

**The Cultural Impact on the Use of ABA as an Intervention  
Tool for Learners with ASD in Dubai and Lebanon  
(Comparative Study)**

الأثر الثقافي لاستعمال أداة تحليل السلوك التطبيقي كوسيلة تدخل لتعليم طلاب التوحد  
دراسة مقارنة بين دبي ولبنان

by

**HALA ALI SHIBLI**

**Dissertation submitted in fulfilment  
of the requirements for the degree of  
MASTER OF EDUCATION**

at

**The British University in Dubai**

**October 2019**

## DECLARATION

I warrant that the content of this research is the direct result of my own work and that any use made in it of published or unpublished copyright material falls within the limits permitted by international copyright conventions.

I understand that a copy of my research will be deposited in the University Library for permanent retention.

I hereby agree that the material mentioned above for which I am author and copyright holder may be copied and distributed by The British University in Dubai for the purposes of research, private study or education and that The British University in Dubai may recover from purchasers the costs incurred in such copying and distribution, where appropriate.

I understand that The British University in Dubai may make a digital copy available in the institutional repository.

I understand that I may apply to the University to retain the right to withhold or to restrict access to my thesis for a period which shall not normally exceed four calendar years from the congregation at which the degree is conferred, the length of the period to be specified in the application, together with the precise reasons for making that application.

***Hala Shibli***

Signature of the student

## **COPYRIGHT AND INFORMATION TO USERS**

The author whose copyright is declared on the title page of the work has granted to the British University in Dubai the right to lend his/her research work to users of its library and to make partial or single copies for educational and research use.

The author has also granted permission to the University to keep or make a digital copy for similar use and for the purpose of preservation of the work digitally.

Multiple copying of this work for scholarly purposes may be granted by either the author, the Registrar or the Dean only.

Copying for financial gain shall only be allowed with the author's express permission.

Any use of this work in whole or in part shall respect the moral rights of the author to be acknowledged and to reflect in good faith and without detriment the meaning of the content, and the original authorship.

## **ABSTRACT**

This research set out to carry out a mixed methods study on the cultural impact on the use of ABA as an intervention tool for learners with ASD in Dubai and Lebanon. The survey responses intended for use in the collection of quantitative data were so small, the research was only able to use these results for triangulation value. However, the collection of qualitative data through semi-structured interviews (3) and questionnaires (3) were quite instructive. Ultimately this research findings confirm findings in the literature and in doing so inform that culture has a trickle-down effect on parents who pose the greatest challenges for those who implement and apply the ABA program as an intervention tool for learners with ASD in both Dubai and Lebanon. The study also found that teachers can benefit from greater knowledge and understanding of the ABA program in order to improve both Dubai and Lebanon's commitment to inclusion policies and practices. Based on the results of this research recommendations are made to improve the effectiveness of the ABA program as an effective tool intervention on behalf of learners with ASD. Recommendations are aimed at targeting parents, teachers and government/policy makers with a view to eliminating the risk of cultural impacts on the effectiveness of ABA as an intervention tool for learners with ASD in both Lebanon and Dubai. This research also identified areas for further research with a view to identifying just how the ABA program can be more effectively implemented and applied globally.

## ملخص البحث

انطلق هذا البحث لإجراء دراسة طرق مختلطة حول التأثير الثقافي على استخدام ABA كأداة تدخل للمتعلمين مع ASD في دبي ولبنان. كانت إجابات المسح المخصصة للاستخدام في جمع البيانات الكمية صغيرة جدًا ، ولم يتمكن البحث إلا من استخدام هذه النتائج لقيمة التثليث. ومع ذلك ، فإن جمع البيانات النوعية من خلال المقابلات شبه المنظمة (3) والاستبيانات (3) كانت مفيدة للغاية. في نهاية المطاف تؤكد نتائج البحوث هذه النتائج في الأدب ، وبذلك تبليغ أن الثقافة لها تأثير هائل على الآباء والأمهات الذين يشكلون أكبر التحديات بالنسبة لأولئك الذين يقومون بتنفيذ وتطبيق برنامج ABA كأداة تدخل للمتعلمين مع ASD في كل من دبي و لبنان. ووجدت الدراسة أيضًا أنه يمكن للمدرسين الاستفادة من معرفة وفهم أكبر لبرنامج ABA من أجل تحسين التزام كل من دبي ولبنان بسياسات وممارسات الإدماج. بناءً على نتائج هذه التوصيات البحثية ، تم تطويرها لتحسين فعالية برنامج ABA كتدخل أداة فعال نيابة عن المتعلمين الذين يعانون من ASD. تهدف التوصيات إلى استهداف أولياء الأمور والمعلمين وصانعي السياسة / الحكومة بهدف القضاء على مخاطر الآثار الثقافية على فعالية ABA كأداة تدخل للمتعلمين الذين يعانون من ASD في كل من لبنان ودبي. حدد هذا البحث أيضًا مجالات لمزيد من البحث بهدف تحديد كيفية تنفيذ برنامج ABA وتطبيقه على نحو أكثر فعالية على المستوى العالمي.

## **Dedication**

This work is dedicated to all those who believed in me and in my passion for higher learning.

**My loving parents** Ali and Raoufa...Thank you for all your love and encouragement.

**Baba**, you've always believed in me, you gave me your support, and your words "Haala, just be sure that whatever you need I'm here for you", those words shed light on my path and made me promise myself that I will do it, because of YOU.

**Mama** I'm sorry for all the days I missed going out with you. There is a secret you need to know. It broke my heart every time I had to leave you and go for interviewing people. But, I think today you are proud that I achieved a dream... I love you wholeheartedly.

**My beloved kids Dunia, Hassan and Leen.** This journey started because of you ...I want to say sorry for all the times I had to leave you alone, all the times I couldn't listen to your problems, all the times I couldn't hug you, kiss you, go out with you. Sorry for all the times I was stressed and asked you to stop nagging. I surely missed a lot the past two years. But here we are today. I need you to know that nothing should stop you from achieving your dreams. I am so blessed to be your MOM.

My sister **Ahlam**...My brothers **Rabi and Haisam**...thank you for all your love and motivation.

For **Leila**...a sister who always knew I could do it and that the sky was the limit. You cleared my path and gave enormous support. Nothing is enough to say THANK YOU.

To Professor Eman Gaad...my mentor and idol.. Thanking you is never enough.

## ACKNOWLEDGEMENTS

My special Thanks goes to YOU

TO YOU and only YOU...YOU know who YOU are... I extend my special thanks and gratitude...a big part of who I am today is because YOU have inspired me so much with your knowledge, love, wisdom, and unconditional support. YOU represent the reason behind all my dreams and success... THANK YOU for BEING YOU!

من حكاية حلم...من أفكار كنت قد كتبتها على أوراقى..وخبنتها داخل خزانتي القديمة..

