Evaluation of the tools used to measure and diagnose autism spectrum disorder in Algeria from the perspective of specialists working in the hospital specialized in mental and psychological diseases in the state of M'Sila

تقييم الأدوات المستخدمة لقياس وتشخيص اضطراب طيف التوحد في الجزائر من منظور المتخصصين العاملين في المستشفى المتخصص في الأمراض النفسية والنفسية في ولاية المسيلة

Saad Ben Sbaa *   **Rabie Abzouzi**

University of blida2-Lounici Ali, Laboratory   **University of blida2-Lounici Ali, Laboratory**

Measurement and Psychological Studies   **Measurement and Psychological Studies**

bensebaasaad@yahoo.com   Abzouzi.rabie@univ-blida2.dz

Abstract: The current study aims to assess the diagnostic tools for autism spectrum disorder in Algeria — a field study at the Specialized Psychiatric Hospital in M'Sila Province. The study relied on an interview tool and was applied to a sample of 12 specialists, selected purposively. The study followed a descriptive analytical approach. After analyzing the results, the following conclusions were reached:

• The institution does not have a complete multidisciplinary team for diagnosing autism spectrum disorder, but only some specialties such as child psychiatrist, psychologist, and speech therapist.

• The most commonly used tools for diagnosing autism spectrum disorder in Algeria are interviews, observation, DSM, ICD, and the Childhood Autism Rating Scale (CARS).

• The tools used in the measurement and diagnosis of autism spectrum disorder are in a foreign language, which means they lack psychometric properties (validity and reliability) suitable for the Algerian environment.

• The tools used are effective in the measurement and diagnosis of autism spectrum disorder according to the number of sessions, duration, age stage, periodic evaluation, and in assessing all aspects.

• Among the obstacles and difficulties faced by specialists in using diagnostic tools for autism spectrum disorder are their insufficient availability in the institution, lack of cooperation from guardians in providing information, and shortage of specialized doctors.

Keywords: Autism measurement and diagnostic tools, autism spectrum disorder.

الملخص: تهدف الدراسة الحالية الى محاولة معرفة تقييم أدوات تشخيص اضطراب طيف التوحد في الجزائر - دراسة ميدانية بالمؤسسة الاستشفائية المتخصصة في الطب العقلي بولاية المسيلة، وقد اعتمدت الدراسة على أداة المقابلة، وطبقت على عينة قوامها 12 مختص، واختيرت بالطريقة القصدية، واتبعت الدراسة المنهج الوصفي التحليلي، وبعد تحليل النتائج تم التوصل الى النتائج التالية:

*-Corresponding author

- لا تتوفر المؤسسة على فريق متعدد التخصصات مكتمل في تشخيص اضطراب طيف التوحد بل ببعض التخصصات مثل الطبيب العقلي للأطفال، والمختص النفسي، والمختص الارطفوني.

- الأدوات الأكثر استخداما في تشخيص اضطراب طيف التوحد في الجزائر هي المقابلة والملاحظة وDSM، وICD، ومقياس كارز CARS.

- الأدوات المستخدمة في تشخيص اضطراب طيف التوحد تستخدم باللغة الأجنبية مما يجعلها لا تتوفر على الخصائص السيكومترية (الصدق والثبات) للبيئة الجزائرية.

- للأدوات المستخدمة فعالية في تشخيص اضطراب طيف التوحد حسب عدد الجلسات، والمدة الزمنية، والمرحلة العمرية، والتقييم الدوري، وفي تقييم كل الجوانب.

- من المعوقات والصعوبات التي تواجه الاخصائيين من استخدام أدوات تشخيص اضطراب طيف التوحد عدم توفرها بشكل كاف في المؤسسة، وعدم تعاون الاولياء مع المختصين في إعطاء المعلومات، ونقص الأطباء في التخصص.

الكلمات المفتاحية: أدوات قياس وتشخيص التوحد، اضطراب طيف التوحد.

Introduction:

The process of diagnosing categories of children with special needs is considered an important topic, as it aims to identify and diagnose them in order to determine appropriate programs for each category of children with special needs, and to guide and direct them to designated places according to their disabilities. Among the categories of special needs that have received great attention and have become a necessity of daily life, due to their recent prevalence among these groups, and due to the ambiguity surrounding them for many people across all social classes and groups, is autism spectrum disorder (ASD). ASD has experienced development and spreads, which has attracted the attention of researchers and scientists worldwide to detect and diagnose it early, in terms of understanding its causes, symptoms, characteristics, and treatment methods. For the diagnosis process to be accurate and free of errors, it must be conducted by a cooperative, coordinated, integrated, and multidisciplinary team covering all developmental aspects affected by autism spectrum disorder, using tools, means, and standards that are appropriate to the cultural environment and suitable for the child's age.

1- General Framework of the Study:

1.1- Study Problematic:

Autism is considered one of the developmental disabilities that affect children. It is one of the most challenging disabilities for the child and their family. It appears during the first three years of the child's life and hinders communication, learning, and social interaction processes. It is characterized by deficiencies and delays in social, cognitive, and speech development in the child (Al-Najjar, 2006, p. 6).

To better understand this group accurately, researchers, specialists, and international bodies and organizations have taken an interest in the process of measuring and diagnosing this disorder in order to identify it precisely and appropriately and to facilitate the process of recognizing it. In this regard, Obeid (2018, p. 345) mentions that researchers and specialists have given great priority and attention in their studies to the mechanisms of diagnosing individuals with autism spectrum disorder and other disorders with precise diagnosis aimed at removing ambiguity and overlap between these disorders. They justify this interest in accurate diagnosis of this disorder by stating that it helps in identifying the manifestations and communicating with individuals with autism spectrum disorder.

The process of diagnosing autism spectrum disorder, like other processes supervised by an integrated and specialized team, is crucial. Al-Qumash (2011) mentioned in this regard that the measurement and diagnosis of autism spectrum disorder should be conducted within an integrated program prepared by specialists, encompassing various developmental aspects. This allows for accurately identifying areas of deficiency and weakness, which helps in providing the necessary comprehensive therapeutic and rehabilitative services to enhance and develop the child in all developmental aspects simultaneously. Attention should not be given to one or more aspects at the expense of others. Researchers agree on the necessity of integrated and multidimensional evaluation and diagnosis, so that the integrated diagnosis covers medical, developmental, health, psychological, familial, social,

educational, and instructional aspects. Thus, the diagnosis becomes complete for all manifestations of autism (Al-Qumash, 2011, p. 103). Al-Zar' (2005) also indicated that the process of diagnosing autism spectrum disorder can only be done through an integrated diagnostic team, which distinguishes individuals with autism spectrum disorder from others with different disorders. He also pointed out that one of the biggest problems facing researchers and workers in the field of childhood issues is that the characteristics or traits of the disorder often resemble and overlap with other disorders. Therefore, precise information must be obtained to measure and diagnose the disorder accurately (Al-Zar', 2005, p. 34).

