Teachers' Use of Evidence-Based Practices for Teaching Social Skills to Students with Autism Spectrum Disorder [Application and Obstacles]

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Abstract

This study investigated the use and obstacles regarding evidence-based practices (EBPs) for teachers in teaching social skills to students with autism (ASD). This study also investigated the impact of several variables on teachers' ability to implement EBPs, including educational qualification, years of experience, number of training courses completed, and the age group taught by the teachers. This study was conducted in Tabuk City, in the northwest of Saudi Arabia. This study adopted a descriptive approach; the researcher developed a 27-item questionnaire survey and three open-ended questions. The sample of this study included (40) female teachers. The result showed that teachers had high incidence of using EBPs to teach social skills. The results also showed that four practices -modeling, social narrative, prompting, and reinforcement- were frequently used in teaching all social skills in general. The most important obstacles, teachers faced in general difficulty implementing new practices, the lack of intensive training courses for teachers, and difficulty using technologies. The results of this study will be beneficial in determining teachers' needs for training programs related to the use of EBPs with ASD. The study's results recommends providing intensive training for teachers using EBPs to teach social skills and other skills.

Keywords: Students with Autism, Evidence-Based Practices, Social Skills, Obstacles.

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استخدام المعلمات للممارسات المبنية على الأدلة لتدريس المهارات الاجتماعية للتلاميذ ذوي اضطراب طيف التوحد [التطبيق والمعوقات]

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مستخلص الدراسة

بحثت هذه الدراسة في استخدام الممارسات القائمة على الأدلة، والعقبات التي تواجه المعلمات في تدريس المهارات الاجتماعية للتلاميذ ذوي اضطراب طيف التوحد. وبحثت هذه الدراسة -أيضاً- تأثير عدة متغيرات على قدرة المعلمات على تنفيذ تلك الممارسات، تشمل (المؤهل التعليمي، وسنوات الخبرة، وعدد الدورات التدريبية التي حصل عليها، والفئة العمرية التي يُدرسها المعلمات). أجريت هذه الدراسة في مدينة تبوك، شمال غرب المملكة العربية السعودية. اعتمدت هذه الدراسة على المنهج الوصفي. وقامت الباحثة بإعداد الاستبانة المكونة من (٢٧) فقرة، وثلاثة أسئلة مفتوحة. وشملت عينة هذه الدراسة على (٤٠) معلمة. أظهرت النتائج أن المعلمات لديهم نسبة عالية في استخدام الممارسات لتدريس المهارات الاجتماعية. وأظهرت النتائج -أيضاً- أن من أهم أربع ممارسات -النمذجة، والسرد الاجتماعي، والتحفيز، والتعزيز- كانت تستخدم بشكل متكرر في تدريس جميع المهارات الاجتماعية بشكل عام. ومن أهم العقبات التي تواجه المعلمات بشكل عام، صعوبة تطبيق الممارسات الجديدة، عدم وجود دورات تدريبية مكثفة للمعلمين، وكذلك صعوبة استخدام وسائل التقنية. وستكون نتائج هذه الدراسة مفيدة في تحديد احتياجات معلمي برامج التدريب المتعلقة باستخدام الممارسات المبنية على الأدلة مع اضطراب طيف التوحد. وتوصي نتائج الدراسة بتوفير التدريب المكثف للمعلمين الذين يستخدمون الممارسات المبنية على الأدلة لتدريس المهارات الاجتماعية والمهارات الأخرى.

الكلمات المفتاحية: التلاميذ ذوي اضطراب التوحد، الممارسات المبنية على الأدلة، المهارات الاجتماعية، المعوقات.

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Introduction:

Autism spectrum disorder (ASD) is a complex developmental disorder characterized by having minimal eye contact with others; deficits in language; sensory sensitivities; disruptive and aggressive behaviors; nonverbal or limited verbal skills; and deficits in social skills. People with ASD may also demonstrate stereotypical behaviors such as rocking their bodies back and forth or flapping their fingers (American Psychiatric Association, 2013; Hume et al., 2021).

Among other difficulties, students with ASD often have trouble with their social skills. Ibrahim and Gharib (2020) mentioned that one of the characteristics that distinguish students with ASD is that social relationships do not develop according to their age. There is a weakness in social interaction because they cannot form relationships with others, or social understanding skills, and they typically demonstrate a lack of initiative to achieve social interaction.

There are many different interventions and practices used for students with ASD that can be used to overcome these difficulties, including Evidence Based Practices (EBPs). EBPs were first used in the medical field. Over time, other disciplines have adopted the use of EBPs, especially in the field of education (Russo-Campisi, 2017).

