain separately and mean of scores for all three domains . In all total three domains mean of scores dose not reach (17) that is why level of awareness in each domain was poor which accounts (16.5, 16.7, 164) in all three domain respectively. Total mean of scores in all three domains together accounts (49.7) which indicates to calculating means of scores for each domain separately and in all three domain together in chapter three Methodology page (63-64) . This finding in present study indicated that nurses who participated in this study did not get any information about ASD ,while they were nurses students and after their graduating or during their services as a nurse in all three hospitals. This is what the researcher look for and should be highlighted especially for nurses who work in pediatric ward, it is very important to be aware about this disorder .

Part Three:- Relationship between Nurses Awareness level about Autism Spectrum Disorder with some of Socio demographic characteristics.

Table (6) Distribution of Sample according to Relationship between Nurses Awareness level and Age Group .

Age Group / Domains	F	p. Value	Sig. Level
Total Domain 1	1.12	.340	**N.S**
Total Domain 2	.62	.600	**N.S**
Total Domain 3	.32	.810	**N.S**

N.S=Non significant S= significant H.S= Highly significant

Table (6) demonstrates the relationship between nurses level of awareness in all three domains regarding ASD and age groups. The finding in this table shows that there is no significant relationship between nurses level of awareness and their age groups in all three domains (P. value 0.05).

The results in the present study agree with the results of previous study done by (Shaukat, et al., 2014) which mentioned that there is no significant relationship between nurses level of awareness and age groups, but it's worth to mention that our finding disagrees with the study curried out by (Bakare et al., 2009) who said that their is a significant relationship between nurses level of awareness and age groups.

Table (7) Distribution of Sample according to Relationship between Nurses Awareness level and Gender .

Domains / Gender		N	Mean	S.D	*t*	p. value	Sig. Level
Total domain 1	Male	85	16.71	3.46	.613	.966	**N.S**
	Female	115	16.38	3.84			
Total domain 2	Male	85	16.58	4.04	.418-	.483	**N.S**
	Female	115	16.81	3.76			
Total domain 3	Male	85	16.08	3.94	1.191-	.687	**N.S**
	Female	115	16.77	4.05			

N.S=Non significant S= significant H.S= Highly significant

Table (7) explores the relationship between nurses level of awareness in all three domains regarding ASD and Gender , as it show above there is no significant relation between nurses gender whom work at pediatric ward and level of awareness all three domains (p. value 0.05).

The finding in the present study disagrees with the results of previous study done by (Luleci, et al., 2012) that indicates there is significant relationship between nurses level of awareness and gender about autism .

Table (8) Distribution of the Sample according to Relationship between Nurses Awareness level and Educational level .

Educational level / Domains	F	p. value	Sig. Level
Total domain 1	1.09	.353	**N.S**
Total domain 2	1.24	.293	**N.S**
Total domain 3	.73	.535	**N.S**

N.S=Non significant S= significant H.S= Highly significant

Table (8) demonstrate the relationship between nurses level of awareness in all three domains regarding ASD and educational level .

Although high level of educational must affect the nurses awareness and knowledge positively, but in the current study the findings show that there is no significant relationship between nurses level of awareness and their educational level in all three domains (P. value 0.05), this indicates that nurses did not receive enough knowledge and information when they were students and during their services in hospitals regarding this issue.

Table (9) Distribution of Sample according to Relationship between Nurses Awareness level and Place of Work .

Place of Work / Domains	F	p. value	Sig. Level
Total domain 1	.48	.618	**N.S**
Total domain 2	.17	.843	**N.S**
Total domain 3	.23	.791	**N.S**

N.S=Non significant S= significant H.S= Highly significant

Table (9) shows that there is no significant relationship between level of Nurses Awareness and their Place of Work at (p. value 0.05).

The results in the present study disagree with the results of previous study done by (Bakare, et al., 2009) which mentioned that there is significant relationship between nurses level of awareness and place of work, also the findings study done in Nigeria by (Igwe et al., 2010) which disagree with our present study they found that the place of work greatly influenced by the knowledge of healthcare workers.

Table (10) Distribution of Sample according to Relationship between Nurses Awareness level and Years of Employment

Years of Employment / Domains	F	p. value 0.05	Sig. Level
Total domain 1	2.13	.077	**N.S**
Total domain 2	.64	.628	**N.S**
Total domain 3	1.13	.344	**N.S**

N.S=Non significant S= significant H.S= Highly significant

The above table demonstrates the relationship between nurses level of awareness in all three domains regarding ASD and years of employment.

The finding shows that there is no significant relationship between nurses level of awareness and years of employment at (p. value 0.05). This result is supported by the result of previous study done by (Igwe, et al., 2011) they found that statistically no significant relationship between nurses level of awareness and years of employment .while the present study disagrees with the results of previous study curried out by (Bakare, et al., 2009) mentioned that their is a significant relationship between the healthcare knowledge about child hood autism and year of working experience.

Table (11) Distribution of Sample according to Relationship between Nurses Awareness level and Nurses who have Close Relative Child with Autism .

Domains / Close Relative Child ASD		N	Mean	S.D	*T*	p. value	Sig. Level
Total domain 1	Yes	24	20.46	5.47	6.06	0.000	**H.S**
	No	176	15.98	3.00			
Total domain 2	Yes	24	21.00	6.46	6.32	0.000	**H.S**
	No	176	16.13	2.95			
Total domain 3	Yes	24	19.83	6.74	4.58	0.001	**H.S**
	No	176	16.02	3.25			

N.S=Non significant S= significant H.S= Highly significant

Table (11) explores the relationship between nurses level of awareness in all three domains regarding ASD and nurses who have close relative child with autism.

The finding shows that there is highly significant relationship between nurses level of awareness and those nurses who have close relative child with autism at (p. value 0.05), this result is supported by the result of previous study done in Northern Ireland by (Dillenburger, et al., 2013) found a significant relationship between level of awareness and their have close relative child with Autism.

Table (12) Distribution of Sample according to Relationship between Nurses Awareness level and Nurses who Caring to ASD Child .

Care to ASD Child / Domains	F	p. value	Sig. Level
Total domain 1	23.00	.000	**H.S**
Total domain 2	12.70	.000	**H.S**
Total domain 3	21.61	.000	**H.S**

N.S=Non significant S= significant H.S= Highly significant

The above table demonstrate the relationship between nurses level of awareness in all three domains regarding ASD and nurses who caring to ASD child .

The finding shows that there is highly significant relationship between nurses level of awareness and nurses who caring their to ASD child previously at (p.value 0.05), this result is supported by the result of previous study done by (Eseigbe, et al., 2015) mentioned that their is a significant relationship between knowledge of respondents about child hood autism and their management to ASD Child, also our present study results agree with the results of previous study done by (Igwe, et al., 2011) who found significant relationship between nurses knowledge about child hood autism and caring to ASD child previously. more contact with ASD child due to more experience and awareness

Chapter Five

Conclusions

&

Recommendations

Chapter Five

Conclusion and Recommendations

This chapter includes the most important finding and conclusions of the study. In addition to that ,its involve the recommendations that should be taken in to consideration.

5.1 Conclusion:

The main conclusions in this study are :-

Majority of the sample are female ,most of them there age ranged between (30-39,and 20-29)years old ,and proportion of married record higher percentage .

More than half of the sample working in pediatric hospital, and very few percentage of the sample gain bachelor degree in nursing ,most of them graduated from secondary school and medical institute.

No one of the nurses in the study sample were participate in any training course or work shop related to ASD inside or outside the country.

Very few percentage of sample have a close relative child with ASD ,and caring for child with this disorder.

Nurses awareness level in general regarding ASD in all three domains (information, concepts and facts about autism spectrum disorders),(social interaction and communication in children with autism), and (disorder in behavioral patterns) was insufficient and very poor .

No significant relationship were found between nurses level of awareness and age groups, place of work, gender, level of education, and years of employment .

Significant relationship were found between nurses level of awareness and nurses who have close relative child with ASD, and nurses that caring autistic children .

5.2 Recommendations:

5.2.1 Construct an education program to enhance nurses information, this will also improving their clinical ability to early recognize children with symptoms of Autism Spectrum Disorders in this environment

5.2.2 Review and updating pediatric nursing curriculum in nursing collage and institute to focus more on developmental disorders like ASD.

5.2.3 Further studies conducted among all health care provided and larger sample on this disorder.

5.2.4 Future studies aiming at providing baseline data to guide policies and planning on healthcare delivery system to children with childhood autism and other developmental disorders in Kirkuk should focus on these issues.

5.2.5 Build public specialized center for children with autism spectrum disorder in Kirkuk city .

References

القران الكريم ،سورة البقرة، الآية (32)

Abbas A D (2013). "Assessment of Sleep Disorder among Autistic Children" *Journal of Kufa for Nursing Science* Volume 3,p 3.

Abd El-haliem E K , Sharkawy S A , Mobarak A , Mohamed N T (2013) " Study of Eating Habits for Children with Autism at Assiut City" *Journal of American Science* , volume 9, Issue 11, pp 485-486.

AL- Shimery EH, AL- Ghabban JM, Abdul Muhsin H (2011) " Autism Among Children Attending Pediatric Psychiatric Department in Child's Central Teaching Hospital in Baghdad" *The Iraqi postgraduate medical journal*, Volume 10, issue 4, pp 430-482.

Angley M, Semple S, Hewton C, Paterson F, McKinnon R. (2007)"Children and autism part 2 management with complementary medicines and dietary interventions" *Aust Fam Physician*, Volume 36, Issue 10 ,p 827.

APA American Psychiatric Association 2016 "What Is Autism Spectrum Disorder" available from https://www.psychiatry.org/patients-families/autism/what-is-autism-spectrum-disorder. (accede 19 April 2016).

Arif M M , Niazy A , Hassan B , Ahmed F (2013) "Awareness of Autism in Primary School Teachers" *Autism Research and Treatment* ,Volume 2013 ,pp 1- 5 .

Ashwood P, Van de Water J.(2004) "Is autism an autoimmune disease" *Autoimmun Rev*, Volume 3, Issues 7–8, p 557.

Atkins W .(2011) "The history and significance of the autism spectrum" M.Sc. thesis. The University of Toledo . USA .

Bakare M.O, Ebigbo P O, Agomoh A, Eaton J , Onyeama G, Okonkwo (2009) "Knowledge about childhood autism and opinion among healthcare workers on availability of facilities and law caring for the needs and rights of children with childhood autism and other developmental disorders in Nigeria" *BMC Pediatrics,* VOL 9 , pp 8-12.

Barton M, Robins D, Jashar D, Brennan L , Fein D (2013)" Sensitivity and Specificity of Proposed DSM-5 Criteria for Autism Spectrum Disorder in Toddlers" *J Autism Dev Disord,* Volume 43, Issue 5 , pp1184,1195.

Bent S, Bertoglio K, Hendren RL (2009) "Omega-3 fatty acids for autistic spectrum disorder: a systematic review" *J Autism Dev Disord*, Volume 39, p 1145.

Bird, G.; Cook, R. (2013). "Mixed emotions: the contribution of alexithymia to the emotional symptoms of autism" *Translational Psychiatry* , VOL 3,Issue 7, p 285.

Bodfish JW, Symons FJ, Parker DE, Lewis MH (2000). "Varieties of repetitive behavior in autism: comparisons to mental retardation" *Journal of Autism and Developmental Disorders*, Volume 30, Issue 3, p 237.

Boyd, M.,(2012) Psychiatric nursing contemporary practice, fifth edition, *Wolters Kluwer Health | Lippincott Williams&Wilkins* :pp.681-685.

Buie T, Campbell DB, Fuchs GJ, Furuta GT, Levy J, Vandewater J et al(2010). "Evaluation, diagnosis, and treatment of gastrointestinal disorders in individuals with ASDs: a consensus report" *Pediatrics* , Volume 125, Issue l 1, pp 1 -4.

