



# INFLUENCE OF CONTEXT RELATED FACTORS ON SAUDI SPECIAL EDUCATION TEACHERS' UNDERSTANDING OF EVIDENCE, EVIDENCE-BASED, AND EVIDENCE BASED PRACTICES

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## Abstract

*The complexity of special education and the variability among students Autism Spectrum Disorder (ASD) require special education teachers to make a concerted effort to provide validated supports that contribute to their students' learning outcomes. Among the most important considerations for teachers is the use of teaching practices supported as effective by evidence. There is a broad consensus that the use of Evidence Based Practices (EBPs) can lead to significant improvements for students with ASD and their families. The research to practice gap is widely recognised in special education in relation to the selection and implementation of EBPs, with several studies finding that teachers used unsupported teaching practices as frequently as those supported by empirical evidence. Thus, in order to utilise EBPs, teachers must first understand what EBPs mean and how a particular practice comes to be evidence-based. Aligning with this emphasis and the increasing introduction of EBPs in special education globally, this study explored special education teachers' understanding of evidence, evidence-based, and EBPs in one centre of autism in the Kingdom of Saudi Arabia (KSA). In this study, a qualitative approach was used. Within this approach, a single case study design was adopted. The data were collected from six special education teachers of students with ASD using interviews. The findings revealed that teachers referred to their own individual experiences or the experiences of other teachers as evidence. In addition, they referred to their superiors' advice as being evidence-based and the perceived EBPs as technical tools handed to them by the Centre. This indicated that teachers' understanding of evidence-based, and EBPs was constructed based on the culture of the Centre. The findings of this study suggest several courses of action for future research, and policymakers and teacher education.*

**Keywords:** *autism, Evidence Based Practices (EBPs), special education teachers, Kingdom of Saudi Arabia*

## Introduction

### *Understanding Evidence Based Practices*

The concept of Evidence Based Practices (EBPs) emerged first in the medical field in the 1990s and was later applied to other fields and disciplines such as the social sciences (Reichow & Volkmar, 2011). Research on EBPs related to ASD has been conducted across many fields such as health (Ziviani et al., 2015), psychology (Falzon, et al., 2010) and education (Cook & Odom, 2013). Each field has a different theoretical orientation which makes it difficult to identify one definition of EBPs. Indeed, each field also has its own interpretation and criteria for what constitutes EBPs (Reichow & Volkmar, 2011).

According to Hudson et al. (2016), Evidence Based Practices have “become the most influential policy construct in the field of special education” (p. 34). In reviewing the literature in special education, EBP has been used in two different, but related, ways (Cook et al., 2016). In describing the first way, Cook and Cook (2013) have referred to EBPs as practices (teaching programmes, interventions, instructional strategies) that have been established as being effective through scientific research designed with clear sets of criteria and that have yielded positive results. In this view, EBPs refer to instructional practices driven solely by research evidence. In the second view, originating in the medical field, EBPs in an educational context are decision-making processes that integrate the best available research evidence, teachers' professional judgement, and the goals and values of the students and their families (Spencer et al., 2012). The combination of these distinct sources of influence (i.e., research evidence, professional judgement, and the goals and values of the students and their families) was prominent in the definition of EBPs of the leading organisations in the field of special education in the USA such as American Psychological Association, American Speech and Hearing Association, and National Autism Centre (Spencer et al., 2012). In addition, Spencer et al. (2012) have suggested that EBP involves more than just a focus on selecting instructional practices. They argue it involves a process of selecting, implementing, adapting, and assessing a practice. In selecting a practice, research evidence in conjunction with teachers' professional judgement, the goals and values of the students and their families, and the teaching and learning context must be considered (Cook & Cook, 2016).

