The degree of teachers/specialists' knowledge and application of evidence-based practices for autism spectrum disorder in autism centers in the city center of Erbil

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Abstract: The current study aimed to describe the degree of teachers' and specialists' knowledge and application of practices based on scientific research for autism spectrum disorder in autism centers in the city center of Erbil. The number of participants in the study reached 99. To achieve the aim of the study, the researcher built two scales: a scale of evidence-based practices and the other a scale of procedures for selection strategy. Their validity and reliability were verified. The descriptive survey method was used to answer the study questions. The results indicated that the degree of knowledge and application of evidence-based practices was moderate and that the relationship between knowledge and application of practices was high. While the relationship between knowledge and how to choose the therapeutic strategy was moderate. The study recommended the need to train teachers and specialists on evidence-based practices and how to choose them, as well as to use other variables such as teachers' experiences and the degree of disorder.

Keywords: *Autism spectrum disorder, Erbil, Teachers/specialists' knowledge and application of evidence-based practices.*

1. Introduction

Autism spectrum disorder is characterized by persistent deficits in communication and social interaction, repetitive behaviors, and restricted interests [1]. Recently, it has been observed that the prevalence of this disorder has increased, as the prevalence rate reached 1/36 in its latest estimate [2]. The causes of this disorder are still not fully determined, and many explanations have emerged for it. Despite the multiplicity of theories explaining it, there are multiple treatment approaches. Autism spectrum disorder has attracted a range of practices, interventions, and treatments that range from those with empirical support for positive impact outcomes, to those with implausible theoretical foundations, evidence of ineffectiveness, or indeed harm. The use of evidence-based practices (EBPs) is an ethical approach that supports human rights and ensures the right to use what is effective to achieve the best results. However, we acknowledge the challenges in translating into practice including terminology and classification, systems factors, and individual factors including access to information and attitudes [3]. The most commonly used approach now is to use therapeutic evidence-based practices [4]. Autism evidence-based practices (EBPs) are those procedures that scientific studies have shown to produce effective outcomes for students with autism across a range of skill domains [5]. Although the contemporary focus on EBPs is Despite the evidence based EBPs in teaching children with autism spectrum disorder, the gap between research and practice still exists [6].

Current human services policies in the United States require that intervention practices have research evidence of their effectiveness [7]. Research has also demonstrated the importance of access to evidence-based practices (EBP) to ensure positive outcomes on targeted skills for students with autism; However, it is unclear what evidence exists to support the implementation of these practices in a variety of inclusive settings Mason, et al. [8]. Guldberg [9] pointed out the need to put the knowledge base of

practitioners on an equal footing with the knowledge base of researchers, relying on the evidence base from the classroom itself. The process of using research-based practices and achieving their effectiveness is linked to newly trained teachers' experiences, knowledge, and beliefs about EBPs in their educational decisions Lukins, et al. [6]. Stahmer, et al. [10] indicated that teachers face great challenges in implementing EBP with children with autism spectrum disorder. Factors such as implementation leadership, climate, and attitudes toward EBP are associated with successful use of EBP and may vary across levels of the educational system.

Many studies have been conducted on the uses of EBPs with persons with autism spectrum disorder. Anixt, et al. [11] emphasized the importance of providing the specialists with information about evidence-based autism treatments and how to choose the appropriate treatment based on developmental needs. While the results [6] showed that positive behavior support and visual schedules were the most effective practices. The use of research-based practices is linked to the extent of teachers' knowledge of the practice and perceptions of its social validity. Sam et al. (2023) indicated that training improves professional growth related to enhancing teachers' use of evidence-based practices for students with autism spectrum disorder. They indicated that the training improved the level of EBP implementation for teacher assistants. The study of Garrad, et al. [12] aimed to explore the decision-making process of Australian teachers regarding adopting and discontinuing EBP. Teachers rated the perception that the EBP would meet the needs of their students as the most important criteria in determining their use of the EBP. Conversely, the judgment that the EBP did not meet students' needs was the most important criteria in their decision to discontinue use. While training was perceived as the second least consideration in their decision to adopt and discontinue use of EBP. Results of Barry, Holloway, Gallagher and McMahon (2022) indicated that the majority of teachers received little initial teacher training in the field of autism spectrum disorder, and received almost no continuing professional development before teaching this group of children. Results also indicated that teachers received little support from allied professionals, so knowledge and uses of EBPs varied significantly across teacher characteristics.