In order to carry out the process of diagnosing autism spectrum disorder, it requires the presence and availability of appropriate methods, tools, and means to achieve an accurate measurement and diagnosis of this disorder. Therefore, several international and global bodies and organizations have provided, through their various studies and research on all aspects of the development of autism spectrum disorder, scientific and reliable criteria and standards to refer to in the process of diagnosing autism spectrum disorder. All these criteria and standards have focused on deficits in the social domain, the communication domain, and the behavioral domain. Observing the most prominent of these criteria and standards presented for use in the measurement and diagnosis of autism spectrum disorder, it becomes clear that the scientist Leo Kanner in 1961, as well as the scientist Rutter in 1978, contributed significantly. Regarding international bodies and organizations, the World Health Organization has provided editions in its manuals (the Ninth International Classification of Diseases in 1978, the Tenth, and the Eleventh editions). The American Psychiatric Association has also issued several editions (the Diagnostic and Statistical Manual of Mental Disorders, Third Edition in 1980, its revision in 1987, the Fourth Edition in 1994, and the Fifth Edition in 2013). Despite the availability of these criteria and standards, the efforts of scientists and researchers have continued in their studies and research to develop tools, methods, and means used in the process of diagnosing

autism spectrum disorder. Among the tools and instruments that have gained great fame worldwide in the diagnosis of autism spectrum disorder are the Childhood Autism Rating Scale (CARS), developed by Schopler, Richler, and Renner; the Autism Behavior Checklist (ABC), prepared by Krug et al., 1993; and the Gilliam Autism Rating Scale (GARS), designed by Gilliam. The Autism Diagnostic Observation Schedule (ADOS) designed by DiLavore and Lord Rutter (1995), the Autism Diagnostic Interview-Revised (ADI/R) developed by Rutter and Le Couteur (1994), the Checklist for Autism in Toddlers (CHAT) created by scientist Baron-Cohen (1992), and the Modified Checklist for Autism in Toddlers (M-CHAT).

At the Arab level, researchers and specialists have conducted studies focused on developing, constructing, and standardizing various forms of tools used in diagnosing autism spectrum disorder. In Jordan, Al-Samadi (1985) conducted a study aimed at preparing a Jordanian version of the Autism Behavior Checklist. Al-Shammari and Al-Sartawi (2002) conducted a study to develop a version of the Childhood Autism Rating Scale. Similarly, Al-Zar' (2003) conducted a study aimed at measuring and diagnosing autistic behavior manifestations by creating a checklist to measure and diagnose autistic behavior in the Saudi sample. Al-Qazzaz and Al-Rousan (2010) conducted a study aimed at constructing a scale for diagnosing autism. Al-Dhamin (2013) conducted a study titled: "Developing a Jordanian version of the Childhood Autism Rating Scale," as well as an interview study (2014) titled: "Deriving standardization criteria for performance on the Jordanian version of the Autism Spectrum Rating Scale for the age group 6-18 years, and comparing it with the original version of the scale." Al-Sughayour's study (2014) was titled: "Deriving performance standards on the Jordanian version of the Gilliam Autism Rating Scale for ages 3-13 years, second edition." Hiba Shaaban (2016) conducted a study titled: "Standardizing the Gilliam Autism Diagnostic Scale, second edition." At the local level, i.e., the Algerian community, Bouafia (2017) conducted a study on the translation and standardization of the Asperger's Syndrome or High-Functioning Autism questionnaire by Baron-Cohen from

the French version, as well as a study by Lahcen and Souad (2017) titled: "Diagnostic criteria for autism spectrum disorder between the DSM-IV-TR 2000 and DSM-5." Al-Hawari Sharif (2019) conducted a study titled: "Verification of the Psychometric Properties of the Autism Spectrum Quotient Scale in the Algerian Environment," and Sharif Zahra (2021) conducted a study titled: "Developing a Scale for Diagnosing Autism."

Those who follow the tools and methods used in the diagnosis of autism spectrum disorder (ASD) find them to be diverse, which is due to the variety of cases and characteristics of ASD. Al-Rousan (2018, p. 328) mentions in this regard that the diversity of tools and diagnostic methods for ASD is due to the variety and classification of autism cases. Accordingly, it is not surprising to find diagnostic tools for all categories of classic autism, Asperger's cases, Rett syndrome, and other known cases. Moreover, the diagnostic process in the field of ASD requires the use of an integrated team with expertise in the field, knowledgeable about these tools in terms of scientific methods of application and use, and ensuring they possess indicators of validity, reliability, standards, standardization, and adaptation. However, if inappropriate tools are chosen or used for purposes other than those for which they were designed, and if they are used by unqualified individuals, in addition to issues related to the validity, reliability, standards of those tools, and inherent forms of bias, problems arise. In this regard, Al-Jalamdeh (2016, p. 255) states that the tools used to diagnose ASD have become numerous and varied as they overlap with measuring other disorders; nevertheless, they remain complex and very difficult, which is due to the ambiguity surrounding this disorder, whether because of symptom similarity with other disabilities or due to the unclear causes leading to this disorder. This is because most tools are available in English or are standardized for Arab environments. Huda Amin (1999, p. 16) also sees that what increases the difficulty in diagnosing ASD is the lack of tools standardized with a high degree of validity and reliability, especially in the Arab environment in general.

The reality of the tools used in the Algerian environment also confirms that there is no widespread and extensive scientific movement, and that most of the tools used locally, through individual effort, have some shortcomings in technical aspects, lack consideration of the cultural dimension and psychometric characteristics, and do not take into account the conditions of application and the method of correction. Therefore, they are unsuitable for use, which may result in incorrect consequences such as measurement, diagnosis, decision-making, and impact on the examinee. This was pointed out by Bousalem (2015, p. 21), who stated that psychological tests and measures in Algeria are translated or directly adapted through Arabization, making them in need of adaptation to suit the specificity of Algerian society. Hence, there is an urgent need today to evaluate the various tests used in academic studies and field practice, and to consider their standards and their suitability for the Algerian environment. As Boukraâ (2020) indicated in her study, most researchers neglect the methodological steps in the process of constructing, standardizing, and adapting measurement tools, without taking into account the problem of cultural transfer and terminological and conceptual differences. Nadia Baibib also demonstrated that most measurement tools used in the Algerian environment suffer mainly from problems related to the lack of standardized tools, difficulty in adapting them due to the absence of appendices and manuals, difficulty in translation, and the absence of specialized bodies for their design or standardization. There are also problems related to psychometric conditions and lack of training during educational stages. Jadidi (2020) also emphasized in her study the necessity of adapting tests and measures in the Algerian environment due to the importance of these tools.

From this standpoint, there is a need to develop objective and precise tools to diagnose autism spectrum disorder, especially those used by specialists in the psychiatric institution at the Day Hospital Department in the Wilaya of M'sila, which is responsible for the diagnosis process of autism spectrum disorder. They have the authority and judgment over the case results that enable them to refer the cases to care

institutions that provide programs and services for individuals with autism spectrum disorder. This is the aim of this study, which will demonstrate the importance of the tools used in diagnosing autism spectrum disorder in the Algerian environment. This is what we attempt to achieve in this study, which is defined by the following questions:

• Does the hospital have a multidisciplinary team for diagnosing autism spectrum disorder?

• What is the nature of the tools used in diagnosing autism spectrum disorder in the institution?

• Do the tools used in diagnosing autism spectrum disorder possess psychometric properties (validity, reliability, and standardization) suitable for the Algerian environment?

• How effective are the tools used for diagnosing autism spectrum disorder in Algeria?

• What are the obstacles and difficulties faced by specialists in using diagnostic tools for autism spectrum disorder?

1.2- Importance of the Study: The importance of the current study lies in adding enrichment by identifying the evaluation of the tools used in diagnosing autism spectrum disorder (ASD) in Algeria from the specialists' perspective, in terms of the availability of the diagnostic team, the nature of these tools, their psychometric properties in the Algerian environment, and the effectiveness of these tools in the process of measurement, evaluation, and diagnosis. This aims to rely on them in making judgments and decisions regarding the measurement and diagnosis of individuals with autism spectrum disorder, as well as the difficulties and obstacles faced by specialists in using these tools.

1.3- Study Objectives: The study includes the following main objectives:

• To determine the availability of a multidisciplinary team in diagnosing autism spectrum disorder at the center.

• To identify the nature of the tools used in diagnosing autism spectrum disorder in Algeria.