There are a number of trusted sources for teachers to use for learning Evidence- Based Practices (EBPs) such as the National Professional Development Center on Autism (NPDC), National Autism Center (NAC); and What Works Clearing House. These organizations provide information, programs and intensive support for teachers who are interested to learn about EBPs (Leko, et al., 2019). For instance, the NPDC identified are different interventions to use as EBPs for social skills: peer mediated interventions;

social narratives; social skills training; structured play group; pivotal response training; video modeling; positive behavioral support; reinforcement; and applied behavior analysis (National Autism Center, 2015).

The number of children with Autism Spectrum Disorder (ASD) has been increasing in recent years. According to their study "One study on Worldwide ASD," Xin and Sutman estimated that in 2011, there was one (1) child with ASD for every (100) typical children. (Xin & Sutman, 2011).

Nine years later, in 2020, the Center for Disease Control (CDC) declare that the rate was higher than before, with an estimated rate of 1 child diagnosed with ASD for every (36) typical children at age (8) (CDC, 2023). In Saudi Arabia, the recent data showed that the incidence rate for children with ASD in Riyadh is (2.5%). For every (1000) typical children there are (25) children with ASD (AlBatti et al., 2022). With the increasing number of students with ASD, there is also an intensified need for effective interventions that lead to positive outcome (Hume et al., 2021; Alhossein, 2021).

Instead of random applications of unsupported practices in the use of interventions and programs, the current trend is to encourage professionals and teachers to implement and apply EBPs because they are based on a strong theoretical and empirical basis (Odom, et al., 2010; Russo-Campisi, 2017). Students with ASD need practices that are "intensive, individualized instruction grounded in EBPs" (Leko, et al., 2019). It is critical that teachers understand and can demonstrate EBPs (Marder & deBettencourt, 2015).

Teachers frequently need to implement instruction methods that use EBPs with their students (Hsiao & Petersen, 2019). To implement EBPs, teachers need to know about a variety of different practices, so that they can apply them in their teaching in a way that benefits students. Applying a variety of different EBPs, can have positive effects on developing and improving the capabilities of students with ASD (Alhossein, 2017). While

a particular practice might work with one student, teachers should be aware that it may not necessarily work with other students with ASD. This is because each child with ASD is unique with different features and his level of negative behaviors and abilities may range from slight to severe (Hume et al., 2021). The variety of abilities and characteristics among students with ASD can make it very hard and challenging for teachers to teach EBPs for students with ASD (Simpson, 2005; Hsiao & Petersen, 2019). According to Paynter el al. (2017), when early intervention providers have the knowledge of and skills to implement EBPs, they can do so in an appropriate and positive manner for their students with ASD. There are many different EBPs that teachers in the field of special education may use to improve the social skills of individuals with ASD.

Literature Review Obstacles Faced by Teachers:

Recent studies have shown that while some teachers use EBPs with students with ASD, many teachers face significant obstacles in doing so. These obstacles may include insufficient training regarding using EBPs for social skills, lack of knowledge about EBPs, or a lack of support from administrators, supervisor, and staff (Silveira-Zaldivar & Curtis, 2019). Azazi's study (2021), found that there are some obstacles in applying EBPs. Teachers had difficulty implementing EBPs in the school setting, as well as a lack of skills, little knowledge of how to implement EBPs and few training programs focusing on the application of EBPs.

Another study by Alhossein (2017) indicated that teachers do not have the time to read research about EBPs, which leads to low levels of knowledge. In some cases, teachers try using familiar, traditional teaching methods when dealing with students with ASD. Some teachers may try to read the research about EBPs, but do not understand the ambiguity of terminology and skills. In addition, teachers may face obstacles related to the school environment such as culture conflicts, or the expense of using EBPs.

In their study Combes, et al. (2016) explored school psychologists' use of evidence-based practices (EBP) for social skills training to students with an autism spectrum disorder. Forty-seven percent of the participants reported that their graduate program did not provide courses addressing social skills training for students with ASD, and (58%) did not receive training on the topic during their internship. The most and least frequently endorsed EBP reported were the provision of clear and measurable treatment objectives and regular communication with parents, respectively. Greater use of EBP was reported when school districts perceived implementing EBP as important.

The Circumstances in Which Teachers are Applying EBPs:

Teachers' use of EBPs vary according to circumstance. A recent study used a descriptive survey method and showed that teachers often apply EBPs (Al-Zari' & Al-Yafi'i, 2020). Still another revealed that teachers indicated a medium degree of knowledge and use of EBPs (Alhossein, 2021). Dynia et al. (2020) discovered that teachers use EBPs for their students with ASD, and that the most important uses of EBPs by preschool teachers were visual support, behavioral strategies, and social narrative.