On the other hand, Stahmer, et al. [10] explained the considerations of the external context, policies, the availability of funding to provide services, the availability of appropriate specialists to provide services, and family cultural characteristics. While internal contextual factors include the individual characteristics of both the children receiving the service as well as the provider providing the service, as well as the leadership and organizational climate surrounding the use of a particular EBP program. Survey results and interviews conducted by Klebanoff (2018) indicated that school psychologists and counselors view EBPs for autism spectrum disorder favorably. The results of the study conducted by Stahmer, et al. [13] confirmed that school personnel received the poorest ratings, while specialists/trainers and related service providers (such as speech-language pathologists) received the highest ratings. Also, the study of Mason, et al. [8] stressed that social communication is targeted most often, while academic skills are rarely targeted for improvement in the comprehensive literature. Gevarter, et al. [14] noted specific knowledge gaps and training needs, as developmental specialists who provided special education services appeared to have greater training needs than speech-language pathologists.

1.1. The Importance of the Study and its Questions

The quality of application of research-based practices depends on the skills and education of healthcare professionals. The appropriate choice of these procedures is related to the type of therapeutic goal and the possibility of application, so choosing the appropriate practices for a person with autism and implementing them accordingly is extremely important. How these practices are chosen and used must be compatible with the skills, preferences, and variables that depend on the individual [15]. In the Kurdistan Region, treatment services provided to children with autism spectrum disorder are still relatively new. Many people are interested in providing treatment services for this category of children. However, the best choice for dentin is that based on (EBPs). Hence, the main goal of this study is to

know the degree of knowledge of these practices, the degree of their application, and how to choose them. Hence, the current study sought to answer the following questions:

- What is the degree of teachers/specialists' knowledge and application of evidence-based practices for autism spectrum disorder in autism centers in Erbil city centre?
- What are the procedures for choosing the treatment strategy applied by teachers/specialists in autism centers in Erbil city centre?
- What is the relationship between the degree of knowledge and the degree of teachers/specialists' application of evidence-based practices for autism spectrum disorder in autism centers in Erbil city centre?
- What is the relationship between the degree of knowledge and the strategy selection procedures applied by teachers/specialists in autism centers in the city center of Erbil?
- What is the relationship between the degree of application and the strategy selection procedures applied by teachers/specialists in autism centers in the city center of Erbil?

2. Methodology

2.1. Research Methodology

A descriptive survey method was used to study the degree of knowledge and application of evidence-based practices and how to choose it.

2.2. Participants

The number of individuals participating in the study was 99 participants from specialists who provide services to children with autism spectrum disorder in the city of Erbil/Kurdistan. Participants filled out the scale for evidence-based practices. They evaluated the degree of knowledge and the degree of application thereof. They also standardized the strategy selection procedures they used.

2.3. Study Tools

The tools included two scales: a scale of evidence-based practices and the other a scale of strategic options.

Scale of evidence-based practices: A list of practices that included 28 practices was prepared based on a review of relevant studies such as the study Hume, et al. [7]; Steinbrenner, et al. [16]; El-Zraigat [4] and Autism Society of NC [17].

The participants were asked to place two ratings on the scale, the first representing the degree of knowledge and the other representing the degree of application within a rating of four levels: to a high degree, to a moderate degree, to a moderate degree, and not at all.

2.4. Validity And Reliability of the Scale of Evidence-Based Practices

To verify the validity and reliability of the scale, it was applied to a sample of 25 people from outside the study sample. The validity was then verified using Cronbach's alpha coefficient, and the internal consistency coefficient for the scale was 0.88, which is a high and acceptable coefficient for the scale and indicates that the scale measures what it was designed to measure.

As for reliability, it was verified using repetition reliability, where the difference between the first and second application was two weeks, and in terms of reliability, it was 0.83. It is a high reliability coefficient that is acceptable for achieving the study objectives.

2.5. Procedures of Selection Treatment Strategies

The list of procedures used for selection was prepared, which included 6 procedures, based on a review of relevant literature such as Romanczyk and Gillis [18]; Lancaster [19]; Saez, et al. [20]; Fong, et al. [21]; El-Zraigat [4] and Rudy [22].

The participants were asked to place an estimate on the scale that represents the degree of application within a rating of four levels: to a high degree, to a moderate degree, to a moderate degree, and not at all.

2.6. Validity And Reliability of the Scale Practice Selection Procedures

To verify the validity and reliability of the scale, it was applied to a sample of 25 people from outside the study sample. The validity was then verified using Cronbach's alpha coefficient, and the internal consistency coefficient of the scale reached 0.89. It is a high and acceptable coefficient for the scale and indicates that the scale measures what it was designed to measure.

As for reliability, it was verified using repetition reliability, where the difference between the first and second application was two weeks, and in terms of reliability, it was 0.82. It is a high reliability coefficient that is acceptable for achieving the study objectives.

3. Results

This part presents the results of the study and is organized according to the questions:

- What is the degree of teachers/ specialists' knowledge and application of evidence-based practices for autism spectrum disorder in autism centers in Erbil city centre?

