

Understanding Emotions In Children With Autism Spectrum Disorder

¹Samara Haider Habeeb alzubaidy; ² Prof. Dr. Ahmed Abd Ul-Hussein Atia

^{1,2} Kerbala University /College of Education for Human Sciences-/ Department of Educational and

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Abstract

The current research aimed to identify the understanding of emotions in children with autism disorder. To achieve the goal of the research, the researchers randomly selected (30) boys and girls from the Imam Hussein Institute for Autistic Children's Care in Karbala and built a mock test to measure the understanding of feelings among autistic children, consisting in its initial form of (27) paragraphs with two alternatives. To verify the validity of the test, the researchers presented it with the theoretical definition On (10) arbitrators specialized in educational psychology and special education, then the researchers applied it to the sample and to extract the psychometric properties of the test by the method of discriminatory power and construction validity (internal consistency). The researchers excluded (5) items from the test of understanding feelings for their invalidity and extracted stability by Alpha Cronbach's method, which amounted to (0.930), which is a very good stability coefficient that can be trusted. After verifying the validity of the scale items, the research concluded that children with autism do not have the ability to understand feelings. In light of the research results, the researchers presented a number of recommendations and suggestions.

Keywords: Emotions, children, autism.

Introduction

Children with autism show indifference to the feelings of others as a result of the difficulties they face in understanding and interpreting expressions represented in gestures, tone of voice and manner of sitting, in addition to their ability to tolerate the emotions of others less than expected, and they suffer from obvious difficulties in expressing their feelings represented by their inability to express The appropriate facial expressions for their emotional states and expressing feelings in an exaggerated and unexpected way (Theeb, 2005: 12), as the ability to understand someone's feelings from their facial expressions depends on the information that comes from the movements of the eyes and mouth, but people with autism spectrum disorder often avoid looking into the eyes of others, a factor that contributes to their

difficulties in understanding feelings; However, when they look at faces and examine mouth and eye movements in behavior similar to normal people (Brewer & Murphy, 2016, website), people with autism usually show a disturbed pattern of communication development that includes a defect in the use of non-verbal techniques that include reading and understanding feelings, as they do not understand the methods of communication. Indirect communication such as body language, tone of voice and facial expressions, and this may be because they find it difficult to interpret non-verbal messages and facial expression of feelings and show less visual communication than others, and an inability to show or point to things (Ben Siddiq, 2007: 15) what the researcher called To think about understanding and studying this problem in light of the

following question: How able are children with autism to understand emotions?

Significant of Research

The importance of the current research appears in that it sheds light on one of the most prevalent disorders in the world, autism, which has become a major threat to the development of children's cognitive, language and social skills. Such as social interaction, verbal and non-verbal communication skills, language difficulties, poor interests and activities, difficulty understanding feelings and interpreting gestures and movements, as well as the presence of some behavioral disorders such as stereotypical movements, aggressiveness and self-harm. Coping with children with autism (Nikopoulos & Keenan, 2003, p. 87) Autism is a complex disorder that causes those who suffer from it to deficient in their nonverbal and verbal communication; This causes problems in their relationships Their social interactions, self-expression, and their inability to understand the feelings of others appear during The first years of a child's life, and these children also suffer from the emergence of strange behaviors Abnormal and repetitive behavior patterns, in addition to introversion (Shehab, 2020: 239) and Abaza (2001) distinguished between autistic children and those with communication disorder, where children with communication disorders show communication with gestures and facial expressions to compensate for speech problems, while children with autism do not show emotional expressions. Suitable (Al-Sharqawi, 2018: 145), as children with autism show difficulties in understanding feelings, which include difficulty distinguishing between feelings and physical sensations of emotional excitement, lack of imagination and daydreaming, external cognitive orientation, difficulty in awareness and perception, and mood problems such as depression, Inability to self-regulate, a paucity of vocabulary, a lack of words used to express their feelings towards others, and a failure to recognize the emotional facial expressions of others. emotional information and tend to unload their pent-up energy in a behavioral and physical

manner (Suslow et al., 2016, P.417). b Autism The inability to form and maintain social relationships. The autistic child withdraws from all forms of interaction and social communication, which leads to the emergence of many obvious problems and difficulties in establishing a relationship with others, and the difficulties and problems continue to adulthood (Theeb, 2005: 12) and the importance of the current research is summarized In shedding light on children with autism, taking into account the most important cognitive characteristics and social behavioral manifestations that they are distinguished by, as it comes here to understanding feelings, and the researchers - as far as they know - did not fall into the hands of any study conducted in Iraq on the subject of the current research. Accordingly, the importance of the current research becomes clear through the following:

It is a new attempt to approach and understand the basic characteristics and features of autism.

