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Teachers' experience with early intervention services for students with Autism Spectrum Disorder

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The current research aimed to assess the experience of teachers of children with Autism Spectrum Disorder (ASD) in providing early intervention services and determine these teachers' recommendations to help improve services. The qualitative research methodology utilized the narrative method to achieve the objectives of the research. Data was also collected through semi-structured individual interviews, and the research sample consisted of six teachers working with children with ASD in early childhood. The results indicated teachers of children with ASD are knowledgeable regarding ASD and early intervention services. The results also indicated that teachers face many challenges when providing early intervention services to children with ASD. The results demonstrated the need for ASD teachers to receive training courses and exchange experiences with ASD teachers, as well as the need to activate family participation by providing awareness and reinforcement. The results also revealed the need to provide integrated services within the center, add learning through play, and also create an effective educational environment for children with ASD. Recommendations were also provided, based on the findings of the research.

KEYWORDS

teacher, ASD, early intervention, services, experience

1 Introduction

Early childhood is one of the most important life stages for all children, due to its prominent impact on their developmental path, and this time period is of the utmost significance to children with disabilities (Alahmari, 2019). In order for children with disabilities to master and learn basic skills, most educational experts agree that early intervention programs and services are most effective in achieving this goal (Huwaidei and Al-Khaza'leh, 2017). Accordingly, early intervention programs play a very important role in teaching children different developmental skills to adapt to the environment (Arkobi, 2018). Early intervention can also improve outcomes for children with Autism Spectrum Disorder ASD (Shenouda et al., 2022).

Early childhood is one of the most important stages of development for children with ASD, because it is the stage in which their skills are developed. In addition, caring for children with ASD not only impacts the child, but also affects society, as it helps them to be a contributing member (Altuwaim, 2020). This is why early intervention has become a public health priority (Shenouda et al., 2022). The category of people with ASD is one of the most complex and difficult categories in the field of special education. This is due to the developmental disorder that has a significant impact on the aspects of growth leading to the child's isolation and withdrawal from society. ASD affects children's behaviors, interactions with society, readiness for learning, and economic and social independence, as ASD limits

children's abilities in social and communicative areas (Awwad, 2018). As a result of the diverse characteristics of children with ASD, many educational programs, services, plans and teaching methods have emerged for these children, which enable them to develop their abilities and adapt to society and independence (Al-Luhaibi and Al-Qusairin, 2020).

Early intervention is one method, which aids children with ASD in acquiring skills and reduces the negative effects the disorder can have on their development, in addition to providing assistance to their families, so they can help their family member reach their full potential (Altuwaim, 2020). Early intervention for children with ASD is one of the important strategies that includes a set of diverse services and programs that can be provided to children (Abdulrahman, 2019). Early intervention services aim to provide timely services to children at risk, reduce the negative effects of disability, help children with ASD acquire developmental skills and also prepare an educational environment suitable for the children's needs and abilities so they are ultimately prepared to be independent contributors to society (Sultan, 2016). Effective early intervention services for people with ASD include diagnostic and medical services, speech and language therapy services, physical and occupational therapy services, psychological services, and educational services and programs (Al-Ruwaili and Muhaidat, 2016).

1.1 Research problem

As a result of the urgent need for early intervention services, many centers have emerged that are concerned with providing services to children with ASD. The centers rely on qualified specialists and teachers to work with children with ASD. Specialists, teachers, and educational staff are qualified through effective training, and the impact of this training and qualification is reflected in the skills of children with ASD (Alqaisarin, 2018). Teachers of children with ASD provide instruction suited for the needs, levels and abilities of their students. They are also tasked with planning, providing educational and social programs, collaborating with parents and members of their students' multidisciplinary teams, and generating individualized education plans (IEPs) (Alaroui and Qawasmeh, 2020).

As the results of the Hendricks (2011) indicated, the characteristics of teachers of ASD greatly affect the educational process, such as the teacher's method of presenting effective strategies, his/her ability to identify the disorder, and the use of evidence-based practices with children with ASD. Competent and experienced teachers influence children's progress and the preparation of appropriate services for them. Therefore, additional training and education is always worthwhile and beneficial for these educators (Asma Sakalli, 2024). It is worth noting that ASD teachers are the ones who actually design, prepare, and implement early intervention plans and services, inside and outside the centers. ASD teachers also play a very important role in coordinating the work of the team, and as a result, they are responsible for developing appropriate individual training programs, including areas of development, long- and short-term goals, methods and strategies, etc. (Al-Khatib and Al-Hadidi, 2018).

Teachers' experiences with children with ASD enable them to build positive relationships and select effective communication methods and appropriate services for these children (Gómez-Marí et al., 2021). The results of the study by Almagarbah and Alhumaidan

(2020) indicated the competencies of teachers of ASD in effective teaching practices are affected by the teachers' number of years of experience teaching. As a result of the significance of ASD teachers' skills, strategies and effective practices in developing the nature of services provided to children with ASD, many studies have emerged that address the competencies and skills of teachers of children with ASD and the provision of early intervention services (Tashtoush and Al-Sahli, 2016). However, there seems to be a gap between research and the effective implementation of services to children with ASD, although it is clear educators need to be knowledgeable, have parental support, and have the money and resources they need to successfully educate their students with ASD (Boyd et al., 2021). Identifying teachers' perspectives provides a foundation to build upon to improve the implementation of early intervention strategies for these students, which is why this research is warranted.

1.2 Research question

The research aimed to assess the experience of teachers of children with ASD in providing early intervention services. It also seeks to generate recommendations, based on teachers' experiences with students with ASD, to help improve services in the future. The research problem can be formulated in the following questions:

1. How do teachers of children with ASD describe their experiences in providing early intervention services?
2. What lessons can be learned from teachers' experiences in improving services and how to provide them?