Table 1.
Means and stand deviations of knowledge and application of evidence-based practices for autism spectrum disorder in autism centers in Erbil city centre.

	N	Mean	Std. Deviation
Degree of knowledge	99	2.49	0.304
Degree of application	99	2.48	0.308

As the data indicate, the degree of knowledge and application of evidence-based practices was average in the sample participating in the study in the city of Erbil

- What are the procedures for choosing the treatment strategy applied by teachers/specialists in autism centers in Erbil city centre?

Table 2.
Means and stand deviations of procedures for choosing the treatment strategy applied by teachers/specialists in autism centers in Erbil city centre.

Procedures for choosing the treatment strategy	N	Mean	Std. Deviation
Target skill/ behavior	99	2.37	0.617
Goals of treatment	99	2.04	0.630
Meet child characteristics and severity of the disorder	99	2.39	0.639
Family variables and characteristics	99	2.01	0.544
Competencies of specialists	99	2.05	0.640
Available resources	99	2.31	0.665
total	99	2.22	0.397

As the data indicate, the degree of choose for evidence-based practices was moderate in the sample participating in the study in the city of Erbil.

- What is the relationship between the degree of knowledge and the degree of teachers/specialists' application of evidence-based practices for autism spectrum disorder in autism centers in Erbil city centre?

Table 3.
The relationship between the degree of knowledge and the degree of teachers/specialists' application of evidence-based practices.

		Degree of application
Degree of knowledge	Pearson Correlation	0.901(**)
	Sig. (2-tailed)	0.000
	N	99

Note: ** Correlation is significant at the 0.01 level (2-tailed).

As the data indicate, the Pearson correlation coefficient between the degree of knowledge and application of evidence-based practices was high in the sample participating in the study in the city of Erbil.

- What is the relationship between the degree of knowledge and the strategy selection procedures applied by teachers/specialists in autism centers in the city center of Erbil?

Table 4.
The relationship between the degree of knowledge and the strategy selection procedures applied by teachers/specialists.

		Strategies as a whole
Degree of knowledge	Pearson Correlation	0.746(**)
	Sig. (2-tailed)	0.000
	N	99

Note: ** Correlation is significant at the 0.01 level (2-tailed).

As the data show, the Pearson correlation coefficient between the degree of knowledge and the selection of treatment strategy was moderate, as the Pearson correlation coefficient reached 0.74 in the sample participating in the study in the city of Erbil.
- What is the relationship between the degree of application and the strategy selection procedures applied by teachers/specialists in autism centers in the city center of Erbil?

Table 5.
The relationship between the degree of application and the strategy selection procedures applied by teachers/specialists.

		Strategies as a whole
Degree of application	Pearson Correlation	0.860(**)
	Sig. (2-tailed)	0.000
	N	99

Note: ** Correlation is significant at the 0.01 level (2-tailed).

As the data show, the Pearson correlation coefficient between the degree of knowledge and the selection of treatment strategy was high, as the Pearson correlation coefficient reached 0.86 in the sample participating in the study in the city of Erbil.

4. Discussion, Conclusions, and Recommendations

Obtaining positive results in treating autism spectrum disorder requires the use of effective treatment practices. The process of using these practices requires knowledge of them, the procedures for applying them, and how to choose them. In effective treatment, the therapeutic procedure is chosen to suit the nature of the problem and the treatment is applied in a professional and regular manner until effective results are obtained, symptoms are reduced, and the goal is achieved.

The degree of knowledge and application of evidence-based practices was moderate. This may be due to the fact that the establishment of autism treatment centers is still recent. The specialists who provide the therapeutic service make their best efforts and try to apply what is appropriate according to their knowledge and experience. Special education and other supportive services are still new in the city of Erbil - Kurdistan. Therefore, the challenge lies in achieving effective results in treatment that

encourages growth in children with autism spectrum disorder and reduces symptoms, leading to increased daily interactions and the fulfillment of special needs.

Scientific literature has pointed to similar challenges in treating children with autism spectrum disorder. However, the results of Barry, et al. [5] indicated a lack of training targeting teachers, in addition to a lack of support from professionals. While Stahmer, et al. [10] explained the impact of the availability of funding to provide services, the availability of appropriate specialists to provide services, and family cultural characteristics. In addition, the results of the study Stahmer, et al. [13] confirmed that school personnel received the poorest ratings, while specialists/trainers and related service providers (such as speech-language pathologists) received the highest ratings.

Based on the results, the study recommends the following:

- Holding introductory workshops on evidence-based practices in treating autism spectrum disorder.
- Training teachers and specialists on evidence-based practices in treating autism spectrum disorder.
- Training on procedures for choosing effective treatment procedures.

Transparency:

The author confirms that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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