• To assess the availability of psychometric properties (validity, reliability, standardization) of the tools used in diagnosing autism spectrum disorder in the Algerian environment.

• To evaluate the effectiveness of the tools used in the assessment and diagnosis of autism spectrum disorder.

• To identify the obstacles and difficulties faced by the diagnostic team in using the tools.

1.4- Defining the study concepts:

1.4.1- Evaluation: Bloom (1967) defines evaluation as: issuing a judgment for a certain purpose on the value of individuals, works, solutions, methods, and materials. It involves using criteria to estimate the adequacy, accuracy, and effectiveness of things, and evaluation can be quantitative and qualitative (Saeed Kamal, 2009, p. 24). Procedurally, evaluation is defined as: "the process of appraisal, estimation, or judgment issued by a diagnostic team on whether the child suffers from autism spectrum disorder or not, using specific diagnostic criteria, means, and tools for autism spectrum disorder."

1.4.2- Measurement: Sawsan Shaker (2014, p. 24) defines measurement as: "the process of quantifying or expressing in quantitative or arithmetic language the attributes, factors, or phenomena of qualitative, meaningful, or behavioral subjects that require issuance or evaluation about them." Procedurally, it is defined as: the process through which a multidisciplinary team can collect quantitative information and data about autism spectrum disorder.

1.4.3- Diagnosis: Jaber Abdel Hamid and Alaa Eldin Kafali (1990, p. 196) define diagnosis as: "the process of determining the pattern of disorder that a person suffers from based on symptoms, signs, tests, and examinations, and classifying individuals based on a set of symptoms or characteristics." Procedurally, in this study, it is defined as: "a process carried out by a multidisciplinary team to identify and classify autism spectrum disorder in the child entering the institution, based on a set of symptoms,

signs, and characteristics that appear in the child, using a set of criteria, means, and tools to issue judgment and make decisions about the child."

1.4.4- Diagnostic Tools: Salah El-Din Mahmoud Allam (2000, p.24) defines diagnostic tools as the tools used to collect data in an organized manner that aids in making various decisions. These tools include a requirement or a set of requirements, tasks, or stimuli linked to a psychological or educational characteristic. Diagnostic tools are operationally defined as: "the method or approach used by a multidisciplinary team to measure and diagnose autism spectrum disorder, through the use of a set of tools, standards, or means to collect data in an organized way that helps in decision-making and issuing judgments to determine the nature of the autism spectrum disorder in the child entering the institution."

1.4.5- Autism Spectrum Disorder: Majid Amara (1999, p.10) defines autism spectrum disorder as: a pervasive developmental disorder characterized by the child's withdrawal, introversion, lack of interest in the presence of others, or awareness of them or their feelings, and avoidance of any communication with them, especially eye contact. Autism is operationally defined as: "a disorder that appears and affects children in the early years, who have been measured and diagnosed by a multidisciplinary team in the institution as having autism according to developmental, social, linguistic, and behavioral criteria, standards, and indicators."

1.4.6- Multidisciplinary Team: Whitehouse (1976) defines a multidisciplinary team as: a closely linked, cooperative, democratic, multidisciplinary union dedicated to a common goal, which is to provide the best treatment for the individual's basic needs. The members of this team work through interconnected and integrated diagnosis, flexible and dynamic planning, appropriate sequential timing of treatment, and balanced procedures. It is an organic group differentiated in its parts but works as a unit, meaning that no significant action by members of one specialty is taken without the approval of the group (Majda Sayed, 2013, p.47).

It is operationally defined as: "A group of specialists working in the hospital, each representing a different specialty in a specific aspect of development, who supervise the provision of integrated sequential measurement, evaluation, and diagnosis services followed by treatment for autism spectrum disorder. They have expertise, maintain close bonds, cooperation, and coordination among themselves, and work as an integrated unit in decision-making in the process of measuring and diagnosing autism spectrum disorder."

1.4.7- The hospital institution specialized in mental health: It is a newly established institution located in the municipality of Ouled Mansour in the Wilaya of M'sila, specialized in mental and psychological disorders. It provides diagnostic, training, rehabilitation, recreational, accommodation, and nursing services for patients suffering from psychological and mental disorders and various disabilities from different age groups, including those with autism spectrum disorder.

1.5- Literature reviw:

1.5.1- Study by Fathia Hamza Ali Koumi (2008) titled "Psychological Diagnosis of Autistic Children in the Kingdom of Saudi Arabia": The study aimed to identify the psychological diagnostic tools used for autistic children in Saudi Arabia, examine their advantages and disadvantages, and propose suggestions that could help overcome the difficulties faced. The study sample included those responsible for government and private autism programs, both specialized and non-specialized. The sample was randomly selected from centers in Riyadh, Jeddah, and Medina. The study followed a descriptive approach and used two tools: a survey form and a questionnaire. After statistical data processing, the study results showed that 62% of the centers do not conduct the diagnostic process themselves but receive cases after diagnosis outside the center. It was also found that approximately 54% of the diagnoses at the centers were inaccurate, and only three centers from the sample used a standardized tool for diagnosing autism. The advantages of applying diagnostic tools outweighed the disadvantages, with the most significant advantage being the tool's ability to diagnose

autism at a rate of 65%, followed by its ability to distinguish between autism and intellectual disability. The main reasons hindering the application of diagnostic tools in centers were the lack of approved tools from the competent authority and the scarcity of specialists qualified to apply the tools.

1.5.2- Study by Awad Ahmed (2011) titled "Contemporary Trends in Diagnosing Autism Spectrum Disorder: A Theoretical Study." The study aimed to identify the current global trends in addressing the concept of autism, its general characteristics, the process of evaluation and diagnosis of autism, as well as the appropriate educational and therapeutic programs for children with autism. After reviewing the theoretical framework, the researcher reached a set of recommendations which include: centers and institutions should focus on providing tools for early detection and identification of autism cases; centers and institutions should provide tools for the evaluation and diagnosis of autism spectrum disorder; it is necessary to hold training courses, workshops, and training sessions for specialists to train them on how to use evaluation and diagnostic tools and how to implement therapeutic intervention programs; and to increase cooperation between families and centers and institutions concerned with autism.

1.5.3-Study by Al-Ghureir, Ahmed Nayel Hazaa (2018) titled: "Effectiveness of Evaluation and Diagnosis of Children with Autism in the Arab World from the Perspective of Experts and Specialists": This study aimed to identify the reality of the evaluation and diagnosis of children with autism in the Arab world from the perspective of experts and specialists by conducting a survey of a sample consisting of 101 experts and specialists from Arab countries working in institutions, hospitals, and centers concerned with diagnosing and treating autism cases. A measurement tool was designed specifically for the study and directed to the sample individuals, along with a form for autism diagnosis centers and reports issued by these centers, which were reviewed by experienced referees. The tool enjoyed a high degree of validity (85%) and reliability (88%). The study results indicated the importance of the topic of evaluation

and diagnosis of children with autism, although the results showed that the efficiency and effectiveness of diagnosing autism cases are below the required level compared to international diagnostic standards. Additionally, there is a shortage of specialized diagnostic staff and insufficient availability of standardized tests. There is a considerable percentage of diagnostic errors in the issued reports, and the method used for diagnosing children with autism is traditional, outdated, and not within global quality standards. The results also pointed to a moderate level of satisfaction regarding the mechanism and procedures of diagnosis. The researcher recommends establishing a clear mechanism and methodology within global standards for the evaluation and diagnosis of children with autism, supporting diagnosis centers with trained and qualified staff, and agreeing on a unified methodology.