2 Methodology

The research used the qualitative approach; this is due to its suitability to achieve the research objectives and answer its questions. Qualitative research, which studies a social phenomenon in its natural context and is interpreted and analyzed in a scientific and comprehensive manner using multiple tools, such as observation, interviews, and document analysis, was thought to be an effective method for this study (Al-Qahtani, 2020). Creswell and Poth (2018) consider that qualitative research begins with assumptions and uses theoretical and interpretive frameworks that we infer to obtain solutions to the human and social problems facing groups and individuals. The narrative method (narrative studies) was also utilized. This method, which according to the definition by Creswell and Poth (2018), begins with individuals narrating their experiences and expertise about a phenomenon, aiming to clarify an idea or message.

2.1 Participants

The research community consisted of female teachers of children with ASD who work in early intervention programs attached to centers in Makkah city, Saudi Arabia. All early childhood teachers in Saudi Arabia are female, which is the explanation for the gender exclusivity used in this study. Creswell and Poth (2018) indicated that the selection of participants in qualitative research depends on the method used by the researchers in their research, and narrative

research focuses on a small sample that is sometimes limited to two or more individuals. Accordingly, the researchers used the intentional method to select the research sample, which consisted of (6) teachers of children with ASD who work in early intervention programs. The judgment in selecting the sample was based on the saturation theory, which is a stage at which the same data extracted by the participants previously is produced, and there is no longer a need to interview more participants (Al-Husseini, 2020).

As Creswell and Poth (2018) indicated, the type of sampling is by density (power) by searching for cases that have a lot of abundant information about the phenomenon, which in the current research is providing early intervention services for children with ASD. This is due to its suitability to the nature and objectives of this research. It is worth noting that the selection of the sample participating in the research came based on a set of criteria set by the researchers so that they could obtain data to answer the research questions, which were as follows: The participants must work in early intervention programs and have knowledge of early intervention services provided to children with ASD. The participants must be selected from different centers, based on the difference in early intervention services provided in the centers. They were also required to work in Makkah city. The following table shows the participants' data, taking into account the confidentiality of the data for their names and the names of the centers where they work (see Table 1):

2.2 Research procedures

The interview was used as a source for collecting data and answering the research questions, employing semi-structured interviews that allow researchers to inquire and request clarification for some of the information provided. The questions included open-ended questions characterized by their ability to develop additional questions based on the teachers' answers to reach a deeper understanding of the phenomenon. Creswell and Poth (2018) defined the interview as knowing and understanding the world from the point of view of individuals and interpreting their experiences, and revealing their experiences through their description of the world where they live.

The researchers developed the interview questions, as the interviews were conducted using a set of open questions, to enhance the discussion and obtain detailed data from the participants. A pilot interview was conducted for the purpose of improving and standardizing the research tool, and the tool was tested and arbitrated in advance; to avoid any potential errors in the research. The interview guide was then reviewed, as well as the consent form for participation

in the research, before starting the official application of the interviews. Thus, the research and interview questions were divided into two parts: The first part included the research question, which asked how teachers of children with ASD describe their experiences in providing early intervention services. In addition, the second research question asked about the lessons that can be learned from teachers' experiences in improving services and how to provide them in the future. This included a set of 13 open-ended sub-questions that led to answering the research questions. The first question asked the participants to introduce themselves, including their qualifications and teaching experience as a teacher in early intervention programs for children with ASD. The second question asked participants if they had attended training courses, conferences, or workshops on providing early intervention services for children with ASD, and if yes, what they acquired from them? The third question asked about the participants' concept as a teacher of children with ASD in early intervention programs towards providing early intervention services provided to children with ASD. The next question asked participants about the most prominent early intervention services provided at the center? Participants were then asked about collaboration with families and teachers in providing early intervention services for children with ASD and how this occurred. Teachers were also asked if they felt they had acquired adequate training to provide early intervention services for children with ASD and if so, how the training was conducted, what domains the training covered, and how the training helped them address the needs of their students with ASD. The seventh question asked participants about the challenges they face in providing early intervention services to students with ASD. Next participants were asked about their proposed solutions to the challenges. Next, teachers were asked about their experience as a teacher in early intervention programs and then how intervention programs could be made more effective. Teachers were then asked how family participation could be enhanced and how challenges in providing early intervention could be overcome. Finally, teachers were asked their recommendations for generating early intervention programs and the ideal mechanisms for providing these services.

Therefore, the first procedure followed by the researchers, in collecting data, was to contact the centers and obtain teachers' information. They communicated with them via WhatsApp, although they communicated with one another by phone. At that time, a form was sent to request participation in the research project, and this form included all the details related to the research, and some data related to the researchers. Accordingly, the next stage after obtaining the consent of the research participants was to set a date for the interview in coordination with the participants, according to what best suited the researchers' and participants' schedules. The participants were

TABLE 1 Data of the research participants and research tool.

Participation No.	Nickname	Years of experience	Centre code	Participants' method
1	(R. D.)	2–5 years	1	Intended
2	(S. Sh.)	8–10 years	2	Intended
3	(A. E.)	5–8 years	2	Intended
4	(S. S.)	2–5 years	3	Intended
5	(GH. B.)	2–5 years	3	Intended
6	(R. H.)	2–5 years	3	Intended

then provided the room link, and the research tool was implemented via the first interview. Accordingly, interviews were conducted to collect data that achieved the research objectives. Participants were asked questions, and the process was recorded after obtaining permission from the participant in advance. The interviews took a total of 20–50 min. The researchers continued to conduct interviews with the participants until they reached aforementioned data saturation stage. Next, the researchers moved to the data analysis stage, which will be discussed in the next section.

2.3 Data analysis

The researchers relied on the Spiral Data Analysis method in data analysis, which is a method in which data is analyzed in analytical circles (Creswell and Poth, 2018). In this method, the researchers went through five basic stages. First, all interviews were transcribed into a Word file in an organized and individual manner for each participant; so that it was easy to refer to them. After that, the researchers delved into reading the data several times until they reached the stage of familiarity and mastery of all the details, reaching the saturation stage. During this stage, the researchers immersed themselves in the participants' data. This was followed by the initial data coding stage. Coding is an important process in qualitative research and includes understanding the texts that were collected. The texts or data were categorized in the form of one or two words. After that, the data was clarified and categorized according to topics by searching among the previous data that were previously coded. The basic data within the codes were then reviewed to ensure the accuracy of the researchers' coding. Finally, the final stage began which involved ensuring all the data was in the appropriate category and complete. A report was then generated with the results that were established by the researchers.