Reichow and Volkmar's (2010) synthesis of sixty-six studies of interventions used to teach social skills to people with ASD provides important data on the frequency with which different interventions are used. The most common interventions used by special education professionals were applied behavior analysis (ABA), peer training, social skills groups, visual techniques, naturalistic techniques and video modeling (Reichow & Volkmar, 2010). According to Hart, (2018), the most-commonly used techniques for teaching social skills to students with ASD were scripts, video modeling, and embedding.

Motivation for This study:

The study was considered the first of its kind,-according to the researcher's knowledge, as it used descriptive methods to measure teachers' use of and obstacles faced in teaching social skills to students with ASD in Tabuk City, Saudi Arabia. Ultimately, this study seeks to understand whether or not teachers are able to use EBPs to teach social skills to their students with ASD, and, if not, what obstacles and challenges they may face in applying EBPs.

Assumptions of the Study:

The study used the following questions to: 1. Identify the EBPs uses and obstacles for social skills and 2. Examine the variables of this study. It seeks to answer the following questions:

- What are the proven best practices most commonly used in teaching in social skills (body language, relationships with peers, social awareness, following instructions, relationship management)?

- Are there any statistically significant differences in the use of EBPs to teach social skills among teachers of students ASD according to the variables of educational qualification, years of experience, number of training courses, and the age group taught by the teachers?

- From your perspective as a special education teacher: What are the most common obstacles and challenges teachers faced in applying EBPs to teach social skills, organizational environment, and using assistive technology? (open-ended question)

Research Methodology:

Descriptive method was used to achieve the objective of the study to investigate teachers' use of and obstacles faced in teaching social skills to students with ASD in Tabuk City, Saudi Arabia.

Sample of the Study:

The study targeted teachers who live in northwest Saudi Arabia, in Tabuk City. Teachers who participated were from different public schools and private centers that teach students with ASD. According to the statistics of the Department of Special Education in Tabuk City for the academic year (2023), the total number of special education teachers was (43). Purposeful sampling was used, and (40) female teachers responded.

The distribution of the study sample according to demographic variables (educational qualification, years of experience, number of training courses, and the age group taught by the teachers). Table (1) provides distribution of the study sample according to demographic variables.

Table (1)
distribution according to the demographic variables (n=40)

Variables		Frequency	Percent
Qualification	Bachelor	30	75%
	Master	10	25%
Years of experience	Less than 5 years	11	27.5%
	5 - 10 years	19	47.5%
	> 10 years	10	25%
Number of training courses	Less than 5 courses	13	32.5%
	5 - 10 courses	17	42.5%
	> 10 courses	10	25%
Age group	3 - 5 years	13	32.5%
	6 - 8 years	16	40%
	> 9 years	11	27.5%

Study's Instrument:

After reviewing the literature-related studies in the field of EBPs and social skills for students with ASD (Reichow, & Volkmar, 2010; Silveira-Zaldivar & Curtis, 2019; Alhossein, 2021); scales of Social and Emotional Competencies Questionnaire (SEC-Q) developed by Zych, et al. (2018); and the Social Emotional Competence Questionnaire (SECQ) developed by (Zhou & Ee 2012), the researcher developed the questionnaire of Social Skills Survey for using EBPs for teachers who work with students with ASD. The questionnaire consisted of (27) fixed response items: body language (4), relationship with peers (7), social awareness (7), following instructions (4), and relationship management (5 phrases).

Data analysis

The following statistical methods were used to analyze the descriptive responses gathered from the survey. Statistical Program for Social Science (SPSS, version 26) was employed to analyze teachers' response to the questionnaire items in terms of Cronbach's Alpha Coefficient; mean, frequencies and percentages; independent samples T-test; and one-way analysis of variance. To determine the degree to which EBPs are used by female teachers to teach social skills, the study used the 5-point Likert-type scale questionnaires (1, 2, 3, 4, 5) with the (5) alternatives: Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree, respectively. The score of each teacher on the questionnaire was converted to (5) degrees by dividing by the number of items for each scale. The average of responses were then classified into (5) levels of equal range through the following equation: Category length = (largest weight - least weight) ÷ number of alternatives = (5-1) ÷ 5 = 0.80.