1.5.4- Study by Hamdi and Alia Gamal (2020) titled: "Assessment of the Level of Knowledge of Autism Spectrum Disorder (ASD) Among Consultant Physicians": The study aimed to assess the knowledge of autism spectrum disorder among medical consultants in the Kingdom of Saudi Arabia. Secondly, it sought to determine if there were any differences among consultants based on years of experience and subspecialties. The KCAHW questionnaire was used to collect data from 53 consultants at a university hospital in Saudi Arabia. The study results concluded that the level of knowledge about autism spectrum disorder among consultants in Saudi Arabia was low. Furthermore, it was found that years of practice as consultants were not significantly associated with knowledge of autism spectrum disorder. The study also indicated that the level of knowledge about autism spectrum disorder was significantly influenced by subspecialties across all fields.

1.5.5-Sukari Soussi's study (2019) titled: "Common Errors in Procedures for Verifying the Reliability and Validity of Measurement Tools Used in Arab Educational Research": The study aimed to identify common errors in the procedures for verifying the reliability and validity of measurement tools used in Arab educational research. The study sample consisted of 72 research papers published in the Islamic

University Journal of Educational and Psychological Studies during the years 2012 and 2016. The number of tools used in these studies was 92, 95% of which were prepared by the researchers. Twelve recurring errors were observed in the procedures for verifying reliability, and nine recurring errors in the procedures for calculating validity. Researchers primarily relied on the internal consistency method to calculate the reliability of measurement tools, with the total usage rate of split-half, Cronbach's alpha, or Kuder-Richardson methods alone or combined with other methods reaching approximately 87%. The use of the test-retest method alone or combined with other methods was 32%. The content-related validity method was the most commonly used, with a usage rate of 77% alone or combined with other methods, without reliance on any quantitative estimation method. The internal consistency method was also used as a method for calculating validity in more than half of the studies, with a usage rate of 52% alone or combined with other methods. The study highlighted the difference between using the internal consistency method to calculate validity and using it to calculate reliability. The study recommended developing a scientific scale to estimate the accuracy of procedures for verifying the validity and reliability of measurement tools in psychological and educational research.

1.5.6- Alam's Study (1993) titled: "Conditions and Controls for the Application and Use of Measurement and Evaluation Tools in the Fields of Psychological Services from an Arab Perspective": The study aimed to establish foundations, standards, and controls that govern and guide the processes and practices of applying and using psychological measurement and evaluation tools in various fields of psychological services in the Arab world. Initially, the researcher presents the most important errors related to psychological measurement and classifies them into errors resulting from the misuse of tests and measurements, and errors resulting from presenting test results to non-specialists or to the examinees. Then, he sheds light on some fundamental problems in measurement and evaluation in the Arab world, the scientific conditions for their application and correction, as well as the scientific

conditions for interpreting their scores and presenting their results. The researcher then identifies some conditions, controls, and ethics for the use of psychological and educational tests and measurements.

1.5.7- Study by Asmaa Ben Halilem and Fatima Zahra Barhal (2023) titled The Reality of the Autism Spectrum Disorder Diagnosis Process Obstacles and Solutions in Psychological Pedagogical Centers in Sidi Bel Abbes: The study aims to reveal the reality of the autism spectrum disorder diagnosis process by psychological specialists, identify the main obstacles faced by these specialists, and propose some solutions. The study was conducted on a sample of 16 psychological specialists working with this group in some psychological and pedagogical care centers in Sidi Bel Abbes, Algeria. The descriptive method was used, and the study tool consisted of a questionnaire prepared by the two researchers. The study concluded the following results:

The use of modern diagnostic tools is weak and insufficient due to the lack of scales, being limited to two tools: CARS and CHAT. Specialists lack the skills to apply tests. Medical examinations complementary to the diagnosis process are neglected. There is a heavy reliance on clinical examination. The obstacles included the absence of tools, difficulty dealing with children, lack of training courses on autism spectrum disorder, insufficient academic training, differences in diagnosis among medical staff, difficulty diagnosing in the presence of comorbid disorders, and the credibility of parents. The proposed solutions include acquiring modern tests and providing free training courses on the use of diagnostic tools and methods.

1.5.8- Study by Nawara Badi and Nazihah Sahrawi (2019) titled Techniques Used for Diagnosing Autism Spectrum Disorder in Pedagogical Medical Centers: The study aimed to identify the techniques used to diagnose autism spectrum disorder in pedagogical medical centers in Algeria and to assess their validity and reliability. The study sample consisted of clinical specialists present in the pedagogical medical centers, and a structured interview technique was used with them. Percentages were also used

to analyze the data and information. Accordingly, the study results showed that specialists in pedagogical medical centers use many techniques and tools to diagnose autism spectrum disorder in children, with observational interview techniques ranking first. Case study (1994) DSM techniques came second, followed by La CARS and ECAN, which are less used, while ECARS, L'ADOS, L'ADIR, and CHAT are used to a lesser extent. An objective evaluation was also conducted on the validity, reliability, and standardization of these techniques and tools used to diagnose autism spectrum disorder by specialists in pedagogical medical centers. The techniques and tools used in differential diagnosis in pedagogical medical centers fall under the following levels: general medical diagnosis, mental medical diagnosis, and psychological diagnosis. A large percentage of clinical specialists have a positive attitude towards the techniques and tools used to diagnose autism spectrum disorder in pedagogical medical centers.

1.5.9- Study by Qiroud Al-Taher (2020) titled "Evaluation of Care Methods for Children with Autism in Batna Province": The study aims to evaluate the care methods for children with autism in Batna Province, which includes 9 institutions involved in the care process for children with autism. The study was conducted on a sample consisting of 43 specialists involved in the care of children with autism. The tools used included a questionnaire prepared by the researcher directed at specialists, a questionnaire directed at the parents of children with autism under care, direct observation by the researcher relying on an observation grid, and content analysis. The study results concluded that the institutions caring for children with autism in Batna Province consist of public institutions and associations not specialized in autism. The methods used in these institutions are the same as those used globally. However, the institutions do not adhere to the internationally recognized standards for caring for autism disorder. There are statistically significant differences in the care methods for children with autism between public institutions and associations.

1.5.10- Study by Saudi Fatima Al-Zahraa (2022) titled: The Level of Effectiveness of Strategies for Diagnosing Autism Spectrum Disorder in Children in

Governmental and Private Special Needs Institutions: This study aimed to identify the level of effectiveness of strategies for diagnosing autism spectrum disorder in children in governmental and private special needs institutions. The study used a questionnaire tool and relied on the descriptive analytical approach. The study was applied to a sample of 269 specialists overseeing the diagnosis of autism spectrum disorder in children according to the available sampling principle. The results of the study indicated a high level of effectiveness for the strategies used in diagnosing autism spectrum disorder in children in governmental and private special needs institutions. There was no difference in the ranking of the strategies used in diagnosing autism spectrum disorder in children in these institutions. However, there were differences in the effectiveness of the strategies based on variables such as educational qualification, workplace, and precise scientific specialization. No differences were found in the mechanisms of the strategies used for diagnosis based on the variable of seniority.

2- Methodological Framework of the Study:

2.1- Study Methodology: The current study is considered an exploratory evaluative study, which addresses the evaluation of the tools used in the process of measuring and diagnosing autism spectrum disorder in Algeria from the perspective of specialists. Therefore, we relied in this current study on the descriptive analytical method.