2.4 Ethical considerations

The researchers adopted the ethical considerations defined by Creswell and Poth (2018), and approval was obtained from Umm Al-Qura University to conduct the research. Approval letters were also obtained from the centers where the research was being conducted, after they were provided with detailed information and a special form for the participants to receive their consent to conduct the research. The researchers were also keen to obtain prior approval to conduct the interview with the participant, through the authorization with the consent form. Participants were also given flexibility, so they were not restricted to a specific time or day. They were also able to withdraw at any time, without stating the reasons. Participants were also informed the interviews would be audio-recorded and stored in a safe location, then destroyed when the research was complete. Additionally, participants were assured they would be treated in a respectful manner, and there would be no objections to their statements or point of view.

The participants were also told of their right to review the research and answer any questions about it, as well as to view the transcripts of the interviews after they were completed. The researchers were diligent to inform the teachers who participated in the interviews of the confidentiality of their information, and not to give their names, reveal their identities, or state the names of the centers in which they

worked, but rather to use symbols to indicate each teacher instead of the participants' real names.

2.5 Validity and reliability

In order to raise the level of accuracy and credibility of the research, the researchers adopted some criteria, by combining some points (Al-Husseini, 2020; Creswell and Poth, 2018), and they were consistent with the procedures that the researchers performed in this research. Creswell and Poth (2018) recommended that the researcher writes in a detailed manner about a specific topic. To enhance this, the researchers were keen to write the detailed research design, the procedures for its application, implementation, and analysis, the procedural description of the data collection processes, the method of selecting the sample, as well as the identification of the participants. The researchers also added detailed quotes from the participants during their presentation and discussion of the results. This was to ensure that no idea mentioned by the participants was marginalized or neglected, as they were all taken into consideration, and described in a concise description through their interpretation and linking.

Al-Husseini (2020) also mentioned an efficient review entails having participants review their own written texts for accuracy. In light of this, the researchers transcribed the interview recordings into a word file and showed them to some participants who were randomly selected through the WhatsApp program. Creswell and Poth (2018) emphasized the importance of peer review by someone familiar with the research in increasing the credibility of the study. This was done by consulting specialists helping with the interpretation of the data to ensure it was accurate.

Al-Husseini (2020) accentuated the importance of review logs, as it tracks and documents the time the researcher spent in the field and contributes toward valid and reliable results. Accordingly, the researchers followed the method of recording the interview times for each participant in the research by using tables. The triangulation method increases the credibility of qualitative research. On this basis, the researcher relied on triangulating the data collection process by applying the research to more than one place. Also, the researchers applied their research to three different centers, and they varied in their selection of participants, based on years of experience and academic qualifications. This diversity resulted in enriching the data and diversity of viewpoints. With this method, the researchers were able to collect the largest amount of varying perspectives about the research objective. This contributed to reaching the most valid results for the studied phenomenon.

3 Findings

The current research aimed to verify the experience of teachers of children with ASD in providing early intervention services and to establish recommendations based on their feedback to improve the implementation of services. To achieve this goal, the researchers conducted interviews with (6) teachers in a number of special education centers in Makkah city. Through this, the research results were divided into two main sections, one section included many topics in which teachers described their experience in providing early intervention services for children with ASD, and the other section

included the most important lessons that could be learned from teachers' experiences in improving services and how to provide them in the future. It was found that the first research question addressed (3) main topics: ASD/early intervention knowledge level, professional competencies of teachers, as well as the challenges facing teachers. As for the second research question, it addressed (3) main topics: professional development, activating family participation, and also developing services provided to children with ASD.

3.1 ASD/early intervention knowledge level

The ASD/early intervention knowledge level of teachers of children with ASD who provide early intervention services is an important matter that can improve the level of provision of early intervention services. The extent of these ASD teachers' knowledge of early intervention programs and services and their cognitive background is also a contributing factor in directing the families of these children to centers and facilities concerned with children with ASD. Through their experience in providing services to children with ASD, the teachers demonstrated their knowledge of the concept of early intervention services and indicated that they provide diverse and integrated services to children with ASD. The participating teachers stated they provided services to children from the age of 1 year to approximately 7 or 8 years. In addition, the teachers stated that these services varied according to the children's needs for them. The services are provided by the ASD teacher and also by some specialists, such as physical therapy, speech and language therapists, and behavior modification specialists. This is what teacher GH, B (5) indicated saying, "They are services provided to children with ASD from the beginning of the diagnosis of the disorder, and determining the child's needs, and they are provided to the child from the age of 2–6 years."

Teacher S. S. (4) added:

"I see that the concept of early intervention services is integrated services for children with ASD—educational services—speech—occupational and physical therapy—to develop their skills and are from the age of one to six years, of course provided by a number of specialists such as an autism teacher, speech and occupational therapist, and others."

One teacher mentioned that she sees that the concept of early intervention services provided to children in a recreational manner provide more than educational benefits. Teacher A. A. (3) indicated this saying:

"I see that they are recreational services more than educational for the child, such as sensory integration, children really enjoy it, from the age of one to eight years, meaning I always see children enjoying it, such as art education or playing, and I see children getting out of the classroom atmosphere a little, such as the art room, playing with colors, coloring, meaning it is a change from the classroom."

The teachers also indicated that the early intervention services provided in the centers vary between educational services, occupational and physical therapy services, as well as behavior modification services, and speech sessions, which in turn help develop

the skills of children with ASD. The teachers also showed their need for specialists who specialize in providing services so that they can be a resource for them when needed.

Teacher S. S. (2) stated:

"In early intervention services, we provide individual educational sessions. We start by setting an individual plan and goals and we implement them. Speech therapy is provided by a speech therapist for children for 30 min, as well as sensory integration, but currently it is not properly staffed, meaning it needs more regulation, occupational therapy, and skills development services, which are complementary to the intervention so that we set goals for visual performance, gross and fine motor skills, etc. Our intervention programs talk about basic skills such as fine motor skills, holding a pen, so that if the early intervention skills are mastered, they move on to developing skills and also using the bathroom."