أحلام لم تتجاوز يوما حدود تأملات طفلة بريئة بربيع عمر قادم..ب فارس أمير يأتي على حصانه الأبيض ليحررها من قيود معصمها...

وها أنت اليوم..لم تعد حلما..ولم تعد أفكار طفلة..

اليك اليوم أهدي ما جنيته بعد تعب وسهر..أهديك حلما كنت أنت من شاركني اختياره..وكنت أنت من دعم اصراي وتحمل غضبي وتقلب مزاجي...

معنا حققنا حلما..ومعا باذن الله سنحقق أحلاما قادمة..

اليك أقول...

لن أبني بعد اليوم قصورا على رمال شواطئ أحلامي...

سأبني معك مستقبلا أفخر به أبدا ما حييت...

لك كل حبي واحترامي...

هالة

## Table of Contents

<b>COPYRIGHT AND INFORMATION TO USERS</b> .....	
Chapter 1: Introduction and Background.....	1
1. Introduction.....	1
1.1 Background.....	3
1.2 Rationale/ Justification for the Study.....	5
1.3 Statement of the Problem.....	6
1.4 Aim and Objectives.....	7
1.5 Research Questions.....	8
1.6 Organization of the Study.....	8
Chapter 2: A Review of Literature.....	9
2. Introduction.....	9
2.1 ASD: Concepts and Definition.....	9
2.2 ABA as an Adequate Intervention for ASD.....	15
2.3 Comparison between Special Education Needs in Lebanon and Dubai: Education System and Structure.....	21
2.3.1 Lebanon.....	21
2.3.2 Dubai.....	22
2.4 Conceptual Framework.....	23
Chapter 3: Research Methodology.....	27
3. Introduction.....	27
3.1 Research Methods.....	27
3.2 Research Philosophies.....	29
3.3 Data Collection.....	30
3.3.1 Research Instruments.....	30
3.4 Sampling.....	31
3.5 Data Analysis.....	32
3.6 Credibility, Reliability and Trustworthiness.....	33
3.7 Ethical Considerations.....	34

3.8 Limitations of the Study.....	34
Chapter 4: Results and Analysis.....	35
4. Introduction.....	35
4.1 Results.....	35
4.1.1 <i>Interviews</i> .....	35
4.1.2 <i>Questionnaires</i> .....	38
4.1.3 <i>Survey Results</i> .....	43
4.2 Analysis.....	53
Chapter 5: Conclusion.....	58
5. Introduction.....	58
5.1 Conclusion.....	59
5.2 Recommendations.....	60
5.3 Weakness of the Research.....	61
5.4 Strengths of the Research.....	61
5.5 Areas for Further Research.....	62
Bibliography.....	72

## **Chapter 1: Introduction and Background**

### **1. Introduction**

This research study explores and describes the cultural impact on the use of Applied Behavioral Analysis (ABA) as an intervention tool for learners with autism in Dubai and Lebanon. The research is carried out using a mixed method approach in which empirical data is collected from a sample population of teachers and special needs teachers in Dubai and Lebanon. The data is collected using semi-structured interviews and surveys.

This research has been necessitated by a lack of scholarly interest in the treatment of ASD in the Middle Eastern region. According to Kelly, Alireza, Busch, Northrop, Al-Atrash, Ainsleigh and Bhuptani (2016), although autism is growing in prevalence, the literature on treatment options for autism in the Middle East is largely absent in the literature (p.1). This is a very important area of study because culture shapes attitudes and perspectives on ASD and whether and what kind of treatment option should be applied (Ennis-Cole; Durodoye and Harris, 2013, p. 3). What it comes down to is a parent's decision to support intervention as well as parental and group attitudes towards ASD and the effectiveness of treatment (Ennis-Cole, et al., 2013, p. 3). These attitudes can influence parents' decisions to seek and support intervention.

Although research on the effectiveness of ABA as an intervention tool for ASD learners have produced encouraging results there is still a need for further research to fortify its effectiveness (Smith, 2012, p. 101). Cultural impacts are very important because although the diagnosis is the same for all cultures, different cultures react differently to the acceptance of the ASD diagnosis and interventions (Fong and Lee, 2017). According to Fong and Lee (2017), cultural experts or special needs teachers with cultural expertise can be involved in the ABA intervention process to ensure its effectiveness.

When we look at the different cultures in Dubai and Lebanon the need for research on the cultural impact on ABA intervention for learners with autism is important. Lebanon is a very small country which only received state status in 1943 (Abdulrahim; Ajrouch and Antonucci, 2015, p. 511). The country's short history has been sabotaged by war and political instability. For the present the country is very diverse with shared governance between the Christian Maronites, Shia Muslims and Sunni Muslims (Abdulrahim, et al., 2015, p. 512). Located in west Asia and shrouded by the Mediterranean Sea on its west side and with Syria to the northeast and Israel and Palestine to its south, Lebanon is perceived as a nexus between the West and the East (Abdulrahim, et al., 2015, pp. 511-512).

Based on Lebanon's small size and short history together with its location and religious proportionality one can expect a unique cultural influence with regards to the diagnosis and treatment of autism. The population of Lebanon is less than five million and most of the population are old with youth migrating outward Abdulrahim, et al., 2015, pp. 511-512). Dubai, on the other hand is a Muslim city with a relatively large population in the UAE. Dubai's population is just under three million. Dubai was established in the 19<sup>th</sup> century and has a very large youth population and rapidly improving economy. Although tolerant of other religions, Islam rules the lives and regulations of Dubai and the rest of the UAE (World Population Review, 2019).

There are obvious differences in the cultural parameters of Dubai and Lebanon. This research study will determine the extent to which these cultural differences have an impact on the ABA intervention for ASD learners. For example, the religious values and/or youth culture compared to an elderly culture may have different impacts on the perceptions of diagnosis and treatment of ASD.

## 1.1 Background

Globally, ASD has increased annually (Elsabbagh; Divan; Koh; Kim; et al., 2012, p. 160). Still, culture, resources, professional and personal limitations on diagnostic capabilities and perceptions have made it difficult to obtain a true reflection of just how much the prevalence of ASD has increased globally and especially in developing countries where knowledge and perception culture are more limited (Elsabbagh, et al., 2012, p. 160). Culture is therefore a very important element in the diagnosis, acceptance and treatment of ASD. It also appears from the literature that culture plays a significant role in the underestimation of ASD prevalence and treatment effectiveness in developing countries.

An increase in the number of children with ASD corresponds with an increase in demand for evidence-based solutions/treatments (Roane, Fisher, and James, 2016, p. 27). In the United States (US) forty-three states have passed insurance legislation for coverage of an ASD treatment. A vast majority of the legislation requires Applied Behavioral Analysis (ABA) concepts for insurance coverage treatment (Roane, et al., 2016, p. 27).