The notion of practice has also been understood differently in both views. Cook and Cook (2011, 2013), who use EBPs to refer to specific instructional practices supported by research, stated that practice refers to “an instructional program or intervention with concrete procedures or steps that can be replicated or followed by others” (Cook et al., 2016, p. 5). Furthermore, practices can be both discrete practices (“micro-practices”, which are everyday interventions, strategies, instructions, and techniques), and broad programmes (“macro-practices”, which involve programme design, curriculum development — a complete framework for intervention). The former needs evidence of everyday technicalities, while the latter needs evidence for deciding on a clear framework for the programme's design and implementation (Cook & Cook, 2013). Spencer et al. (2012) have referred to practice as “an outcome of a decision-making process” of “the whole of one's professional activities” relating to the “school, classroom, or individual case” (Spencer et al., 2012, pp. 129–130) rather than a list of a “well-supported practices”. Although they differ in how they conceptualise EBPs, both groups of researchers emphasise the importance of utilizing research evidence regarding which practice to use in teachers' decision-making. Thus, teachers must have a clear understanding of what comprises EBPs and evidence in order to identify these practices (Sciuchetti et al., 2016). In the absence of an understanding of what constitutes EBPs, teachers may continue to use less effective practices (Cook & Cook, 2013).

### *Evidence and Evidence Based Practices in Autism*

Autism Spectrum Disorder (ASD) is a life-long developmental disorder affecting an individual's behaviours, social interactions, relationships, communication, and can be (or not) comorbid with intellectual disability (Volkmar & McPartland, 2014). There is no one typical presentation of ASD (Anderson et al., 2018), and it comes in many forms. Such forms range from mild to severe disruptions to functioning in areas such as language and social skills. These disruptions often accompany repetitive patterns of special interest and behaviour affecting child learning and development (Lai et al., 2014). Therefore, teachers of students with ASD require specialised knowledge and skills to address the varied needs of these students. Moreover, they must be well versed in teaching practices that are effective for students with ASD (Hsiao &

Petersen, 2019; West et al., 2013). Effective teaching practice in this context is often associated with EBPs (Cook & Odom, 2013; Reichow, 2016).

Within the field of autism research, the National Autism Centre (NAC) and the National Professional Development Centre on Autism Spectrum Disorder (NPDC-ASD) in the USA have evaluated research and have reported many practices that have evidence of their effectiveness based on their set of criteria. Each of these agencies has published reports of their findings and has also provided online guides, resources, and material for practitioners to access (Alexander et al., 2015).

Despite the substantial number of EBPs that have been published by the NAC and the NPDC-ASD for the use of teachers, teachers infrequently use these practices and commonly use practices not supported as effective by research (Brock et al., 2019; Knight et al., 2019; Kodak et al., 2018; Paynter et al., 2017) the extent of this gap has not been well studied. We surveyed 99 teachers in Ohio about their highest priority goals for students with autism spectrum disorder (ASD). There are several reasons that may explain why teachers of students with ASD do not use EBPs in their teaching. These include: a lack of knowledge about many of the EBPs (Paynter et al., 2017), a lack of training in EBPs (Hsiao & Petersen, 2019), teachers' attitudes (Locke et al., 2019), a lack of resources (Stokes et al., 2017), and a lack of administrative support (Wilson & Landa, 2019). Although these factors contribute to our knowledge about some of the barriers of implementing EBPs in Western contexts, questions arise about the implementation of EBPs in the Saudi context, whether Saudi special education teachers use specific practices, what consideration they take when they make decisions about their practice, and if they have knowledge about EBPs.

The policy reform in the USA, such as the NCLB Act of 2001 and the Individual with Disabilities Education Improvement Act of 2004 meant that USA teachers not only had to identify these practices but implement them too. With respect to the identification of EBPs, Marder and deBettencourt (2015) asserted that it is important for teachers to have a clear understanding of what EBPs are likely help them in making decisions if the disparity between research and practice is to be reduced. Therefore, teachers must have a clear understanding of what an EPB is, what EPBs exist for them to use in teaching students with ASD, and which EBPs are relevant to their students' needs.

Thus, a central question can be posed which relates to these concerns and has been addressed in this research. This question has been: How do teachers understand the concept of EBPs? little attention has been paid to this issue in the special education field and most of the studies related to evidence-based practices for students with disability have been conducted in Western contexts. In the context of KSA, there has only been one study that has examined teachers' knowledge and use of several (listed) EBPs in relation to students with disability. In the KSA, Alhossein (2016) undertook a survey study of teachers' knowledge of EPBs associated with the teaching of special education students with emotional and behavioural disorders. Some other studies focused either on teachers' knowledge of ASD and its related teaching practices (Alnemary, 2017), or on investigating the level of knowledge and the use of one specific practice such as Applied Behavioural Analysis (ABA) (Alotaibi, 2015), or social stories (Alotaibi et al., 2016). No KSA studies addressed teachers' understanding of the concept of EBPs.