An attempt to reveal the understanding of emotions in children with autism.

Building a new test to understand feelings for children with autism spectrum disorder.

Research Aim

The current research aims to identify the understanding of emotions in children with autism disorder.

Definition of Terms:

First: Feelings Recognizing: It was defined by: Griffin et al. (2015)

The ability to identify and describe one's own emotions and correlates with a focus of externally directed thinking (Griffin et al., 2015, p.1)

Suslow et al., (2016)

The ability to express feelings, to recognize and describe feelings, to distinguish between feelings and bodily sensations, and to think outward (Suslow et al., 2016, p.195)

Schwartz (2019)

Recognizing and discerning inner feelings, identifying and expressing the causes of feelings, and the ability to communicate with others and

recognize their feelings (Schwartz, 2019, website))

Theoretical definition: The two researchers define the understanding of feelings as a non-verbal communicative ability that includes recognizing and distinguishing feelings, realizing their connotations and expressing them, whether they are internal feelings or the feelings of others.

Procedural definition: The overall score obtained by a child with autism spectrum disorder after undergoing an emotional understanding test adopted in the current research.

Second: Autism Spectrum Disorder: It was defined by:

Dawson (2008):

A developmental disorder characterized by impairment in social relationships, communication, verbal and nonverbal performance, and commitment to a set of behaviors and goals (Dawson, 2008, p.137)

The Diagnostic and Statistical Manual of Mental Disorders DSM-5:

A disorder characterized by persistent deficits in social communication and social interaction, and specific patterns of behavior, interests, and repetitive activities, and symptoms appear in the early developmental period (APA, 2013, p.50).

Al-Buhairi and Imam (2019):

A developmental disorder with a genetic neurological basis linked to the brain, accompanied by a deficit in social interaction and communication, in addition to repetitive stereotyped interests and behaviors (Al-Buhairi and Imam, 2019: 25)

Theoretical Framework and Previous Studies

Emotions Understanding

A large part of human communication depends on non-verbal means, through actions, gestures and postures that convey signals to others about individuals' thoughts, feelings, and intentions Expression of feelings face-to-face. (Black et al., 2017, p.488) There is a well-established stereotype that children with autism spectrum

disorder cannot feel empathy for people, or understand their feelings. It is true that they do not show their emotions in the usual ways that others know, but they are accused of being people who lack to feelings, and they cannot understand them is a completely wrong idea, but to hold on to such an idea will distort our perception of them, and cause delays in finding an effective treatment for them; Autism is also associated with other emotional difficulties, such as knowing the feelings of the other person, and although this trait is universally accepted as a symptom of autism spectrum disorder, there is little scientific evidence to support this concept. The eyes and mouth tell us, but people with autism often avoid looking into the eyes of others, and this is another factor that contributes to their difficulties in discerning emotions (Brewer & Murphy, 2016, website)

Understanding Emotions and Autism Spectrum Disorder

It is commonly assumed that difficulties in recognizing emotions are found in individuals with autism spectrum disorder, but in normal children recognizing facial expressions is an early social skill, Andrews (1998) found Andrews found that 4-month-old infants were able to distinguish between expressions of anger, fear, sadness, happiness and surprise when these expressions were presented in a familiar context and that their reactions were also specific to certain emotional expressions. Also, between 8 and 10 months children begin to use emotions for social cues (Camras, 2010, p. 217.). & Shutter).
Difficulty understanding feelings

Difficulty understanding feelings includes four aspects:

Difficulty recognizing and describing feelings: It means difficulty recognizing feelings and expressing them verbally and nonverbally.

Difficulty distinguishing between feelings and physical sensations: It means difficulty distinguishing between feelings and physical sensations resulting from emotional arousal.

Difficulties recognizing and responding to other people's emotions, including tone of voice and facial expressions.