There are several diverse intervention programs for ASD with uncertain effectiveness (Vismare and Rogers, 2010, p. 447.) However, the most popular and trusted intervention tool is ABA (Vismare and Rogers, 2010, p. 447). In fact, ABA has strong support in the literature where it is described as “an evidence-based option” with a “strong evidence base” (Welch and Polatajko, 2016, p. 1). Still there are concerns expressed in the literature on the impact of culture on the effectiveness of ABA and other intervention tools aimed to at learners with ASD. The effect of Islamic and non-Islamic culture on ABA intervention tools in developing countries will provide some much-needed insight into how knowledge and acceptance of ASD and the effectiveness of

treatment can be improved for a more accurate compilation of prevalence and acceptance of ASD and its intervention options.

According to a study carried out by Chaaya, Saab, Maalouf and Boustany (2016) there are no reports or records of whether autism is widespread in Lebanon (p. 514). Therefore, the authors carried out a study with the intention of identifying how prevalent ASD was among toddlers in Beirut and Mount-Lebanon's nursery schools (Chaaya, et al., 2016, p. 514). The study collected data from 177 nursery schools which included a sample population of 998 toddlers. The results show that at least 1 in 66 toddlers had ASD (Chaaya, et al., 2016, p. 514). Saab, et al., (2016), concluded that 1.53% of toddler population in all of Lebanon had ASD (p. 1). A study carried out by Hamada, Salameh, Medlei-Hashim; Jaji-Moussa; Saadallah-Zeidan and Rizk (2013), revealed that in Lebanon, most of the autistic babies are male making up 79.1% (p. 119).

Autism awareness and programs for intervention are difficult in Lebanon which has been engulfed in significant war and political unrest and internal conflicts for many years (Dirani and Raad, 2018). For the most part, assistance for any member of the population with disabilities is done primarily through the private sector (Dirani and Raad, 2018). Private organizations such as the Autism Center and Autism Awareness Association are non-governmental organizations committed to helping families and children impacted by autism. This study identifies the extent to which ABA is applied and how it has worked so far.

On the other hand, Dubai, an oil producing country in the Middle East with relative peace and stability is expected to have a different outcome in terms of autism intervention. Still, Al-Abbady, Hessian, and Alaam (2017) describe autism as a challenging and significant public health concern in the UAE (p. 1). The prevalence of autism is not matched by available care (Al-Abbady, et al., 2017, p. 1). This is most likely because culture plays a part in how disabilities are viewed. In the

UAE and elsewhere in the Middle East, there is a lack of interest in ASD and as a result, the UAE lags behind Western countries in their treatment of ASD children (Nahad, 2015, p. 141).

This research will be carried out through a mixed methods research design. The data will be collected from among teachers and special needs teachers who have experienced or are experiencing the phenomenon of ASD among children in Lebanon and Dubai in the UAE. The research instruments used to collect data are semi-structured interviews among 10 teachers and special needs teachers. A closed-ended survey will be used and will be distributed among a population of a least 25 teachers and special needs teachers. The research methodology is more specifically described in the methodology chapter of this dissertation.

## **1.2 Rationale/ Justification for the Study**

The researcher is academically invested in the subject of Autism and completed an online course on Understanding autism from the University of Kent. This research is one way for the researcher to share and improve the researcher's current understanding of autism. Moreover, a preliminary review of literature reveals that the prevalence and diagnosis of ASD and intervention tools success and cultural impacts are understudied in developing countries such as Lebanon and the UAE. The difficulty arises because of a knowledge and capability cultural deficit which impacts the accuracy of diagnosis and intervention tools. As a result, there are many instances in which individuals may have ASD and are candidates for treatment in developing countries, but they are neither diagnosed nor treated.

A culture that cultivates doubts in the effectiveness of ASD intervention tools will foster a culture of resistance to accepting ASD diagnosis. In such a culture it is also expected that parents and other caregivers will not have the ability to identify nor report symptoms of ASD. This will

obviously have a negative impact on the ability of professionals to diagnose ASD and of course this hinders the likelihood of a prescribed treatment.

In addition, this pervading culture where knowledge and acceptance of ASD intervention programs are low will have a negative impact on the effectiveness of the application of ABA. Given that Lebanon and the UAE have been described as states where knowledge and acceptance of ASD are low, this study is justified and rationalized. By carrying out this study, effective solutions can be identified for penetrating cultural barriers to improving knowledge and acceptance of ASD and ABA interventions.

### **1.3 Statement of the Problem**

According to the World Health Organization (WHO) one out of every one hundred and sixty children have ASD worldwide. ASD starts during childhood and usually carries on until the child becomes an adult. Although some ASD sufferers can be independent, those with more serious ASD disabilities cannot survive on their own (World Health Organization, 2018). Interventions based on empirical research findings indicate that “behavioral treatment and parent skills training programs” can decrease communication and social difficulties and positively influence the quality of life of the ASD sufferer as well as those upon whom they rely for assistant (World Health Organization, 2018).

ASD is a “serious neurodevelopmental disorder” which creates a significant “burden for individuals, families, and society” (Xu; Strathearn; Liu and Bao,2018, p. 81). Reports in the literature indicate that cases of ASD are found all over the world and these cases are increasing substantially (Onaolapo and Onaolapo, 2017, p. 14). The greatest problem however is getting a genuine estimate of ASD cases particularly in developing countries (Onaolapo and Onaolapo,

2017, p. 14). Culture and attitudes toward Autism have a negative impact on the motivation to diagnose and treat autism among those affected (Onaolapo and Onaolapo, 2017, p. 14).

Obviously, the difficulties that the individual, the care giver, families and society suffer with regards to ASD require greater attention to programs such as ASD for easing these burdens. The problem has always been that much of the research on ASD have focused almost entirely on English speaking populations (Samadi and McConkey, 2011). This means that many developing countries are left out of the research parameters where adequate solutions may be found.

Therefore, in order to close this gap in the literature, it is necessary to turn attention to prevalence, diagnosis and treatment options in specific developing countries. This study seeks to close this gap in the literature by focusing on two developing countries and by delimiting the study to the ABA program as a solution in the UAE and Lebanon.

#### **1.4 Aim and Objectives**

##### **Aim**

The Aim of this study is to determine the effectiveness of the ABA program for children with ASD in Lebanon and the UAE.

##### **Objectives**

- The objectives of this study are:
- To shed some light on the ABA program as a form of treatment for children with ASD.
- To gain insight into the effectiveness of the ABA program.
- To identify the strength of the ABA program in the context of children with ASD in the UAE and Lebanon.

- To identify methods for improving the effectiveness of the ABA program for children with ASD in the UAE and Lebanon.

### **1.5 Research Questions**

The research questions guiding this research in the acquisition of the research aim and objectives are:

- To what extent is ABA culturally affected as a tool for intervention for learners with ASD in Dubai?
- To what extent is ABA culturally affected as a tool for intervention for learners with ASD in Lebanon?
- What are the similarities between the cultural impact on the use of ABA as an intervention tool for learners with ASD in Lebanon and Dubai?
- What are the differences between the cultural impact on the use of ABA as an intervention tool for learners with ASD in Lebanon and Dubai?