The overall Cronbach alpha equation was used, and the reliability factor connected the scale teaching social skills (0.957), Body Language (0.879), Relationship with Peers, (0.896), Social Awareness (0.921), Following Instructions (0.837), Relationship Management (0.898). Table (2) shows reliability and validity coefficients of the study questionnaire (n = 40)

Table (2)
Reliability and validity coefficients of the study questionnaire (n = 40)

Item	Cronbach's Alpha if Item Deleted	Item-Total Correlation	Corrected Item-Total Correlation	Dimension Cronbach's Alpha of Dimension (Dimension -Total Correlation)
1	.823	.888**	.787**	Body language
2	.803	.916**	.848**	0.879
3	.846	.860**	.732**	(0.934**)
4	.879	.762**	.596**	
5	.730	.852**	.800**	Relationship with peers
6	.694	.855**	.800**	0.896 (0.950**)
7	.714	.851**	.793**	
8	.706	.682**	.541**	
9	.715	.700**	.567**	
10	.713	.913**	.877**	
11	.707	.748*	.640**	
12	.904	.859**	.801**	Social awareness
13	.904	.867**	.819**	0.921 (0.964**)
14	.895	.929**	.899**	
15	.921	.619**	.485**	
16	.920	.724**	.621**	
17	.900	.892**	.843**	
18	.898	.905**	.866**	
19	.800	.808**	.652**	Following instructions
20	.738	.892**	.785**	0.837 (0.939**)
21	.837	.759**	.552**	
22	.781	.829**	.707**	
23	.875	.840**	.758**	Relationship management
24	.865	.874**	.801**	0.898 (0.955**)
25	.898	.754**	.607**	
26	.869	.872**	.781**	
27	.860	.890**	.820**	
Overall Cronbach's Alpha of research tool = 0.957				

** Sig. at the level ($\alpha \leq 0.01$)

What are the proven best practices most commonly used in teaching in social skills (body language, relationships with peers, social awareness, following instructions, relationship management)?

The mean of the EBPs in teaching Body Language (4.23). In general, the average of the body language scale was (4.23 out of 5), indicates that the female teachers of students with ASD in Tabuk City in the study sample use and practice teaching body language to a very high degree. Table (3) presents the means of body language scales items (n = 40).

Table (3)

Means of body language scales items (n = 40)

Items	Means	Std. Deviation	The degree of evidence-based practices	Practice rank
Explaining to a student that the absence of an expression on a person's face may not mean that she is miserable, but rather that she is focusing his attention on something else.	4.00	0.75	High	4
Explaining to a student that not using gestures or body language does not mean that the other person is not interested or closed off, but rather that they are not good at using them.	4.18	0.59	High	3
Introducing a student to use eye contact skills and when it is the good time to achieve attention.	4.20	0.76	Very high	2
Training the student on how to use high and low tones of voice according to the situation the need, and the nature of the emotion.	4.53	0.60	Very high	1
Body language dimension as a whole	4.23	0.50	Very high	-

The mean of the EBPs in teaching Relationship with Peers (4.34). The general average of the relationship with peers scale was (4.34 out of 5), which indicates that the female teachers of students with ASD in Tabuk City in the study sample, in general, practice teaching relationship with peers to a very high degree. Table (4) indicates the means of relationship with peers scales items (n = 40).

Table (4)
Means of relationship with peers scales items (n = 40)

Items	Means	Std. Deviation	The degree of evidence-based practices	Practice rank
Encouraging a student to help other classmates.	4.50	0.51	Very high	2
Encouraging a student to participate in-group games.	4.75	0.54	Very high	1
Developing the simple interactive talk between students.	4.50	0.60	Very high	2
Making a student stand with her friends in difficult times and defend their friends' rights.	3.95	0.93	High	5
Encouraging a student to have a sense of humor and fun.	3.93	0.89	High	6
Helping a student to make friends with others.	4.48	0.60	Very high	3
Finding a student leader and involving her in taking over the responsibilities of a group of students.	4.30	0.79	Very high	4
Relationship with peers as a whole	4.34	0.44	Very high	-

The mean of the EBPs in teaching Social Awareness (4.24). In general, average for the social awareness scale was (4.24 out of 5), which indicates that the female teachers of students with ASD in Tabuk City in the

study sample use and practice teaching social awareness to a very high degree. Table (5) shows the means of social awareness scales items (n = 40).