Scarcity of imagination: It means shallowness of imagination, shallow thinking, and intellectual inertia (Leonard, 2019, website)

The theory that explains feelings

Theory of mind

Theory of mind is a branch of cognitive science that investigates how we attribute other people's psychological states and how we use those states to explain and predict their actions. To be more precise, theory of mind is the branch that investigates mind reading, mental analysis, and mental abilities. All humans possess these skills from early childhood, and they are used to treat situations such as those with unobservable psychological states, as well as to anticipate and explain behavior related to them. These mental abilities are called "general psychology" by philosophers, and they are called "intuitive psychology" and "naïve psychology" according to cognitive scientists. (Hurlburt & Heavey, 2001, p.401) The theory indicates that children make transitions from theories of simple phenomena to more complex phenomena The most famous experimental discovery in the evolutionary branch of the theory of mind is the discovery of Weimer and Berner (1983) Wimmer and Perner for a startling cognitive change in approximately three- and four-year-olds This empirical finding is that 3-year-olds tend to fail a particular misbelief task while 4-year-olds tend to succeed on the task (Iacoboni et al., 2005, P533) Theorists argue that by posing a theory change in the minds of three-year-olds who usually have perceptions of desire and beliefs, these states depict simple relationships between the world of knowledge and the outside world, and relationships that do not recognize the possibility of error. This simple theory gradually gives way. To a greater complexity in which beliefs are linked to hypothetical representations that can be right or wrong in the world at age three the child has not yet realized the idea that a belief can be wrong and in the absence of the representational theory

of belief, the child – compared to adults has a "conceptual deficit" and this deficit It is what makes a three-year-old unable to pass the false belief test but once the child reaches the representative theory of belief, at around age four, he or she can pass the false belief test False Belief (Johnson, 2005, p.341) and Sinclair (1989.) Sinclair notes that children with autism have a problem with using emotion words, so it is difficult for them to know what the assumptions are and to find a way to communicate the dissonance between what has been assumed and what they are experiencing in reality (Singer et al., 2004, p.1159)

Previous studies

Studies on understanding emotions

Ketelaarsa et al. (2016): Recognizing feelings and alexithymia in high-functioning females with autism spectrum disorder

Emotion recognition and alexithymia in high functioning females with autism spectrum disorder

This study investigates the relationship between alexithymia and emotional knowledge in this cohort of 31 high-functioning females with autism spectrum disorder and 28 age-matched model females who performed a visual and vocal emotion recognition task and completed an alexithymia questionnaire. Feelings are between 25% (low intensity) and 100 (full movement intensity) in 25% increments. There was no evidence of impairment in the accuracy of visual or audio emotion recognition, the two groups were equally affected by the level of severity, and the level of alexithymia was higher in women with autism spectrum disorder in the cognitive domain Within the autism spectrum disorder group, women with high levels of alexithymia had a decrease in Visual emotion recognition at lower intensity, suggesting that the ability to identify one's feelings may help process subtle feelings.

Drimalla et al. (2021): Imitation and facial emotion recognition in autism: a computer vision approach

Imitation and recognition of facial emotions in autism: a computer vision approach

Facial expression mimicry plays an important role in social functioning. However, little is known about the quality of facial mimicry in individuals with autism and its relationship to identification of difficulties in emotion. So the study investigated facial mimicry and recognition in 37 individuals on the autism spectrum using an existing new facial analysis. On the computer, the study measured instructive imitation of emotional facial expressions and correlated it with emotion recognition abilities. Individuals with autism imitated facial expressions if asked, but their imitation was slower and less accurate than individuals with the neural pattern. In both groups, the most accurate imitation was positively developed using participants' accuracy in emotion recognition. Given the focus of the study on adults with autism without intellectual disability, it is unclear whether the results are generalizable to children with autism or individuals with intellectual disabilities. The study concluded that Group differences in emotion recognition and imitation and their interrelationships highlight the potential for treating social interaction problems in individuals with autism.

Methodology

Research Methodology: The literature of the scientific research method indicated that defining

an appropriate research methodology is one of the stages of scientific investigation of the phenomenon, as the research method is a complex and integrated procedural method that the researcher relies on to reach a new truth or overcome an ambiguous problem. (Hamdan, 1989: 52) Therefore, the researchers relied in their research on the (descriptive research method), which is considered one of the scientific research methods based on studying the phenomenon as it exists in reality.)

Second: Research Population: The research community means any defined gathering of things, people or accidents, and it is the comprehensive sum from which samples are being selected. (Al-Najjar, 2010: 149) and the population of this research are children with autism spectrum disorder at the Imam Hussein Institute for Autistic Children's Care in Karbala, Annex (1), totaling (105) boys and girls.

