

Teachers' Perspectives on Using Applied Behavior Analysis Strategies to Students with Autism Spectrum Disorder in Saudi Arabia: Barriers and Solutions

Jumana T. Ashour¹ and Nizar H. Bagadood²

Department of Special Education, College of Education, Umm Al-Qura University, Makkah, Saudi Arabia

E-mail: ¹<s44180253@st.uqu.edu.sa>, ²<nbagadood@uqu.edu.sa>

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ABSTRACT This study seeks to identify the barriers facing teachers working in Saudi Arabia with students with Autism Spectrum Disorder (ASD). It focuses in particular on their use of Applied Behavior Analysis (ABA) strategies, as well as their views concerning potential improvements. The research used a qualitative approach, collecting data by means of individual semi-structured interviews with eight female teachers of ASD students, which were then analyzed using the thematic analysis method. This study recommends that the competent authorities should obligate the management of centers of special education to apply ABA strategies, in accordance with binding rules and regulations. It also calls for the undertaking of further studies that measure the quality of ABA courses offered at centers of special education from the perspective of teachers.

INTRODUCTION

Education is a fundamental social requirement, being the primary method of enabling individuals to fulfil their potential. Autism Spectrum Disorder (ASD) presents many challenges, particularly when dealing with its diversity and change of behaviors. Therefore, the problems experienced by students with ASD may have a direct impact on teachers when it comes to their choice of the most appropriate strategies and interventions. The difficulties experienced by ASD students tend to create challenges for teachers, particularly as other disciplines have the advantage of historical and theoretical foundations for the most appropriate methods to be employed. However, ASD is a relatively modern field, containing innovative and scientifically unproven strategies, resulting in teachers experiencing difficulties in identifying the more appropriate solutions (Boutot 2011). This has resulted in the need for researchers and specialists to reach an appropriate intervention to alleviate the impact of this disorder in the classroom (Siddiq and Alzahrani 2021). There has recently been an increase in the effectiveness of Applied Behavior Analysis (ABA) strategies for

students with ASD, thus targeting their developmental skills. This has had a positive impact on improving learning skills and enabling children to achieve full autonomy before reaching school age, thus facilitating their ability to reach the highest levels of inclusion in society.

However, as demonstrated by Abdelaal (2016), this presents several difficulties, particularly since the application of ABA strategies may require intervention in terms of rearranging environmental stimuli to improve students' behavior. This indicates that teachers need to follow procedures appropriate for students with ASD in an accurate manner, so highlighting the need for researchers to evaluate teachers' knowledge and use of ABA strategies. These have been examined in various studies evaluating teachers' knowledge and application of ABA, including those of Alajarma and Alkhatib (2018), Khaleel (2019), Fennell and Dillenburger (2018) and Alotaibi (2015).

The above discussion has indicated the established importance of using ABA strategies with students with ASD, including the need for additional research into this educational field, to address its most frequently discussed issues. This current study therefore firstly, examines the most significant obstacles facing the application of ABA strategies by teachers of students with ASD and secondly, identifies potential solutions to facilitate the use of such strategies.

Address for correspondence:

Nizar H. Bagadood

E-mail: nbagadood@uqu.edu.sa

As noted above, the importance of ABA strategies for students with ASD has resulted in many researchers studying related subjects. However, most of these studies have focused on the effectiveness of such strategies for students with ASD, with few seeking to understand the views of their teachers. In addition, there remains a limited number of studies examining ABA strategies from the point of view of female teachers in an in-depth manner, particularly in the Arabic context. This current study therefore seeks to address these significant gaps.

The importance of using ABA strategies with ASD students has led to investigations into their use in relation to several variables. These include the Alotaibi Study (2015), which focused on teachers of students with ASD in Saudi Arabia. The most prominent results revealed that the most effective teachers had received training in behavior management, so indicating that such training improved their level of knowledge and application. The study concluded that, to raise the level of knowledge and application of ABA strategies, it was first vital to consider the needs of teachers.