Teacher R. H. (6) stated, "We have sensory integration services—occupational therapy—speech therapy—individual skills development—educational services." Teacher G. B. (5) indicated, "Early intervention services for children, individual educational sessions for the child—sensory integration—occupational therapy—speech therapy—skills programs—hobby programs, coloring, organizing, etc. for the child."

Teacher A. stated, "The need for centers to provide early intervention services for children with ASD by specialists in providing services. S. Sh. (2) added to this saying, "Previously, there was a group of diverse services: sensory integration services, art education, physical education, speech services, and educational services. Most of the services are provided by the teachers' efforts and are not scheduled. I believe that they have the right to have integrated services, meaning that this is one of their most basic rights, to have sensory integration, art education, sports, of course, occupational and physical therapy is affiliated with the Ministry of Health, and also sensory integration, meaning there is a bit of confusion about it, as it can be submitted by the Ministry of Education or the Ministry of Health, but it is provided by the teachers' efforts, but not in the required manner or by specialized people. Currently, only educational services are provided to them." The teachers' responses showed that the places where early intervention services are provided differ according to their suitability to the family's circumstances and the type of service, such as medical services and physical therapy, and some are provided within special education centers, and some services are also provided at homes. This was mentioned by some teachers, GH. B. (5). S. Sh. (2). R. H. (6) said, "Early intervention services are provided in a center, hospitals, or at home, but homes are not expected to be available, but it is possible if the child's condition requires."

3.2 Teachers professional competencies

The term competencies refers to the items and standards that must be met by teachers of ASD. Teachers' motivation and years of experience also play an effective role in developing the educational process, and courses are also a contributing factor in developing teachers' competencies. Teachers' motivation level is evident in their provision of services to children with ASD, through their exposure to

everything new in the fields of early intervention. Teachers explained their motivation for self-learning and developing their educational skills by attending courses, as well as their continuous exposure to modern information in early intervention. In addition, perseverance in providing the best for children with ASD and achieving goals by modifying their behaviors.

This is what teacher A. indicated. A (3): “I attended courses in early intervention and services such as ABA, but most of them were paid and by my own personal effort, not from the ministry. I did not benefit much from them, most of them do not serve the field or are unrealistic. For example, the child has very simple behaviors and does not have accompanying disabilities, and his IQ is high. They do not talk about the category that we always face, those with low performance, or most of it is theoretical and not practical training, just information. Also, I am always employed in early intervention classes, and all the learning and experience was my own effort to achieve the shortcomings and problems that I faced; there is no training or even sometimes if I face a problem I have to communicate with teachers in the center with me or from other centers to solve the problem.” Teacher G. H. said B (5): “I attended courses, but it was through my own personal effort, research and knowledge that depended on me; because most centers do not hold courses for teachers, and the most beneficial course from which I benefited was Applied Behavior Analysis (ABA); because it touches very much on the side of children with ASD, especially the young age group, when the child comes to the center for the first time and you make a behavior modification plan, so I feel I need it.” The teacher S. also indicated (2) that the Master’s degree plays an effective role in developing her skills and raising her motivation to research and learn about useful topics: “I attended training courses in the services provided by the Ministry of Education, and some of them are during international days such as the International Day of Persons with Disabilities, where there is a rush of courses on specific topics. I attend several courses according to my need. I certainly benefited from them, but not all of them, especially those that touch the field in the most precise way, which means how to deal with a child with ASD, and are about behavior and behavior modification, given that they are young children and have behaviors.

Also, knowing new and useful courses in the field, courses in specific areas, for example, I did not know Dr. Mishal AlRifai at Jeddah University, but when I entered the Master’s degree and became interested in video modeling as a fun and useful educational method for the child, I noticed that he was very focused on it. Video modeling opened up horizons for me to teach children one of the methods that I followed with children and it was very wonderful, so I benefited from the Master’s degree, which is to focus on a specific topic in a specific research.” Some teachers also mentioned an aspect of their motivation to achieve goals for children and enhance the child’s achievement and development. Teacher S. Sh. (2) said, “I was making an educational bag for a child in which he would learn some skills during the 4-month long vacation, such as holding a pen and toilet training, and the child would benefit from it and the family would also learn how to implement the objectives.”

Teacher R. D. (1) also indicated: “I was working on myself by reading, attending courses, and reading, especially in the area of behavior modification, such as the behavior of destroying things, the child throws things on the ground, and I initially used a strategy with him that increased the behavior, such as not caring, or ignoring the child, or giving the child a strong reaction; but after reading, the first

step was to study the behavior and determine the goal of the behavior, and the most likely thing was to attract attention, and I even discussed the reason with the mother, and the most likely thing was to attract attention and use the over-correction strategy and provided the mother with a way to apply it, and the child, thank God, the behavior disappeared.”

The years that teachers spend in the fields of early intervention are the basic essence that results in the formation of experience through which the educational goals of these children are achieved. Accordingly, the teachers mentioned their educational experience and its use within the classroom environment in early intervention classes. They also expressed how they learned from the experiences of other teachers.

Teacher R. H. indicated that in some situations she benefits from the experiences of others. R. stated (6) “we can take most of the information from the experience of our educational supervisor.” Teacher R. D. also mentioned the development of her experience through working with children with ASD in the early intervention stage. R. D. (1) indicated this saying: “In the beginning, it increased my skills. I mean, I am telling you about the skills that are always repeated and I am happy that the child accomplished them, other than the independent skills for those who accomplish them. You feel that you are the one who accomplished them, not them. A child did not know how to hold a pen and draw a line. At first, I tried to look for ways to make the child learn to hold a pen and make him love this thing. I searched and used several methods. The feeling of the child accomplishing something that you worked hard on and searched for was a very wonderful feeling.” In another context, teacher R. D. indicated using her experience to facilitate the achievement of goals for the family. R. D. (1) says: “At the end of the year, we make a recommendation to the mother about the goals that the mother and child should work on during the vacation. So I wrote down all the skills in all the communication fields and others during the 4 months of the vacation, and the mother worked on them, and the child’s performance made a very big difference. Why? Because the mother followed the plan that was set for her, and of course I provided the mother with educational videos that I designed, which explained the goals and the method.”