Third: Research Sample: The selection of the research sample is one of the important steps of the research, as it helps in collecting data, as it is not possible to collect them in most cases from the entire research community (Daoud and Abdel Rahman, 1990: 67) and the sample represents a part of the statistical community as it is selected According to specific scientific rules and methods, and correctly represent the society from which it was withdrawn. (Al-Maghrabi, 2002: 193), (30) children with autism were selected in a simple random way, as shown in Table (1):

Table (1) Research sample by gender

the age	sex	percentage
male	22	%73
female	8	%27
	30	%100

Fourth: The Research Tool: For the purpose of achieving the goal of the current research, it was necessary to build a test to understand the feelings of children with autism, so the two researchers looked at what fell under its hand from the studies that dealt with the variable (understanding of

feelings) and relied on building the research test on what was brought by Allen Yen (Allen & Yen, 1979), as she indicated that the process of constructing any test passes through the basic steps:

- Planning the test by defining the definition and the areas covered by the paragraphs.
- Collecting, formulating and distributing paragraphs to each area of the test.
- Apply the formulated paragraphs to the research sample.
- Perform paragraph analysis. (Allen & Yen, 1979, p. 118 - 119)

Accordingly, the researchers followed the following steps:

Define the concept of understanding feelings: After the researchers defined the concept of understanding feelings as: a non-verbal communicative ability that includes identifying feelings, distinguishing them, realizing their implications and expressing them, whether they are internal feelings or the feelings of others. Recognizing feelings, interpreting feelings, perceiving feelings based on desire, perceiving feelings based on belief, expressing feelings)

Preparing the test items in its initial form: The researchers prepared the test in an initial form, consisting of (27) items distributed over the domains, as shown in Appendix (5). The test is given to the child after he is shown the appropriate picture of the paragraph, and for each situation there are two alternatives to the answer, the first measures the understanding of feelings, and the second does not.

Logical analysis of the paragraphs: The test with the specified fields and images to test the understanding of feelings was presented to (10) ten arbitrators specialized in special education and developmental psychology, Annex (1), and they were asked to estimate the validity of each paragraph in measuring what it was prepared to measure as it appears in its apparent form. By approving the paragraph, suggesting its exclusion, or making an appropriate amendment to it. In view of the approval of all the arbitrators on all the test items in number, wording, content and alternatives, the researchers kept the test as it is.

Statistical analysis of paragraphs: Statistical analysis of paragraphs is more important than

logical analysis, because it verifies the content of the paragraph in measuring what it was prepared to measure, by verifying some standard indicators of the paragraph, such as its ability to distinguish between respondents, and its validity coefficient (Al-Kubaisi, 1995: 5)

Statistical analysis sample: Psychometricians agree that the discriminatory strength of the items and their validity coefficients are among the most important standard characteristics that should be verified in psychological tests (Al-Masry, 1999: 92). On a sample of (30) boys and girls with autism spectrum disorder.

Psychometric properties of the test: The selection of items with appropriate psychometric characteristics enables the construction of a test that has good standard characteristics, so the standard characteristics of the items must be checked to select the appropriate ones and modify or exclude the unsuitable items (Ghiselli, El at, 1981: 421)

(Discrimination Power of Items):

The discriminatory power of the paragraphs means the extent to which the paragraph is able to distinguish between those with higher and lower levels of individuals in relation to the trait measured by the paragraph (Shaw, 1967: 450) and after applying the test to the sample members numbering (30) boys and girls and correcting the answer forms, and to extract the discriminatory power of the test items The scores of the sample members were arranged from the highest total degree to the lowest total degree, and the two extreme groups were determined by the total degree, at a rate of (27%) from each group. 27% of the sample members (Awdah, 1998: 286). The number of individuals in each group reached (8) children in the upper group, and (8) children in the lower group, using the t-test for two independent samples in calculating the significance of the differences between the mean of the two groups in the scores of each of the test items. The differences between the upper group and the lower group in paragraphs from (19-23) are not statistically significant, which means that their discriminatory power between superior children and low children in understanding

feelings is weak, so the researchers omitted it from the test in its final form.

Structural validity: Specialists in the field of psychometrics agree on the importance of honesty in the paragraphs of psychological tests, because the validity of the test depends mainly on the validity of its paragraphs.

Therefore, the researchers extracted honesty by the following methods:

The relationship of the paragraph with the total score: In calculating the validity of the paragraph, the researchers relied on the "Pearson" correlation coefficient between the degrees of each paragraph and the total degree, noting that the sample of paragraphs' validity consists of (30) boys and girls in the current research, as Anastasi indicated that the link of the paragraph is a test An internal or external indicator of its sincerity, and when an appropriate external test is not available, the total score of the respondent represents the best internal test in calculating this relationship (Anastasi, 1976: P 206). It was found that the correlation between the total score of the test and the items is not significant for each of the items (19,20,21), so the researchers excluded it from the test.

Correlation of the paragraphs with the domain to which they belong: For the purpose of calculating the value of the correlation coefficient between the degree of the paragraph and the total degree of the domain to which it belongs, the Pearson correlation coefficient was used, and it was found that all the correlation coefficients are statistically significant. 19-22) is not a function, so the researchers excluded it from the test.