Burgess AF, Gutstein SE (2007). "Quality of life for people with autism: raising the standard for evaluating successful outcomes" Child and Adolescent Mental Health, Volume 12, Issue 2, pp 80–86.

Cambridge University Press (2016) "Cambridge Dictionaries Online" available from http://dictionary .cambridge. org/pt/dicionario /ingles /awareness (accede 14 April 2016).

Caronna EB, Milunsky JM, Tager-Flusberg H (2008) "Autism spectrum disorders: clinical and research frontiers" *Arch Dis Child* , Volume 93, Issue 6 , p 518.

Casanova MF (2007). "The neuropathology of autism". *Brain Pathology*, Volume 17, Issue 4, pp 422–430.

CDC Center for Disease Control and Prevention. (2014) "CDC estimates 1 in 68 children has been identified with autism spectrum disorder" available from http://www.cdc.gov/media/releases/2014/p0327-autism-spectrum-disorder.html (accede 18 May 2016).

Chaste P, Leboyer M.(2012) Autism risk factors: genes, environment, and gene-environment interactions" *Dialogues Clin Neurosci*, VOL 14 , Issue 3, pp281–282.

Chisholm K , Lin A , Abu-Akel A, Wood S (2015)."The association between autism and schizophrenia spectrum disorders: A review of eight alternate models of co-occurrence". *Neuroscience & Biobehavioral Reviews*, VOL 55 , pp 173,183.

Chomiak T, Turner N, Hu B. (2013) "What We Have Learned about Autism Spectrum Disorder from Valproic Acid" *Pathology Research International* ,Volume 2013 , Article ID 712758, p 8 .

DeStefano .F, Price .C, Weintraub .E (2013)"Increasing Exposure to Antibody-Stimulating Proteins and Polysaccharidesin Vaccines Is Not Associated with Risk of Autism" *The journal of pediatrics*,Vol 163, p 2.

Dhossche DM, Reti IM, Wachtel LE.(2009)" Catatonia and autism: a historical review, with implications for electroconvulsive therapy" *J ECT*. Volume 25, pp 19–22.

Dillenburger K , Jordan J A., McKerr L., Devine P, Keenan, M (2013) "Awareness and knowledge of autism and autism interventions: Ageneral population survey' *Research in Autism Spectrum Disorders*, VOL 7, pp 1558-1567.

Dillenburger K, Keenan M(2009)" None of the As in ABA stand for autism: dispelling the myths" *Journal of Intellectual and Developmental Disability*, Volume 34, Issue 2, p 193.

Eikeseth S (2009)"Outcome of comprehensive psycho-educational interventions for young children with autism" *Research in Developmental Disabilities,* Volume 30,Issue 1, pp 158–159.

Erickson CA, Stigler KA, Corkins MR, Posey DJ, Fitzgerald JF, McDougle CJ. (2005) "Gastrointestinal factors in autistic disorder: a critical review" *J Autism Dev Disord*, Vol 35, Issue6, p 713.

Eseigbe E, Nuhu F.T, Sheikh T.L, Eseigbe P , Sanni K.A, Olisah V.O (2015)" Knowledge of Childhood Autism and Challenges of Management among Medical Doctors in Kaduna State, Northwest Nigeria" *Autism Research and Treatment*, Volume 2015, p 6 .

Eyles. D, Burne .T, McGrath J (2013)" Vitamin D, effects on brain development, adult brain function and the links between low levels of vitamin D and neuropsychiatric disease" *Front Neuroendocrinol* ,VOL 34, Issue 1, p 47.

Fombonne. E, Zakarian. R, Bennett. A, Meng .L, McLean-Heywood. D.(2006)" Pervasive developmental disorders in Montreal, Quebec, Canada: prevalence and links with immunizations" *Pediatrics*, VOL 118, Issue (1) , p139.

Freitag CM (2007) "The genetics of autistic disorders and its clinical relevance: a review of the literature" *Molecular Psychiatry*, VOL 12, Issue (1), pp 2–4.

Gardener H, Spiegelman D, Buka SL(2009) "Prenatal risk factors for autism: comprehensive meta-analysis" *British Journal of Psychiatry* ,VOL 195, pp 7,14.

Geschwind .D (2008). "Autism: many genes, common pathways" *Cell* ,Volume 135, Issue 3, pp 391–392.

Geschwind .D (2009*)* "Advances in autism" *Annual Review of Medicine* ,VOL 60, pp 367-368 .

Ghaziuddin M(2005) Mental Health Aspects of Autism and Asperger Syndrome. 1 edition. Jessica Kingsley. London N1,pp 15 ,18,48.

Glasson .E , Psych . B , Hons . B, Carol .B, FAFPHM .D, Petterson .B, et al(2004) Perinatal factors and the development of autism" *Archives of General Psychiatry*, VOL 61, p 618.

Gold C, Wigram T, Elefant C. (2006) "Music therapy for autistic spectrum disorder" *Cochrane Database of Systematic Reviews*" VOL 2, pp 11- 12.

Granpeesheh D., Tarbox J., Dixon D. R., Wilke A. E., Allen M. S., Bradstreet J.(2010) "Randomized trial of hyperbaric oxygen therapy for children with autism." *Research in Autism Spectrum Disorders*, Volume 4, Issue 2, pp 268–269.

Great Plains Skeptic (2016)" The journey from PDD to ASD: What's with all these letters" available from http://www.skepticink.com/gps/2016/03/09/1548/ (accede1 September 2016).

Hamilton AF (2008). "Emulation and mimicry for social interaction: a theoretical approach to imitation in autism" *The Quarterly Journal of Experimental Psychology*, Volume 61, Issue 1, p101.

Hartley-McAndrew M, Doody K.R, Mertz J (2014)" Knowledge of Autism Spectrum Disorders in Potential First- Contact Professionals" *N A J Med Sci.* VOL 7,Issue 3, pp 97-102.

Hatton. D, Sideris. J, Skinner . M ,Mankowski .s , Jean. B, Donald. B ea tal (2006). "Autistic behavior in children with fragile X syndrome: Prevalence, stability, and the impact of FMRP" *American Journal of Medical Genetics*, VOL 140A (17), pp 1804–1806.

Igwe M, Ahanotu A, Bakare M, Achor J, Igwe C (2011) "Assessment of knowledge about childhood autism among paediatric and psychiatric nurses in Ebonyi state, Nigeria" *Child and Adolescent Psychiatry and Mental Health* , Vol 5, Issue 1, pp 1-8.

Igwe M, Bakare M, Agomoh A, Onyeama G, Okonkwo K (2010)" Factors influencing knowledge about childhood autism among final year undergraduate Medical, Nursing and Psychology students of University of Nigeria, Enugu State, Nigeria" *Italian Journal of Pediatrics*, VOL 36 , pp 1-7.

International Council of Nurses (2015 **)** "Definition of Nursing" available from http://www.icn.ch/who-we-are/icn-definition-of-nursing (accede 17 April 2016).

Jepson B., Granpeesheh D., Tarbox J., Olive M. L., Stott C., Braud S (2011) "Controlled evaluation of the effects of hyperbaric oxygen therapy on the behavior of 16 children with autism spectrum disorders" *Journal of Autism and Developmental Disorders*, VOL 41,Issue 5, pp575–578.

Jeste SS, Nelson CA (2009)"Event related potentials in the understanding of autism spectrum disorders: an analytical review" *J Autism Dev Disord* , VOL 39,Issue (3), pp 495–497.

Jiar Y K , Xi Lu (2012) " Parenting Stress And Psychological Distress Among Mothers Of Children With Autism In Johor Bahru And Hangzhou" Malaysia ,*Journal of Educational Psychology & Counseling* ,Volume 6 , p 129.

Johnson CP, Myers SM (2007)"Identification and evaluation of children with autism spectrum disorders" *Pediatrics* , VOL 120, Issue 5, p1183.

Kern. J, Jones .A, (2006)"Evidence of toxicity, oxidative stress, and neuronal insult in autism" *Journal of Toxicology and Environmental Health Part B*, VOL 9, p 485.

Klin. A(2006)"Autism and Asperger syndrome: an overview" *Revista Brasileira de Psiquiatria* ,VOL 28, p 3.

Kneisl, C., and Trigoboff, E (2009) Contemporary Psychiatric-Mental health Nursing, second Edition. *Pearson education, Inc.*, pp. 693-695.

Kochel. G, Myers. B (2005)"Congenital versus regressive onset of autism spectrum disorders: Parents beliefs about causes" *Focus on Autism and Other Developmental Disabilities*, VOL 20,Issue (3), pp 169-179.

Kolevzon A, Gross R, Reichenberg A. (2007) "Prenatal and perinatal risk factors for autism" *Arch Pediatr Adolesc Med*, VOL161,Issue (4), p 326 .

Kulage. K, Smaldone . A , Cohn .E (2014) "How Will DSM-5 Affect Autism Diagnosis? A Systematic Literature Review and Meta-analysis" *Journal of Autism and Developmental Disorders* ,Volume 44, Issue 8, pp 1918-1920.

Landa R (2007). "Early communication development and intervention for children with autism" *Mental Retardation and Developmental Disabilities Research Reviews* ,Volume 13, Issue (1), pp 16-17.

Lee B, Magnusson .C, Gardner .R, Blomström S, Newschaffer CJ, Burstyn I et al (2014)"Maternal hospitalization with infection during pregnancy and risk of autism spectrum disorders." *Brain, Behavior and Immunity* ,VOL44, pp 100–105.

Lee MS, Kim JI, Ernst E (May 2013) "Massage therapy for children with autism spectrum disorders: a systematic review" *J Clin Psychiatry*, Volume 127 , Issue 4, p 487.

Levy SE, Hyman SL. (2005)"Novel treatments for autistic spectrum disorders" USA, Mental Retardation and Developmental Disabilities Research Reviews,Vol 11, Issue 2 ,Pages131–135.

Lord .C, Cook. E, Leventhal .B, Amaral .G (2014)" Autism spectrum disorders" *Neuron*. Vol. 28, Issue 2, pp 355–357.

LoveToKnow Corp (2016) " YourDictionary" available from http://www.yourdictionary.com/ward (accede 17 April 2016).

Lüleci NE, Hidiroglu S, Karavus M, Suzan Celik S, Cetiner D, Koc E et al (2012) "exploring the autism awareness of first grade nursing and medical students in Istanbul" *J Pak Med Assoc*, VOL 66, p 8

Malow B. A ,Byars K J,ohnson K ,Weiss. S ,Bernal. P ,Goldman S. E,et al(2012)"A Practice Pathway for the Identification, Evaluation, and Management of Insomnia in Children and Adolescents With Autism Spectrum Disorders" *Pediatrics*, VOL 130, p 106 .

Mandell D S , Novak M , Zubritsky C D (2005) " Factors Associated With Age of Diagnosis Among Children With Autism Spectrum Disorders" *Pediatrics Journal* , volume 116, Issue 6, p 738.

Manzi B, Loizzo AL, Giana G, Curatolo P (2008) "Autism and metabolic diseases" *Journal of Child Neurology*, VOL 23, Issue 3, pp307–309.

Marcdante .kj , Kliegman. RM(2014) Nelson Essentials of Pediatrics. 7th Edition. ,Saunders Elsevier Inc, Philadelphia ,pp 63,66.

McConachie H, Diggle T.(2007)" Parent implemented early intervention for young children with autism spectrum disorder: a systematic review" *Journal of Evaluation in Clinical Practice*, Vol 13, Issue 1,pp 120–125.

McElhanon .B, McCracken C, Karpen S, Sharp WG (2014) "Gastrointestinal Symptoms in Autism Spectrum Disorder: A Meta-analysis" *Pediatrics* ,Volume 133, Issue 5 ,pp 872–873.