### **1.6 Organization of the Study**

The study is divided into five chapters which are organized and presented as follows:

Chapter 1: Introduction to the Study

Chapter 2: Review of Literature

Chapter 3: Research Methodology

Chapter 4: Results and Analysis

Chapter 5: Conclusion

## **Chapter 2: A Review of Literature**

### **2. Introduction**

This chapter reviews the relevant literature on the ASD and ABA. Therefore, the chapter is divided into three parts. The first part of this chapter will provide a review of literature on what ASD is, how it effects concerned individuals and parties and its prevalence, treatment and perspectives on it in developing countries such as the UAE's densely populated city of Dubai and the country of Lebanon. The second part of this chapter reviews the literature on ABA as an effective ASD treatment program and its use in developing countries with a special emphasis on Dubai and Lebanon. The third part of this chapter examines the literature on the education system and structures effecting students with special needs in Dubai and Lebanon.

#### **2.1 ASD: Concepts and Definition**

ASD is defined as a “behaviorally defined neurodevelopmental disorder associated with the presence of social-communication deficits and restricted and repetitive behaviors” (Ousley and Cermak, 2014, p. 20). The DSM-5<sup>th</sup> diagnostic criteria defines ASD as consisting of “persistent deficits in social communication and social interaction across multiple contexts” which are evidenced by three parameters (Reynolds and Kamphaus, 2013, p. 2).

The first of the three parameters is “deficits in social-emotional reciprocity” where the individual diagnosed with ASD has difficulty with appropriate social skills, difficulty maintaining two-way conversations identifying common interest, “emotions, or affect” and a “failure to initiate or respond to social interactions” (Reynolds and Kamphaus, 2013., p. 2). Secondly, persons with autism have problems with “nonverbal communicative behaviors” in social situations (Reynolds and Kamphaus 2013, p. 2). Finally, the person diagnosed with autism has difficulties “developing,

maintaining, and understanding relationships” which means he or she will have problems with interpersonal interactions, playing or “making friends” and a lack of “interest in peers” (Reynolds and Kamphaus, 2013, p. 2).

Other patterns identified by the DSM include “restricted, repetitive patterns of behavior” which can include speech or treatment of objects (Reynolds and Kamphaus, 2013, p. 2). For example, the person diagnosed with ASD may line objects up according to commonalities or repeat “idiosyncratic phrases” (Reynolds and Kamphaus, 2013, p. 2). The individual diagnosed with autism may also insist on “sameness” and inflexibility regarding “routines” and may manifest “ritualized patterns of verbal or nonverbal behavior” (Reynolds and Kamphaus, 2013, p. 2). Interest are also fixed and constrained. A person with ASD will also manifest “hyper- or hyporeactivity to sensory input or unusual interest in sensor aspects of the environment” (Reynolds and Kamphaus, 2013, p. 2). However, intellectual impairment is not always present (Reynolds and Kamphaus, 2013, p. 3).

The patterns and themes identified by the DSM as consistent with ASD can be explained away by reference to cognition deficits in executive functions, a “weak central coherence” and theory of the mind (Kimbi, 2014, p. 329). Ultimately, theory of the mind is an assumption about the ability of children to replicate and “understand others’ mental states such as goals, emotions and beliefs” (Kimbi, 2014, p. 329). Studies centered around theory of the mind have found that when an individual has ASD, such an individual child will have theory of the mind deficits (Kimbi 2.14, p. 329). Ultimately, what this means is that:

...individuals with ASD, for the most part, perform significantly lower on tasks designed to measure ToM than individuals with typical development (Kimbi, 2014, p. 329).

The deficits are manifested in a number of theories of the mind “tasks” which include any task that examines falsified beliefs, fake images or the “inference of mental states from photographs” (Kimbi, 2014, p. 330). Research has also revealed that the chances of succeeding depends on the age, intelligence and the type of tasks undertaken (Kimbi, 2014, p. 330).

There are differences in the reports of prevalence of ASD in developed countries compared to developing countries. To this end, reports of autism from developed countries indicate a high rate where developing countries report a low rate. However, this disparity can be explained by the fact that treatment programs are for the most part not available and there is a “dearth of the requisite health care professionals” (Uwaezuoke, 2015, p. 152). It is also possible that this disparity can be explained by a higher rate of treatment outcomes in developing countries. The lack of data from these countries leaves the question open to multiple interpretations.

Most of the studies in the literature are focused on ASD in developed countries where the wherewithal to diagnose and treat ASD is voluminous compared to developing countries (Taha and Hussein, 2014, p. 2509). In Arab countries the area of child psychiatrics is very new compared to elsewhere in the world. Autism did not become a topic of concern at all in the Arab countries until the latter part of the 1990s. For the time being there is a “lack of awareness and culture are well as a lack of resources” for contributing to the unsatisfied “needs of autism patients in the region” (Taha and Hussein, 2014, p. 2509).

A study carried out by Obeid, Daou, DeNigris, Shane-Simpson, Brooks and Gillespie-Lynch (2015) helps us to understand the impact of culture on the conceptualization of ASD. According to Obied, et al., (2015), conceptualizations of ASD is different from one culture to another (p. 1). Obied, et al., (2015), carried out a study that compared ASD conceptions between the US and Lebanon. The research was conducted among a sample of 346 students in US colleges with ASD

and 328 college students with ASD in Lebanon. Research findings revealed that US college students with ASD knew more about ASD and had lower stigma about ASD than their Lebanese cohorts (Obied, et al., 2015, p. 1).

In another study carried out by Al Rayess (2014), there appears to be some progress in terms of the attitudes of elementary teachers in relation to the inclusion of their students with autism. Al Rayess' (2014) study was carried out among 35 elementary school teachers and measured the attitudes of elementary school teachers regarding the inclusion of children with autism. The study was conducted with the use of the Autism Attitude Scale for Teachers. Results revealed that teachers in general had positive attitudes toward the inclusion of children with autism, but special needs teachers had a far more positive attitude (Al Rayess, 2014, p. 8). These positive attitudes are important because it reflects a positive culture among Lebanese teachers who encounter children learners with ASD. This positive culture is linked to a willingness and patience to implement and effectively use intervention strategies.

As of 2014 reports indicate that in Lebanon, the rights of individuals with disabilities are “broadly infringed upon” (Sida, 2014, p. 2). Apparently, when attempting to obtain assistance from health services, individuals with disabilities in Lebanon are confronted by discriminatory reactions. This discrimination also persists when people with disabilities apply for jobs and credit facilities in banks. Discrimination in the popular schools also forces disabled children to enroll in “residential state institutions” or to forget about getting an education altogether (Sida, 2014, p.2).