The stability of the test Scales Reliability: The goal of calculating the reliability is to estimate the errors of the test and to suggest ways to reduce these errors (Murphy, 1988: 63), and to calculate the reliability, the test was applied to a sample of (30) boys and girls selected from the research community. The researchers used stability to test their research Using the Facronbach method to estimate the values of the reliability coefficient, as it depends on the internal structure of the test

to determine the homogeneity of the vocabulary (Allam, 2000: 144). The value of the reliability coefficient is (0.930), and the value of this reliability coefficient is high Thus, the reliability coefficient of the test is very good and reliable when compared to the criteria set by Nunnally (1978), when it referred to the following criteria: (80) and above are good, (70) are acceptable, (60) are marginal, (50) are exploratory (Nunnally, 1978, p.262).

Test correction: After the test was applied to (30) boys and girls from the research community, the total scores were calculated for each of the sample members and for each of the test items to represent the raw score of the examinee, noting that the test correction scores are (1,2), and thus the highest A score that can be obtained (54) and a minimum score (27).

final application of the test: After extracting the validity of the test by logical analysis and statistical analysis and excluding invalid paragraphs by the previously mentioned methods and methods, it became clear that all of them belong to the field (perception of feelings based on belief) consisting of (5) paragraphs, so the researchers excluded it, so the final image of the test consisted of (22) paragraphs Divided into four fields, Annex (2), applied by the two researchers to the final research sample consisting of (30) boys and girls.

Seventh: Statistical Tools: The two researchers used the IBM SPSS ver.26 Statistical Portfolio Program for Social Sciences.

Results

First: Presentation and interpretation of the results:

The aim of the research: To identify the understanding of emotions in children with autism spectrum disorder

To achieve this goal, the researchers extracted the arithmetic mean to test the understanding of feelings, which amounted to (28,30), which is less than the hypothetical mean of (33).

Table (2): Single sample T-test results

Sample volume	SMA	hypothetical mean	standard deviation	degree of freedom	T value		Significance at 0.05. level
					tabular	calculated	
30	28,30	33	4,178	29	2,048	6,161	function

From Table (2) it is clear that the calculated t-value of (6,161) is less than the tabular t-value of (2,048), which means that the statistical differences between the arithmetic mean of the sample and the hypothetical mean of the test are statistically significant in favor of the hypothetical mean, which means that children with autism spectrum disorder have a level of Low understanding of feelings, and the researchers concluded that this result is consistent with the direct observations that researchers observed on children with autism, as the weakness of the characteristics and cognitive abilities of children with autism, the most important of which is attention is attributed to the poor understanding of feelings among children with autism, and that The problem of children with autism in using emotion words is that it is difficult for them to know what the assumptions are and to find a way to communicate the dissonance between what has been assumed and what they are experiencing in reality (Singer et al., 2004, P.1159)

This result is in agreement with the study Ketelaarsa et al. (2016) and Drimalla et al. (2021)

Recommendation

Based on the results of the current research, the researchers recommend the following:

1. Develop accredited training programs in centers for children with autism spectrum disorder.
2. The need for government attention to centers specialized in training children with autism spectrum disorder.
3. The need to train families of children with autism spectrum disorder to develop and improve the skills of their children

according to well-studied steps and programmes.

Suggestions

Based on the results of the current research, the researchers suggest the following:

1. Conducting a correlational study between joint attention and understanding emotions in children with autism spectrum disorder.
2. Conducting a pilot study on the effectiveness of a training program based on joint attention in developing the understanding of emotions in children with autism disorder.
3. Conducting a comparative study between normal children and children with autism in understanding feelings.

References

1. Al Ismail, Hazem Radwan (2012): Autism and Communication Disorders, Majdalawi House for Publishing and Distribution, Amman-Jordan.
2. Al-Azzawi, Rahim Younis (2008): Curriculum in Educational Sciences, Amman, Jordan, Dar Degla.
3. Allugunti V.R (2022). Breast cancer detection based on thermographic images using machine learning and deep learning algorithms. International Journal of Engineering in Computer Science 4(1), 49-56
4. Al-Gharib, Kamel Muhammad (2002): Methods of scientific research in the humanities and social sciences, Scientific