An understanding of the applicability and relevance of evidence, evidence-based, and EBPs will differ depending on the context (e.g., the location and type of education being provided, as well as how an education system functions) (Foster, 2014). The Kingdom of Saudi Arabia, as with other countries, has its own culture that encompasses multiple forms of knowledge, beliefs and values, its religion, the social systems, and its own education system. For example, the Saudi education system (i.e., its policies and objectives) is informed by Islamic beliefs and dogmas, and consists of gender segregated schools (Marghalani, 2017). It can be considered to be a state-sponsored enterprise and is highly centralised (Marghalani, 2017). As a result of these

influences on the education system Saudi teachers will have particular and unique explanations for how and why they understand and/or experience evidence in education and Evidence Based Practices. These explanations may be quite different from those expressed in other contexts and countries. In this context, this study is important in that it explores Saudi special education teachers' explanations of evidence, evidence-based, and EBPs from a unique cultural context.

## Research Methodology

### *Research Design and Approach*

This study explored special education teachers' perceptions of evidence, evidence-based, and Evidence Based Practices (EBPs) in the KSA context. It considered the context of the teachers' teaching practices by examining the particular phenomenon of EBPs as practised and understood by teachers in a centre teaching students with ASD in the KSA. A single case study was therefore used to explore this phenomenon within its natural context i.e., the Centre (Yin, 2018). In addressing the research question, qualitative approach was used. This approach can help a researcher to understand the ways people "construct their world, and what meaning they attribute to their experiences" (Merriam & Tisdell, 2016, p. 6). In this study, the research question was exploratory in nature focused on how these teachers constructed their own meanings of the concepts: evidence, evidence-based, and EBPs during the school year 2017-2018.

### *Study Site and Participants*

This study was conducted in the Noor Centre (pseudonym) situated in one of the mega-cities in the KSA. The Noor Centre, as stated in their official website and prospectus, provides educational programmes and services to support and develop the abilities of students with ASD to enable them to achieve independence and to integrate within their communities. This Centre includes practitioners from different disciplines including psychologists, sociologists, academic advisors, and special education teachers for children with ASD. Students who attend this Centre are boys and girls from 3 to 15 years old. External experts/Academics from different universities in the KSA train the Centre staff. Those External experts/Academics also provide counselling support and guidance to parents and families of students with ASD. The Centre staff also prepare educational professionals to become specialists in the field of autism. Given these characteristics, this site provided an appropriate setting to investigate special education teachers' teaching practices and their perceptions and use of evidence, evidence-based, and EBPs in the context of the KSA.

In qualitative research, the aim is to develop an in-depth understanding of the phenomenon under study and, therefore, the number of participants is often small (Cohen et al., 2017; Seidman, 2019). Cohen et al. (2017, p. 144) have argued that "the correct sample size depends on the purpose of the study and the nature of the population". Purposive sampling was chosen to select the participants for this study. A purposive sample is a non-probability sample that is selected based on the characteristics of the population and appropriate to the objective of the study (Cohen et al., 2017). The main reason for choosing this sampling type was to explore a specific population (that is, special education teachers and their practices) in greater depth (Palinkas et al., 2015). In addition, the use of purposive sampling in this study was informed by the study's research question. The research question was framed around exploring the special education teachers' understanding of the concepts: evidence, evidence-based, and EBP.

The study purposively selected six teachers who had varying amounts of teaching experience and were called Principal Teachers who were primarily responsible for teaching the students facilitating student learning in their classrooms at the Noor Centre. At the Noor Centre,

teachers who had less than two years' experience were trainees and did not take on a full teaching role, but rather monitored the teaching-learning process in the classroom and undertook minor teaching-type duties. The participants were all female special education teachers as recruitment and employment in the education system in the KSA is single sex. The demographic information about the special education teacher participants has been provided in Table 1.