While teacher S. Sh. stated that the experience she gained during her master’s studies had brought her the greatest benefit. S. Sh. (2): “But the master’s degree benefited me a lot. It gave me information and broadened my horizons, and introduced me to many things that I was ignorant of in dealing with children with ASD, especially children at this very early stage. We benefit a lot from them, and we learn from them patience and how to deal with them, and pay attention to details. My experience in early intervention taught me how to be a good dialogue partner for the mother, how to convince the mother of the importance of her child and the importance of educating her child. I see it as a beautiful experience that requires constant development, and dealing with children is a pleasure, frankly.” Some teachers stated that they had received training before they began providing early intervention services, which focused on several areas for children with ASD. S. Sh. (4). GH. B (5): “I had a training period, and the training covered almost all the basic skills that a child needs—behavior modification—setting educational goals for the child—developing goals—and also working on the child’s communication and motor side. The experience of providing early intervention services is very useful and added a lot to me and my

skills. I have come to know how to deal with children at this age, especially since it was a problem that was very difficult for me at the beginning. I also know how to deal with each child according to his needs, and also adapt the tools and methods according to each child.”

3.3 Challenges experienced by teachers

Teachers face some challenges when providing early intervention services to children with ASD. One challenge is the vast number of children in early intervention classes. Diagnosis and its effects on children with ASD presents another challenge, while family participation and the administrative structure of the center are also challenges for teachers.

This is what some teachers emphasized saying that the equal percentage of children with ASD in early intervention classes contributes to achieving the goals, as increasing the number of children in classes may lead to teachers suffering from symptoms of burnout; and thus failure to achieve educational goals. Teacher A. A. (3) indicated this, “One of the exhausting challenges for the teacher is the high number of children in one class. This means that you have different cases in the class; one child may be hyper and the other is calm and has no behaviors. I see that the teacher focuses on one child and may neglect the rest.” Teacher S. Sh. (2) also agreed with her, saying: “The shortage of teachers, as there is almost one teacher in each class, has a negative impact on the children. How do you want a teacher to focus on a child when she is alone with 4 autistic children? It is very difficult.” Some teachers also mentioned the importance of early and correct diagnosis of children with ASD, as diagnosis seeks to identify and discover this category. The diagnosis also determines the eligibility for services for children with ASD and their families. Teacher A. A. (3) indicated this saying: “The diagnosis process should be standardized so that the child is not penalized by diagnosis at an older age. Those responsible for the diagnosis should be accredited centers that have correct and standardized tools, so that this confusion does not occur.” The family plays the role of an equal partner to the early intervention team in terms of participating, developing, and implementing the individual educational plan for the child.

This forms the basis for developing the early intervention program for children with ASD and facilitating the development of learned skills. This is what some teachers confirmed saying: R. D. (1): “The families cooperate with us on the individual educational plan and communicate with us, and also in setting goals. One of the stories about family cooperation is that I had a child who is now 2 years old, the first time he entered my class was the first time he entered a center or received services, and his skills were very weak. At that time, we had a long vacation of 4 months, and we had a plan and the family and I set some skills such as hand washing skills—eating with a spoon—communication skills—almost many skills in every field. Of course, I train the child and the mother with me, and at the end of the year we make a recommendation to the mother about the goals that the mother and child must work on during the vacation. So I wrote down all the skills in all the communication fields and others, and during the 4 months of the vacation, the mother worked on them and the child’s performance made a very big difference. Why? Because the mother followed the plan set for her. The assistance was very useful. I mean, most of the goals were almost mastered by the child, and the mother is still continuing to care during this year. An example of

things that were modified with the mother’s cooperation is modifying the behavior of hitting—Specifically hair pulling—I’m not saying the behavior disappeared, but it significantly decreased.”

Teacher S. S. (4) also added that “the family is the biggest problem I faced and was sometimes an obstacle to achieving goals. I mean, my child might master the goal and then come the next day or after the vacation and the skill is missing because the family does not generalize the goal or does not help in fixing the goal.” While teacher R. H. mentioned a story related to the role of the family, R. H. (6) substantiated this. “There is a child in the family who wanted to learn the skill of using the bathroom, and the mother was very cooperative because she was the one who set the goal in the plan, and I made a schedule so that the mother would put the child in at fixed times and share the schedule with me, and also give me the behaviors that appear before using the bathroom, and we would continue teaching the skill. The child learned the skill of using the bathroom in less than 3 months, but there are uncooperative families, and families will not cooperate if they are not convinced from within to participate in providing early intervention services.” Teacher R. H. (6) also added an experience that illustrates the importance of the family’s role for the child in generalizing the skill. She says: “A child has a behavior of throwing colors and things, and the mother was always reinforcing the behavior so that she would collect the colors at home, and she never responded to us in implementing the goal and generalizing it, and the result is that the child still has the behavior.” Teacher G. B. indicated that visiting the center, reviewing the goals, and participating in preparing goals that meet the family’s needs is essential for the child’s progress. Teacher G. B. (5) stated that: “The family’s visit to the center, reviewing the child’s goals, and adding the goals that the family needs most helps us, and is one of the biggest challenges I face. Some families never cooperate, and all the work is on the teacher. There is never cooperation from some families and all the work is on the teacher, and no progress occurs for the child.” The teachers also pointed out the role played by the administrative structure within the centers, which is a very important role in alleviating the challenges facing teachers with ASD. Teacher A. A. (3) pointed this out saying: “The person in charge must be a specialist and expert in special education. Even the circulars and arrangements coming from the Ministry of Education must be from someone who understands special education, and dealing with early intervention is always linked to kindergartens in public schools. I see this as injustice. We must differentiate between special education and their needs and early intervention.”