- House and House of Culture, Amman - Jordan.
5. Al-Hadi, Nabil Abd (2002): *The Introduction to Educational Measurement and Evaluation and its Uses in the Field of Classroom Teaching*, 2nd Edition, Amman, Wael Publishing and Distribution House.
 6. Al-Imam, Mustafa Mahmoud and others (1990): *Calendar and Measurement*, Dar Al-Hikma for Printing and Publishing, Baghdad, Iraq.
 7. Kumar, S. (2022). A quest for sustainium (sustainability Premium): review of sustainable bonds. *Academy of Accounting and Financial Studies Journal*, Vol. 26, no.2, pp. 1-18
 8. Allam, Salah El-Din Mahmoud (2000): *Analysis of psychological, educational and social research data*, Cairo, Arab Thought House.
 9. Allen, MJ & Yen, MW (1979). *Introduction to measurement theory*, California, Brook cole.
 10. Al-Sharqawi, Mahmoud Abdel-Rahman (2018): *Autism and its treatment*, first edition, Dar Al-Ilm wa Al-Iman for Publishing and Distribution, Desouq.
 11. Alyan, Ribhi Mustafa (2001): *Scientific Research: Its Foundations, Methods, and Procedures*, first edition, International House of Ideas, Amman - Jordan.
 12. Al-Zahler, Muhammad Zakaria and others (2002): *Principles of Measurement and Evaluation in Education*, International Scientific House for Publishing and Distribution and House of Culture for Publishing and Distribution, Amman, Jordan.
 13. Al-Zoba'i, Abdul Jalil, and Muhammad Al-Ghannam (1981): *Research Methods in Education*, Volume 1, Baghdad University Press.
 14. Anastasi, A. (1976): *Psychological testing*, Macmillan, New York.
 15. APA, American Psychiatric Association (2013): *DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS (DSM-5)*, Fifth edition.
 16. Ben Siddiq, Lina Omar (2007): The effectiveness of a proposed program for developing nonverbal communication skills for autistic children and its impact on their social behavior, *Arab Childhood Journal*, Kuwait Association for the Advancement of Arab Childhood, Volume IX - Issue 33.
 17. Black, Melissa & Nigel TM Chen & Kartik K. Iyer & Ottmar V. Lipp & Sven Bölte & Marita Falkmer & Tele Tan & Sonya Girdler (2017): Mechanisms of facial emotion recognition in autism spectrum disorders: Insights from eye tracking and electroencephalography, *Neuroscience and Biobehavioral Reviews*.
 18. Brewer Rebecca & Jennifer Murphy (2016): There is a fine line between autism and alexithymia—feeling emotions but being unable to identify them, Website: <https://www.scientificamerican.com/>
 19. Brewer, R.; Cook, R.; Cardi, V.; Treasure, J.; Bird, G. (2016): Emotion recognition deficits in eating disorders are explained by co-occurring alexithymia, *R. Soc. Open Sci.*, 2, 140382.
 20. Daoud, Aziz Hanna, and Abdul Rahman, Anwar Hussein (1990): *Educational Research Methods*, Amman Press, Baghdad.
 21. Dawson, G. (2008). Early behavioral intervention, brain plasticity and the prevention of autism spectrum disorders. *Development and Psychopathology*, 20, 775–804.
 22. Drimalla, Hanna & Irina Baskow & Behnoush Behnia & Stefan Roepke & Isabel Dziobek (2021): Imitation and recognition of facial emotions in autism: a computer vision approach <https://doi.org/10.1186/s13229-021-00430-0>
 23. El-Behairy, Abdel-Raqib Mohamed and Imam, Mahmoud Mohamed (2019): *Autism Spectrum Disorder: An Applied Guide to Diagnostic and Therapeutic Intervention*, First Edition, Anglo-Egyptian Library, Cairo.
 24. Essawy, Mohamed Abdel Rahman (1985): *Measurement and Experimentation in*