McPartland, J. C., Reichow, B., & Volkmar, F. R. (2012) "Sensitivity and specificity of proposed DSM-5 diagnostic criteria for autism spectrum disorder" *Journal of the American Academy of Child & Adolescent Psychiatry*, Volume 51, pp 368-383.

Mehler .M, Purpura .D (2009) "Autism, fever, epigenetics and the locus coeruleus" *Brain Research Reviews* ,VOL 59, Issue(2), pp 388–889.

Millon T, Krueger R, Simonsen E editors (2010)"Contemporary Directions in Psychopathology. Scientific Foundations of the DSM-V and ICD-11*"* 1 edition ,*New York City:* Guilford Press. *p.* 555 [cited 2016 April 27]. Available from: https://www.scribd.com/doc/91450155/Contemporary-Directions-in-Psycho-Pathology-Scientific-Foundations-of-the-DSM-V-and-ICD-11.

Millward C, Ferriter M, Calver S, Connell-Jones G (2008)"Gluten- and casein-free diets for autistic spectrum disorder" *Cochrane Database of Systematic Reviews*. Volume 2, pp 5-8.

Muhammad Z , Dhia Al- Deen L, Abdul Muhsin H (2013)" Knowledge about childhood autism among care providers in Baghdad" *The Arab Journal of Psychiatry* ,Volume 24, (1), pp 27 - 31.

Murray D , Currans K , Johnson H , Bing N , Kroeger-Geoppinger K , Sorensen R , et al (2013) " Autism Spectrum Disorders" *Pediatric and Adolescent Health Care* ,Volume 43, Issue 1, pp 2,11 .

Nelson. K, Bauman. M (2003)" Thimerosal and autism" *Pediatrics*, VOL 111, Issue 3 ,p 674.

Newschaffer CJ, Croen LA, Daniels J, Giarelli E, Grether JK, Levy SE et al (2007) "The epidemiology of autism spectrum disorders" *Annual Review of Public Health*, Volume 28, p 235.

Ng .D, Chan. C, Soo. M, Lee .R (2007)"Low-level chronic mercury exposure in children and adolescents: meta-analysis" *Pediatrics International* ,Volume 49, Issue 1, pp 80–83.

Ng. F, Berk .M, Dean .O, Bush .AI(2008)" Oxidative stress in psychiatric disorders: evidence base and therapeutic implications" *International Journal of Neuropsychopharmacology*, VOL11, Issue 6 , pp 851–853.

Onore C, Careaga M, Ashwood. P (2012)"The role of immune dysfunction in the pathophysiology of autism" *Brain, Behavior and Immunity* ,Volume 26, Issue 3, p 383.

Orsmond GI, Seltzer MM (2007) "Siblings of individuals with autism spectrum disorders across the life course" *Mental Retardation and Developmental Disabilities Research Reviews*, Vol 13, Issue 4, p 313.

Oxford University Press(2016) " Oxford Dictionaries language Matters " available from http://www.oxforddictionaries. com/definition/ english/ assessment (accede 16 April 2016).

Panksepp . A (1979)" neurochemical theory of autism" *Trends in Neurosciences*. VOL 2, pp 174–175.

Paul R. (2009)"Parents ask: am I risking autism if I vaccinate my children" USA, *Journal of Autism and Developmental Disorders*, VOL 39, Issue 6 ,p 962.

Polit O. and Hungler, B.: *Nursing Research Principles and Methods*, 6th ed ; 1999; , pp. 187 – 92,373 ; Lippincott Company. Philadelphia.

Posey DJ, Stigler KA, Erickson CA, McDougle CJ. (2008)"Antipsychotics in the treatment of autism" *Journal of Clinical Investigation* , Volume 118, Issue 1, pp 6–14.

Rapin I, Tuchman RF (2008) "Autism: definition, neurobiology, screening, diagnosis" *Pediatric Clinics of North America*, Volume 55, Issue 5, pp 1129–1136.

Razali1 N M, Toran H , Kamaralzaman S , Salleh N M , Hanafi M (2013) "Teachers Perceptions of Including Children with Autism in a Preschool" *Asian Social Science*, Volume 9, p12.

Román GC. (2007)Autism: transient in utero hypothyroxinemia related to maternal flavonoid ingestion during pregnancy and to other environmental antithyroid agents" *Journal of the Neurological Sciences*, Volume 262, pp 15–16.

Rossignol DA, Rossignol LW, Smith S, Schneider C, Logerquist S, Usman A et al.(2009)"Hyperbaric treatment for children with autism: a multicenter, randomized, double-blind, controlled trial" *BMC Pediatrics*, Volume 9, pp 9-12.

Rossignol, D. A. (2009) "Novel and emerging treatments for autism spectrum disorders: a systematic review" *Annals of Clinical Psychiatry* ,Volume 21 ,Issue 4, pp 213–215.

Russell .G , Kelly. S , Golding ,(2009) A qualitative analysis of lay beliefs about the aetiology and prevalence of autistic spectrum disorders" *Child: care health and development*, VOL 36, Issue 3, pp 431,436.

Rutter M.(2005)" Incidence of autism spectrum disorders: changes over time and their meaning" *Acta Paediatr* ,Volume 94, Issue 1, p 2.

Scarpinato, N., Bradley, J., Kurbjun, K., Bateman, X., & Ely, B.,(2010) Caring for the child with an autism spectrum disorders in the acute care setting. *Journal of specialist in Pediatrics nursing*, VOL 15, Issue3, pp 244-254.

Schaefer G, Mendelsohn .N (2013) "Clinical genetics evaluation in identifying the etiology of autism spectrum disorders" *Genetics in medicine* , VOL15, pp 399–401.

Schlosser RW, Wendt O. (2008) "Effects of augmentative and alternative communication intervention on speech production in children with autism: a systematic review" *American Journal of Speech-Language Pathology* , VOL 17,Issue 3, pp 212–214.

Schultz .R (2005) "Developmental deficits in social perception in autism: the role of the amygdala and fusiform face area" *International Journal of Developmental Neuroscience ,*Volume 23, Issues 2–3, p 125.

Seba., J, Lakshmi .B, Troge . J, Alexander . J, Young. J, Lundin. P, et al (2004). "Large-Scale Copy Number Polymorphism in the Human Genome" *Science*, VOL 305, Issue (5683), pp 525–528.

Shattock .P , Whiteley .P (2002) "Biochemical aspects in autism spectrum disorders: updating theopioid-excess theory and presenting new opportunities for biomedical intervention" *Expert Opinion on Therapeutic Targets* ,Volume 6, Issue 2, p 175.

Shaukat F, Fatima A, Zehra N , Hussein M, Ismail O (2014)" Assessment of knowledge about childhood autism among medical students from private and public universities in Karachi" *J Pak Med Assoc*, Volume 64, Isuue (11), pp 1331-1334.

Sigman M, Dijamco A, Gratier M, Rozga A (2004)"Early detection of core deficits in autism". *Mental Retardation and Developmental Disabilities Research Reviews* ,Volume 10, Issue 4, pp 221–223,

Siniscalco . D, Cirillo . A, Bradstreet .J, Antonucci.N(2013) " Epigenetic Findings in Autism: New Perspectives for Therapy" *International Journal of Environmental Research and Public Health*, VOL 10, pp 4261-4263.

Stefansson.H ,Meyer-Lindenberg .A,Steinberg. S, Magnusdottir .B, Morgen. K, Arnarsdottir. S, et al (2013). *"CNVs conferring risk of autism or schizophrenia affect cognition in controls".* *Nature*, VOL 505 ,(7483),p361–363.

Stigler. K , Sweeten .L, Posey. D, McDougle. C. (2009)"Autism and immune factors: a comprehensive review" *Research in Autism Spectrum Disorders,* Volume 3, Issue 4, pp 840–841.

Surmen A, Hidiroglu S, Hande U H , Awiwi M , Saki O A, Karavus M , Karavus A (2015) "exploring knowledge, attitudes and behaviours towards autism among adults applying to a Family Health Center in Istanbul" *Northern Clinics of İstanbul*, VOL 2, Issue 1 , pp13-18.

Tager-Flusberg. H (2010) The origins of social impairments in autism spectrum disorder: studies of infants at risk" *Neural Networks*, VOL 23 , pp 1072–1074.

Treffert DA (2009) "The savant syndrome: an extraordinary condition. A synopsis: past, present, future" *Philosophical Transactions of the Royal Society B*, Vol 364, (1522) ,pp1351–1357.

Uher, R (2009). "The role of genetic variation in the causation of mental illness: an evolution-informed framework" *Molecular Psychiatry*, VOL 14,Issue 12 ,pp 1072–1073.

Ullah S , Aqdas M I , Khan N , Nabi G , Aziz T (2015)" Awareness Regarding Autism in Schools' Teachers at District Lower Dir, Khyber Pakhtunkhwa" *Universal Journal of Medical Science* ,volume 3, Issue 3,pp 55-59.

Underwood L, McCarthy J, Tsakanikos E.(2010)" Mental health of adults with autism spectrum disorders and intellectual disability" *Current Opinion in Psychiatry*, Volume 23, Issue 5, pp 421–426.

Upendra S (2013) "Knowledge of Autism Among Pre School Teachers" *Sinhgad e Journal of Nursing*, Vol. III, Issue II , pp 5-8.

Williams DL, Goldstein G, Minshew NJ (2006). "Neuropsychologic functioning in children with autism: further evidence for disordered complex information-processing" *Child Neuropsychol* ,Volume 12 ,Issue 4-5 , p 279 .

Williams JH (2008) "Self–other relations in social development and autism: multiple roles for mirror neurons and other brain bases" *Autism Research* ,Volume 1, Issue 2, pp 73–75.

Willis Clarissa(2006) Teaching Young Children With Autism Spectrum Disorder. 1 edition .Gryphon House, Inc. United States of America. pp 20-21 .

Wolff S.(2004) " The history of autism" *European Child & Adolescent Psychiatry* , VOL 13, p 4

Worley, J. A., & Matson, J. L. (2012) "Comparing symptoms of autism spectrum disorders using the current DSM-IV-TR diagnostic criteria and the proposed DSM-V diagnostic criteria" *Research in Autism Spectrum Disorders*, Vol 6, Issue 2, pp 965-970.

Zafeiriou D, Ververi A ,Vargiami E (2007) "Childhood autism and associated comorbidities " *Brain & Development* , VOL 29 , pp 257 ,272.

Zwaigenbaum L , Bryson S , Lord C , Rogers S , Carter A , Carver L ,et al (2009) Assessment and Management of Toddlers With Suspected Autism Spectrum Disorder: Insights From Studies of High-Risk Infants" *Journal of PEDIATRICS*, Volume 123, p 5.