She also added to that saying: “The comparison by the administration between a child in early intervention who is provided with services, and a child who is in second or third grade, well there is a difference. This is a child who has not been provided with any service before, and the child is entering a center for the first time and has behaviors, so the blame comes from the administration, for example: Why does the child not return when she leaves the classroom and gets bored, why does she cry? And they compare her behavior to a girl in second or third grade. And since the administration all specializes in kindergartens and they do not have knowledge of special education, especially ASD and the behaviors that appear in the child as a result of changing the routine and place, especially since the child is entering a center for the first time, it was a lot of psychological pressure on me as an early intervention teacher. The evaluation is also a burden on you and the evaluation is not related to my performance, but to the child and his

behaviors. Also, I am wronged in the evaluation because the child was tense that day or did not sleep well, etc. Well, why do not you evaluate my strategies, my dealings with the child, and my efforts.”

3.4 Professional development

Professional development is one of the topics that teachers of ASD referred to. This is because the lack of specialized training courses and workshops in the field of early intervention poses a challenge for teachers in dealing with children with ASD. Teacher R. D. (1) confirmed this saying, “Of course, attending courses and organizing training courses is more than theoretical to benefit from them. I mean, personally, I really like attending training courses, and workshops make me more informed and benefit. There are few training courses that talk about early intervention.” Teacher R. H. (6) added, “I hope there are workshops that enable us to apply the solutions and skills we learn because most of them are theoretical only.” She also added to this saying, “We need training courses on the most field problems for children with ASD.” While teacher A. A. (3) stated, “Conducting courses on modern topics in intervention and early intervention services, and the most effective programs for this age.” Some teachers indicated their desire to provide each class with two teachers specialized in the field of ASD; because this is something that would develop the process of providing services. Teacher S. Sh. (2) substantiated this: “We have a shortage of female teachers at the center, and because there are no female teachers covering the services this year, there are no diverse services. I think that providing female teachers who specialize in early intervention and dealing with children with ASD will enable us to provide the services in the best possible way and make them available to everyone. It is necessary to provide a good teacher to provide the service, but in light of the shortage of female teachers, this reason may be an obstacle to providing the services to a child well.”

Teacher A. A. (3) added, saying: “Support with ASD teachers no other specializations, because the center currently only has 7 autism teachers, the rest all have intellectual disabilities, and dealing with the autism category is supposed to be provided by specialized teachers, not from another category. I see this as a grave mistake. Appointing specialized educational cadres in early intervention programs and dealing with children with ASD because it is important and develops the child better.” The teachers spoke about the lack of experience among teachers that may lead to providing unhelpful services to children with ASD.

Teacher A. A. (3) indicated that:

“Most of those who provided services were volunteer girls who had no experience, so I did not see the services provided in an organized manner or according to a clear policy. The teacher was young and had just graduated from university, meaning that I did not see anyone on the ground who specializes in providing these services in a scientific manner. Most of them provide them as volunteers or have a diploma. I believe that teachers who provide early intervention services have knowledge and experience in these services and the way to provide them to a child at a certain age because then they will provide the child with the best services.” Some teachers also indicated collaborating with other educators

is one strategy that helps them overcome challenges in providing effective early intervention services.

Teacher R. D. (1) indicated this saying:

“I see one of the solutions to overcome some of the difficulties we face is sharing experiences with previous teachers who worked on early intervention services, so that if I encounter a problem I can discuss it with her, because previous experiences are considered important for teachers like us, almost new ones, or having an educational supervisor to whom we can refer.” Teacher S. S. (4) said: “It is better to exchange experiences with experienced teachers to benefit from their experiences and solutions to some of the problems we face in the field.”

3.5 Activating family participation

Family participation in the educational process also plays a role in overcoming many educational problems and difficulties, as the family contributes to raising the level of educational goals for children with ASD within the centers. It also contributes to increasing the motivation for learning and teaching, and thus developing the skills of these children. The family also provides teachers with better opportunities to learn about the child’s goals and needs. This can only be done in close cooperation with the family, which is the first nucleus of the child and the most knowledgeable about him. Teacher S. Sh. indicated that the vision that the family has about its child with ASD is one of the most important things for their cooperation with teachers. S. said: Sh (2): “I think the solution starts with the family itself and their belief in their child’s change. Here I can enhance their participation, but some families do not care about their child’s achievement of goals or their belief in their child, or even do not see a future for their child and that she will not reach university or even if she learns and after that? There is nothing else, or I want her to leave the house just as an outlet.

There is no awareness of the importance of early intervention and its impact on the child, so any achievement with the child will not be taken into consideration and the family will not cooperate; I think we must emphasize cooperation between families and the center. Because it is very important.” While teacher GH, B (5) added that “organizing sessions for the family with the psychologist so that the family accepts the child and can provide us with assistance. The center also holds courses with titles that touch on the needs of the family and raise their awareness.” While teacher S. S. (4) indicated family counseling sessions showed satisfactory results and that they are appropriate solutions through her experience in the field. She said: “Family counseling and explaining their importance in their child’s progress. The center implemented this solution and thank God the results were satisfactory. Families became more interested in the child’s goals and progress. Also, periodic meetings were set between the center and the family and also between the teacher and the family.”

Teacher A. A. (3) added to this saying:

“Intensifying the courses provided to families are educational, due to misconceptions that the disorder is caused by the evil eye and others. The mother or family must be educated in a correct and simplified way in their language. We must stay away from the

complex scientific language that most mothers may not understand or get bored of. The course must touch on their need for knowledge, not just any information and that's it. After that, they may accept to participate with the teacher and the center."

In addition, enhancing their communication through electronic means or in-person family sessions, whether verbal or written, is one of the most important factors in the progress of children with ASD. Communication between the family and teachers is a contributor to the success of the learning process and achieving the desired goals. It is imperative to be knowledgeable of the most important developments and needs of the child and the family. This is not achieved, except by enhancing their participation in the center. The teachers provided, from their experiences in providing early intervention services, some solutions that seek to overcome challenges, provide mutual benefit, and enhance their provision of effective services for students with ASD.