- Psychology and Education, University House, Beirut, Lebanon.
25. Farag, Safwat (1980): Psychometrics, Arab Thought House, Cairo, Egypt.
 26. Granck, R.; Vanheule, S.; Sdesmet, M. & Slegers, S. (2010): The Observer Alexithymia Scale: A Reliable and Valid Alternative for Alexithymia Measurement. *Journal of Personality Assessment*, 92 (2), 175-185
 27. Griffin, Cait & Michael V. Lombardo & Bonnie Auyeung (2015): Alexithymia in Children With and Without Autism Spectrum Disorders, *Autism Research* 00:00–00
 28. Guilford, JP (1954): *Psychometric Methods*, 2nd ed. New York, McGraw-Hill.
 29. Hersh F. Mahmood, Hooshang Dabbagh, Azad A. Mohammed, Comparative study on using chemical and natural admixtures (grape and mulberry extracts) for concrete, *Case Studies in Construction Materials*, Volume 15, 2021.
 30. Helmy, Jihan Ahmed (2018): The effectiveness of a selective counseling program in reducing alexithymia among students with learning difficulties in the preparatory stage, *Fayoum University Journal of Educational and Psychological Sciences*, Issue Ten, Part IV.
 31. Hurlburt, RT and Heavey, CL (2001): Telling what we know: Describing inner experience, *Trends in Cognitive Sciences* 5: 400-403.
 32. Iacononi, M. & Molnar-Szakacs, I. & Gallese, V. & Buccino, G., & Mazziotta, JC & Rizzolatti, G. (2005): Grasping the intentions of others with one's own mirror neuron system. *PLoS Biology* 3: 529-535.
 33. Ketelaars, Mieke P. & AnneIn't Velt & Audrey Mol & Hanna Swaab & Sophie van Rijn (2016): Emotion recognition and alexithymia in high functioning females with autism spectrum disorder, *Research in Autism Spectrum Disorders*, 21 51–60
 34. -Najjar, Nabil Jumaa Saleh (2010): *Measurement and Evaluation: An Applied Perspective with SPSS Software Applications*, first edition, Dar Al-Hamid, Amman-Jordan.
 35. Nicolo, G., Semerari & A., Lysaker, PH & Dimaggio, G. & Conti, L. & Angerio, S. & Procacci, M. & Popolo, R. (2011): Alexithymia in personality disorders: Correlations with symptoms and interpersonal functioning. *Psychiatry Research*, 190, 37-42.
 36. Nunnally (1978). *Psychometric theory*, 2nd edition megraw. Hall, New York.
 37. Obeidat, Thouqan and Adas, Abd al-Rahman, Kayed (2000): *Scientific Research, its Concept, its Tools and its Techniques*, Riyadh, Dar Osama.
 38. Odeh, Ahmed Suleiman (2002): *Measurement and Evaluation in the Teaching Process*, Fifth Edition, Faculty of Educational Sciences, Yarmouk University, Dar Al-Amal.
 39. Odeh, Ahmed Suleiman and Al-Khalili, Khalil Youssef (1988): *Statistics for the researcher in education and human sciences*, 1st edition, Dar Al-Fikr for Publishing and Distribution, Amman, Jordan.
 40. Odeh, Ahmed Suleiman and Malkawi, Fathi Hassan (1992): *Fundamentals of Scientific Research in Education and Psychology*, 2nd Edition, Al-Kinani Library.
 41. Omar, Mahmoud, and others, (2010): *Psychological and educational measurement*, first edition, Dar Al Masirah, Amman - Jordan.
 42. Schwartz, Allan (2019): *The Loneliness of Alexithymia*, Website: <https://www.mentalhelp.net/articles/personality-disorders/>
 43. Second: Foreign sources and references
 44. Shaw, M. & Costanzo, P. (1982): *Theories of social psychology*, New York, McGraw-Hill, Inc.
 45. Singer, J., & Willett, JB (2003). *Applied longitudinal data analysis*. Oxford: Oxford University Press.
 46. Stagner, R. (1974): *Psychology of Personality*, 4th ed., New York, McGraw-Hill.

47. Stranger, Symbolism (1977): Evaluation and Psychometrics, Anglo-Egyptian Library, Cairo, Egypt.
48. Suslow, T., Kugel, H., Rufer, M., Redlich, R., Dohm, K., Grotegerd, D., Zaremba, D., &... Dannlowski, U. (2016). Alexithymia is associated with attenuated automatic brain response to facial emotion in clinical depression. *Progress in Neuro-Psychopharmacology & Biological Psychiatry*, 65, 194-200.
49. Suslow, Thomas & Harald Kugel & Michael Rufer & Ronny Redlich & Katharina Dohm & Dominik Grotegerd & Dario Zaremba & Udo Dannlowski (2016): Alexithymia is associated with attenuated automatic brain response to facial emotion in clinical depression, *Progress in Neuro-Psychopharmacology & Biological Psychiatry* 194–200
50. Taylor GJ, Bagby RM., Parker JDA (1997): Disorders of affect regulation: alexithymia in medical and psychiatric illness, Cambridge: Cambridge University Press.
51. Theeb, Raed (2005): The Initial Course in Autism, Karim Reda Saeed Foundation (Disability Program in Syria), Damascus.