**Table 1**  
*Demographic Information about the Teacher Participants*

Participants (pseudonyms)	Qualifications	Experience
1. Farah	BA Psychology	13 years
2. Dana	BA Special Education	11 years
3. Samar	BA History	9 years
4. Heba	BA Psychology	6 years
5. Lama	BA Sociology	4 years
6. Aseel	BA Special Education	3 years

#### *Data Collection Instrument*

As a method of data collection in this study, an interview was adopted. According to Merriam and Tisdell (2016), interviews are used mainly to identify how people interpret, understand and make meaning of the world around them. Moreover, interviews may allow interviewees to give their answers on their own terms and at their own pace (Cohen et al., 2017).

In this study, individual semi-structured interviews were used. The semi-structured interview is a type of interview that makes use of predetermined questions meant for all participants. However, the participants have the flexibility and freedom to express their own thoughts, opinions and feelings (Merriam & Tisdell, 2016; Patton, 2015). This type of interview also creates an opportunity for the researcher to modify the sequence of the questions depending on the interviewee's responses (Cohen et al., 2017). In addition, it allows the researcher to ask off-script, supplementary questions in order to generate more details in case of the emergence of important new issues during the interview (Seidman, 2019). The questions for the semi-structured interview were open-ended, they comprised a predetermined set of questions about the participants' experience of selecting teaching practices, the kind of evidence the participants relied on, and what the concepts of evidence, evidence-based, and EBPs meant to them. Prior conducting the interviews with the participants in the main study, a pilot study was carried out with two teachers in order to correct any error and unclear questions.

The interview guide included twenty-eight questions distributed across four sections (See Appendix). The four sections represented four topics designed to obtain responses to Research Question. These were (1) the participants' backgrounds, (2) the participants' perceptions of the goal of teaching students with ASD, (3) the participants' experiences in selecting their teaching practices in lessons, and (4) their understanding of the terms evidence, evidence-based, and EBP. The sequence of questions and how the questions were posed were kept flexible and were based on the participants' responses in the interview (Merriam & Tisdell, 2016). The teachers' responses were often elaborate, and, in their responses, they often answered questions that

would come up elsewhere in the interview. I followed their conversational way of answering (Brinkmann, 2013), while making sure that all the questions were covered by the end of the interview by marking off the questions as they were answered.

### *Data Analysis*

In analysing the interview data, a thematic analysis framework of Braun et al. was utilized. The data were coded, then grouped into categories according to teachers' knowledge and understanding of evidence, evidence-based, and EBPs. These were organised diagrammatically in concept maps, then the themes were refined and reported as the study's findings.

## **Research Results**

### *Teachers' Knowledge and Understanding of Evidence*

Five teachers understood evidence as their experience, or someone's experience, or both. Lama viewed evidence as her own experience, defining evidence as "any strategy that I had tried and had positive outcomes". Similar to Lama, Samar also considered her experience as a form of evidence. She further argued that "Trial and error is the best method in determining effectiveness because theorising is not useful".

Heba added that the source of evidence was not her top priority as long as the practice worked successfully with the student. She argued, "I do not care where the source [comes] from, what I do care about is to what extent this practice is successful with the child". Heba implied that teachers would try any strategy that helped to overcome the difficulties regardless of the source of evidence.

Aseel and Farah considered their individual experiences and also other teachers' experiences as evidence. Aseel put emphasis on not using a practice that "has not been tried" by other teachers. In the same way, Farah also understood evidence as the strategy that "I tried it, or someone tried it, [and] found [it] to be effective".

From a different perspective, Dana understood evidence in many different ways. She viewed evidence as a combination of research-based knowledge and individual experiences. She stated that evidence is both "empirical research, and something which I practically tried, and it was effective. Both are evidence". Dana did not prefer one source over the other, instead, she believed that the research supplemented her experience.

Dana also pointed to the importance of parents' opinions in understanding and using evidence as effective or ineffective. She considered positive feedback from the family about the methods and techniques that she tried out as evidence of effectiveness. She gave an example of how a father approved of her methods when he observed the positive results with his child saying

*"... The father of the child confirmed that his son knew the pictures from the first time, but he has never seen him doing such things practically [like the child does now]. I was asked about these methods that I implemented and about the resources I used. I told him that I developed these methods to allow more practical and meaningful implementations. (Dana)*

All of the teachers had argued that their teaching experiences were evidence. The experiences of Senior Teachers and colleagues were also important in their understanding of evidence. The opinions of parents and research-based practices in combination were also understood as evidence by one teacher.