As the teacher A. A. (3) stated:

"We tried in our center a solution to enhance participation, which is that we honor the mothers and mention the mothers' names, so there was enthusiasm, cooperation and achieving goals in a very excellent way. I also see the best solution as holding courses with psychologists that make the family more accepting of the child so that this leads to their cooperation and strengthening their role."

The teacher S. S. (4) indicated:

"They are supposed to give them family guidance so that they meet with them and explain to them the importance of participating with the teacher and that the child will not progress if the parents are not cooperative with us, as well as strengthening their participation by meeting with them and educating them about the importance of their role in achieving educational goals and others. Continuous family guidance in a simple and easy way for families. Another good solution is sharing videos of the child during the session and the child's achievement will affect the families and strengthen communication between the teacher and the family." Teacher GH. B. (5) also mentioned one of the solutions during her experience in providing services to children with ASD, which was applied in the center, and the results showed its effectiveness in involving families, saying: "The mother's observation of the child in the center. I applied this suggestion once with the mother, who attended the center and began to see how I give the child the skill, and she began to apply the skill with the child at home, and the child improved greatly, and the mother was encouraged again after that and began to communicate with me constantly, and implement the goals."

While teacher S. Sh. (2) mentioned that if the family is accepting of the child with ASD, they prepare an educational plan that includes common goals between the family and the teacher. She says: "In the case of the family accepting the child, I can come up with solutions here—for example, involving them in the individual corner, so that we implement a program in which the mother attends, sits, and sees how the child's school day is—and I implemented this solution at the Jeddah Center only once, and the mothers were very cooperative and wanted to see what their children were doing. I put in place a

program in which the mother attends and sees how I explain to the child how he is in the circle and individually, and then the mother explains the next day and I implement it, so that she learns how to give the child the skill at home and also feels her child's accomplishment."

The teacher R. D. also mentioned that knowing the family's culture and educational level enhances participation in services. R. D. (1) said: "There was also a family—the person responsible for the child was illiterate and could neither read nor write, and I always sent written notes and she did not respond to me. After a while, we held our first face-to-face meeting after Corona and she told us that she could neither read nor write and wanted another way of communication. I told her, "Good news. So we started filming videos for her and recording voices. There was a great improvement after that in the child and the way we communicated with the family—one of the reasons for strengthening the role of the family is that we know the family's culture and level so that we can help them and cooperate with us. It is very important to meet the mother and the teacher and talk to her."

3.6 Developing services

The quality of providing early intervention services for children with ASD is one of the things that must be taken into consideration in special education centers, as developing the services provided in the centers is one of the most important quality factors for the center. This is done by keeping pace with developments in the field of specialization by adding diverse and enjoyable programs for children, as well as preparing an educational environment that suits the needs of children with ASD. The good educational environment also aims to provide better learning opportunities for children; it provides integrated services for children with ASD. Teachers indicated that the buildings were not prepared for the needs of these children, while the classroom environment lacked creativity and interaction with the teacher, says teacher GH. B. (5): "One of the difficulties I see facing in providing the service is that the buildings are not prepared for children with ASD, and the playgrounds are not fully integrated as required."

Teacher R. D. (1) also added: "We can make the services provided more effective if the classroom environment is excellent, but unfortunately the environment is not very excellent at the moment, but providing a suitable classroom environment for children with ASD and being more interactive due to their age, and also introducing play with the children, and changing the Teach method and corners. I do not feel that they adhere to a specific classroom system like adults, and also the corners do not benefit everyone, so I change them so that the child is creative and does not get bored."

Learning through play is also an important educational methods for children; it contributes to the acquisition of skills through the use of entertaining educational means. In this regard, the teachers indicated that adding learning through play is beneficial for children with ASD during early intervention, and teacher G. B. (5) indicated this saying: "Adding educational tools, in a playful way, we need such purposeful games. Because most we build and use it, learning through play has a very important benefit for the child and attracts his attention. As teacher A. A. (3) said: "Adding educational programs through play more than just corners, and the child takes its benefits."

Teacher S. S. (4) stated that “it is better to add learning through play, and I see how every child likes to learn through play and learns more.” As teacher R. H. (6) stated, “Adding play to learning; because play is the most attractive thing for the child and he learns faster.”

The teachers pointed out the provision of early intervention services that are provided according to the needs of each child with ASD. These services also contribute to the development of the child's skills.

About this topic, teacher A. A. (3) said:

“I also see the diversity of services in the center, so that all services are available to every child who can receive the service sufficiently, also activating the services in an integrated manner and not just on paper because most of them only come in circulars and are on paper but there is no application or activation for them, so they prefer to open additional classes than to provide services that the child needs. They must look at this matter.”

Teacher S. Sh. (2) added: “Also, the ministry's provision of support services and their complete belief that it is a right for the child and not just a supplementary thing, it is true that it exists on paper, but it is not implemented in reality and the interest in it is very little, meaning that currently if a teacher is delegated, they prefer that she opens a class, but does not hold a service.” Some teachers mentioned the use of several programs for children with ASD within special education centers; this is because what suits some children with ASD may not suit the needs of other children. Teacher R. D. (1) indicated that “one of the ways to develop and make services more effective is to add new programs for early intervention, and implementing them in addition to the Teach program will be more useful. I am not saying that teaching is not important or not useful, teaching is nice because it organizes the environment and the child, but introducing a new program makes a difference.” Teacher S. S. (4) suggested “adding the Floor Time program because it is a new and beautiful program for the child and depends on play.”

4 Discussion

The findings of the current research suggest that teachers' knowledge of intervention services plays an integral role in their provision of services, which vary according to children's needs. While teachers provide the educational services, other services in homes, centers or hospitals are sometimes necessary, including occupational and physical therapy, behavior modification services, and speech sessions, which help children develop their skills. This result was consistent with the findings of the study (2020) Wallace-Watkin et al. that suggested common educational interventions for children with ASD include: treatment with ABA, speech and language therapy, and intervention by the teacher or assistant teacher. These are among the current and preferred delivery methods for early educational interventions.