Appendices

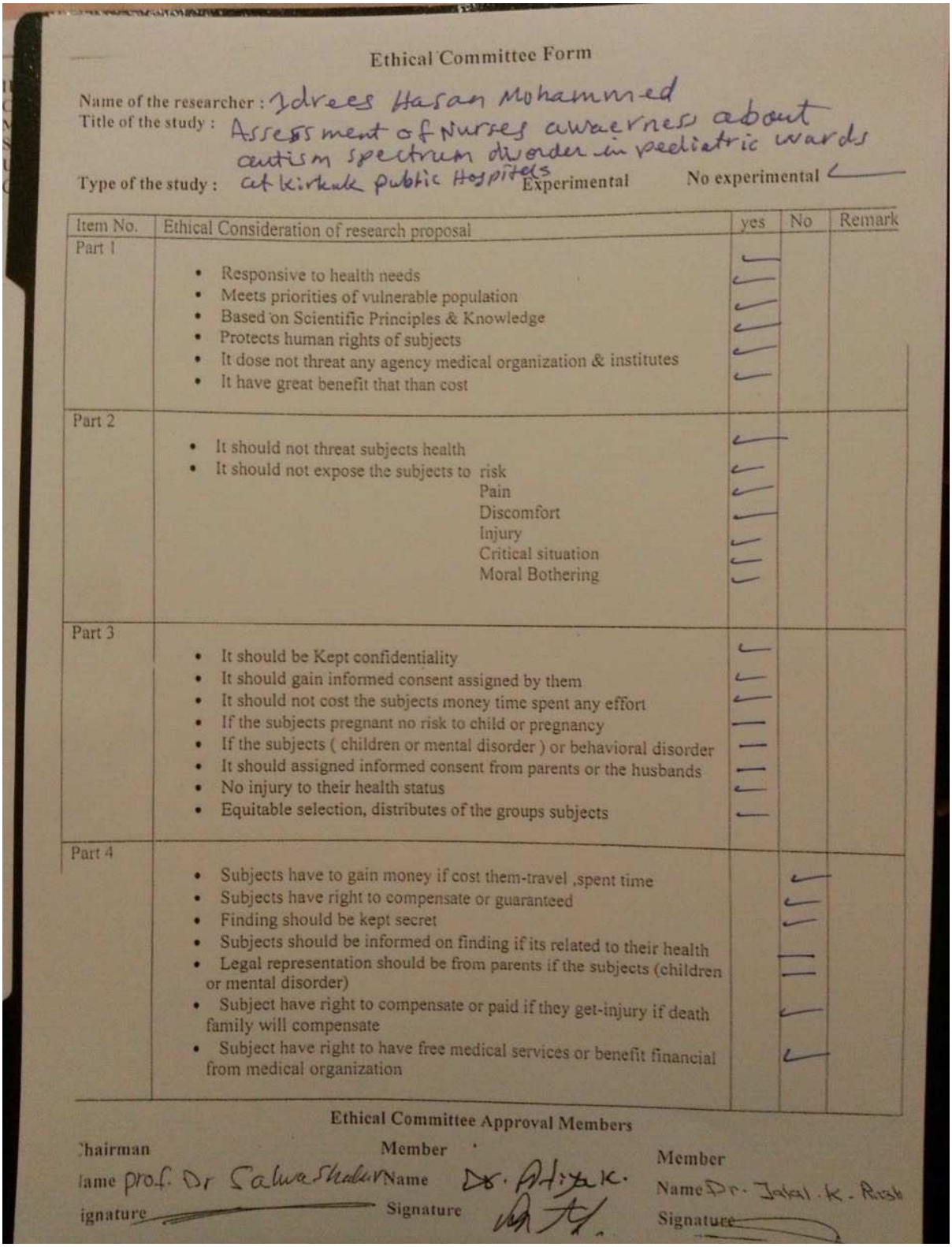
Appendix A

List of experts

	Name	Scientific Title	Workplace
1.	Dr. Salwa shaker alkurwi	Professor	School of Nursing- University of Sulaimani\(Psychiatric Nursing)
2.	Dr Nazar M. Ameen	Professor	College of medicine- University of Sulaimani\(Psychiatrist
3.	Dr. RadhwanHussien Ibrahim	Professor	College of Nursing -University of Musel (Community Health nursing)
4.	Dr. Norhan Z. Shaker	Assistant Professor	College of Nursing-Hawler Medical University\(Pediatric Nursing)
5.	Dr.ShukirSaleemHasan	Assistant Professor	College of Nursing-Hawler Medical University\(Child health Nursing)
6.	Dr. Saadoun D. Ahmad	Assistant Professor	College of medicine-University of Kirkuk\(psychiatrist)
7.	Dr.Jasim M. Alshindi	Consultant psychiatrist	Azadi teaching hospital (Psychiatrist)
8.	Dr.AbdulkareemKhidher	Consultant psychiatrist	Azadi teaching hospital (Psychiatrist)
9.	Dr. Abdulqader Hussein Gardi	Assistant Professor	College of Nursing-Hawler Medical University\(Psychiatric Nursing)
10.	Dr Jamal Q. welli	Lecturer	Azadi teaching hospital (pediatrician)
11.	Dr. Salah Mohammad Salih Hassan	Lecturer	College of Nursing -University of Kirkuk (Medical-Surgical nursing)
12.	Dr. Hiwa Sittar Salih	Lecturer	College of Nursing -University of Kirkuk (Community Health nursing)
13.	Dr. Vian Q.Sadeq	Lecturer	Kirkuk General Hospital (pediatrician)
14.	Dr. Saad A. Alhamdani	Lecturer	Higher Health profissions institute in Kirkuk
15.	Dr Mufeed A. Taha	Lecturer	College of medicine-University of Kirkuk\(psychiatrist)

Appendix B

ETHICAL COMMIT PERMISSION



Ethical Committee Form

Name of the researcher : Idrees Hasan Mohammed
Title of the study : Assessment of Nurses awareness about autism spectrum disorder in pediatric wards at kirkuk public Hospitals
Type of the study : Experimental No experimental

Item No.	Ethical Consideration of research proposal	yes	No	Remark
Part 1	• Responsive to health needs • Meets priorities of vulnerable population • Based on Scientific Principles & Knowledge • Protects human rights of subjects • It dose not threat any agency medical organization & institutes • It have great benefit that than cost	✓ ✓ ✓ ✓ ✓ ✓		
Part 2	• It should not threat subjects health • It should not expose the subjects to risk Pain Discomfort Injury Critical situation Moral Bothering	✓ ✓ ✓ ✓ ✓ ✓ ✓		
Part 3	• It should be Kept confidentiality • It should gain informed consent assigned by them • It should not cost the subjects money time spent any effort • If the subjects pregnant no risk to child or pregnancy • If the subjects (children or mental disorder) or behavioral disorder • It should assigned informed consent from parents or the husbands • No injury to their health status • Equitable selection, distributes of the groups subjects	✓ ✓ ✓ — — — ✓ ✓		
Part 4	• Subjects have to gain money if cost them-travel ,spent time • Subjects have right to compensate or guaranteed • Finding should be kept secret • Subjects should be informed on finding if its related to their health • Legal representation should be from parents if the subjects (children or mental disorder) • Subject have right to compensate or paid if they get-injury if death family will compensate • Subject have right to have free medical services or benefit financial from medical organization		✓ ✓ ✓ — — ✓ ✓	

Ethical Committee Approval Members

Chairman
Name prof. Dr Salwa Shaker
Signature

Member
Name Dr. Ahlak.
Signature

Member
Name Dr. Jalal. K. Rush
Signature

Appendix (C-1)

التعليمات :

يحتوي هذا الاستبيان على بعض الأسئلة حول اضطراب طيف التوحد لذا أرجو التفضل منك الاستماع إلى الأسئلة بعناية التي اطرحها في المقابلة وتوفير المعلومات اللازمة من خلال إعطاء الرد المناسب علما سيتم الاحتفاظ بسرية المعلومات التي تم جمعها منك واستخدامها فقط لغرض الدراسة

الباحث

ادريس حسن محمد

الجزء 1: البيانات الديموغرافية رقم الاستمارة ☐

الخصائص الديموغرافية للممرضين

1- العمر

2- مكان العمل م. ازادي التعليمي ☐ م. كركو العام ☐ م. الاطفال ☐

3- الجنس ذكر ☐ انثى ☐

4- الحالة الاجتماعية اعزب ☐ متزوج ☐ مطلق ☐ أرمل ☐

5- المستوى التعليمي شهادة عليا ☐ كلوريوس ☐
دبلوم ☐ اعدادية ☐

6-عدد سنوات الخدمة في ردهة الاطفال

اقل من سنة واحدة	☐	1-5 سنة	☐	14+ فأكثر	☐
6-10 سنة	☐	11-14سنة	☐		

7- هل لديك طفل مصاب بمرض اضطراب طيف التوحد نعم ☐ لا ☐

8- هل لديك قريب مصاب بمرض اضطراب طيف التوحد نعم ☐ لا ☐

9- هل شاركت في دورة تدريبية او ورشة عمل متعلقة بمرض اضطراب طيف التوحد في داخل البلد

لم اشارك	☐	مشارك في دورة واحدة	☐
مشارك في دورتان	☐	مشارك في ثلاث دورات فأكثر	☐

10- هل حضرت دورة تدريبية او ورشة عمل متعلقة بمرض اضطراب طيف التوحد في خارج البلد

لم اشارك	☐	مشارك في دورة واحدة	☐
مشارك في دورتان	☐	مشارك في ثلاث دورات فأكثر	☐

11- خلال فترة عملك في ردهة الاطفال كم عدد الاطفال المصابين بمرض اضطراب طيف التوحد الذين اعتنيت بهم

لايوجد	☐	1-4	☐
5-9	☐	10- فأكثر	☐

الجزء 2

المحور 1 : معلومات ومفاهيم والحقائق حول اضطراب طيف التوحد

ت	العنصر	نعم	لا اعرف	لا
1.	التوحد هو اضطراب النمو العصبي الذي يتصف ضعف التفاعل الاجتماعي، والتواصل اللفظي وغير اللفظي، وأماط سلوكية مقيدة ومتكررة			
2.	ان اضطراب طيف التوحد مجهول السبب			
3.	الذكور اكثر عرضة للإصابة من الإناث ونسبة 4الى 5مرات			
4.	يدرس الطفل التوحد في الصفوف التربية الخاصة			
5.	لايعالج التوحد دوائيا فقط			
6.	علامات التوحد تظهر بين سن 1-3 سنوات			
7.	يعرف التوحد بأنه انفصام شخصية طفولي			
8.	يرتبط التوحد مع اضطراب نقص الانتباه مع فرط النشاط			
9.	للتوحد أسباب وراثية			
10.	التوحد قد يكون مرتبطاً مع تخلف العقلي او الصرع			

المحور 2: علامات اضطراب في التفاعل الاجتماعي والتواصل لدى الاطفال المصابين بالتوحد.

ت	العنصر	نعم	لا اعرف	لا
-1	لا يتواصل بصريا مع من هم حوله			
-2	يضحك بطريقة غريبة			
-3	لا يريد ان يحضنه احد			
-4	لا يستجيب لاسمه عند مناداته			
-5	يتصرف كطفل اصم او ابكم			
-6	منعزل عن الاخرين			
-7	غضب شديد و الاسباب مجهولة			
-8	يفشل الطفل في تنمية علاقات الصدقة المناسبة بعمريه			
-9	التأخر في النطق او في تطور الكلام			
-10	يكرر نفس الكلام او العبارات و لا يعرف معناه			

المحور 3 : اضطراب في انماط سلوكية .

ت	العنصر	نعم	لا اعرف	لا
1-	فرط في الحركات المتكررة والشائعة كإتواء طرف الاصابع او رفرفة اليدين .			
2-	اكله محدود جدا			
3-	يحب الاشياء التي تدور			
4-	يفضل الفعاليات النمطية			
5-	يرفض تغير الروتين			
6	لديهم حساسية عالية أو منخفضة لمحفزات البصرية والسمعية والمس أو حاسة الشم			
7	يظهر سلوكا عدوانيا و مؤذي لذات			
8	نشاط مفرط و راحة قليلة			
9	يعاني من اضطراب في النوم			
10	لا يظهر احساسا بالألم			

Appendix (C-2)

INSTRUCTIONS:

This questionnaire contains some questions about Autism Spectrum Disorders . I kindly requesting you to listen to the questions asked by the interviewer carefully and provide the necessary information by giving appropriate response. The information collected from you will be used only for the purpose of the study and kept in confidential.