### *Teachers' Knowledge and Understanding of Evidence-Based*

Teachers' knowledge and understanding of evidence-based was equated to the advice of their superiors. When the participant teachers of the Noor Centre were asked about their understanding of evidence-based, the majority of the teachers referred to advice given by their superiors as being evidence-based. Those superiors were the Advisors, the Psychologist, and the External Experts/Academics. Data from the teachers' responses revealed that the teachers, in most cases, referred to the Advisors for information about educational methods and techniques and pedagogy, the Psychologist for ways of solving problem behaviour, and the External Experts/Academics for both educational and behavioural advice.

Lama stated "Academics and Advisors are my evidence-base. I always report back to them and ask for instructions".

Similarly to Lama, but referring to the Centre policy, Samar stated:

*Evidence-base is my Advisor, this is the policy here. We are required to consult the Advisors and take the advice from them. Or the Academic when he attends the Centre". (Samar)*

Aseel stated "I always refer to people here, the Advisors, the Academic, they are my evidence-base". Regarding solving problem behaviour, Aseel added "Firstly, I ask the Psychologist here. If we could not find a solution; I would then ask the Academic and explain the problem".

Along the same lines, Farah added an emphasis on the consultations with the Psychologist in solving the students' behavioural problems. She also indicated that "always my reference is my Advisor; we are not used to saying this method is good or this is bad". Farah claimed that the teachers in the Centre did not have the habit of judging what was effective or not since the policy of the Centre required the teachers to call on the Advisor as a point of reference. This indicates the strong influence of the Centre's culture on the teachers.

Heba supported Farah's argument in relation to viewing evidence-based as their superiors' advice. Likewise, she referred to the Centre policy stating: "It is an obligation here. If there were any problems or goals were not achieved, the Advisor and the Psychologist are to be advised. Otherwise, I will be held accountable".

Unlike other participant teachers, Dana understood evidence-based differently. She viewed evidence-based as being research-based. She contended "it means ... to have an understanding that particular evidence comes from research". Dana explained that her understanding of evidence 'as research' originated from the repeated asking for researched sources by her former Advisor, particularly at the beginning of her job. She explained

*... I worked with an Advisor who was very systematic and asked for evidence of everything I put forward or said. So, it has become a grounded base in my work ... It became a habit to always back up and support my information with [scientific] evidence. (Dana)*

This finding related to Dana provides strong evidence of the influence of the context on teachers' understanding of evidence-based and how the context shaped the teacher's understanding of the meaning of evidence-based. In this study, Dana was the only teacher whose understanding of evidence-based as a research-based practice aligned with what was suggested in the literature. This indicated the important role of these teachers' workplace and the kinds of mentoring they received in their workplace in promoting an evidence-based identity.

### *Teachers' Knowledge and Understanding of Evidence Based Practices*

The analysis revealed that teachers understood Evidence Based Practices (EBPs) as the “list” or group of practices that was mandated for use by the Centre that were recognised in the field of autism and drawn from a range of sources they said:

It is “a group of teaching methods based on international programmes, just like the practices given here” (Heba).

Farah understood it as “a list of many practices that were found to be effective by many autism programmes. Some of these practices are implemented here”.

Similarly, Aseel indicated that there were “some programmes backing up them [practices], like practices that are provided here”.

While Dana said:

*EBPs are a group of teaching practices that have been recognised by many reliable programmes in the autism field. Indeed, a lot of these practices are given by the Centre. (Dana)*

These teachers' understanding of EBPs as a given list of programmes and practices reinforces the idea that EBPs were understood as a ‘prescription’ or ‘manual of instructional techniques’ that was adopted by the Centre and that the teachers were required to implement the programme and associated practices.

## **Discussion**

In this chapter, the analysis revealed that almost all teachers understood evidence as their own individual, or other teachers' experiences. They also suggested that when the results of a strategy were retained over time, the effectiveness of any strategy could be determined through trial and error. One teacher understood evidence as a combination of her experience and research, and whether she received the approval of parents who indicated that in their view the strategy was effective. In this regard, it can be contended that the teachers' understanding of evidence came in the forms of experiential evidence and contextual evidence. This finding indicates that the understanding of evidence as information derived from research (Cook, 2015; Mesibov & Shea, 2011) was not a dominant understanding among the teachers.