2.2- Study Sample: The sample of the current study consisted of all specialists responsible for the diagnosis of autism spectrum disorder in the Day Hospital Department at the specialized hospital institution for mental health in M'sila, as it is responsible for the diagnosis of autism spectrum disorder in the M'sila province. Their number reached (12) specialists. Due to the specificity of the study field, they were selected purposively, based on the following conditions: the specialist must work in the Day Hospital Department and must be involved in the diagnosis of autism spectrum disorder. The characteristics of the sample were as follows:

2.2.1- Description of Sample Characteristics According to Gender Variable: After statistical processing, we reached the results shown in the following table:

Table N° (01) Representing Sample Characteristics According to Gender Variable

Gender	Frequency	Percentage
Male	3	25%
Female	9	75%
Total	12	100%

From the above table, related to the sample characteristics according to the gender variable, with a total number of (12) specialists, we notice that the number of male specialists was (03), representing (25%), while the number of female specialists was (09), representing (75%). Accordingly, the majority of the sample members are female specialists.

2.2.2- Characteristics by Medical Specialty: After statistical processing, we reached the results shown in the following table:

Table N° (02) represents the sample characteristics according to the medical specialty variable

Medical Specialty	Frequency	Percentage
Child Psychiatrist	6	50%
Clinical Psychologist	4	33.33%
Orthophonist	2	16.66%
Total	12	100%

From the above table, related to the sample characteristics according to the medical specialty variable, with a total number of (12) specialists, we observe that the number of specialists with the specialty of Child Psychiatrist reached (06), accounting for (50%), while the number of specialists with the specialty of Clinical Psychologist was (04), accounting for (33.33%), and the number of specialists with the medical specialty of Orthophonist was (02), accounting for (16.66%). Accordingly, the majority of the sample individuals among the specialists are those with the medical specialty of Child Psychiatrist.

2.3- Study Tools: After reviewing previous studies related to the research problem and conducting a survey, we relied on the interview tool, which is the most suitable for collecting information and data from specialists working at Al-Nahar Hospital in the

specialized health institution for mental health in M'Sila. The steps for building the interview were as follows:

Step One: Defining the Interview Objective: The interview in this study aims to collect information and data regarding the evaluation of diagnostic tools for autism spectrum disorder from the perspective of specialists, by identifying the nature and characteristics of multidisciplinary teams, the most commonly used tools and criteria in diagnosis, the extent to which they possess psychometric properties, and the use of these tools in diagnosing autism spectrum disorder. Additionally, it seeks to identify the difficulties and obstacles specialists face in using autism diagnostic tools.

Step Two: Defining the Dimensions and Items of the Interview: The interview included five axes distributed over 15 items, which are represented as follows:

The First Axis: This dimension relates to "the nature and characteristics of the multidisciplinary team working at the institution," and includes the following items:

• Does the center have a multidisciplinary team?

• Is the multidisciplinary team selected by specialists in autism?

• Does the multidisciplinary team work directly with autism spectrum disorder?

• Is there coordination within the multidisciplinary team?

• Does the multidisciplinary team have experience in the field of autism?

• Does the multidisciplinary team conduct training courses?

Second Axis: This axis relates to "the nature of the tools and standards you use in measuring and diagnosing autism spectrum disorder" and includes the following item:

• What are the tools and standards you use extensively in measuring and diagnosing autism spectrum disorder?

Third Axis: This axis relates to "the extent to which the tools used in measuring and diagnosing autism spectrum disorder possess psychometric properties (validity and reliability)" and includes the following items:

• Do the tools used in measuring and diagnosing autism spectrum disorder have validity and reliability?

• Are the languages of the tools used in measuring and diagnosing autism spectrum disorder foreign or Arabic?

Fourth Axis: This axis relates to "the use of tools in the process of evaluating and diagnosing autism spectrum disorder" and includes the following items:

• How many sessions does the process of evaluating and diagnosing autism spectrum disorder using the tools take?

• What is the duration of the process of evaluating and diagnosing autism spectrum disorder using the tools?

• Are the tools used in the process of evaluating and diagnosing autism spectrum disorder used according to age?

• Are the tools used in the process of evaluating and diagnosing autism spectrum disorder used in periodic evaluations?

• Are the tools used in the process of evaluating and diagnosing autism spectrum disorder used to assess all aspects?

Fifth Axis: This axis relates to "the difficulties and obstacles that hinder the use of tools in the process of measuring and diagnosing autism spectrum disorder," and includes the following item:

• What are the difficulties and obstacles you face in using the tools in the process of measuring and diagnosing autism spectrum disorder?

Step Three: Verifying the Validity of the Interviewers: The interview in its initial form was presented to a group of university professors specializing in the field, numbering (05). They provided their opinions and observations regarding the appropriateness of its items and their relevance to the dimensions, as well as the clarity of their linguistic formulation. Based on those opinions, some items were modified, resulting in a total of (15) item distributed across five axes.

Step Four: Determining the Place and Time for Conducting the Interview: The place for conducting the interview was the office of each specialist at the hospital, with a duration not exceeding 45 minutes.

Step Five: Setting a Prior Appointment for Conducting the Interview: Before conducting the interviews with the specialists, a prior and convenient appointment was set with them, outside of their work hours. It was agreed with all specialists to conduct the interview according to each specialist's work schedule and during their free time, which was in the evening period

3- Presentation of Study Results:

3.1.1-Presentation of the results of the first axis of the interview: Formation and characteristics of the multidisciplinary team working in the institution: Through the results of the interviews conducted with specialists working in the diagnosis of autism spectrum disorder at the specialized psychiatric hospital in the Wilaya of M'sila, the specialists' answers to the interview were compiled into a table relying on frequencies and percentages. The results are shown in the following table:

Table N° (03) represents the formation and characteristics of the multidisciplinary team working in the institution

Response	Yes		No		Total	
Formation and characteristics of the multidisciplinary team	F	%	F	%	F	%
Does the center have a multidisciplinary team?	5	41.66%	7	58.33%	12	100%
Is the multidisciplinary team selected by autism specialists?	8	66.66%	4	33.33%	12	100%
Does the multidisciplinary team work directly with autism?	10	83.33%	2	16.66%	12	100%
Is there coordination among the multidisciplinary team?	0	00%	12	100%	12	100%
Does the multidisciplinary team have experience in the field of autism?	9	75.00%	3	25.00%	12	100%

Does the multidisciplinary team conduct training courses?	12	100%	0	00%	12	100%

Through the results of the table, it became clear to us that:

- The institution does not have a multidisciplinary team, and this indicator was achieved at a high rate estimated at (58.33%).

- There is no coordination between the multidisciplinary team, and this indicator was achieved at a high rate estimated at (100%).

- The multidisciplinary team conducts training courses, and this indicator was achieved at a high rate estimated at (100%).

- The multidisciplinary team works directly with autism disorder, and this indicator was achieved at a high rate estimated at (83.33%).

- The multidisciplinary team has experience in the field of autism, and this indicator was achieved at a high rate estimated at (75.00%).

- The multidisciplinary team is selected by specialists in autism, and this indicator was achieved at a high rate estimated at (66.66%).

3.1.2- Presentation of the results of the second axis of the interview: related to the most used tools and standards in diagnosing autism spectrum disorder:
Through the results of the interviews conducted with specialists working in diagnosing autism spectrum disorder at the specialized hospital institution in mental illness medicine in the state of M'sila, the specialists' answers to the interview were compiled in a table relying on frequencies and percentages, and the results are shown in the following table:

Table No. (04) represents the tools used by the multidisciplinary team working in the institution.

Specialization Tools	Child Psychiatrist		Clinical Psychologist		Speech Therapist		Total	
	F	%	F	%	F	%	F	%
CARS Scale	2	16.66%	4	33.33%	2	16.66%	8	66.66%
Observation	6	50.00%	4	33.33%	2	16.66%	12	100%

Interview	6	50.00%	4	33.33%	2	16.66%	12	100%
DSM	6	50.00%	3	25.00%	2	16.66%	11	91.66%
ICD	6	50.00%	1	08.33%	2	16.66%	9	75.00%

Through the results of the table, it became clear to us:

Regarding the tools used by specialists in diagnosing autism spectrum disorder, they primarily use observation and interviews, achieving this indicator at a high rate of (100%). The use of observation and interviews is distributed as follows: child psychiatrist (50.00%), psychologist (33.33%), and speech therapist (16.66%). In second place, they use the CARS scale, achieving this indicator at a rate of (66.66%), with its use distributed among the psychologist (33.33%), then the child psychiatrist and speech therapist at (16.66%) each.