Similarly, Alhussein (2015) confirmed the importance of pre-service training for teachers to ensure the effective use of ABA strategies. The most prominent finding indicated a very low level of awareness of ABA strategies among student teachers, as well as the existence of a negative correlation between the level of the participants' knowledge of these strategies, and their willingness to undertake their implementation. Furthermore, Alhussein (2015) indicated the impact of this deficiency on the future performance of teachers, so confirming the importance of the current study's aim to identify and address obstacles related to pre-service training. The results of the current research identify several obstacles, as well as solutions, alongside an examination of further neglected aspects.

One significant result from the study of Alhussein (2015) concerned the fact that student teachers' knowledge of strategies may reduce their use. This highlights the importance of the current research, to study the factors behind this lack of enthusiasm, and to use open interviews to facilitate an understanding of their opinions. The aim was to discover whether this lack of enthusiasm arises from a lack of familiarity with such strategies, and identify any other contributing reasons.

The participants in Alsheikh's (2018) study demonstrated considerable knowledge of beneficial strategies for improve behavior, with the parameters' use of strategies for increasing desirable behavior proving moderate. This shows that the application of strategies to increase the desired behavior was medium, despite their high level of knowledge. This therefore indicates a need to examine the reasons behind any failure to use parameters for these strategies, which may also identify challenges preventing their use. This recognition led the current researchers to explore the current insufficient access to more comprehensive and realistic results determining the level of application of these parameters. A recent study conducted by Alghamdi and Maajini (2020) also sought to identify the level of application of ABA strategies by teachers of students with ASD, focusing on the relationship between the level of knowledge of the female teachers of these strategies and the extent of their application. The most prominent results indicated a direct relationship between the level of knowledge of the parameters of the strategies and their application. Alghamdi and Maajini (2020) added further items into their scale axes concerning the most important obstacles faced by teachers of students with ASD, however this proved insufficient to objectively examine all trends in relation to this aspect. Consequently, the current research seeks to examine these obstacles in a more in-depth and extensive manner, by listening more freely and openly to the teachers' perspectives and concerns.

There is generally a paucity of studies seeking to measure the effectiveness of training both teachers and mothers to use ABA strategies with students with ASD. However, Ahmed (2020) attempted to identify the impact of increasing the use of such strategies, finding that the training program was effective in: firstly, raising the level of knowledge of both mothers and teachers and secondly, improving their effectiveness. These results prompted the current research to make additional contributions to this field by identifying solutions to support and facilitate the use of ABA strategies. Furthermore, Allen and Bowles (2014) conducted a study to measure the effectiveness of a training program in changing the attitudes of primary school teachers towards the use of ABA strategies, with the results demonstrating a noticeable transformation from nega-

tive to positive. The results demonstrate that the program has contributed to the professional development of teachers in their use of ABA strategies, so indicating that some teachers may need additional training in these strategies.

In the same context, an additional study by Gulec-Aslan (2017) sought to measure teachers' perceptions of ABA strategies, to establish the experiences of teachers providing ABA-based education to students with ASD in Turkey. The results found that the participants held positive views of ABA strategies, and that the teachers' knowledge of the methods tended to enhance their professional competence. Likewise, Reeves (2017) examined teachers' perceptions, knowledge, and use of ABA strategies in schools. The results revealed that teachers held positive perceptions of using ABA strategies, so indicating that teachers' use of strategies is influenced, regardless of implementation, by their attitudes.

Therefore, the current research focuses on the perceptions and attitudes relating to the ABA strategies of teachers of students with ASD. A limited number of previous researchers have endeavored to understand obstacles to the use of these strategies. Roll-Pettersen et al. (2016) highlighted the need for researchers to understand these obstacles, as well as consider the impact of variables on the implementation of such intensive behavioral intervention. The study identified several barriers, including: (1) staff knowledge, competence, and development through supervision; (2) the role of the principal; and (3) any relevant influences and tensions. Moreover, Roll-Pettersen et al. (2016) confirmed the existence of barriers impacting on the use of early and intensive behavioral intervention for students with ASD. This therefore confirms the main purpose of this current study, that is, to examine the presence of obstacles hindering the use of ABA strategies. Furthermore, Aldaoud and Alhussein (2018), aimed to identify the attitudes of school workers towards the use of positive behavior support strategies, as well as the obstacles to their application. The results revealed that the participants' expressed a positive attitude towards the use of such strategies, accompanied by an inverse correlation between their application and the attitudes of school workers.