Researcher

Idrees Hasan Mohammed

- Part I : Demographic data *Form number* ☐

The socio-demographic characteristics of pediatric nurses

1-Age

2- Place of work Azadi Teaching Hospital ☐ Kirkuk General Hospital ☐

Pediatric Hospital ☐

3-Gander Male ☐ Female ☐

4- Marital status Single ☐ Married ☐ Divorce ☐ Widow ☐

5- Educational level ☐ High certificate ☐ Bachelor

☐ Diploma ☐ Secondary

6-Years of employment in pediatric ward

Less than one years	☐	1-5 years	☐	16-and more	☐
6-10 years	☐	11-15 years	☐		

7- Do you have a child with autism spectrum disorder .

Yes ☐ No ☐

8-Do you have a close relative with autism spectrum disorder

Yes ☐ No ☐

9- Are you participate to any training course or workshop related to (ASD) inside the country

no participate	☐	participate in 2	☐
participate in1	☐	participate in 3 and more	☐

10- Are you attended to any training course or workshop related to (ASD) outside the country

no participate	☐	participate in 2	☐
participate in 1	☐	participate in 3 and more	☐

11 -During your time working in pediatric ward ,how many children have you care with who have autism spectrum disorder .

no one	☐
(1-4chlidren)	☐
(5-9 children)	☐
(10+ children)	☐

1- Domain 1

Information, Concepts and Facts about Autism Spectrum Disorders .

N	Items	Yes	Don't Know	No
1-	Autism is a neurodevelopmental disorder characterized by impaired social interaction, verbal and non-verbal communication, and restricted and repetitive behavior			
2-	Autism spectrum disorders is unknown causes			
3-	Four to five times more common in males than females			
4-	Teaches autistic child in special education classes			
5-	Autism is not treatable using medication alone			
6-	Signs of Autism show between 1- 3 years			
7-	Autism is defined as a Childhood Schizophrenia			
8-	Autism could be associated with Attention Deficit Hyperactivity Disorder(ADHD)			
9-	Autism is hereditary causes			
10-	Autism could be associated with Mental Retardation or Epilepsy			

2- Domain 2

Signs of impairment in social interaction and communication .in children with Autism

N	Items	Yes	Don't Know	No
1-	Doesn't make eye contact with those around him			
2-	Laughing in a strange way			
3-	Doesn't want to be cuddling			
4-	Not responding to his name			
5-	Acting like a deaf or dumb			
6-	Isolated from the others.			
7-	Angry and unknown reasons			
8-	Child fails to develop peer relationship appropriate for developmental age			
9-	Delays in speech or in development of spoken Language			
10-	Repeats the same words or phrases and does not know its meaning			

3- Domain 3

Disorder in behavioral patterns

N	Items	Yes	Don't Know	No
1-	Stereotyped and repetitive movement (Hand or finger flapping or twisting).			
2-	Eating is very restricted			
3-	likes the spin objects			
4-	Prefers events module			
5-	Refusing to change the routine			
6-	have high or low sensitivity of visual, auditory, tactile, or olfactory stimuli			
7-	Appears aggressive behavior and self injury			
8-	Hyperactivity and little comfort			
9-	Suffering from a sleep disorder			
10-	Does not appear a sense of pain			

Appendix (C-3)

(پرسیارنامە)

بە ئە وپە ڕێ خۆشحاڵیەوە بە شداری کردنت لەم ڕاپەڕینە دابەرزەنرخێنم دەربارەی(هەڵسەنگاندنی درک کردنی پەرستیاران سەبارەت بە ئۆتیزم لە هۆیەکانی منداڵاندا لە نەخۆشخانە حکومیەکانی کە رکوک)کەوا بەپەنای خودا سودی دەبێت بۆسەرهە مو میلاکاتی پەرستیاری لەپارێزگاکە و هەمو ولاتدا. بۆیە داوا لە بەڕێزتان دەکە م کە بە وردی وەلاّم بدەنەوە لەگەڵ پابەند بون بەڕاستی وەلاّمە کان بۆگشتاندنی سودەکەی.

تۆێژەر

ئیدریس حە سەن محە مەد

بەشی 1 :داتا دانیشتوانیە کان ژمارەی فۆرم

خەسڵەتە دانیشتوانیە _کۆمەڵایەتیەکانی پەرستیاران

1-تەمەن

2- شوێنی کارکردن نە . ئازادی فێرکاری نە .گشتی کەرکوک نە . منداڵان

3- ڕەگەز نێر مێ

4-ئاستی خوێندەواری خوێندنی باڵا بە کالۆریۆس

دیبلۆم ئامادەی

5-ژمارەی ساڵەکانی خزمەت لە

کەمتر لەساڵێك		1- 5 ساڵ		6-10ساڵ		11-14ساڵ		14+ وە زیاتر	

هۆبەی منداڵاندا

6-ئایامنداڵت هەیە توش بوی ئۆتیزم بێت

7-ئایاخزمێکت هەیەتوش بوی ئۆتیزم بێت بەڵێ نەخێر

8-ئایابەژدا ربویتەلە خولێکی ڕاهێنان یان دەستیکار پەیوەندی دا ربوبێت بە نەخۆشی ئۆتیزمەوە لەنێو وڵاتدا

بە ژدار نە بووم		بەژدا ربومە لە یەك خولدا	
بەژدا ربومە لە دوو خولدا		بەژدا ربومە لە سێ خولدا	

9- ئایابەژدا ربویتەلە خولێکی ڕاهێنان یان دەستیکار پەیوەندی دا ربوبێت بە نەخۆشی ئۆتیزمەوە لەدەرەوەی وڵاتدا

بەژدا رنەبومە		بەژدا ربومە لە یەك خولدا	
بەژدا ربومە لە دوو خولدا		بەژدا ربومە لە سێ خولدا	

10-لەماوەی کارکردنت لەهۆبەی منداڵان ژمارەی ئەو منداڵانەچەندبون کەتوش بوی ئۆتیزم بونە وتۆچاودێریت کردون

هیچ		1- 4 منداڵ	
5- 9 منداڵ		10-وە زیاتر	

بەشی 2 :

تەوەری 1:زانیاری و چەمکەکان دەربارەی تەنگەژەی ئۆتیزم

ڕ	پێکهاته	بەڵێ	نازانم	نەخێر
1-	ئۆتیزم تێکچونێکه لەگەشەی هەڵچوندا که ناودەبرێت بەلاوازی لەکارلێکی کۆمەلایەتیدا ، وەپەیوەندی قسەکردن و نادرکەی ، وەبەشێوازی ڕەوشتی سنوردار و دووباره			
2-	شلەژانی ئۆتیزم هۆکارەکەی نادیارە			
3-	نێرینه زیاتر بەردەکەوێت لە مێینه وەبە ڕێژەی 4بۆ 5 جار			
4-	منداڵی توشبوو بە ئۆتیزم لە پۆلی پەروەردەی تایبە تدا دەخوێنێت			
5-	ئۆتیزم تەنها بە دەرمان چارەسەر ناکرێت			
6-	نیشانەکانی ئۆتیزم دەردەکەوێت لەنێوان 1-3 ساڵیدا			
7-	ئۆتیزم پێناسە دەکرێت بەوەی درز بردنی کەسایەتی منداڵە			
8-	ئۆتیزم دەبەستڕێتەوە بە کەمی بەئاگابوون لەگەڵ چالاکی زۆر			
9-	ئۆتیزم هۆکاری بۆماوەی هەیە			
10-	ئۆتیزم ڕەنگە بەستڕابێتەوە بە دواکەوتوی عەقڵی یان سەرع			

تەوەری 2 :نیشانەکانی تێکچون لەچالاکی کۆمەلایەتی و پەیوەندی لەلای منداڵانی توشبوو بە ئۆتیزم

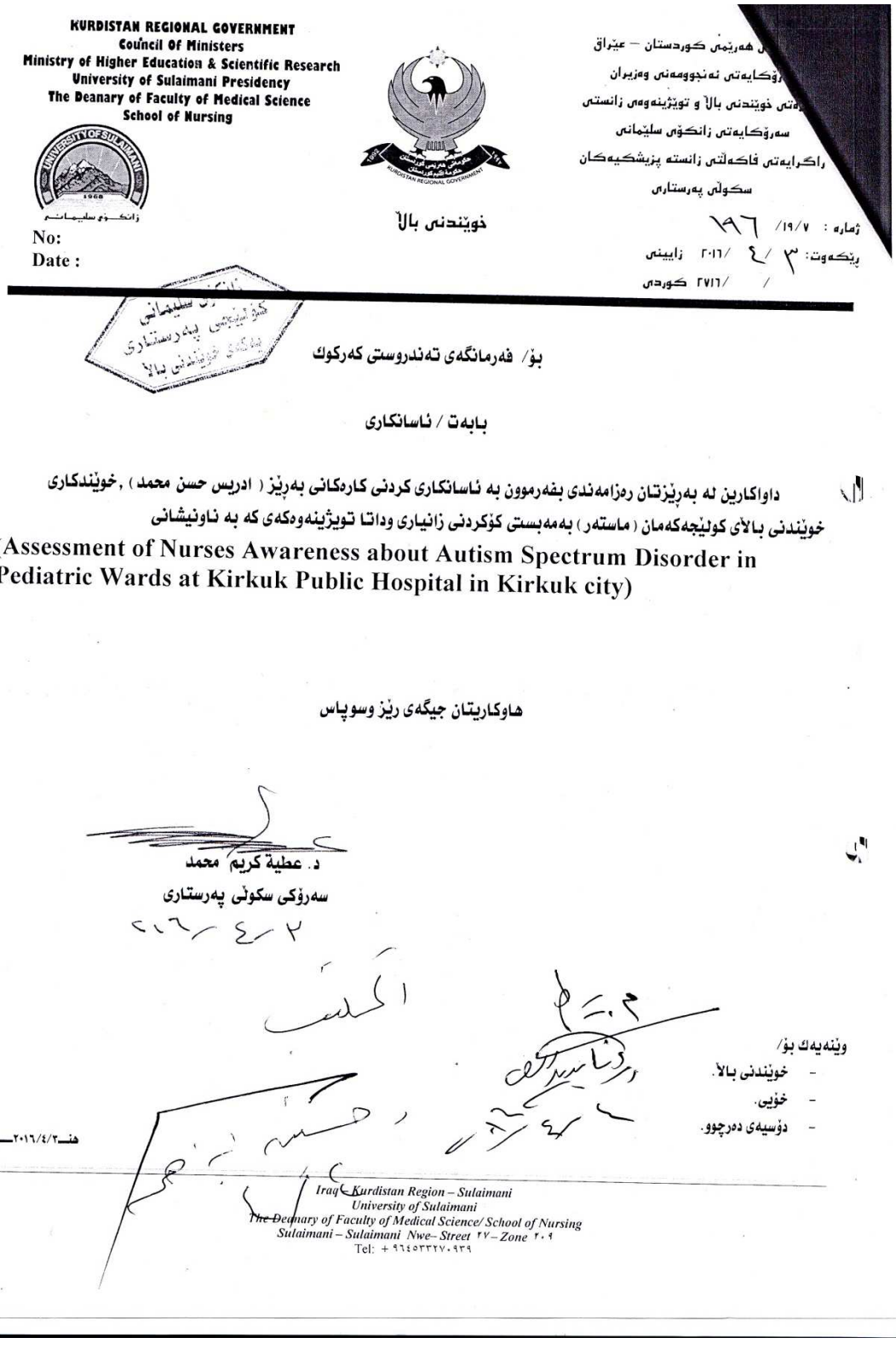
ڕ	*پێکهاته*	*بەڵێ*	*نازانم*	*نەخێر*
1-	*بەچاو پەیوەندی نابێت لەگەڵ کەسانی چوار دەوریدا*			
2-	*بەشێوازێکی نامۆ پێدەکەنێت*			
3-	*نایەوێت کەس لە ئامێزی بگرێت*			
4-	*کاتێك بەناویەوە بانگدەکرێت وەلام ناداتەوە*			
5-	*وەك منداڵێکی کەڕیان لاڵ هەڵسوکەوت دەکات*			
6-	*گۆشەگیرە لە کەسانی دیکە*			