Supplement (I)

The names of the referees for the training program and the test of understanding feelings

T	The name	The scientific title	Jurisdiction	Workplace
1	Rahim Abdullah Al-Zubaidi	Professor Dr	educational psychology	Mustansiriya University
2	Ali Hussein Mazloum Al Mamouri	Professor Dr	educational psychology	University of Babylon
3	Abbas Ali Shallal	Professor Dr	educational psychology	Baghdad University
4	Ali Mahmoud Kazem Al-Mamouri	Professor Dr	educational psychology	University of Babylon
5	Heba Munadil Abd Al-Hussein	Assistant Professor Doctor	Special Education	Mustansiriya University
6	Amer Abbas Aziz	Assistant Professor Doctor	Special Education	Mustansiriya University
7	Baraa Mohammed Hassan	Assistant Professor Doctor	Psychological health	Psychological Research Center
8	Ibrahim Khalil Jarallah	Doctor teacher	educational psychology	Dhi Qar University
9	Rasha Khalil Ibrahim	Doctor teacher	Special Education	Mustansiriya University
10	Abeer Abdel Moneim Ahmed	Doctor teacher	educational psychology	Baghdad University

Supplement (2)

The ultimate emotion understanding test

The name:.....

Gender Male Female

age:.....

Test application instructions:

The scale is applied by the coach.

The coach begins by preparing the ground for the examination by encouraging the child, for example, by saying to him: (Let's play this game and solve the questions.. think carefully and do not rush before answering).

The trainer displays the scale images according to the sequence of questions in the scale.

The trainer makes it easy for the child to ask the question in an appropriate language that he can understand.

The trainer records the child's response on a separate sheet of paper by placing a mark (□) in front of the appropriate alternative for the response of the examined child.

The alternatives are (true: 2, false: 1)

Domain 1: Recognizing feelings (Picture 1)

T	vertebrae	true	Error
1	Point the sad face		
2	Point the happy face		
3	Point to the frightened face		
4	Point to the angry face		

The second field: the interpretation of feelings

T	vertebrae	true	Error
1	If my mother travels, am I happy or sad (Picture 2)		
2	I will be run over by a car, am I afraid or relieved (Picture 3)		
3	My sister and I paint the drawings. Am I happy or angry ?(Picture 4)		
4	If a dog wants to bite me, am I afraid or angry (Picture 5)		
5	My bike is broken, am I angry or happy (Picture 6)		
6	This boy broke my car, am I angry or relieved? (Picture 7)		
7	This girl took my doll, am I happy or angry (Picture 8)		
8	My mother brought me a gift. Am I happy or sad? (Picture 9)		

The third area: awareness of feelings based on desire

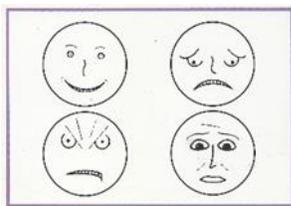
T	vertebrae	true	Error
1	I love cakes and my mom brought me a cake (point to the face representing my condition (Picture 10)		

2	I love colors and my mom brought me colors (I point to the face that represents my condition (Picture 11)		
3	I love yellow cupcakes and my mom brought me red cupcakes point on the face that represents my status (pic 12))		
4	I like to celebrate with my brother and celebrate with him (I point to the face that represents my condition (Picture 13)		
5	I love the cat painting and my mom brought me a rose painting point on the face that represents my condition (Picture 14))		
6	I love jelly and my mom brought me a cake (Point on my face (Picture 15)		

Fourth Domain: Expressing feelings (Picture 21)

T	vertebrae	true	Error
1	?What is the condition of the first face		
2	?What is the condition of the second face		
3	?What is the condition of the third face		
4	?What is the condition of the fourth face		

In these questions, the trainer points to the faces that represent the emotional states shown in the pictures and asks the child to express the emotional state of the face referred to.



Picture (1)



Picture (2)



Picture (3)



Picture (4)



Picture (5)



Picture (6)



Picture (7)



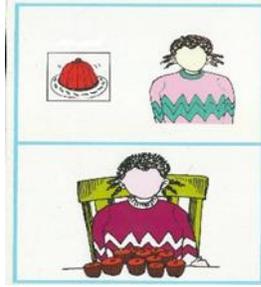
Picture (8)



Picture (9)



Picture (10)



Picture (11)



Picture (12)



Picture (13)



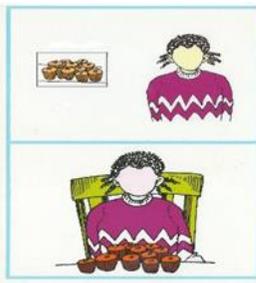
Picture (14)



Picture (15)



Picture (16)



Picture (17)



Picture (18)



Picture (19)



Picture (20)