Thus, the findings of Aldaoud and Alhussein (2018) reveal that the attitudes of workers play a

key role in determining the knowledge and application, as well as obstacles to the use of ABA strategies. It is therefore vital to highlight such issues from the viewpoint of teachers, to establish a deep understanding of the phenomenon. This highlights the importance of the current research as the first aiming to identify the views of teachers of students with ASD concerning barriers to the use of ABA strategies.

Qahwaji (2018) examined barriers to the use of effective ABA strategies and support for students with ASD in the United Arab Emirates and Saudi Arabia contexts, from the perspective of a non-local therapist. The results varied between identifying the most prominent obstacles, to working effectively with families of students with ASD, including language and cultural differences. However, the study tended to reflect the limitations of employing a non-local therapist, as well as those of the participants, indicating the need to ascertain additional points of view to fully understand the phenomenon. Therefore, this current study differs from that of Qahwaji (2018) in terms of the applied sample, which focuses on the teachers' views as part of its data collection tool.

ASD is currently the subject of considerable research, potentially due to the global increase in the percentage of those affected over the previous two decades, including in Saudi Arabia (Jalal 2020), where government statistics indicate that its prevalence has increased annually by between 10 percent and 17 percent (Human Resources Development Fund 2017). This has had a considerable impact on the provision of appropriate educational processes. According to statistics issued by the Authority for the Care of Persons with Disabilities (2020b), the number of individuals with ASD among the population of the Kingdom of Saudi Arabia has now reached 53,282. In addition, the King Salman Centre for Disability Research (2021) states that the survey conducted by the General Authority for Statistics in 2017 found that the number of individuals with ASD in the Makkah region consisted of 9735 cases, of which 2215 were females, and 7520 males.

Hamdallah and Rashid (2015) highlighted the difficulties of working in the field of special education, particularly as teachers play an essential role in instilling knowledge capable of benefiting students in their future lives, which is particularly important for those with ASD. In addition, they

need to face the challenges arising from each case being unique. This can result in many teachers suffering from disappointment and a weak sense of self-sufficiency, which can eventually lead to job/professional burnout (Omar 2020). Therefore, to provide high-quality education to all students, including meeting their needs in an appropriate manner, it is vital that teachers of students with ASD are provided with appropriate support and training, including opportunities to expand their knowledge and develop their skills (Listiakova and Preece 2020).

The use of ABA strategies is currently gaining in importance, including in the Kingdom of Saudi Arabia, where the educational and psychological services provided to students with ASD include the application of behavior modification strategies derived from ABA (Public Education Agency 2021). However, due to the lack of any accredited training program, there remain few certified ABA therapists. This has led the Autism Research Centre, in cooperation with the University of Nevada, Reno (UNC), to establish the high-quality accredited ABA program in behavior analysis in the city of Riyadh in 2014 (Autism Research Centre 2021b).

Objectives

The aim of this current research is to: firstly, identify the obstacles faced by teachers of students with ASD when employing ABA strategies and secondly, established their views of possible solutions to overcoming such obstacles.

MATERIAL AND METHODS

The study adopted the qualitative approach, which is considered appropriate when the researcher wishes to acquire detailed knowledge about a particular topic, and study the social aspects in their natural environments, to understand phenomena in terms of the meanings accorded to them in relation to education. The study analyzed interactions between individuals, along with their circumstances and within different environments (Mik-Meyer 2020; Almeida et al. 2021).

The research sample consisted of teachers of students with ASD working in special education centers in the city of Makkah who had some knowledge of ABA strategies. A purposive sam-

ple was used, which included eight female teachers of students with ASD. This type of sample is selected on a free basis by the researchers, to achieve the objective of the study (Muhammad 2017). In addition, several participants were selected with the snowball sampling technique, being nominated by participants for their suitability in relation to the research criteria. Such methods of sampling were defined by Creswell and Poth (2019) as, identifying cases through individuals familiar with the problem addressed by a particular study.