Previous research examining teachers' understanding of the concept of evidence in special education has been limited. Only one study was found that examined special education teachers' perceptions of evidence (i.e., Greenway et al., 2013). Most of the special education teachers of students with intellectual and developmental disabilities in that study perceived evidence as their personal experience and knowledge, and as information from multiple sources (student-work and parents). This current study adds to the growing body of research on EBPs by revealing how special education teachers of students with ASD understand evidence in the context of KSA.

Teachers' understanding of evidence-based comprised the advice and consultations from their superiors within the Centre. Only one teacher had a more nuanced way of understanding evidence-based, defining this idea in relation to the idea of practices being research-based. According to these findings, the teachers' understanding of evidence-based was shaped by the hierarchical power structure of the Centre. Since the policy of the Centre required teachers to call on their superiors as a point of reference about their teaching practice, it is likely that teachers' understanding was constructed based on the culture of the Centre. The findings in this section add a new understanding of how these teachers of students with ASD understood the concept of evidence-based. Studies were found in the special education field that examined teachers' views (Boardman et al., 2005) or perceptions of research-based evidence (Hudson et al., 2016).

These earlier studies assumed that teachers already had an understanding of evidence-based as research-based. This current study appears to be the first study to explore the teachers' understanding of the concept of evidence-based among teachers of students with ASD and has found that these teachers did not have this same underpinning understanding.

Lists of EBPs have been identified and published by many professional organisations. These lists are meant to be a resource that helps teachers in their decision-making process with respect to determining the teaching programmes and practices they should use (Spencer et al., 2012; Cook & Cook, 2016). In this study, the majority of teachers defined EBPs as a list or a group of programmes and practices given to them by their superiors in the Noor Centre to implement. Their understanding of EBPs as a given list reinforces the idea that these teachers understood EBPs to be technical tools, rather than understanding them to be resources that help them in the decision-making process associated with the selection of teaching practices. This finding differs from Denniston's (2017) study in which 12 primary school special education teachers of students with ASD in a USA study were surveyed. The study found that the majority of the teachers defined EBPs as research practices that "supported" or "assisted" students with ASD and as practices that were "effective" or had "positive results (benefit)" (p.125). However, the findings of this current study are consistent with those of Hudson et.al. (2016) who interviewed special education teachers of students with emotional and behavioural disabilities in four school districts in the USA and revealed that these teachers "defined EBP in ways that externalised the locus of authority for what constituted relevant evidence for practice as the results of 'studies someone had done'" (p.34). The researchers argued that "ironically, this view also appeared to be the focus of considerable tension and concern, as many of the practitioners we interviewed expressed the idea that research did not adequately reflect the characteristics of the students they served nor the contexts of the decisions about practice they were charged with making on a daily basis" (Hudson et al., 2016, p. 34). The latter view was also expressed by the majority of the teachers in this current study.

Also, the findings of the current study revealed that these teachers had limited knowledge of contemporary understanding of EBPs as suggested in the literature and as defined as a situated decision-making process that integrates the best available research with the professional judgement of the teacher and the client's (learners and their families) values and context (see for example, Cook & Cook, 2016; Spencer et al., 2012). In this study, the teachers gave weight to the programmes and practices that the teachers were required to implement by the Centre and the Centre's policies and teaching guidelines and diminished or negated other elements in their understanding of EBPs. Thus, their understanding of EBPs was formed primarily by the context. Such an influence is also likely to affect the way these practices were implemented (Alhossein, 2016).

## Conclusions and Implications

The aim of this study was to investigate a small group of special education teachers' perceptions of evidence, evidence-based and Evidence Based Practices (EBPs) in the context of one autism centre in the Kingdom of Saudi Arabia (KSA). The findings of the analysis of the interviews revealed that the teachers' knowledge and understanding of evidence, evidence-based, and EBPs was shaped by the hierarchical order of the Centre. These teachers referred to their own individual experiences or the experiences of other teachers as evidence. In addition, they referred to their superiors' advice as being evidence-based and the perceived EBPs as technical tools handed to them by the Centre. This means that how teachers think, believe, and act were shaped by the contextual factor i.e., the culture of the Centre (hierarchical organisational structure).