UNESCO (2013) also reports that Lebanon's Law 220/2000 offers significant protection against discriminatory treatment of individuals with disabilities and requires inclusive services. Still, there are some lapses. To begin with there are no government funded medical aid for individuals with disabilities (UNESCO, 2013). Moreover, education has also suffered because despite the inclusion

and equality parameters of the 200/2000 law, only five schools in Lebanon offer services to children with physical disabilities. While there are other schools available to children with disabilities, teachers lack training to “deal with disabilities and to monitor integration of students with disabilities in schools” (UNESCO, 2013, p. 15).

As it currently stands there is a significant gap between the needs of those diagnosed with autism and the services available in Arab countries (Taha and Hussein, 2014, p. 2509). According to Obied, et al. (2015), “many cases of ASD go unidentified in Arab countries due to insufficient understanding of ASD among the public and a lack of trained professionals” (p. 1). Moreover, government funded and available ASD education programs are hardly ever accessible and available and where they are, the programs are of sub-standard quality (Obied, et al., 2015, p. 1). This research study draws attention to this gap with a view to identifying the utility of ABA as a method for narrowing the gap between autism needs and services in the Arab region.

Based on the cultural differences and its impact on the conceptualization of ASD one can expect that in countries such as Lebanon and other Arab countries, the lack of knowledge and understanding of ASD can lead to stigmatism and a lack of diagnosis and treatment. One can also expect that where ASD does exist and is identified in these kinds of cultures where there is a knowledge deficit and high stigmatism, treatment programs may not be well-funded nor well-organized. Therefore, where those diagnosed with ASD do receive treatment it may not be as productive nor effective as it can be.

Ultimately, it is the culture and societal values and beliefs that direct just how disabilities such as ASD are defined and perceived (Ennis-Cole; Durodoye and Harris, 2013, p. 1). Cultural and societal values and beliefs will certainly direct just how families and patients feel about disabilities and the utility of obtaining intervention programs (Ennis-Cole, et al., p. 1). Much will depend on

how others within a culture view ASD and intervention options. Thus, studies in locations which as Lebanon and Dubai where culture can be diverse and centralized is important for determining the effectiveness of ASD intervention tools such as ABA which is a popular and trusted intervention tool globally.

In a study of 86 Lebanese children with ASD the results indicate that future ASD cases can be avoided. This is because the study results discovered themes that can be avoided to lower the risk of autism. According to this study, children with ASD were more frequently linked to older parents, living near industrial areas, an unhappy mother while pregnant and infections during childhood (Khalifeh; Yassin; Kourtian and Boustany, 2016, p. 112). It would therefore appear that should these conditions be avoided, the risk of developing ASD in Lebanon may be lowered significantly. One unavoidable risk of ASD among Lebanon children was the male gender as most children with ASD in Lebanon were found to be male (Hamade, Salameh; Medlej-Hashim; Hajj-Moussa; Saadallah-Zeidanand and Rizk, 2013, p.1).

Nahad (2015) shares her experience as a parent of a child with ASD in the UAE when her child was diagnosed during 2003. At that time, Nahad (2015) noticed symptoms and was referred to a psychology clinic in Dubai. There, her son was diagnosed with ASD, but no treatment of any form was recommended as the clinic did nothing more than diagnose the problem. One of the main reasons, autism is difficult to deal with in the UAE is the cultural views of it. According to Nahad (2015) the Arab culture views autism as a disability which is in turn viewed as a burden to both families and communities. Moreover, most Arabs are not inclined to deal with “psychologists or psychiatrists” (Nahad, 2015, p. 143). Ultimately, autism is viewed by Arabs in the UAE as “a stigma which should be overlooked or even ignored if possible (Nahad 2015, p. 143). Parents struggle to cope with or accept that their children have ASD (Nahad, 2015, p. 143). While these

generalizations cannot be accepted as genuinely representative of the population in the UAE, a study centered on Dubai can confirm or deny these sorts of reports in the literature.

It is important to note however, that Nahad's (2015) article represents the lack of research on ASD and treatment options in developing countries such as the UAE. The study was carried out in 2015 and reflected on a diagnosis that first occurred in 2003 when her son was only five years old. The study carries on sharing her experiences up until her son was 17 years old. Still, one can expect that things may have changed since the diagnosis and thereafter. After all, a conference was held in Dubai on ASD globally and it was attended by experts from Australia, the US, Pakistan, Bangladesh and other Middle Eastern countries. It established at the conference that there was only one hospital in the UAE committed to childcare where the first ASD conference was held in the country (Harvard Medical School, Center for Global Health Delivery, 2017, p. 2). That is why this study is important for filling gaps left in the literature.

Culture and policies therefore appear to significantly impede willingness to diagnose and treat ASD among both Lebanese and Arab families. It also appears that together, the culture and policies have created an environment where the needs of autistic children are not prioritized. Therefore, it is up to parents to seek assistance and help for their autistic children in countries where support is inconsistent. The negative impact of culture can also be observed in developed countries. For instance, a study on a sample of Latin mothers in the US showed that "culturally informed parent education intervention" can improve both parent and child results in ASD intervention tools (Lopez, Magana, Morales and Iland, 2019, p. 1).

## **2.2 ABA as an Adequate Intervention for ASD**

There are three categories behind the science of behavior. The three categories are experimental analysis and behaviorism or behavior philosophy and ABA/applied behavior analysis (Leaf,

Cihon, Ferguson and Weinkauff, 2017, p. 25). ABA was developed by Baer and his colleagues in 1968 and essentially the production of interventions in education, disabilities and ASD and other psychological areas (Slocum, Etrich, Wilczynski, Spencer, Lewis and Wolfe, 2014, p. 41). ABA focuses on helping patients resolve social problems in social settings (Slocum, et al., 2014, p. 41). ABA is not a “single treatment” but rather a series of approaches to helping to deal with “behavioral symptoms associated with childhood psychopathology and the behavioral challenges associated with developmental disabilities” (Ringdahl and Falcomata, 2009, p. 29-30). As such, ABA leans on the arrangement of “response-consequence relationships” which include positively and negatively reinforcing and punishing behavior (Ringdahl and Falcomata, 2009, p. 30). The idea is to aid in the decrease of problematic behavior and to increase satisfactory conduct patterns (Ringdahl and Falcomata, 2009, p. 30).

The use of ABA as an effective treatment program for children diagnosed with ASD has been archived in the literature. A study carried out by Vietze and Lax (2014), tested the validity of the ABA on ASD children. The study was carried out among a population of 106 children less than 40 months old. Base line measurements and post ABA measurements were taken. Research findings indicate that the children demonstrated important improvements in their cognition, motor, socio-emotional, communication, adaptive and behavior together with a decrease in ASD symptoms and obstacles to learning (Vietze and Lax, 2014, p. 1). Ultimately, this study concluded that early intervention was the key to successfully treating children and getting them to a place where they can socialize and learn effectively.