Table (5)
Means of social awareness scales items (n = 40)

Items	Means	Std. Deviation	The degree of evidence-based practices	Practice rank
Encouraging a student to take care for other's needs.	4.45	0.75	Very high	1
Showing a student how to help others who need help.	4.35	0.66	Very high	2
Helping students to look at peoples' facial expressions to understand peoples' feeling	4.33	0.73	Very high	3
Heling a student to find out what others thinking.	4.00	0.85	High	6
Helping the student to justify the behavior of others.	4.05	0.81	High	5
Helping a student to understand why a classmate is upset.	4.25	0.84	Very high	4
Teaching students to interpret people's faces when they are angry.	4.25	0.74	Very high	4
Social awareness as a whole	4.24	0.55	Very high	-

The mean of the EBPs in teaching Following Instructions (4.28). In general, the average for the following instructions scale was (4.28 out of 5), which indicates that the female teachers of students with ASD in Tabuk City in the study sample use and practice teaching following instructions to a very high degree. Table (6) presents the means of following instructions scales items (n = 40)

Table (6)

Means of following instructions scales items (n = 40)

Items	Means	Std. Deviation	The degree of evidence-based practices	Practice rank
Encouraging students to follow the instructions, regulations, and guidelines issued by the school.	4.55	0.68	Very high	1
Showing students the importance of sharing their tools, toys and things with others.	4.50	0.75	Very high	2
Encouraging students to respond to criticism in a positive way.	3.75	0.84	High	4
Directing students according to the maximum mastery of the tasks.	4.30	0.61	Very high	3
Following instructions as a whole	4.28	0.50	Very high	-

The mean of the EBPs in teaching (4.34) Relationship Management. In general, the average for the relationship management scale was (4.34 out of 5), indicating that female teachers of students with ASD in Tabuk City in the study sample use and practice teaching relationship management to a very high degree. Table (7) presents the means of relationship management scales items (n = 40).

Table (7)

Means of relationship management scales items (n = 40)

Items	Means	Std. Deviation	The degree of evidence-based practices	Practice rank
Encouraging a student to apologize when she inadvertently hurt a classmate.	4.60	0.59	Very high	1
Asking a student to help her friend to get over the sadness.	4.43	0.68	Very high	2
Training the student to avoid criticizing others when a difference occurs.	4.15	0.86	High	5
Encouraging a student to forgive the mistakes of others.	4.25	0.87	Very high	4
Having a student defend herself without offending others.	4.28	0.75	Very high	3
Relationship management as a whole	4.34	0.56	Very high	-

The frequencies of EBPs used in teaching social skills (body language, relationship with peers, social awareness, follow instructions, and relationship management). In order to understand which practices the teachers deemed to be best for teaching social skills to students with ASD, the researcher used open-ended questions, and then measured the frequency with which specific practices were mentioned by the teachers. Table (8) indicates frequencies of practices used in teaching social skills.

Table (8)

Frequencies of practices used in teaching social skills (as measured by repetition of response in open-ended questions

Scale (Social skills)	Practice	Frequency*	Practice rank
Body language	Modeling	30	1
	Prompting and verbal communication	24	2
	Visual aids	18	3
	Facial expression (use of gestures)	15	4
	Reinforcement	9	5
	Tone of voice	7	7
	Interrupt response	4	7
	Explanation and clarification	4	7
	Peer learning	4	7
	Cognitive behavioral intervention	2	8
	Social narrative	2	8
	Social skills training	2	8
Relationship with peers	Modeling	48	1
	Reinforcement	36	2
	Guidance	26	3
	Peer learning	25	4
	Social narrative	23	5
	Prompting	14	6
	Social skills training	14	6
	Verbal communication	8	7
	Visual aids	6	8
	Use gestures	4	9
	Expressing the position	4	9
	Explanation and clarification	2	10
Social awareness	Modeling	30	1
	Visual aids	26	2

Scale (Social skills)	Practice	Frequency*	Practice rank
	Social narrative	26	3
	Prompting	22	4
	Reinforcement	20	5
	Social skills training	18	6
	Explanation and clarification	12	7
	Cognitive behavioral intervention	8	8
	Guidance	6	9
	Expressing the position	2	10
Following instructions	Differential reinforcement	24	1
	Modeling	12	2
	Social narrative	11	3
	Prompting	11	3
	Explanation and clarification	10	4
	Visual aids	8	5
	self-management	8	5
	Discrete trial training	4	6
	Peer learning	2	7
	Pivotal response training	2	7
Relationship management	Modeling	42	1
	Verbal prompting	26	2
	Social narrative	14	3
	Understanding feelings	14	3
	Social interaction with friends	13	4
	Reinforcement	12	5
	Explanation and clarification	7	6
	Discrete trial training	6	7
	Cognitive behavioral intervention	4	8
	Visual aids	3	9
	Functional communication training	2	10

Total Frequencies in all practices in teaching social skills mentioned by teachers.