7-	*تورەیی بونی تۆند کە هۆکارەکەی نادیارە*			
8-	*منداڵەکە شکست دەهێنێت لەبنیاد نانی هاوڕێیەتی گونجاو بەتەمەنی خۆی*			
9-	*دواکەوتن لە دوان یان لەبەردەم پێش چونی قسەکردن*			
10-	*هەمان قسەو دەستە واژە دووبارە دەکاتەوەو ماناکەی نازانێت*			

تە وەری3:تێکچون لە شێوازی ڕەوشتدا

ڕ	پێکهاتە	*بەڵێ*	*نازانم*	*نەخێر*
1	زۆری جولّەی دووبارەو بەربڵاو وەك گوشینی لاپەنجەکان یان ناولەپ			
2	خواردنی زۆر سنوردارە			
3	ئەو شتانەی خۆش دەوێت کە دەخولێنەوە			
4	چالاکیە شێوازیەکانی بەلاوە پەسەندە			
5	گۆڕانکاری ڕۆتینی ڕەت دەکاتەوە			
6	حەساسیەنی زۆریان کەمیان هەیە بۆ پالّنەرەدەنگی و بینینیەکان و دەست لێدان و بۆنکردن			
7	ڕەوشتی دوژمنکاری و زیانبەخش بەخود دەر دەبڕێت			
8	چالاکی زۆرو ئارامی کەم			
9	دەنالّێنێت بەدەست تێکچونی خەوتنەوە			
10	هەستکردن بە ئازار دەر نابڕێت			

Appendix(D-1)



KURDISTAN REGIONAL GOVERNMENT
Council Of Ministers
Ministry of Higher Education & Scientific Research
University of Sulaimani Presidency
The Deanary of Faculty of Medical Science
School of Nursing

ئەنجوومەنی وەزیران
وەزارەتی خوێندنی باڵا و توێژینەوەی زانستی
سەرۆکایەتی زانکۆی سلێمانی
ڕاگرایەتی فاکەڵتی زانستە پزیشکیەکان
سکوڵی پەرستاری

خوێندنی باڵا

No:
Date :

ژمارە : ٧/١٩/ ٨٩٦
ڕێکەوت: ٣/ ٤/ ٢٠١٦ زایینی
/ / ٢٧١٦ کوردی

بۆ/ فەرمانگەی تەندروستی کەرکوک

بابەت / ئاسانکاری

١. داواکارین لە بەڕێزتان ڕەزامەندی بفەرموون بە ئاسانکاری کردنی کارەکانی بەڕێز (ادریس حسن محمد) ,خوێندکاری خوێندنی باڵای کولێجەکەمان (ماستەر) بەمەبستی کۆکردنی زانیاری وداتا تویژینەوەکەی کە بە ناونیشانی
(Assessment of Nurses Awareness about Autism Spectrum Disorder in Pediatric Wards at Kirkuk Public Hospital in Kirkuk city)

هاوکاریتان جیگەی ڕێز وسوپاس

٢. د. عطية كريم محمد
سەرۆکی سکوڵی پەرستاری
٢٠١٦/٤/٢

وێنەیەک بۆ/
- خوێندنی باڵا.
- خۆیی.
- دۆسیەی دەرچوو.

هـ ـ ٢٠١٦/٤/٣ ـ د

Iraq-Kurdistan Region – Sulaimani
University of Sulaimani
The Deanary of Faculty of Medical Science/ School of Nursing
Sulaimani – Sulaimani Nwe– Street ٢٧– Zone ٢٠٩
Tel: + ٩٦٤٥٣٣٢٧٠٩٣٩

Appendix(D-2)

وزارة الصحة
دائرة صحة محافظة كركوك
مكتب المدير العام
مركز تدريب وتطوير الملاكات
وحدة إدارة المعرفة والبحوث
العدد / ٨٠٦
التاريخ / ١١/٤/ ٢٠١٦

وه زارەتی تە ندروستی
فەرمانگەی تە ندروستی پارێزگای کەرکوک
نووسینگەی بەڕێوە بەری گشتی
سە نتە ری / راهێنان وپەرە پێدانی میلاکات
ژمارە /
بەروار / / ٢٠١٦

إلى/ مستشفى آزادي التعليمي
م / بيان رأي

تحية طيبة ..

أشارة إلى كتاب جامعة السليمانية ذي العدد ١٩٦ في ٢٠١٦/٤/٣

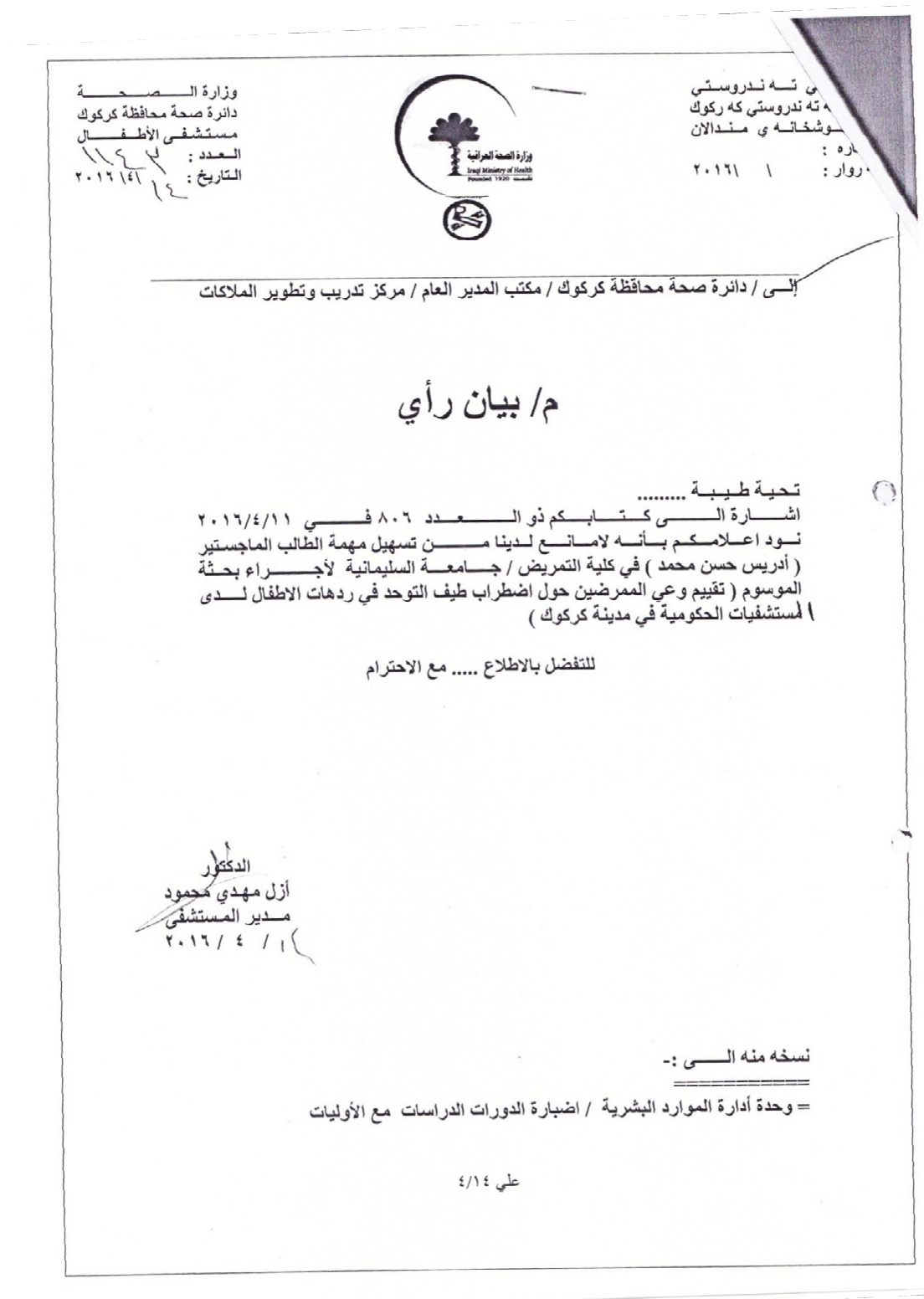
والذي يتضمن طلب طالب الماجستير/ (إدريس حسن محمد) لإبداء مساعدته في بحثه الموسوم (تقييم وعي الممرضين حول اضطراب طيف التوحد في ردهات الأطفال لدى مستشفيات الحكومية في مدينة كركوك) تفضلكم بالاطلاع وأمركم على إجرائه في مؤسساتنا الصحية وحسب الضوابط المعمول بها هذا ولكم الأمر بما تنسبونه .. مع الاحترام

صباح أمين احمد الداودي
المدير العام
٢٠١٦/٤/١٠
عدنان بكر علي

نسخة منه إلى/
مستشفى كركوك العام / لنفس الغرض أعلاه...مع الإحترام
مستشفى الأطفـــــال / لنفس الغرض أعلاه...مع الإحترام

(رقم الخط الساخن ٠٧٧٠٨٥٩٢٤٤٤) (WWW.kirkukhelth.com)
(البريد الالكتروني / مكتب المدير العام) Office.kirkukh@gmail.com
البحوث ٤/١٠

Appendix(D-3)



وزارة الصحة
دائرة صحة محافظة كركوك
مستشفى الأطفال
العدد : ٦١١٤
التاريخ : ١٤/ ٤/ ٢٠١٦

وزارة الصحة العراقية
Iraqi Ministry of Health
Founded 1920

ى تـه نـدروستي
ه ته ندروستي كه ركوك
وشخانه ي منـدالان
اره :
روار : ١ ٢٠١٦

إلـى / دائرة صحة محافظة كركوك / مكتب المدير العام / مركز تدريب وتطوير الملاكات

م/ بيان رأي

تحية طيبة .....
اشارة الى كتابكم ذو العدد ٨٠٦ في ٢٠١٦/٤/١١
نود اعلامكم بأنه لامانع لدينا من تسهيل مهمة الطالب الماجستير (أدريس حسن محمد) في كلية التمريض / جامعة السليمانية لأجراء بحثة الموسوم (تقييم وعي الممرضين حول اضطراب طيف التوحد في ردهات الاطفال لدى المستشفيات الحكومية في مدينة كركوك)