There is a paucity of literature on ABA intervention services in the Arab Middle East (Kelly, et al., 2016, p. 1). So far it has been established that the UAE does not have a policy for the licensing and provision of ABA although the treatment program is available through several ASD centers

and in both private and public schools in the UAE (Kelly, et al., 2016, p. 11). The extent to which ABA is available in Dubai through treatment programs at ASD centers in private public schools will be determined by this research study. This kind of data will go a long way toward narrowing gaps in the literature on the intervention tools available for intervening in ASD learners in key locations in the Arab Middle East.

In fact, Hussein and Taha (2013) examined the literature on ASD in Arab countries and found that between 1992 and 2012 there were only 75 articles published. A vast majority of these articles were published on autoimmune theory and were primarily focused on Saudi Arabia and Egypt. Hussein and Taha (2013) argued that there is obviously a significant need for further research on ASD in Arab countries in order to improve knowledge and understanding of the disorder in Arab contexts with a view to determining “the most effective and efficient means of improving diagnosis and service delivery” in each “country, culture and governmental structure” (Hussein and Taha, 2013, p. 106).

In other words, there is no one-size fits all criteria for diagnosing and treating ASD. Much depends on the resources, culture and contexts in which children diagnosed with ASD must exist. Although there is a temptation to place all Arabs diagnosed with ASD into one category there are cultural and governmental differences that can impact the diagnosis and treatment of ASD. What may be effective in one culture may not be as effective in another. Therefore, this study contributes to our knowledge and understanding of the diagnosis and treatment of ASD in the Arab contexts by identifying two countries and their shortcomings and needs.

Liao, Dillenburger and Buchanan (2017) carried out a qualitative study on a sample of ABA professionals and parents with students with ASD from the UK and China (p. 1). The study found that culture not only impacted the intensity and commitment to ABA but also policies for using

and applying ABA interventions (Liao, et al., 2017, p. 1). Research findings revealed that in China, the delivery of ABA interventions was primarily based on parental centrality whereas, in the UK, parental cooperation was encouraged, the staff took center stage (Liao, et al., 2017, p. 7).

Culture can be an entirely destructive force for poor families that rely on the public education system in Lebanon. According to the Human Rights Watch report, education is reportedly available to all children with exception. Yet, children with disabilities have a very difficult time entering the public-school system. One parent with a child with ASD in Lebanon reported going from school to school in Lebanon only to be turned away at every turn (Human Rights Watch, 2018). The parent was told that the school simply did not accept handicapped children or that the school's administrators were afraid that other parents would not be satisfied with children enrolled with disabilities (Human Rights Watch, 2018).

As for the UAE, research on ABA and ASD is even scarcer than the research on Lebanon. A study going back to 2003 by Nahad (2015) described locating an ABA intervention therapist for her child recently diagnosed with ASD (p. 145). The therapist attended Nahad's (2015) child at home where he was homeschooled. This is because, the child was subjected to increasing bouts of bullying at school as he aged. According to Nahad (2015), things have changed somewhat in the UAE. Currently, Dubai offers the most help with Dubai hosting the "largest support network for disabled individuals" with 9 "different schools" (Nahad, 2015, p. 145). In other cities however, resources are sparse with one center per city (Nahad 2015, p. 145). The greatest concern at this point is that there is no help for children diagnosed with ASD in the UAE once they become adults. At this point they remain at home (Nahad, 2015, p. 145).

Kelly, Tennant and Al-Hassan (2016), report that although, autism cases have grown in the UAE, there are very few studies on ASD in the Arab Middle East (p. 1). In Kelly, et al.'s (2016) study,

119 individuals reported using 128 ASD interventions with the leading ones being speech/language therapy, technology assisted interventions and ABA respectively (p. 1). Thus, ABA is not the leading intervention option in the UAE. This does not mean that ABA is not the leading intervention option for ASD learners in Dubai however, This research study will determine at the very least, the extent to which ABA is used successfully in Dubai and whether cultural issues can be an influence on the outcomes of ABA intervention for ASD learners in Dubai.

A study carried out by Al-Ayadhi; Halepoto; Al-Dress; Mitwali and Zainah (2015) reveals just how important culture can be on perspectives of the efficacy and efficiency of intervention options. In this study, the authors make the claim that there is no real efficient intervention tool for ASD. However, the study went on to state that the value of camel milk as a therapeutic treatment for diabetes and hepatitis B has already been proven. The researchers therefore took it upon themselves to test the impact of camel milk on autism among 65 boys and five girls between the ages of 2 and 12 in Saudi Arabia. Research findings revealed that after just two weeks of consuming camel milk, ASD symptoms improved significantly (Al-Ayadhi, et al., 2015, p. 819).

The research study carried out by Al-Ayadhi et al., (2015), is important because it reveals just how cultural centered interventions for ASD can have a positive outcome for children with ASD. When assessing the ramifications for ABA it is important to take note of cultural standards and values when planning the implementation and application of ABA. In developed countries such as the US, there is an emphasis on evidence-based practice in descriptions of ABA. In this regard, evidence based practice is defined as “a model of professional decision-making in which practitioners integrate the best available evidence with client values/context and clinical expertise” so that they can deliver adequate solutions for their patients (Slocum; Detrich; Wilczynski; Spencer; Lewis and Wolf, 2014, p. 41).

Ultimately, for the US, evidence-based practice refers to the “integration of the best available research with clinical expertise in the context of patient characteristics, culture and preferences” (Slocum, et al., 2014, p. 42). What this means is that, the actual intervention tool is integrated with certain things that are specific to the patient and culture is a big part of patient specific characteristics. Culture is just as important to developing countries as observed by the study carried out in Saudi Arabia by Al-Ayadhi, et al., (2015) where confidence in camel milk was examined for its effect as an ASD intervention tool. A culturally friendly ABA will motivate greater confidence in perspectives about its efficacy and efficiency as an intervention tool for children with ASD in developing countries as well.

Fong; Catagnus; Brodhead; Quigley and Field (2016) assessed culture in the context of behavior analysts in the US and concluded that culture is very important because it shapes conduct/behavior (p. 84). In order to deliver satisfactory services an intervention tool is required to be consistent with culture inclusive of “preferences and norms” (Fong, et al., 2016, p. 84). Fong, et al. (2016) also noted that the science behind ABA is also culturally sensitive. However, ABA is aligned with Western science and may therefore fail to “align with” the norms, values and such of other cultures (Fong, et al., 2016, p. 85).

It is therefore hardly surprising that in developed countries there are demands for behavioral analysts to acquire and utilize cultural skills (Fong, Ficklin and Lee, 2017, p. 103). There is a need for cultural skills so that culturally appropriate factors can be integrated into the intervention tools (Fong, et al., 2017, p. 103). Developed countries are coming to the realizing that the culture can have an impact on the efficacy and efficiency of ABA as an intervention tool for children with ASD.