Regarding the criteria used by specialists in diagnosing autism spectrum disorder, they primarily use the Diagnostic and Statistical Manual of Mental Disorders (DSM), achieving this indicator at a rate of (91.66%). The use of this criterion is distributed as follows: child psychiatrist (50.00%), psychologist (25.00%), and speech therapist (16.66%). In second place, they use the International Classification of Diseases (ICD), achieving this indicator at a rate of (75.00%). The use of this criterion is distributed as follows: child psychiatrist only (50.00%), psychologist (8.33%), and speech therapist (16.66%).

3.1.3- Presentation of the results of the third axis of the interview: related to the availability of tools used and their psychometric properties: Through the results of interviews conducted with specialists working in the field of diagnosing Autism Spectrum Disorder at the specialized hospital institution for mental health in the state of M'sila, the specialists' answers were compiled in a table relying on frequencies and percentages, with the results as shown in the table.

Table No. (05) represents the availability of tools used for psychometric properties

Indicators		Responses of Specialists						Total	
		Child Psychiatrist		Clinical Psychologist		Speech Therapist			
		F	%	F	%	F	%	F	%
Validity and Reliability	Yes	6	50%	4	33.33%	2	16.66%	12	100%
	No	0	00%	0	00%	0	0%	0	00%
Language Tools	Arabic	0	00%	2	16.66%	1	8.33%	3	25.00%
	Foreign	0	50%	2	16.66%	1	8.33%	9	75.00%

Through the results of the table, it became clear to us:

- All specialists answered "yes" to the fact that the diagnostic tools for autism spectrum disorder are characterized by validity and reliability, achieving this indicator at a rate of (100%).

- Most specialists use diagnostic tools for autism spectrum disorder in a foreign language, achieving this indicator at a rate of (75.00%).

3.1.4- Presentation of the results of the fourth axis of the interview: related to the use of tools in the process of evaluation and diagnosis of Autism Spectrum Disorder: Through the results of the interviews conducted with specialists working in the field of diagnosing Autism Spectrum Disorder at the specialized hospital institution for mental diseases in the state of M'sila, the specialists' answers to the interview were compiled in a table relying on frequencies and percentages, and the results are as shown in the following table:

Table No. (06) represents the use of tools in the process of evaluation and diagnosis of autism spectrum disorder.

Indicators		Psychiatrist		Psychological Specialist		Orthophonic Specialist		Total	
		F	%	F	%	F	%	F	%
Number of diagnostic sessions	2-3 sessions	5	41.66%	3	25.00%	1	8.33%	9	75.00%
	Not specified	1	8.33%	1	8.33%	1	8.33%	3	25.00%

Duration of evaluation	One month	5	41.66%	1	8.33%	2	16.66%	8	66.66%
	Not specified	1	8.33%	3	25.00%	0	0.00%	4	33.33%
Use of age-appropriate tools	From 0-3 years	1	8.33%	0	0.00%	0	0.00%	1	8.33%
	All age stages	5	41.66%	4	33.33%	2	16.66%	11	91.66%
Periodic evaluation	Yes	6	50.00%	4	33.33%	2	16.66%	12	100%
	No	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Evaluation of all aspects	Yes	6	50.00%	4	33.33%	2	16.66%	12	100%
	No	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Through the table results, it became clear to us:

- Most specialists indicated that the number of sessions for diagnosing autism spectrum disorder ranges from 2 to 3 sessions, achieving this indicator at (75.00%).

- Most specialists indicated that the time duration for evaluating autism spectrum disorder is one month, achieving this indicator at (66.66%).

- Most specialists indicated that the use of diagnostic tools for autism spectrum disorder according to age is applied at all age stages, achieving this indicator at (91.66%).

- All specialists answered "yes" to using diagnostic tools for autism spectrum disorder periodically, achieving this indicator at (100%).

- Most specialists answered "yes" to using diagnostic tools for autism spectrum disorder in evaluating all aspects, achieving this indicator at (100%).

3.1.5- Presentation of the results of the fifth axis of the interview: related to the difficulties and obstacles that hinder the use of tools in the process of measuring and diagnosing Autism Spectrum Disorder: Through the results of the interviews conducted with specialists working in the field of diagnosing Autism Spectrum Disorder at the specialized psychiatric hospital in M'sila province, the specialists' answers to the

interview were compiled in a table relying on frequencies and percentages, and the results are shown in the following table:

Table No. (07) represents the difficulties and obstacles that hinder the use of tools in the process of measuring and diagnosing autism spectrum disorder

Difficulties	Child psychiatrist		Specialist Psychologist		Specialist Speech therapist		Total	
	F	%	F	%	F	%	F	%
Lack of cooperation from parents	2	16.66%	1	8.33%	1	%08.33	4	%33.33
Lack of doctors in the specialty	1	%08.33	1	%08.33	0	%00.00	2	%16.66
Insufficient availability	3	%25.00	2	%16.66	1	%08.33	6	%50.00
Total	6	%50.00	4	%33.33	2	%16.66	12	%100

From the results in the table, we note that six specialists stated in the interview that the most difficult challenge they face is "the lack of adequate tools in the institution," with a percentage of 50.00%. This was followed by four specialists who stated in the interview that the difficulties they face are "lack of cooperation from parents," with a percentage of 33.33%. Finally, two specialists stated in the interview that the difficulties they encounter are "a shortage of doctors in the specialty," with a percentage of 16.66%.

3.2- Discussion and interpretation of study results:

3.2.1- Discussion and interpretation of the results of the first question, which states: "What is the nature of the multidisciplinary team working in the process

of measuring and diagnosing autism spectrum disorder?" Through the specialists' answers to the interview, we found that the institution does not have a multidisciplinary team, but rather some specialists, and there is no coordination between them. They conduct training courses, work directly with autism spectrum disorder, and have experience in the field of autism. A multidisciplinary team is selected by specialists in autism spectrum disorder.

These results can be explained by the fact that the hospital specializing in mental health does not provide a multidisciplinary team, according to specialists. This is due to the institution's adherence to the conditions and laws stipulated in the recruitment process, which include the inability to recruit all cadres, especially in the educational field. Although multidisciplinary teams are considered a modern approach that seeks to provide good, accurate, comprehensive, and integrated care from those with experience and professional knowledge of autism spectrum disorder around the world, We do not find multidisciplinary teams in one place on a continuous basis. We only find them in hospitals specializing in diagnosis, as is the case in the rest of the world, but in Algeria, they are limited to certain specialties. This is what Al-Qamash (2011) pointed out, stating that the measurement and diagnosis of autism spectrum disorder must be carried out within an integrated program prepared by specialists. Al-Zara'a (2005) also stated that the diagnosis of autism spectrum disorder can only be carried out by an integrated diagnostic team.

The study by Al-Ghurair and Al-Hazaa (2018) showed that the difficulties in diagnosing autism spectrum disorder are due to the lack of specialized personnel. This can also explain what most specialists have stated, namely that "there is a lack of coordination between them in the process of measuring and diagnosing autism spectrum disorder." The laws in force in Algeria assign the diagnosis of ASD to a doctor specializing in child mental health, who has the authority and final say in making the diagnosis. However, some specialists have stated that there is coordination based on the medical assessment carried out by the child psychiatrist, the psychological

assessment carried out by the psychologist, and the speech assessment carried out by the speech therapist, all of which are done after the decision has been made and under the supervision of the child psychiatrist. This was revealed in a study by Saudi Fatima Al-Zahra (2022), which showed in its results that there is no coordination, as the child psychiatrist is the one who makes the diagnosis.