The main tool for data collection consisted of semi-structured interviews, varying in length between twenty-five minutes and an hour. This was due to the flexibility of such interviews, which also accord participants sufficient space to expand their opinions, including points that may not be mentioned in the questions. Semi-structured (that is, in-depth) interviews are also known as a dialogue taking place between the researchers and participants, characterized by a flexible interview protocol, so allowing the researchers to collect open data, explore the participants' ideas and beliefs, and delve deeply into the issue under investigation (DeJonckheere and Vaughn 2019). It was therefore vital to attain the participants' consent prior to setting the date for each interview. The interviews were applied to the sample, with the number of participants determined in accordance with the saturation of the data, described by Braun and Clarke (2019) as the point when there is a repetition of information, or no more value can be added to the data. It should be noted that the current interviewer obtained permission of all participants to record the interviews and ensured the secure storage of the subsequent data.

Following their completion, all the interviews were analyzed according to thematic analysis, this being one of the most popular methods for analyzing qualitative data (Braun and Clarke 2012). The researchers employed six basic stages: firstly, all interviews were transcribed on paper, in an organized and individual manner for each participant. Secondly, this data was considered in-depth, by reading it over several times to attain familiarity and full knowledge of all the details. Thirdly, the researchers undertook the initial coding stage of the data, which is one of the most important stages in the use of objective analysis, during which content was taken from a specific

sentence of the participants' answers, placing them in the form of a symbol with one or two words. Fourthly, the data was crystallized and took shape according to topics previously encoded in the data, to ensure that the coding was correct, and all encoded topics were accurate. Fifthly, the topics were named, with all convergent topics placed under one group to arrange the ideas. Finally, the report was written up, along with a discussion of the results.

RESULTS AND DISCUSSION

This section addresses the main findings concerning the obstacles faced by ASD teachers when using ABA strategies, as well as the proposed solutions.

A significant result emerging during the analysis of the data indicated several issues concerning the policy of managing special education centers, the most prominent being a lack of attention paid to the use of ABA, including viewing it as a personal choice. This is consistent with the study of Alotaibi (2015). A variety of points of view were demonstrated, including:

"There are many special education centers that do not have systems in the application of ABA strategies, so the system flounders, the administration is confused, and the teacher is confused, and so is the student. The absence of such systems means that there is no productivity, and the fruits are not reaped at the end of the semester, but on the contrary, we feel ourselves to be lost." (Teacher from Centre [1])

In addition to the above, there were some negative comments indicating that special education centers fail to support teachers, a finding confirmed by both Ahmed (2020) and Alotaibi (2015). Furthermore, a proportion of the participants considered this a barrier to their use of ABA strategies. This current study identified this deficiency as a challenge to educators, as the equalization of the accomplished and the unfulfilled, the creative and the non-creative. It was also an important factor in teachers' frustration and sense of injustice, potentially leading to an absence of development and creativity. In general, the participants agreed that there was lack of support from the administration, as summarized in the following:

"There is not enough moral support for us. The special education teacher is in constant

need of a supportive word, and positive energy, and I think that is because he is burning internally, this must be reflect in the teaching. There is a need for patience, and positive energy. It is not only that there is little moral support." (Teacher from Centre [3])

In addition, this study highlighted the need to offer support to teachers by giving them periods of rest and to be able to leave when they need, to prevent burnout. This was supported by the study of Ahmed (2020). One of the teachers in the current research stated:

"We don't have a rest period for the teacher at work, meaning working for five or six hours straight! This is one of the reasons that exhausts us in dealing with the use of ABA strategies, especially in behavior modification, as the work is constantly exhausting." (Teacher from Centre [2])

Furthermore, the analysis also demonstrated that the participants agreed on the lack of an assistant teacher being an obstacle to their use of ABA strategies. This supports the conclusions of Ahmed (2020) and Alghamdi and Maajini (2020). One of the teachers in the current research commented:

"The assistant teacher's role is as important as that of the specialized teacher. As a teacher, I must take the first student, present the activity to him, and present the strategy with him before the other student attends. The arrangement of the class, the re-classification, and its adaptation must be completed within five minutes. I find it all a very big burden." (Teacher from Centre [1])

Moreover, this problem may become more prominent when it comes to increasing the number of students in the class and therefore the range of behaviors. A teacher noted:

"The number of students in the class certainly affects the use of ABA, and how it is applied, for example: if the class contains a large number of students, here the situation will be different, and we will not be able to give the student sufficient attention." (Teacher from Centre [2])

Moreover, a minority expressed negative views when it came to the centers providing the necessary tools for implementing the strategies, thus supporting the study of Alghamdi and Maajini (2020). One of the current participants stated:

"There are many centers that require the teacher to provide these tools. This increases the teacher's burden and may require personal diligence if the center does not provide the nec-

essary tools. This means I have to provide them, shouldering both the cost and the effort.” (Teacher from Centre [1])

Furthermore, this research identified many different challenges related to the cooperation of the work team, including the teacher, the family, and specialists. One of the teachers noted:

“Unfortunately, our psychologist has not continued to work with us, and I do not know why. It may be the pressure she is under. Each psychologist tends to work with us for a year, or two years, or a term, and then she leaves, and another comes, and we tell her that we need someone to teach and guide us in the use of strategies. In this aspect, we need a strong, knowledgeable, and experienced psychologist, whether it comes to teaching or dealing with students with ASD”. (Teacher from Centre [3])

A further challenge related to the families’ lack of knowledge of these strategies, which could lead to a lack of cooperation and failure to follow up. One teacher stated:

“When I work with the student on a certain strategy, the family is supposed to follow the same strategy. Unfortunately, families do not follow the same method as the teacher, as they lack knowledge and interest.” (Teacher from Centre [1])

A further challenge concerned the lack of cognitive and applied competencies for teachers. One of the recurring themes noted by the participants was the lack of knowledge of ABA strategies. This finding is consistent with Alotaibi (2015), and gave rise to a further issue, as highlighted by one of the participants from the current study:

“The reasons why parameters use traditional methods is that: firstly, it is possible that [teachers] lack a background in modern [methods] and secondly it could be [teachers’] ignorance of the implementation method.” (Teacher from Centre [1])

Moreover, the participants were unanimous in viewing academic education for undergraduates is based more on theoretical than the practical aspects, as expressed below:

“Unfortunately, we lack programs in which we prepare special education teachers in the field, meaning that I, as a special education specialist, joined the university for four years, and only in the final year completed a period of field training.” (Teacher from Centre [1])

This indicates that training courses are the development method most likely to increase edu-

cators’ knowledge and application of ABA strategies. However, the participants drew attention to various shortcomings, as also identified by Ahmed (2020) and Alotaibi (2015). One of the current participants stated:

“Recently, most of the courses offered are proven by scientific evidence, but they may be weak or strong, for example: there are centers that offer courses in the Sunrise Program. The science isn’t strong, but, for example, if the tooth rays were replaced by the axial response, it would be stronger.” (Teacher from Centre [2])

This confirms the importance of selecting strong topics when educating the teachers, as well as the challenges relating to the lack of facilities to attend development courses, as demonstrated by one of the teachers:

“It is possible that the center will pay for you to attend a course, but it does not cover the full amount. Then we face another difficulty, if, for example, the course starts at three or four in the afternoon and our work ends at half past one”. (Teacher from Centre [4])

This indicates that encouraging teachers to use ABA strategies may not be limited to training and preparation but may also take place through reviewing educational research. However, there are several obstacles, as shown in this response:

“No, I have not seen studies of it before, because I do not know a source to which I can refer for studies and translations.” (Teacher from Centre [4])

In addition to the obstacles discussed above, the current research also focused on determining the needs of teachers for overcoming obstacles to their implementation of ABA strategies with those with ASD. One of the proposed solutions was to provide supervision and follow-up from management, as noted by one of the teachers:

“[Providing] continuous supervision for us reminds us that we made a mistake here or worked here [about] the strategies we use, when behind us there is follow-up [something important], and I see follow-up and oversight from a management point of view as important.” (Teacher from Centre [2])

The teachers also suggested the benefits of determining the appropriate number of students in each class, to enable them to use ABA strategies more accurately, with one stating:

“[The environment] must be arranged and divided, and there is [a barrier] between corner

and corner, so that no one is allowed to be in this area. The activity must also be limited so that the student does not get distracted.” (Teacher from Centre [3])