According to this data, teachers in the study believe that the five best practices for teaching each social skill to students with ASD are as follows:

The top five practices for teaching body language are: modeling, prompting and verbal communication, visual aids, facial expression and reinforcement.

The top five practices for teaching relationship with peers are: modeling, reinforcement, guidance, peer learning, and social narrative.

The top five practices for teaching social awareness are: modeling, visual aids, social narrative, prompting, and reinforcement.

The top five practices for teaching following instructions are: differential reinforcement, modeling, social narrative, prompting, and visual aids.

The top five practices for teaching relationship management are: modeling, verbal prompting, social narrative, understanding feelings, and social interaction with friends.

Four practices such as modeling, social narrative, prompting, and reinforcement were frequently used in teaching all social skills.

Are there statistically significant differences in the degree to which EBPs are used to teach social skills to students with ASD, according to the variables of educational qualification, years of experience, number of training courses completed, and the age group taught by the teachers?

An independent-samples t-test was performed on teachers of students with ASD due to qualification variable. Table (9) indicates the independent sample t-test results.

Table (9)

Independent-samples t-test results when examining differences in the degree of EBPs in social skills among teachers of students with ASD due to qualification variable

Scales	Qualification	N	Mean	Std. Deviation	T-Test value	Sig.
Body language	Bachelor	30	4.18	0.53	0.92	0.36
	Master	10	4.35	0.36		N.S
Relationship with peers	Bachelor	30	4.32	0.46	0.59	0.56
	Master	10	4.41	0.36		N.S
Social awareness	Bachelor	30	4.21	0.55	0.49	0.62
	Master	10	4.31	0.57		N.S
Following instructions	Bachelor	30	4.21	0.54	1.48	0.15
	Master	10	4.48	0.32		N.S
Relationship management	Bachelor	30	4.30	0.60	0.77	0.45
	Master	10	4.46	0.43		N.S

N.S = Non- Significant

As shown in Table (9), the variable of educational qualification among teachers in the study presented NO statistically significant differences in the degree of usage of EBPs for teaching social skills (body language, relationship with peers, social awareness, following instructions, managing relationships), as no t-test values are statistically significant.

One-Way analysis of variance ANOVA test was performed on teachers of students with ASD due to years of experience variable. Table (10) shows test results.

Table (10)

One-Way analysis of variance ANOVA test results when examining differences in the degree of EBPs in social skills among teachers of students with ASD due to years of experience variable

Scales	Years of experience	N	Mean	Std. Deviation	F-value	Sig.
Body language	Less than 5 years	11	4.18	0.64	0.09	0.92 N.S
	5 - 10 years	19	4.22	0.32		
	> 10 years	10	4.28	0.63		
Relationship with peers	Less than 5 years	11	4.38	0.56	0.54	0.59 N.S
	5 - 10 years	19	4.27	0.27		
	> 10 years	10	4.44	0.55		
Social awareness	Less than 5 years	11	4.43	0.57	1.27	0.29 N.S
	5 - 10 years	19	4.11	0.50		
	> 10 years	10	4.29	0.59		
Following instructions	Less than 5 years	11	4.43	0.55	0.73	0.49 N.S
	5 - 10 years	19	4.21	0.51		
	> 10 years	10	4.23	0.45		
Relationship management	Less than 5 years	10	4.49	0.62	0.54	0.59 N.S
	5 - 10 years	19	4.27	0.54		
	> 10 years	10	4.30	0.58		

N.S = Non- Significant

As shown in Table (10), there are NO statistically significant differences in the usage of EBPs for teaching social skills (body language, relationship with peers, social awareness, following instructions, relationship management) due to the variable years of experience among female teachers of ASD students; all values of the (F) test are not statistically significant.

One-Way analysis of variance ANOVA test was performed on teachers of students with ASD due to number of training courses variable. Table (11) shows test results.

Table (11)

One-Way analysis of variance ANOVA test results when examining differences in the degree of EBPs in social skills among teachers of students with ASD due to number of training courses variable.