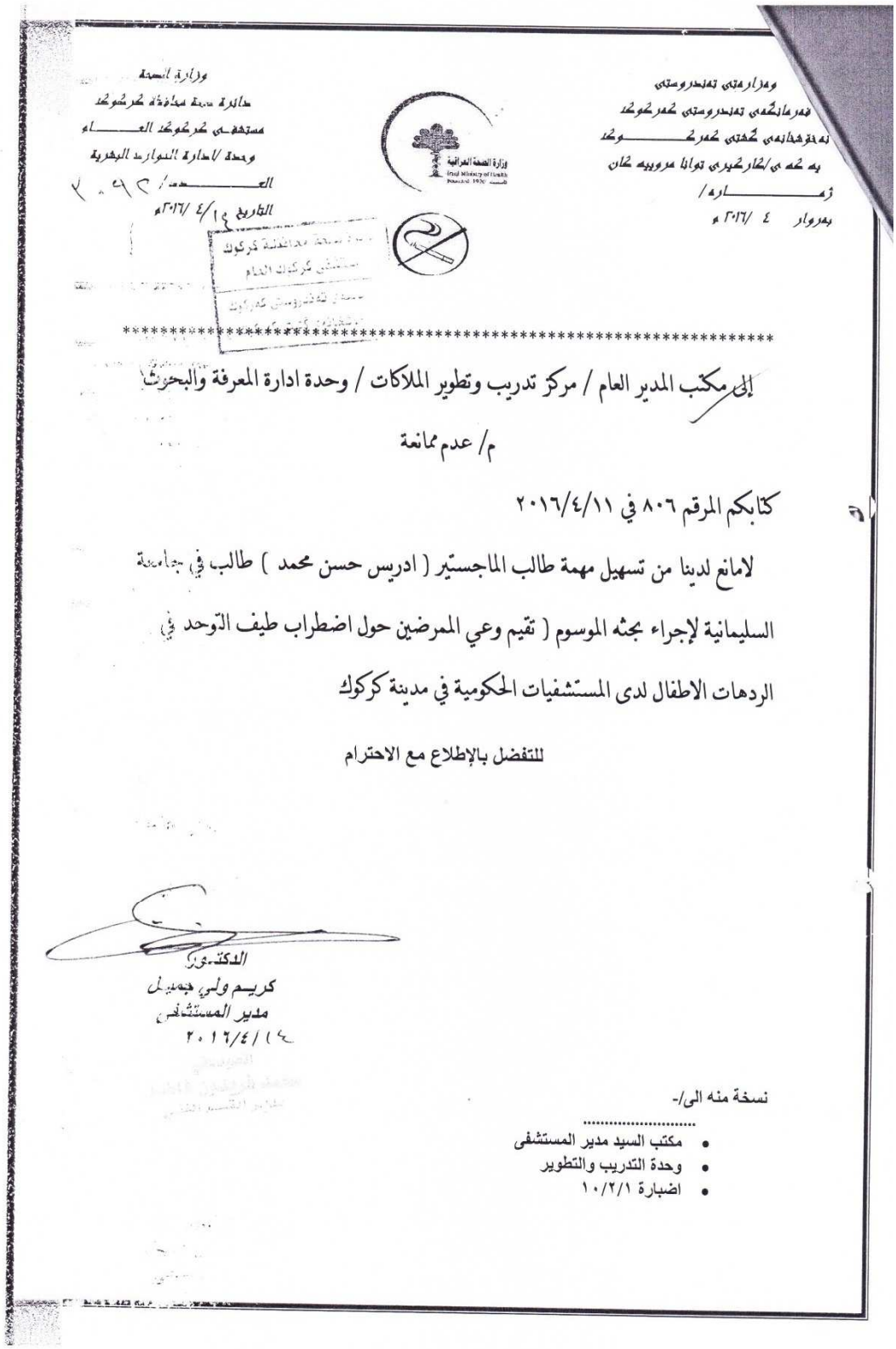
للتفضل بالاطلاع ..... مع الاحترام

الدكتور
أزل مهدي محمود
مدير المستشفى
١ / ٤ / ٢٠١٦

نسخه منه الى :-
= وحدة أدارة الموارد البشرية / اضبارة الدورات الدراسات مع الأوليات

علي ٤/١٤

Appendix(D-4)



وزارة الصحة
دائرة صحة محافظة كركوك
مستشفى كركوك العام
وحدة /ادارة الموارد البشرية
العدد / ٢٠٩٢
التاريخ ١٢/ ٤/ ٢٠١٦م

وەزارەتی تەندروستی
فەرمانگەی تەندروستی کەرکوک
نەخۆشخانەی گشتی کەرکوک
یەکەی/بەڕێوبەری توانا مرۆییەکان
ژمارە/
بەروار ٤/ ٢٠١٦ ز

****

إلى مكتب المدير العام / مركز تدريب وتطوير الملاكات / وحدة ادارة المعرفة والبحوث

م/ عدم ممانعة

كتابكم المرقم ٨٠٦ في ٢٠١٦/٤/١١

لامانع لدينا من تسهيل مهمة طالب الماجستير (ادريس حسن محمد) طالب في جامعة السليمانية لإجراء بحثه الموسوم (تقيم وعي الممرضين حول اضطراب طيف التوحد في الردهات الاطفال لدى المستشفيات الحكومية في مدينة كركوك

للتفضل بالإطلاع مع الاحترام

الدكتور
كريم ولي حميد
مدير المستشفى
٢٠١٦/٤/١٤

نسخة منه الى/-
.....
- مكتب السيد مدير المستشفى
- وحدة التدريب والتطوير
- اضبارة ١٠/٢/١

Appendix(D-5)

وزارة الصحة
دائرة صحة محافظة كركوك
مستشفى آزادي التعليمي
الشعبة :
العدد : ٤٠٨ ص
التاريخ : ١٢/٤/٢٠١٦

وزارة الصحة العراقية
Iraqi Ministry of Health
Founded 1920

الى /دائر صحة كركوك/ مكتب المدير العام / مركز تدريب وتطوير الملاكات/ وحدة ادارة المعرفة والبحوث

م / تسهيل مهمة

تحية طيبة .....

اشارة الى كتابكم ذي العدد ٨٠٦ في ٢٠١٦/٤/١١.

لا مانع لدينا من تسهيل مهمة الطالب الماجستير / (ادريس حسن محمد) لاجراء بحثه الموسوم (تقيم وعي الممرضين حول اضطراب طيف التوحد في ردهات الاطفال لدى مستشفيات الحكومية في مدينة كركوك) وحسب الضوابط المعمول به في مستشفانا.

مع الاحترام ....

الدكتور
كيلان قادر علي
مدير المستشفى
١٢/٤/٢٠١٦

نسخة منه الى /
- وحدة تدريب وتطوير الملاكات في مستشفانا.
- وحدة ادارة الموارد البشرية .
- شؤون العلمية.

Appendix E

DSM-5 AUTISM SPECTRUM DISORDER

A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history

A1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.

(A1 reflects problems with social initiation and response)

- *Problems with social approach*
  - Unusual social initiations (e.g. intrusive touching; licking others)
  - Use of others as tools
- *Limited or impaired back and forth use of language*
  - Poor pragmatic/social use of language (e.g. does not clarify if not understood; does not provide background information)
  - Failure to respond when name called or when spoken directly to
  - Does not initiate conversation
  - One-sided conversations/monologues/tangential speech
- *Reduced sharing of interests*
  - Doesn't share
  - Lack of showing, bringing, or pointing out objects of interest to other people
  - Impairments in joint attention (both initiating and responding)
- *Reduced sharing of emotions/affect*
  - Lack of responsive social smile *(note: the focus here is on responding to another person's smile; other aspects of emotional expression should be considered under A2).*
  - Failure to share enjoyment, excitement, or achievements with others
  - Failure to respond to praise
  - Does not show pleasure in social interactions
  - Failure to offer comfort to others
  - Indifference/aversion to physical contact and affection
- *Lack of initiation of social interaction*
  - Only initiates to get help; limited social initiations
- *Poor social imitation*
  - Failure to engage in simple social games

A2. Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication. (A2 reflects problems with non-verbal communication)

- Impairments in use of eye contact
- Impairment in the use and understanding of body postures (e.g. facing away from a listener)
- Impairment in the use and understanding of gestures (e.g. pointing, waving, nodding/shaking head)
- Abnormal volume, pitch, intonation, rate, rhythm, stress, prosody or volume in speech

- Problems with use and understanding of affect *(note: responsive social smile may be considered under A1, while affect that is inappropriate for the context may fall under A3)*
    - Impairment in the use of facial expressions (may be limited or exaggerated)
    - Lack of warm, joyful expressions directed at others
    - Limited communication of own affect (inability to convey a range of emotions via words, expressions, tone of voice, gestures)
    - Inability to recognize or interpret other's nonverbal expressions
- Lack of coordinated verbal and nonverbal communication (e.g. inability to coordinate eye contact with gestures)

A3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absences of interest in peers. (A3 reflects problems with social awareness and insight, as well as with the broader concept or social relationships)

- Deficits in developing and maintaining relationships, appropriate to developmental level
    - Lack of "theory of mind"; inability to take another person's perspective
- Difficulties adjusting behavior to suit social contexts
    - Lack of response to contextual cues (e.g. social cues from others indicating a change in behavior is implicitly requested)
    - Inappropriate expressions of emotion (laughing or smiling out of context) (*note: other abnormalities in the use and understanding of emotion should be considered under A2)*
    - Unaware of social conventions/appropriate social behavior; asks socially inappropriate questions or makes socially inappropriate statements
    - Does not notice another's distress or disinterest
    - Does not recognize when not welcome in a play or conversational setting
    - Limited recognition of social emotions (does not notice when he or she is being teased; does not notice how his or her behavior impacts others emotionally)
- Difficulties in sharing imaginative play *(Note: solitary imaginative play/role is NOT captured here)*
    - Lack of imaginative play with peers, including social role playing (>4 years developmental age)
- Difficulties in making friends
    - Does not try to establish friendships
    - Does not have preferred friends
    - Lack of cooperative play (over 24 months developmental age); parallel play only
    - Unaware of being teased or ridiculed by other children
    - Does not play in groups of children
    - Does not play with children his/her age or developmental level (only older/younger)
    - Has an interest in friendship but lacks understanding of the conventions of social interactions (e.g. extremely directive or rigid; overly passive)
    - Does not respond to the social approaches of other children
- Absence of interest in others
    - Lack of interest in peers
    - Withdrawn; aloof; in own world
    - Does not try to attract the attention of others
    - Limited interest in others;
    - Unaware or oblivious to children or adults
    - Limited interaction with others
    - Prefers solitary activities

B. Restricted, repetitive patterns of behavior, interests, or activities as manifested by <u>at least 2 of 4</u> symptoms currently or by history

B1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).

- *Stereotyped or repetitive speech*
  - Pedantic speech or unusually formal language (child speaks like an adult or "little professor")
  - Echolalia (immediate or delayed); may include repetition of words, phrases, or more extensive songs or dialog
  - "Jargon" or gibberish (mature jargoning after developmental age of 24 months)
  - Use of "rote" language
  - Idiosyncratic or metaphorical language (language that has meaning only to those familiar with the individual's communication style); neologisms
  - Pronoun reversal (for example, "You" for "I"; not just mixing up gender pronouns)
  - Refers to self by own name (does not use "I")
  - Perseverative language (not: *for perseveration on a specific topic, consider B3)*
  - Repetitive vocalizations such as repetitive guttural sounds, intonational noise-making, unusual squealing, repetitive humming
- *Stereotyped or repetitive motor movements*
  - Repetitive hand movements (e.g., clapping, finger flicking, flapping, twisting)
  - Stereotyped or complex whole body movements (e.g., foot to foot rocking, dipping, & swaying; spinning)
  - Abnormalities of posture (e.g. toe walking; full body posturing)
  - Intense body tensing
  - Unusual facial grimacing
  - Excessive teeth grinding
  - Repetitively puts hands over ears (*note: if response to sounds, consider B4)*
  - Perseverative or repetitive action / play / behavior (*note: if 2 or more components, then it is a routine and should be considered under B2)*
  - Repetitive picking (*note: may also be sensory; consider B4)*
- *Stereotyped or repetitive use of objects*
  - Nonfunctional play with objects (waving sticks; dropping items)
  - Lines up toys or objects
  - Repetitively opens and closes doors
  - Repetitively turns lights on and off

B2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior (e.g. extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat same food everyday)

- *Adherence to routine*
    - Routines: specific, unusual multiple-step sequences of behavior
    - Insistence on rigidly following specific routines (*note: exclude bedtime routines unless components or level of adherence is atypical)*
    - Unusual routines
- *Ritualized Patterns of Verbal and Nonverbal Behavior*
    - Repetitive questioning about a particular topic (*note: distinguish from saying the same word or phrase over and over, B1)*
    - Verbal rituals – has to say one or more things in a specific way or requires others to say things or answer questions in a specific way
    - Compulsions (e.g. insistence on turning in a circle three times before entering a room) (*note: repetitive use of objects, including lining up toys, may be considered under B1).*
- *Rigid Thinking*
    - Inability to understand humor
    - Inability to understand non-literal aspects of speech such as irony or implied meaning
    - Excessively rigid, inflexible, or rule-bound in behavior or thought