## **2.3 Comparison between Special Education Needs in Lebanon and Dubai: Education System and Structure**

### **2.3.1 Lebanon**

Lebanon's Education for all Handicapped Children Act 1975 and its Special Law for Individuals with Disabilities Education Act 1990 requires that all children have access to public education and that children with special needs are educated together with children who do not have special needs (Elzein, 2009, p. 164). In an interview with 15 parents with children with learning disabilities, the legislative action mandating inclusion for children with learning disabilities in Lebanon was a major encouraging step (Elzein, 2009, p. 164). Lebanon's Law No. 220 of 2000 also ensures that children with disabilities are entitled to education and additional services (Human Rights Watch). However, this law is ignored for the most part (Human Rights Watch, 2018).

However, when we examine a report by the Human Rights Watch in 2018, we find that although Lebanon has an all-inclusive policy, it is not followed through in practice. Lebanon's practice is to exclude children with learning disabilities on the basis that they are not expected to be productive and contributive members of society (Human Rights Watch, 2018). The deputy director of the Middle East chapter of Human Rights Watch was quoted as saying "discriminatory admission practices are robbing Lebanese children with disabilities of an education. Without any real option to get a quality inclusive education, thousands of children with disabilities are being left behind" (Human Rights Watch, 2018).

In a report commissioned by the UK government, Combaz reports that Lebanon's law for equality of education for individuals with disabilities is lacking and "not enforced" (Combaz, 2018, p. 3). Ultimately, the law tends to ignore non-physical disabilities altogether. There is a culture in Lebanon where "lack of knowledge, prejudice, and stigma against persons with difficulties are

common” (Combaz, 2018, p. 3). In addition, Combaz (2018), reports that in Lebanon there is a “systemic lack of provisions for rights, resources, and services for persons with disabilities” due to the lack of action on the part of the state (p. 5). Consequentially, individuals with disabilities suffer from “widespread discrimination, marginalization, exclusion, and violence, at the hands of a range of State and non-State institutions and individuals, in the home and outside” (Combaz, 2018, p. 5).

Combaz (2018) concluded that the social, political, cultural and economic disadvantages for individuals with disabilities in Lebanon is undisputed (6). In this regard, the consequences for disabled individuals’ rights, abilities, experiences and life quality are deleterious (Combaz, 2018, p. 6). The combined impact of political, social, cultural and economic paradigms is high levels of socially occluded, uneducated and unemployed disabled people in Lebanon. Things are even worse for Syrian and other refugees in Lebanon (Combaz, 2018, pp. 5-6).

### **2.3.2 Dubai**

Based on the UAE’s Persons with Determination description of and policy for people with disabilities, Dubai created the Dubai Inclusive Education Policy Framework (Al Karam, 2017, p. 3). The Dubai Inclusive Education Policy Framework is captured by the Dubai Disabilities Strategy which is aimed at sustaining a society characterized by cohesion and inclusion (Al Karam, 2017, p. 3). Under the Dubai Disabilities Strategy, people of determination/disabilities are assured the protection of rights to available and accessible “equitable opportunities” (Al Karam, 2017, p. 3). Dubai’s goal is to implement and practice an education system that is marked by absolute inclusion by the year 2020 (Al Karam, 2017, p. 3).

Unlike Lebanon, the UAE is a party to the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) (Al Karam, 2017, p. 7). The UNCRPD together with federal and

localized laws requires inclusion in education systems, policies and practices in the UAE. On the federal level, Federal Law 2006 and 2009 and at the local level Dubai Law No. 2 of 2014 reflect the country's "commitment to ensuring the educational and social inclusion of all children, adults and families experiencing special and educational needs and disabilities" (Al Karam, 2017, p. 7). As a result, Dubai's strategy for inclusion also known as the KHDA, specifically addresses the possibility of schools refusing to admit students with disabilities. In this regard, the framework states that schools may not refuse admission to students based solely on special education needs and disabilities (SEND) (Al Karam, 2017, p. 7). Unfortunately, this can mean that SEND children can be refused admission to schools on other grounds however which leaves open the possibility for schools to fabricate or exploit other grounds for denying admission to SEND children.

A study carried out by Al-Abbady, Hessian and Alaam (2017), reveals that the problem for the implementation of Dubai's inclusive education strategy for people with ASD is diagnosis (p. 1). According to this study, ASD is increasing in numbers in Dubai with the vast majority among foreigners living in the city. However, there are concerns that nationals are simply undiagnosed because of cultural and policy shortcomings. Based on culture, parents tend to either miss or ignore symptoms of ASD. On the policy level there is a need for more intensive and expansive training of nurses capable of diagnosing children with ASD because the earliest intervention is desired (Al-Abbady, et al., 2017, p. 1-2).

## **2.4 Conceptual Framework**

The medical and social models of disabilities are more often referenced in the literature on academic perspectives on disabled persons (Wise, 2016, p. 201). The medical model perceives disabilities as "a reduction in health and/or functioning caused by an impairment that is defined as a problem with the normal biological operation of the body" (Wise, 2016, p. 201). In other words,

it is up to the medical profession to accommodate people with disabilities. The social model on the other hand perceives disabilities as an output from the social environment (Wise, 2016, p. 202). In this regard, the environment is “structured to accommodate the normal functioning levels of society’s members so disability is experienced when people are unable to attain the functional standards” (Wise, 2016, p. 202). Given the social repercussions for individuals with ASD a social model/theory of disabilities is necessary for analyzing and comparing the output for ABA as an intervention tool for ASD in Lebanon and Dubai.

The social theory selected for this research is the ecological systems theory which is based on critical realism. Critical realism takes the position that disability is a dynamic and complicated phenomenon based in part on the perceptions and beliefs of people combined with “components that are independent of what humans believe” (Wise, 2016, p. 205). The phenomenon of disability is comprised of several layers each of which contain causative mechanics and interacting elements (Wise, 2016, p. 205). Thus, the ecological systems theory goes is specific in that it assumes that the experience of the disabled is influenced by his/her relationship his/her environment (Wise, 2016, p. 206). The ecological systems theory therefore expects that effective interventions will target both the “personal and environmental elements” (Wise, 2016, p. 206).