Scales	Number of training courses	N	Mean	Std. Deviation	F-value	Sig.
Body language	Less than 5 courses	13	4.13	0.54	0.34	0.71 N.S
	5 - 10 courses	17	4.25	0.48		
	> 10 courses	10	4.30	0.51		
Relationship with peers	Less than 5 courses	13	4.33	0.56	0.26	0.77 N.S
	5 - 10 courses	17	4.30	0.40		
	> 10 courses	10	4.43	0.34		
Social awareness	Less than 5 courses	13	4.37	0.60	0.75	0.48 N.S
	5 - 10 courses	17	4.13	0.47		
	> 10 courses	10	4.26	0.61		
Following instructions	Less than 5 courses	13	4.38	0.62	0.61	0.55 N.S
	5 - 10 courses	17	4.26	0.49		
	> 10 courses	10	4.15	0.36		
Relationship management	Less than 5 courses	13	4.42	0.73	0.39	0.68 N.S
	5 - 10 courses	17	4.25	0.52		
	> 10 courses	10	4.40	0.40		

N.S = Non- Significant

As shown in Table (11), there are NO statistically significant differences in the usage of EBPs for teaching social skills (body language, relationship with peers, social awareness, following instructions, relationship management) due to the variable number of training courses for teachers of ASD students; all values of the (F) test are not statistically significant.

One-Way analysis of variance ANOVA test was performed on teachers of students with ASD due to age group variable. Table (12) shows test results.

Table (12)

One-Way analysis of variance ANOVA test results when examining differences in the degree of EBPs in social skills among teachers of students with ASD due to age group variable

Scales	Age group	N	Mean	Std. Deviation	F- value	Sig.
Body language	3 - 5 years	13	4.44	0.40	2.25	0.12
	6 - 8 years	16	4.06	0.42		
	> 9 years	11	4.20	0.63		N.S
Relationship with peers	3 - 5 years	13	4.37	0.32	0.05	0.95
	6 - 8 years	16	4.32	0.36		
	> 9 years	11	4.34	0.65		N.S
Social awareness	3 - 5 years	13	4.26	0.53	0.38	0.69
	6 - 8 years	16	4.30	0.53		
	> 9 years	11	4.12	0.63		N.S
Following instructions	3 - 5 years	13	4.27	0.47	0.02	0.99
	6 - 8 years	16	4.28	0.49		
	> 9 years	11	4.27	0.60		N.S
Relationship management	3 - 5 years	13	4.11	0.51	1.85	0.17
	6 - 8 years	16	4.50	0.51		
	> 9 years	11	4.38	0.66		N.S

N.S = Non- Significant

As shown in Table (12), there are NO statistically significant differences in the usage of EBPs for teaching social skills (body language, relationship with peers, social awareness, following instructions, relationship management) due to the variable the age group taught by teachers of ASD students; all values of the (F) test are not statistically significant.

3- From your perspective as a special education teacher: What are the most common obstacles and challenges teachers faced in applying EBPs to teach social skills, organizational environment, and using assistive technology? (Open-ended question).

The frequencies and percentages of the obstacles and challenges that were mentioned by the study sample in their answers to open-ended questions were calculated the results were as follows:

Table (13) indicates the frequencies and percentages of obstacles and challenges faced in applying EBPs in terms of teaching social skills.

Table (13)

Frequencies and percentages of obstacles and challenges to teach social skills

Problems & challenges	Frequency*	Percent	Rank
Difficulty implementing new practices	9	27%	1
Lack of knowledge of all practices	6	18%	2
Lack of Pre-training in EBP	6	18%	2
Lack of time with students	4	12%	3
Teaching loads during the class, including evaluation and follow-up of the group class and teaching at the same time	2	6%	4
Sometimes used not approved EBP	6	18%	2

* Some teachers did not mention any problems or challenges

As shown in Table (13), the frequencies and percentages of the most common obstacles and challenges faced in applying EBPs to teach social skills. The most common was "Difficulty implementing new practices" (27%), and the least common response was "Teaching loads during the class, including evaluation, and follow-up of the group class at the same time" was (6%).

Table (14) indicates the frequencies and percentages of obstacles and challenges faced in applying EBPs in terms of the organizational environment.

Table (14)

Frequencies and percentages of obstacles and challenges in terms of the organizational environment

Problems & challenges	Frequency*	Percent	Rank
The lack of intensive training courses for teachers on these topics	12	30%	1
Lack of organizational or academic resources	6	15%	3
Lack of interaction and cooperation from some colleagues	7	17.9%	2
Large number of students in the classroom	4	10%	4
Classes not ready	4	10%	4
There are no mandatory laws or regulations	2	5%	5
Poor organization: all are individual efforts of the teachers	2	5%	5
Difficulty applying EBP to students without knowing its method	2	5%	5

* Some teachers did not mention any problems or challenges

As shown in Table (14), the frequencies and percentages of the most common obstacles and challenges faced in applying EBPs in terms of the organizational environment. The most common response was "The lack of intensive training courses for teachers on these topics" (30%). The lease common response was "Difficulty applying it to students without knowing its method" (5%).

Table (15) presents the frequencies and percentages of obstacles and challenges faced in applying EBPs in terms of using assistive technology.