A study by Al-Qayroud Al-Taher (2020) showed that diagnosis is carried out only by child psychiatrists. and according to specialists' statements that they "take training courses" and that these courses are mostly theoretical and practical in the form of lectures, seminars, and workshops and focus only on the diagnosis process, which leads to improving the measurement, diagnosis, and assessment of the case by a multidisciplinary team, as evidenced in Al-Qayroud Al-Taher's study (2020), which showed that most specialists working in centers for autism spectrum disorder receive training courses in diagnosis and treatment. Most specialists also stated that they "work directly with children with autism spectrum disorder," meaning that they deal with autism cases every day on a regular basis by gathering information among themselves, observing the child's behavior, identifying symptoms, and then submitting a report on the case and issuing a verdict on whether or not the child has autism. Among the conclusions reached, most specialists stated that they have experience in the field of autism due to their daily interaction with autism cases and working directly with them, as well as through the prior theoretical knowledge they have acquired about autism spectrum disorder, its symptoms, and its causes, which has enabled them to gain experience in the field of autism.

This is evident in the study by Al-Qayroud Al-Taher (2020), which showed that most specialists working in centers that treat autism spectrum disorder receive training courses in diagnosis and treatment. Most specialists also stated that they " work directly with children with autism spectrum disorder," meaning that they deal with autism cases every day on a regular basis by gathering information among themselves, observing the child's behavior, identifying symptoms, and then submitting a report on the case and

issuing a diagnosis of whether or not the child has autism. Among the conclusions reached, most specialists stated that they have experience in the field of autism due to their daily interaction with autism cases and working directly with them, as well as through the prior theoretical knowledge they have acquired about autism spectrum disorder, its symptoms, and its causes, which has enabled them to gain experience in the field of autism.

This is evident in the study by Al-Qayroud Al-Taher (2020), which showed that specialists working in care institutions have experience in autism, acquired as a result of their work with people on the autism spectrum. Furthermore, according to statements by a multidisciplinary team, "they are selected by specialists " through the institution's recruitment policy. When selecting staff, the institution attracts experts in the field who assess candidates and determine their requirements and skills for the job based on their competence and professional experience, in order to improve the quality of the assessment and diagnosis process.

3.2.2- Discussion and interpretation of the results of the second question: "What tools and criteria does a multidisciplinary team use to diagnose autism spectrum disorder?" The specialists' answers to the interview showed us that, in terms of tools, they use observation and interviews first, followed by the CARS scale. In terms of criteria, they use the DSM diagnostic and statistical manual first, followed by the ICD international classification criteria.

The specialists' statement can be explained by their frequent use of observation and interview tools, as these are basic, effective, and appropriate data collection tools that are easy to apply and complement each other. The process of diagnosing autism may require the specialist to refrain from using psychological tests and scales. The use of observation by the specialist in diagnosing autism allows them to observe behavior directly and monitor nonverbal behaviors, understand the child's interaction with situations and people, observe play, and document behavior in different situations. In other words, the primary goal of using observation by specialists is to assess social

communication skills and behaviors associated with autism spectrum disorder. Interviews are also used in the diagnosis of autism spectrum disorder, and are conducted directly with the child's parents, allowing the specialist to learn about the child's developmental history and stages of growth, understand the family and social context and how the child interacts at home and with relatives, and learn what the specialist did not observe, i.e., symptoms that did not appear during observation and are unclear. The use of interviews and observations by specialists improves the quality of the diagnostic process. The specialists' statements indicate that they use the CARS scale as their second choice, which can be explained by the fact that applying these tools requires effort and time. which made them less concerned with the quantitative aspect of this tool. They may use this scale in objective and measurable assessments as an observation guide for some behavioral symptoms that appear in the child. He also pointed out that specialists consider this tool to be one of the most well-known international tools relied upon for diagnosis, that it can be used individually, and that it is comprehensive in its assessment, measuring all aspects of the autism spectrum. Specialists also use it to confirm the information gathered from the interview tool. The application of the CARS scale helps specialists classify the case and determine the severity of autism. It is one of the scales that can be used with all ages, especially in periodic assessments and determining treatment plans. The specialists' statement can be interpreted as meaning that their use is primarily limited to the Diagnostic and Statistical Manual of Mental Disorders (DSM), as it is a manual published by the American Psychiatric Association. It is also considered the world's leading reference for the classification of mental disorders and one of the most widely used diagnostic criteria for autism spectrum disorder by doctors around the world. The use of the DSM diagnostic criteria provides a more accurate definition of autism spectrum disorder and has proven effective in identifying children with autism. It is also more comprehensive in identifying the symptoms of autism and clinical characteristics that are not specific.

Furthermore, according to statements made by specialists, they use the International Classification of Diseases (ICD) as a global medical guide issued by the World Health Organization. It is one of the diagnostic criteria used worldwide and relied upon by doctors to diagnose autism spectrum disorder, because it covers all medical and developmental aspects and is widely used in hospitals, especially in diagnosis, as it helps specialists extract medical reports, obtain support and services, and provides a more accurate understanding of autism spectrum disorder. Therefore, limiting the work team to certain tools and criteria is considered insufficient, despite the availability of other tools in the process of measuring and diagnosing autism spectrum disorder. This can be explained by limiting the assessment and diagnosis process to a single specialist, namely the child psychiatrist. This is agreed upon by the studies of Saudi Fatima Al-Zahra (2022), Al-Qayroud Al-Tahir (2020), and Badi Nawara (2019), whose results showed that among the tools and methods most frequently used by specialists working in institutions that care for autism spectrum disorder are observation and interviews, the CARS scale, the Diagnostic and Statistical Manual of Mental Disorders (DSM) criteria, and the International Classification of Diseases (ICD) criteria.

3.2.3- Discussion and interpretation of the results of the third question: "Are the tools used by the multidisciplinary team in diagnosing autism spectrum disorder psychometric (reliability and validity)?" Through the specialists' answers to the interview, we found that all specialists answered "yes" to the question of whether the tools used to diagnose autism spectrum disorder are valid and reliable, and they use them in a foreign language. The specialists' statement can be interpreted to mean that the tools used to diagnose autism spectrum disorder are valid (accurate) and reliable (consistent). This is due to their scientific knowledge, experience, and clinical judgment, which led them to believe that these tools are widely used internationally and are among the best means of assessing and diagnosing autism spectrum disorder. This has led them to use these tools in their original form and language, and to use them as an assessment network. For example, one of the conditions for applying the CARS scale is

that the specialist must be familiar with all the terms of the scale. The scale is completed by observing and noting the child's behavior, interviewing the family, and learning about the child's history. The primary reference for these tools is the Diagnostic and Statistical Manual of Mental Disorders (DSM).

According to the International Classification of Diseases (ICD) and Algerian law, the person responsible for making decisions and issuing judgments on the diagnosis of autism is a specialist in child psychiatry. This has led psychologists and speech therapists to pay little attention to the psychometric characteristics of these tools. and their role is limited to taking care of and monitoring the case at the institution. Consequently, the tools used to diagnose autism spectrum disorder at the institution are not reliable or consistent and are not standardized for the Algerian environment, given that the measurement and diagnosis process is carried out by a child psychiatrist who uses them in French, a foreign language. and they differ from what is practiced in other countries at the global level. The diagnosis of autism spectrum disorder must be carried out by an integrated multidisciplinary team. These tools for assessing and diagnosing autism must be reliable and consistent, adapted to the local environment, and approved and standardized. Otherwise, the credibility of the diagnosis and assessment may be compromised, and the results may not help specialists in the field make decisions. This is what some studies have agreed upon, namely that the tools used by multidisciplinary teams in diagnosing autism spectrum disorder do not have psychometric properties (accuracy and consistency), such as the study by Fathia (2008), the study by Huda Amin (1999), Barkhisa (2020), Al-Ghurair and Al-Hazaa (2018), Abdulaziz (2015), and Awad (2011).