This study suggests several opportunities for future research. Further investigation could involve quantitative methods with a larger sample size and different settings to explore whether teachers' perceptions of the concepts of evidence, evidence-based, and EBPs will yield similar results. Furthermore, it would be interesting to explore the experience of male special education teachers and to identify if different factors contribute to their knowledge and understanding of EBPs.

The findings of this study suggest several courses of action for policymakers and teacher education. Firstly, as this study revealed teachers' limited knowledge and understanding of evidence, evidence-based, and EBPs, there is a need to increase teachers' knowledge and encourage them to be research-informed. Therefore, teacher education, both pre-service and continuing professional learning, needs to design or develop courses that specifically address these topics.

### *Limitations*

This study adopted a case study approach to explore the teachers' perceptions of the concepts of evidence, evidence-based, and EBPs in one autism centre in the KSA. Hence, the findings of this study might not be generalisable to other autism centres or other disability centres in the KSA. In conducting a case study, generalisation is not the aim. It seeks to provide a deep understanding of the phenomena under the study rather than seeking generalisation to other contexts. Generalisability would be enhanced by expanding the study to include different kinds of centres from different cities. This expansion would provide a wider range of perspectives which would enrich the knowledge about the teachers' perceptions regarding evidence, evidence-based, and EBPs. Even so, the findings complement and extend other research in the field, as indicated in this earlier, adding weight to the body of evidence.

### **Declaration of Interest**

The authors declare no competing interest.

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## Appendix: Semi-structured Interview Protocol Special Education Teachers of students with ASD

Date ..... Interviewee (pseudonym).....

Start time..... End time .....

Greet the interviewee.

State the purpose of the interview: I would like to know about your experience of teaching practices, the kind of evidence you rely on and what does evidence mean to you.

### A. Background questions

**First, I want to ask you some background questions.**

1. How long have you been teaching in general?
2. How long have you been teaching students with ASD?
3. Where did you do your preservice teacher training?
4. What is your highest teaching qualification? When did you obtain that?
5. What qualifications do you have specifically related to teaching students with ASD?
6. What class(es) do you teach at this Centre?
7. How would you introduce yourself as a teacher?

**B. The next question is about your goal as a teacher with respect to your students and their learning. I want to ask you about your goal.**

8. What is your general goal in teaching students with ASD?

**C. The rest of the questions relate to your understanding of the terms “evidence”, “evidence-based”, and EBP.**

9. a. What does the word “evidence” mean to you? b. In what context would you use it? c. How do you use this term in your teaching?
10. a. What does “evidence-based” mean to you? b. In what context would you use the word “evidence-based”?
11. a. What does “evidence-based practice” mean to you? b. In what context would you use the word “evidence- based practice”?
12. a. When you are using a practice with students or sharing a teaching practice with a colleague, how do you know if the teaching practice is evidence-based?
13. a. What types of evidence do you use? b. What types of evidence do you mostly rely on?
14. a. To what extent do you think evidence is relevant to your classroom decision-making and classroom practice? b. Why? c. Please provide an example.
15. a. Please identify a situation or circumstance that made you look for an evidence-based practice.
16. Which sources of information about evidence-based practices do you find most useful?
17. How do you usually realise that a current classroom teaching practice needs to be changed or replaced by some other practice? b. Please describe such example.
18. a. Describe a time when you implemented practices or instructional strategies from research based on evidence. b. How long did you use that practice or instructional strategy?

19. Are there any of challenges when you implement a new practice?
20. How does the *Noor Centre's* policies and practices around teaching students with ASD affect your efforts to implement evidence-based practices? b. Can you give me an example?
21. What role does your Principal play in deciding what teaching practices you use in your lessons in the classroom?
22. What kind of support would be most helpful in using evidence-based practices?
23. How would you describe your role in deciding what teaching practices to use? Describe a typical process of selecting a practice?

#### **D. Closing question**

24. Is there anything else that you would like to tell me about evidence and EBP in teaching students with ASD.

#### **Thanks**

Thank you for participating in this Interview.

#### **Probes/ Follow up questions**

1. What do you mean by X?
2. Can you provide an example of X?
3. Can you explain that a little bit more?
4. Please describe X.
5. How did/does X influence your [practice]
6. In your opinion, [. . .?]
7. Why do you think [X is ...]?

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