Table (15)

Frequencies and percentages of obstacles and challenges in terms of using assistive technology

Problems & challenges	Frequency*	Percent	Rank
Unavailability of assistive devices and technologies	19	52.7%	1
Difficulty using assistive technology and did not have enough experience to use modern technologies	12	33%	2
Most of the devices and technologies are from teachers budgets	5	13.8%	3

* Some teachers did not mention any problems or challenges

As shown in Table (15), the frequencies and percentages of the most common obstacles and challenges faced in applying EBPs in terms of using assistive technology. "Unavailability of assistive devices and technologies" (52.7%) was the most common response, and "Most of the devices and technologies are from teachers budgets" was the least common response (13.8%).

Discussion and Conclusion:

This study aimed to determine the use of and obstacles to using EBPs to teach social skills to students with ASD among female special education teachers. The results revealed that teachers had a high usage level EBPs to teaching social skills across all five scales.

Additionally, the results from the open-ended questions indicate that the most frequently used practices for teaching social skills to students with ASD were modeling, social narrative, prompting and reinforcement. This result is consistent with other studies (Alhossein, 2021; Paynter et al., 2017; Al-Zari' & Al-Yafi'i, 2020; & Silveira-Zaldivar & Curtis 2019; Al-

Zari' & Al-Yafi'i, 2020; National Autism Center, 2015). In contrast, the result from Reichow and Volkmar (2010) indicated that special education professionals' most frequently used EBPs were applied behavior analysis (ABA), peer training, social skills groups, visual techniques, naturalistic techniques, and video modeling" (Reichow & Volkmar, 2010). None of these practices was considered as essential among teachers in this study.

The results also showed that some teachers in this study mentioned that they also had used interventions that were not considered as EBPs such as respecting friends, tones of voices, explanation, understanding feelings, and expressing their position. Some teachers may choose to implement practices that are not considered under EBPs because these practices are easy and familiar to them. In this sense, it is important to prepare and support teachers who work with students with ASD, as some teachers use old fashion techniques and interventions in education that are not proven (Travers, 2017). At the same time, teachers' confidence in and belief that they are using EBPs do not always correlate to their desire for professional development (Dynia et al., 2020).

Teachers should be aware of how and when to use these interventions in appropriate ways for the benefit of their students with ASD (Alhossein, 2021). The variety of EBPs can lead to confusion among teachers on which practice should be used for their students with ASD. The lack of knowledge and confusion is likely due to the dearth of intensive training programs on applying different EBPs (Lauderdale-Littin, & Brennan, 2018; Almaliki, 2022). Some teachers may apply EBPs, but do so inconsistently, they may avoid using EBPs because they prefer to stick to interventions that they are familiar with but are unproven and they are not

able to use different practices for students with ASD (Owens et al., 2014; Alhossein, 2017). When teachers have little training and knowledge about using different EBPs, it often leads to them not using or implementing any practices in their classrooms. It can also lead to a lack of the intensive support that students with ASD need (Hsiao & Petersen, 2019; Silveira-Zaldivar & Curtis, 2019). Programs are needed to help bridge the gap between teachers' knowledge of EBPs and the best and most appropriate ways to apply EBPs.

This study found no statistically significant differences in the degree of usage of EBPs for teaching social skills (body language, relationship with peers, social awareness, following instructions, relationship management) due to the variables among teachers' educational qualifications, years of experience or number of training courses completed, and the age group taught by the teachers.

Finally, the results from the open-ended questions showed that the most common problems and challenges facing special education teachers in applying EBPs were difficulty in applying new practices or lack of knowledge of practices. A final obstacle faced by teachers was a lack of time to apply a new EBP with their students. In their study, Silveira-Zaldivar & Curtis (2019) also reported that some teachers reported lack of time to implement EBPs in the classroom. Overall, there are many obstacles when applying the EBPs such as "Lack of funding, lack of knowledge, lack of support, and lack of time" (Lauderdale-Littin & Brennan, 2018). Teachers who work with students with ASD needs to have "support, preparation, and motivation" (Silveira-Zaldivar & Curtis, 2019) to successfully implement EBPs for social skills.

Future Study and Recommendations

Future study is needed to know more about what kind of educational programs teachers have available to them in the area of EBPs. In addition, studies are needed on the efficacy of intensive training programs for teachers in using EBPs to teach daily living skills. This study recommends providing intensive training for teachers using EBPs to teach social skills and other skills. Additionally, this study recommends creating guidebooks and websites in Arabic language for new teachers who want to conduct EBPs.

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