B3. Highly restricted, fixated interests that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or preseverative interest)

Note: Consider B1 for some forms of perseverative speech

- Preoccupations; obsessions
    - Interests that are abnormal in intensity
    - Narrow range of interests
    - Focused on the same few objects, topics, or activities
    - Preoccupation with numbers, letters, symbols
    - Being overly perfectionistic
    - Interests that are abnormal in focus
- Excessive focus on non-relevant or nonfunctional parts of objects
    - Preoccupations (e.g. color; time tables; historical events; etc.)
    - Attachment to unusual inanimate object (e.g. piece of string or rubber band)
    - Having to carry around or hold specific or unusual objects (not common attachments such as blankets, stuffed animals, etc.)
    - Unusual fears (e.g. afraid of people wearing earrings)

B4. Hyper- or hypo-creativity to sensory input or unusual interest in sensory aspects of the environment (e.g. apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement) (B4 includes sensory seeking and sensory aversion)

- High tolerance for pain
- Poking own eyes
- Preoccupation with texture or touch (includes attraction/aversion to texture)
    - Tactile defensiveness; does not like to be touched by certain objects or textures
    - Significant aversion to having hair or toenails cut, or teeth brushed
- Unusual visual exploration/activity
    - Close visual inspection or objects or self for no clear purpose (for example, holding things at unusual angels) (no vision impairment)
    - Looks at objects, people out of corner of eye
    - Unusual squinting of eyes

    - Extreme interest or fascination with watching movement of other things (e.g. the spinning wheels of toys, the opening and closing of doors, electric fan or other rapidly revolving object)
- In all domains of sensory stimuli (sound, smell, tests, vestibular, visual), consider:
    - Odd responses to sensory input (e.g. becoming extremely distressed by the atypical sound)
    - Atypical and/or persistent focus on sensory input
- Unusual sensory exploration with objects (sound, smell, test, vestibular)
    - Licking or sniffing objects (*note: as part of a ritual, consider B2; licking or sniffing people consider A1*

C. Symptoms must be present in the early developmental periods (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life)

- Early primary caregiver report no longer essential
- "Early Childhood" approximately age 8 and younger (flexible)

D. Symptoms together limit and impair everyday functioning.

- Select one severity level specifier for Social Communication AND one for Restricted Interests and Repetitive Behaviors
- **Minimal social impairments:** "Without supports in place, deficits in social communication cause noticeable impairments. Has difficulty initiating social interactions and demonstrates clear examples of atypical or unsuccessful responses to social overtures of others. May appear to have decreased interest in social interactions." (*from DSM 5 severity rating)*
- **Minimal RRB impairments:** "Rituals and repetitive behaviors (RRB's) cause significant interference with functioning in one or more contexts. Resists attempts by others to interrupt RRB's or to be redirected from fixated interest." (*from DSM 5 severity rating)*

DSM 5 Autism Spectrum Disorder

____ **A.** Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history

___**A1.** Deficits in social-emotional reciprocity, ranging, for example, from abnormal Social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.

___**A2.** Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.

___**A3.** Deficits in developing, maintaining, and understandings relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absences of interest in peers.

___ **B.** Restricted, repetitive patterns of behavior, interests, or activities as manifested by **at least 2 of 4 symptoms** currently or by history

___**B1.** Stereotyped or repetitive motor movements, use of objects, or speech (e.g. simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases)

___**B2.** Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior (e.g. extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat same food everyday)

___**B3.** Highly restricted, fixated interests that are abnormal in intensity or focus (e.g. strong attachment to or preoccupation with unusual objects, excessively circumscribed or preservative interest)

___**B4.** Hyper – or hypo-reactivity to sensory input or unusual interest in sensory aspects of the environment (e.g. apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement)

___ **C.** Symptoms must be present in the early developmental periods (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life)

___ **D.** Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning. (minimum = level 1)

___*Social Communication Severity Level (1, 2, or 3)*

___*Restricted Repetitive Behavior Severity Level (1, 2, or 3)*

___ **E.** These disturbances are not better explained by intellectual disability (intellectual development disorder) or global development delay.

____ **Patient meets criteria for ASD (criteria A-E satisfied)**

SEVERITY LEVEL FOR ASD

	Social-Communication	Restricted Interests & Repetitive Behaviors
Level 3 'Requiring very substantial support'	Severe deficits in verbal and nonverbal social communication skills cause severe impairments in functioning, very limited initiation of social interactions, and minimal response to social overtures from others. For example, a person with few words of intelligible speech who rarely initiates interaction and, when he or she does, makes unusual approaches to meet needs only and responds to only very direct social approaches	Inflexibility of behavior, extreme difficulty coping with change, or other restricted/repetitive behaviors markedly interfere with functioning in all spheres. Great distress/difficulty changing focus or action
Level 2 'Requiring substantial support'	Marked deficits in verbal and nonverbal social communication skills; social impairments apparent even with supports in place; limited initiation of social interactions; and reduced or abnormal response to social overtures from others. For example, a person who speaks simple sentences, whose interaction is limited to narrow special interest, and who has markedly odd nonverbal communication	Inflexibility of behavior, difficulty coping with change, or other restricted/repetitive behaviors appear frequently enough to be obvious to the casual observer and interfere with functioning in a variety of contexts. Distress and/or difficulty changing focus or action
Level 1 'Requiring support"	Without supports in place, deficits in social communication cause noticeable impairments. Difficulty initiating social interactions, and clear examples of atypical or unsuccessful response to social overtures of others. May appear to have decreased interest in social interactions. For Example, a person who is able to speak in full sentences and engages in communication but whose to –and-from conversation with others fails, and whose attempts to make friends are odd and typical unsuccessful	Inflexibility of behavior causes significant interference with functioning in one or more contexts. Difficulty switching between activities. Problems of organization and planning hamper independence.

پوختە

تێکچونی شەپەنگی ئۆتیزم یەکێکە لە نەخۆشیەکانی نیرۆدیقلۆپمێنتالْ کە ڕووئەدات لەتەمەنی منداڵیدا ئەناسرێتەوە بەچەند ڕەفتارێك وەکو کەمی کارلێکی کۆمەلایەتی وسنوردارێتی پەیوەندی کومەلایەتی،دووبارەکردنەوەی چەندشێوازێك لەهەڵسوکەوت، گرنگیدان یان چالاکی.

شێوازی توێژینەوەی وەسفی بەکارهێنراوە بۆ هەڵسەنگاندنی ئاستی بەئاگابوونی ئەوپەرستارانەی کار ئەکەن لەقاوشی منداڵان دەربارەی تێکچونی شەپەنگی ئۆتیزم لە نەخۆشخانە گشتیەکانی شاری کەرکوك ئەنجامدراوە لە (جونی 2015 تا سێپتەمبەری 2016).

توێژینەوەکە لەسێ نەخۆشخانەی گشتی شاري کەرکوك/ قاوشی منداڵان ئەنجامدرا نموونەی توێژینەوەکە بەشێوازی نۆن-پڕۆبابلیتی بۆ ئەوپەرستارانەی کە لەقاوشی منداڵان-نەخوشخانەگشتیەکانی شاری کەرکوك کاریان کردوە وئامادە بون لەکاتی کۆکردنەوەی داتاکان.دووسەد پەرستار وەك نمونەی توێژینەوەکە هەڵبژێردران (47 پەرستار لەنەخۆشخانەی ئازادي فێرکاری ، 33 پەرستارلەنەخۆشخانەی کەرکوکی گشتی و 120پەرستار لەنەخوشخانەی منداڵان).

بۆ وەرگرتنی زانیاری وپێوانەکردنی ئاستی بەشداربوەکان پرسیار نامەیەك دروستکرا لەلایەن توێژەرەکەوە، وداتاکان ڕاستەوخۆلەلایەن توێژەرەکەوە کۆکرایەوە بەشێوازی چاوپێکەوتنی ڕاستەوخۆ. ڤالیدیتی ناوەڕۆکی پرسیارنامەکە لەلایەن15 شارەزاوە پێداچونەوەی بۆکرا بۆ زانینی ئاستی ڕوونی وگونجاوی پرسیارەکان.

بۆ تاقیکردنەوەی متمانەداری وێەکگرتوی ناوخۆیی پرسیارنامەکە هاوکێشەی کرونس باگ ئالفابەکارهێنرا بۆ 20 نمونەی جیا لەنمونەی توێژینەوەکە، و ئەنجامی توێژینەوە بچوك کراوەکە دەریخستوە کە (ر=8.21.) کەئە ئەویش جێی متمانەی پرسیارنامەکە نیشان ئەدا. داتاکان شیکراونەوەلەڕێگەی بەکارهێنانی بەرنامەیەکی ئاماری بۆ زانستی کۆمەڵایەتی

بەگشتی دەرەنجامەکان نیشانیدان کە ئاستی هۆشیاری پەرستاران لە هەموو برگەکان پەیوەندییان هەبوو بە هەر سێ تەوەرکە (زانیاری، چەمك و ڕاستی دەربارەی ئۆتیزم)، (کارلێك کردنی کۆمەڵایەتی و پەیوەندی لە منداڵان لەگەڵ ئۆتیزم)،و (نارێکی لە شێوازی ڕەفتاری) تێکڕای ژەمارەکان لاوازبوون وبەنزمی سەرجەم ژەمارەکان تۆمارکران (16.5±3.6)،(16.7±3.8)،(16.4±4.0).

بەشێوەیەکی ئاماری پەیوەندیی گرنگ دۆزرایەوە لەنێوان ئاستی هۆشیاری پەرستاران و پەرستاران کە منداڵیان هەیە یان کەسوکاری ئۆتیزم هەیە ، و پەرستاران کە چاودێری دەکەن بۆ منداڵی ئۆتیزم بەها (P. value < 0.05) ، و هیچ پەیوەندیی گرنگ بە شێوەیەکی ئاماری نە دۆزرایەوە لەنێوان ئاستی هۆشیاری پەرستاران و (گروپی تەمەن ، ڕەگەز ، شوێنی کار ، ئاستی پەروەردە ، و سالانی دامەزراندن بەها .(P . value > 0.05)

لەکۆتاییدا توێژینەوەکە گەیشتە ئەنجامی ئەوەی ئاستی وشیاری کارمەندانی پەرستاری دەربارەی تێکچونی شەپەنگی ئۆتیزم بەگشتی کەمە، وە توێژینەوەکە ڕادەسپێرێت کەخولی فێرکاری تایبەت هەبێت بۆ باشترکردنی ئاستی زانیاری پەرستیاران.

حکومەتی هەرێمی کوردستان-عێراق
سەرۆکایەتی ئەنجومەنی وەزیران
وەزارەتی خوێندنی باڵا و توێژینەوەی زانستی
سەرۆکایەتی زانکۆی سلێمانی
کۆلێژی پەرستاری

هەڵسەنگاندنی وشیاری پەرستاران دەربارەی تێکچونی شەپەنگی ئۆتیزم لە قاوشی منداڵان لە نەخۆشخانە گشتیەکانی شاری کەرکوک

نامەیەکە

پێشکەش کراوە بۆ ئەنجومەنی کۆلێژی پەرستاری -بەشی پەرستاری منداڵان/ زانکۆی سلێمانی وەک بەشێک لە پێداویستیەکانی بەدەستهێنانی بڕوانامەی ماستەر لە زانستی پەرستاری منداڵان

لە لایەن

ئدریس حەسەن محەمەد

بەکالۆریۆس لە زانسی پەرستاریدا 2009

بە سەرپەرشتی

ماموستا

د. بەهار نەسرەدین مەجید

2016 کانون الاول

2716 بەفرانبار