The teachers also described their professional motivation, experience, and courses that developed their skills in providing early intervention services. Participants indicated that their professional motivation developed from their continuing education and professional development, in terms of attending courses and

constantly reviewing the latest information in early intervention. Teachers also expressed their experiences provided motivation, as they wanted to help children develop and reach their goals. This result was consistent with the findings of the study by [Tashtoush and Al-Sahli \(2016\)](#) regarding the existence of a high level of self-efficacy among teachers of children with ASD. The term self-efficacy is consistent with what the results indicated regarding teachers' self-motivation. This also aligned with the results of the study of [Almagarbah and Alhumaidan \(2020\)](#), which indicated the existence of statistically significant differences in the competencies of teachers of children with ASD in effective teaching practices attributed to the variable of training courses.

The research also emphasized the importance of ABA courses for teachers of ASD. This is due to the association of applied behavioral analysis with modifying the behavior of children with ASD, which makes them more able to adapt to society. This result was consistent with the findings of the study by [Al-Ajarmeh and Al-Khatib \(2018\)](#) that found special education teachers implemented applied behavioral analysis strategies at a high level. The results of the study (2019) Khaleel substantiated this finding, as well. Teachers of students with ASD found applied behavioral analysis strategies to be important and effective methods to utilize for children with ASD.

Other results asserted that experience associated with educational qualifications plays a role in expanding and developing educational methods and techniques in the field of special education. This result was consistent with the findings of the study by [Almagarbah and Alhumaidan \(2020\)](#). The results indicated that there were statistically significant differences in the competencies of teachers with ASD in effective teaching practices attributed to the variable of experience.

The findings also indicated the support of teachers in early intervention classes with other teachers who are specialized in the field of ASD contributes to their success overcoming challenges educating students with ASD. The results align with the results of [Al-Asiri and Al-Hajjan \(2017\)](#), which suggested some of the institutional obstacles to work within early intervention centers are represented by the lack of educational cadres working in the field of early intervention.

The research results indicated that the numbers of children with ASD in early intervention classes were not equal to the proportions of teachers, and it affected their job performance and the achievement of the desired goals for each child. This aligned with the results of the study of [Al-Ghamdi and Al-Maajini \(2020\)](#). Their findings suggested that one of the obstacles facing teachers in applying ABA strategies is the presence of a large number of children in the classroom, which burdens the teacher, making it difficult to apply the strategy of ABA ([Al-Ghamdi and Al-Maajini, 2020](#)).

The results of the research showed that teachers emphasized the challenges of misdiagnosis of children with ASD during the early years, as well as the importance of standardizing the diagnosis process. Failure to do this hinders the provision of appropriate services to the child. This result was consistent with the findings of the study by [McCarty and Frye \(2020\)](#). Looking at the current burden on the medical system in diagnosing and evaluating children with ASD, it is important to establish effective systems for examining children that can better identify children with ASD ([McCarty and Frye, 2020](#)).

The teachers also explained that the lack of participation of some families in providing early intervention services is another challenge. The family's participation in the individual educational plan, the family's visit to the center, and their follow-up in disseminating the

goals in external environments helps the child and the teacher to master the goal. The teachers also indicated they encountered some families who did not cooperate with the center and the teacher, and this greatly affects the development of the skills of the child with ASD. This aligns with results previous research, which emphasized the importance of parental involvement in the education of their children with ASD (Al-Ghamdi and Al-Ghamdi, 2021; Al-Qahtani, 2016; Hamdan, 2018; Kheirallah and Al-Qahtani, 2017).

The results also showed that one of the challenges facing teachers is the existence of an administrative structure that is not specialized in the field of special education, specifically ASD. This partially agreed with the results of the study by Waeli and Al-Ghaith (2016). Their findings suggested one of the administrative problems associated with the educational and teaching staff is the conflict of the workers' specializations within the field.

The results of this research confirmed that developing and enhancing services is one of the most recommendations to ensure children with ASD are receiving the most effective education possible. This is done by preparing the educational environment to suit the needs of children with ASD, making the environment more interactive, and adding learning through play to suit the ages of children in the centers. In addition, it is important to ensure integrated and diverse services are offered. This aligns with the results of the study by Alharithi and Tolba (2021), which indicated that participants valued the importance of educational games to develop visual perception in students with ASD. The results of the study by Mohamed (2019) also showed that a program incorporating play activities has a significant positive effect on developing some basic motor skills for children with ASD.

4.1 Research obstacles

The researchers initially faced difficulty in accessing the research sample. Although the researchers chose the sample intentionally, there were some uncooperative centers, and the reason for this may be their reluctance to participate in the research. There is no doubt that the data coding process requires a lot of effort, accuracy, and honesty in coding the participants' data, so it took a significant amount of time to complete the process. However, it is certain that these challenges do not detract from the quality of the research, but they were mentioned to increase the credibility of the research and provide the most accurate details.

4.2 Research recommendations

The researchers recommend periodic meetings with teachers of children with ASD to discuss the most prominent problems they face and proposed solutions. Training courses and professional development workshops should also be held for teachers of students with ASD regarding intervention services to raise their professional competencies. It is also necessary to hold educational courses for families of children with ASD on the most needed topics. In addition, it is necessary to take into account the provision of a specialized administrative structure in the field of special education to manage special education centers. It is important to propose various early intervention programs and implement them within special education centers. It is imperative to provide integrated early intervention services for children with ASD within the center. Support should also be provided to teachers of ASD

by employing specialized educational staff in the field. Plans must be developed by the management of the centers that specify methods of communication with parents of children with ASD and also provide times and locations parents can meet with their children's teachers.

4.3 Future research proposals

The researchers suggest conducting more research and studies on assessing the needs of teachers of children with ASD, while providing early intervention services in Makkah city. In addition, they also recommend that, unlike the current research, which focuses on the ASD category, research should be conducted on different categories of teachers of children with disabilities. The researchers recommend conducting research that demonstrates the effectiveness of training programs to activate the role of parents within the work team to improve the provision of early intervention services. In addition, they recommend conducting research that measures the level of knowledge of teachers of children with ASD. They also recommend the implementation of effective strategies, such as play-based learning strategies.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

HA: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. RA: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Validation, Visualization, Writing – original draft, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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