3.2.4- Discussion and interpretation of the results of the fourth question: "How effective are the tools used in the assessment and diagnosis of autism spectrum disorder?" Through the specialists' answers to the interview, we found that most of them indicated that the number of sessions for diagnosing autism spectrum disorder ranges from two to three sessions, that the duration of the assessment of autism

spectrum disorder is one month, and that these tools are used at all age stages and periodically. The assessment covers all aspects. The specialists' statement that the number of sessions for measuring and diagnosing autism spectrum disorder ranges from one to four sessions and that the duration of the assessment of autism spectrum disorder ranges from one month to one year can be explained by the fact that the diagnosis of autism spectrum disorder is carried out by a single specialist, namely a child psychiatrist. This violates international standards, which require that the assessment and diagnosis of autism spectrum disorder be carried out by an integrated multidisciplinary team. The assessment and diagnosis are a complex process that involves several steps and requires the collaboration of a number of specialists in order to provide a clear picture of the autistic child. This is in line with the study by Saudi (2022) and the study by Qirud (2020). Most specialists have stated that the use of tools in the assessment and diagnosis of autism spectrum disorder at all ages is due to the fact that they rely on tools (interview, observation, CARS, DSM, and ICD), all of which rely on observing symptoms and behaviors and are valid and appropriate for all age groups, as shown in a study by Saudi (2022).

The specialists' statements can also be interpreted as meaning that they use tools in periodic assessment, referring primarily to the fact that the periodic assessment process is carried out in two ways: either by placing the autistic child under continuous monitoring within the institution or by monitoring them outside the institution. This is in order to determine the child's progress, development, and improvement, as well as the success of the decision made by the pediatric psychiatrist that the child does indeed have autism spectrum disorder. Regular assessment also allows specialists to develop plans to care for children with autism spectrum disorder and to collaborate with each other. However, in Algeria, the regular assessment process is carried out by speech therapists and psychologists under the supervision of a child psychiatrist, which is in line with the study by Guirrod (2020). The statements made by specialists in diagnosing ASD can also be interpreted as meaning that the assessment process using tools covers

all aspects, referring to the nature of the staff working in the assessment process at the institution, which consists of three specialties: medical assessment, psychological assessment, and speech therapy assessment through interviews conducted by specialists with the child's parents and observation of the child's behavior based on the aspects mentioned in the DSM, the ICD, and the CARS scale, which are social aspects, communication skills, play skills, and stereotypical and restrictive behaviors. According to the researcher's observation of the assessment process at the institution, it does not comply with the international standard, which requires that it be conducted by a multidisciplinary team, with each specialty assessing aspects within its specialty. The assessment should be comprehensive and integrated, covering all aspects of growth, using the best methods available, with specialists and family members participating in the assessment procedures. The assessment report should include all the findings reached by each specialist and be written in an understandable manner. This is consistent with the study by Saudi (2022) and the study by Qirud (2020).

3.2.5- Discussion and interpretation of the results of the fifth question: Which states: "What difficulties hinder the use of tools in the process of assessing and diagnosing autism spectrum disorder?" Based on the specialists' responses to the interview, the most significant difficulties they encounter are the lack of adequate diagnostic tools and methods, lack of cooperation, and shortage of doctors in the specialty. The lack of diagnostic tools and resources in the institution can be explained by the fact that they rely on a single measure, which is the CARS test. As for the interview and observation tools, they use them irregularly based on their own discretion, which is mostly based on the DSM and ICD in their questions. Relying on clinical experience alone is insufficient in the diagnostic process, which is consistent with the study by Asma and Fatima (2023), whose results showed the difficulties specialists face in using tools to assess and diagnose autism spectrum disorder, including the lack of scales and tests, and the study by Fathia (2008) , which showed in its results that the difficulties in diagnosing autism spectrum disorder include the lack of tools approved by a competent

authority and the scarcity of specialists in applying the tool. It should be noted that most of these tools do not meet the scientific conditions of validity and reliability and are not adapted to the Algerian environment, which makes them unsuitable for the environment and culture of society.

This was evident in Huda Amin's study (1999), which found that what makes it difficult to measure and diagnose autism spectrum disorder is the lack of standardized tools with a high degree of reliability and consistency, especially in the Arab environment in general. Barkhisa's study (2020) showed that one of the difficulties in diagnosing autism is the lack of tools adapted to the local environment. The study by Al-Ghurair and Al-Hazaa (2018) showed that the difficulties in diagnosing autism spectrum disorder are the lack of specialized personnel in diagnosis and the lack of sufficiently standardized tests. A study by Abdulaziz (2015) showed that psychological tests and measures in Algeria are translated directly or through Arabization, which means they need to be adapted to suit the specific characteristics of Algerian society. Therefore, there is an urgent need today to evaluate the various tests used in academic studies and field practice and to consider their criteria and suitability for the Algerian environment. Awad's study (2011), whose results showed that centers and institutions need to focus on providing tools for assessing and diagnosing autism spectrum disorder. The difficulties in diagnosing autism spectrum disorder can also be explained by parents' lack of awareness of autism spectrum disorder, as evidenced by the results of interviews conducted with them, most of which showed that they did not have sufficient information about the symptoms of autism spectrum disorder, especially with regard to the stages of child development from pregnancy and infancy and the symptoms that appeared in the child. They also lack information about the age at which the symptoms began in the child, which makes it difficult for specialists to deal with and complicates the process of determining the appropriate tool for diagnosing and assessing the child. This is consistent with the study by Asma and Fatima (2023).

A study by Saudi (2022) showed that one of the difficulties specialists faces in using tools to assess and diagnose autism is the lack of cooperation from parents, who do not have the necessary information about their child's developmental stages. Specialists also indicated through interviews that another difficulty is the shortage of doctors in this specialty, which is due to the limited ability of institutions to attract specialist doctors, especially those specializing in child psychiatry, most of whom prefer to open private clinics rather than work in hospitals. Furthermore, the lack of financial and moral support means that doctors in this specialty do not stay long in these institutions. The fact that the institution is located in a remote area is also a reason for the shortage of specialist doctors, especially if they do not have accommodation and daily necessities.

4- **General Conclusion:** The results of the study show that professionals working in specialized mental health institutions in Algeria who diagnose autism spectrum disorder use tools to assess the child's condition, which leads to the following results:

• The institution does not have a complete multidisciplinary team for diagnosing autism spectrum disorder, but rather some specialties such as a child psychiatrist, a psychologist, and an occupational therapist.

• The most commonly used tools for diagnosing autism spectrum disorder in Algeria are interviews, observation, DSM, ICD, and the CARS scale.

•The tools used in the process of measuring and diagnosing autism spectrum disorder are in a foreign language, which means that they do not have the psychometric properties (validity and reliability) for the Algerian environment.

•The tools used are effective in measuring and diagnosing autism spectrum disorder based on the number of sessions, duration, age group, periodic evaluation, and evaluation of all aspects.

•Among the obstacles and difficulties faced by specialists in using tools to diagnose autism spectrum disorder are their insufficient availability in institutions, the lack of

cooperation from parents in providing information, and the shortage of doctors specializing in this field.

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