One of the most frequently expressed opinions concerned the appropriate distribution of students to facilitate the most effective use of strategies, with some suggesting that a class should not exceed eight students. One participant commented:

“When it comes to ASD, I think the best thing is that there are only eight, as more than that prevents the teacher from achieving what is required, and she will not be able to catch up with them and employ appropriate strategies, until they reduce their behaviors.” (Teacher from Centre [2])

The participants also made additional suggestions indicating their need of the support of an assistant teacher, with one teacher noting:

“I need to be provided with an assistant teacher so that I can use the strategies with the students. I feel that to give the best to my students, I need an assistant teacher.” (Teacher from Centre [2])

In addition, the participants considered it beneficial to receive encouragement from the administration:

“We need motivation and rest times. Moral stimulation consists of providing a simple reward for the teachers, and offering rest times, or time for discussions between teachers and the supervisor.” (Teacher from Centre [2])

A further suggestion related to time saving to enable teachers to use ABA strategies effectively, concerned the provision of assistive technology:

“We need to provide technical transformation to activate assistive technology, this will save time, effort and money in implementing strategies for applied behavior analysis.” (Teacher from Centre [2])

In addition, the participants agreed on the importance of team spirit and cooperation, as well as the significant role played by the administration in facilitating this approach. One of the results indicated the need to provide support in facilitating cooperation between teams, as well as supporting the psychologist:

“One of the most important types of support is cooperation between the family, the psychologist, and the autism specialist. This is the most important thing. Also, the psychologist’s sup-

port, asking for her participation in behavior modification plans. I think this offers very strong support.” (Teacher from Centre [3])

The analysis also revealed that training courses were continuing to take place in specialized centers, due to the recognition of the importance of the professional development of special education teachers, and particularly when it came to the scientifically proven teaching methods for ASD. This finding was confirmed by Khaleel (2019). One of the teachers in the current study said:

“[ABA courses held in centers] I wish they were longer. I feel that it would be a good thing if there was information the teachers could conveyed to the parents, and it became certified between school and home.” (Teacher from Centre [4])

This study found that the teachers generally benefitted from the provision of regular courses on ABA strategies. The above answer demonstrates that increasing knowledge of all ABA innovations can enhance teachers’ motivation. This finding was corroborated by the Aslan (2017) Gulec study, which noted the importance of providing adequate training for teachers implementing ABA strategies. A further suggestion was made by the participants, as follows:

“We need to develop this field, we need to have meetings and lectures, which are enlightening in the sense that they are [for] two to three hours’ maximum, and for all teachers, not just a single center. This will allow us to discuss matters with teachers from other centers, with whom we can exchange experiences.” (Teacher from Centre [2])

This indicates the importance of holding community meetings between teachers in different centers, including exchanging experiences with teachers from different cultures. The participants also suggested providing trainers from abroad, so allowing training in ABA strategies to be provided by ABA specialists. One teacher noted:

“[The centers should] bring specialists from abroad; to train us in applied behavior analysis, and also to provide courses, as well as educational supervision.” (Teacher from Centre [2])

The above confirms the efficacy of the current results, as well as the fact that two out of the eight teachers confirmed the American Board classification (RBT) is required by teachers of students with ASD to facilitate their accurate use of strategies. One of the teachers commented:

"I hope that all teachers will receive the classification of the American Board [RBT], and if there is a Saudi Board, they need to obtain a Classification of a Registered Behavior Technician, until they obtain enough training, if they get training without a license, that's enough for them." (Teacher from Centre [2])

As supported by Alghamdi and Maajini (2020), most of the current participants agreed on the benefits of access to research relating to ABA to improve their information related to the strategies, as noted below:

[Teachers] need to be constantly informed of the developments in the field, whether in Arabic or a foreign language, and to see research on an on-going basis. This is a necessary thing, because applied behavior analysis is new and has been proven by many studies. Keeping pace with this development is essential." (Teacher from Centre [4])

A further aspect discussed concerned the needs of teachers when using ABA strategies during their pre-service. The teachers highlighted the need for the provision of field training every semester after the exact specialization of the students had been determined. This was supported by the study of Alhussein (2015), who recommended the adoption of ABA courses for student teachers, based on both theoretical and practical aspects, as well as providing the opportunity to experience their knowledge in a realistic manner. One participant stated:

"[Field training], for example, assigning students some duties that require them to go to the field, and that [field training] starts from the second year. The more they go out in the field, the more cases they will get to know, and the more teachers they will meet, and the more experience they will gain." (Teacher from Centre [2])

A further area of development highlighted by the participants of the current study concerned access to research, including the benefits of learning the basics of a scientific research. One teacher stated:

"The graduates should learn the basics of research, including [how to understand] new studies and see them, and also [how to] research in a foreign language." (Teacher from Centre [2])

Several points of view were expressed regarding the need for modern teachers to benefit from existing practitioners. The participants also suggested the benefits of exchanges to benefit from

the experience of practitioners in the field in their application of strategies. One participant stated:

"I need to watch people practicing in the field to become familiar with the background. For example, we attend some exchanges of visits between teachers. It is very important. As a new teacher, I benefit from those who have previous experience." (Teacher from Centre [1])

CONCLUSION

In conclusion, this study has identified several challenges to the use of ABA strategies with students with ASD. In addition, it concludes that these can be overcome by implementation of the proposed solutions.

This study focused on the views of teachers of students with ASD regarding their experiences and expertise in ABA strategies, particularly in terms of identifying obstacles to their use and the relevant solutions. The findings indicate the inadequacy of administrative systems in using ABA strategies, in addition to the lack of management support for their use with students with ASD. In addition, the participants highlighted the vital importance of moral support, along with its current absence.

Furthermore, one of the participants referred to the lack of sufficient organization of the classroom environment, including an increasing number of students in the class, resulting in having to deal with a wider range of ASD behaviors. The participants agreed that the greatest challenge facing their use of these strategies consisted of the lack of an assistant teacher, and their need for rest. The participants unanimously agreed that a major obstacle was their lack of familiarity with the strategies appropriate for students with ASD, which led many female teachers in the field to exclude their use due to a lack of motivation.

The participants were also unanimous in stating that one of their most common problems related to their professional preparation, whether during their study period or at the beginning of their employment. This particularly related to the fact that their training focused on the theoretical, rather than the practical, aspects of delivering these strategies. Additionally, the participants noted the lack of professional preparation programs available at the centers for new female teachers in the field. Furthermore, one of the most prominent problems identified by the current research concerned the low quality of the training

programs offered at the centers, as well as difficulties in accessing the courses, that is, management failing to facilitate attendance at external courses.

Moreover, the participants noted a lack of cooperation from families when it came to using the strategies, which increased the responsibility of the teacher for their application, particularly when there were shortcomings in support on the part of the team and the psychologist.

RECOMMENDATIONS

The above identification of the most prominent obstacles experienced by teachers of students with ASD has resulted in the participants offering several suggestions to facilitate their use of ABA strategies. Firstly, they indicated the need to improve the organization of the classroom environment, including rendering it free from distractions. Secondly, they suggested restricting the numbers of students, suggesting that this should be between four and eight. Thirdly, they noted the importance of highlighting students' behaviors, to ensure a class does not include an overwhelming behavior. Fourthly, they considered one of the most important improvements would be to provide permanent moral stimulation, including guidance and follow up information on how to implement the strategies. In addition, they felt that management should be required to both adopt the strategies and provide the appropriate support. Fifthly, they suggested the importance of educating families about the strategies. They suggested conducting group counselling sessions with the family and the team, to discuss the most important strategies appropriate for students with ASD. Sixthly, they proposed the quality of training programs could be improved by the provision of practical workshops, including bringing in specialists to provide courses, and choosing modern topics beneficial for the employment of the strategies. Finally, the participants also made suggestions for preparing female teachers prior to service, the most prominent being to accompany the study period with additional training.

CONFLICT OF INTEREST DISCLOSURE STATEMENT

We do not have any interests that might be interpreted as influencing the research. Additionally, this manuscript has not been submitted

to any other journal, nor is it under consideration for publication with any other entity.

ETHICAL CONDUCT STATEMENT

That Internal Review Board (IRB) approval for the use of human subjects was granted prior to conduct of the research and guidelines were adhered to throughout the research process.

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