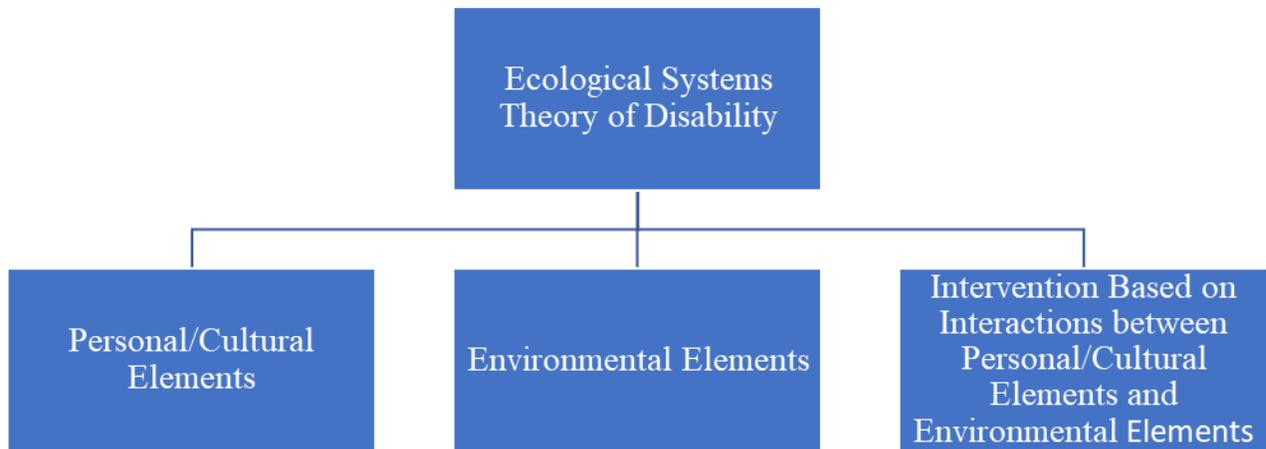


Figure 1: Conceptual Framework: Ecological Systems Theory of Disability

The ecological systems theory of disability is ideal for understanding and explaining the effectiveness of ABA as an intervention tool for children with ASD. This is because, the results of ASD intervention is not universal (). In fact, the results are “contextual” (Cuvo and Vallelunga, 2007, p. 162). It is also important to bear in mind that while the context may change for one individual it may remain the same for another. Moreover, the child’s development is also non-linear in that it may progress for one individual, while it may stagnate for another (Cuvo and Vallelunga, 2007, p. 162). The ecological systems theory of disability allows for considering the individual’s environment, development, cognition, emotions, behavior, and diverse times (Cuvo and Vallelunga, 2007, p. 162). In other words, the impact of culture on the utility of ABA as an

intervention tool for learners with ASD in Lebanon and Dubai will be explained and understood well by reference to the ecological systems theory.

The ecological systems have been found to be understudied in relation to ASD in the literature and is therefore even more appropriate for use with this study. For example, in a study just carried out last year, Anderson, Roux, Kuo and Shattuck, (2018) discovered that the “breadth and depth of social-ecological factors” in ASD results are constrained because of the “narrow inclusion of variables across social-ecological levels” and the “overreliance on a limited number of national data sets” and the general absence of “variation in research design” (Anderson, et al., 2018, p. 302). This study will therefore narrow a significant gap in the literature by adding another variable in terms of culture in the explanation and understanding of ABA outcomes for learners with ASD in Dubai and Lebanon.

## **Chapter 3: Research Methodology**

### **3. Introduction**

This chapter describes the methodology used for the collection and analysis of data for this research study. In describing the methodology used for the collection and analysis of data for this research study, this chapter will also justify the methodology selected. This chapter will also explain the research philosophy, research design, sampling, steps taken to improve the credibility of the research and the results and steps taken to safeguard against ethical issues.

### **3.1 Research Methods**

The research is a mixed methods approach. This means that rather than using just a quantitative or qualitative research method, this research will use both. Quantitative research is concerned with an “objective” reality and takes the position that reality can be measured and reduced to numbers (Almaki, 2016, p. 290). Ultimately, the quantitative researcher believes that reality can be subdivided “into smaller, manageable pieces,” and that “observations can be made and that hypotheses can be tested” (Almaki, 2013, p. 290).

In a typical case, the researcher carrying out a quantitative research will put together a “theory that is exemplified within a specific hypothesis,” which is then put to the test” (Almaki, 2016, p. 290).

In this research, the author theorizes that culture has an impact on the effectiveness of ABA interventions on children with ASD in Lebanon and Dubai. This theory is broken down into the following hypotheses:

H1: Culture has an impact on the diagnosis of ASD in Lebanon and Dubai.

Null H1: Culture has no impact on the diagnosis of ASD in Lebanon and Dubai.

H2: Culture has an impact on perceptions of ASD in Lebanon and Dubai.

Null H2: Culture has no impact on perceptions of ASD in Lebanon and Dubai.

H3: Culture has an impact on amenability to ABA interventions for ASD in Lebanon and Dubai.

Null H3: Culture has no impact on amenability to ABA interventions for ASD in Lebanon and Dubai.

H4: Culture has an impact on the application and implementation of ABA intervention for ASD children in Lebanon and Dubai.

Null H4: Culture has no impact on the application and implementation of ABA intervention for ASD children in Lebanon and Dubai.

Each hypothesis will be tested by the measurable data collected via surveys (See Appendix B).

Qualitative studies are concerned with studying a social phenomenon in its context and observing how those who are experiencing the phenomenon or have experienced it perceive the phenomenon (Almalki, 2016, p. 291). In other words, qualitative researchers believe that reality is subjective and in following up on this belief, qualitative researchers are looking to explore and understand the experiences and perspectives of the respondents participating in the study (Almalki, 2016, p. 291).

The researcher will collect the qualitative data from face-to-face semi-structured interviews (See Appendix A). Through semi-structured interviews the researcher will be able to put together the individual experiences and perspectives of those with first-hand knowledge and experience with culture and its impact on the diagnosis of ASD and the effectiveness of ABA intervention tools in Lebanon and Dubai.

Using a mixed methods research approach can be advantageous to using a qualitative research or a quantitative research. This is because each approach can complement the other (Almaki, 2016,

p. 291). For example, the quantitative research will typically involve the collection of close-ended, measurable data. This kind of data is lacking in detail. The qualitative data, however, will compensate for this shortfall by providing rich data. Due to the richness of the data collected in qualitative research, the author will usually work with a very small sample size. However, this sample will be compensated for by the quantitative data which facilitates the use of a large sample size due to the brevity of the data collected.

### **3.2 Research Philosophies**

For this mixed methods research two philosophies are used. The research philosophy of positivism is used to explain and rationalize quantitative data in this research and interpretivism is used to justify the qualitative data used in this research. Positivism is basically scientific in its approach and takes the position that factual knowledge is derived from that which can be observed and measured (Howell, 2013, p. 41). Therefore, anything that cannot be measured is undesirable and this includes the perspectives and emotions that mark human behavior (Howell, 2013, p. 41). Based on positivism theory, this research will gather quantitative data for measuring the cultural impact on the ABA intervention for individuals with ABA in Lebanon and Dubai.

Interpretivism takes a different approach to the discovery of truths and reality. Interpretivism believes that reality is constructed subjectively and as such permits the researcher to gain insight through the perspectives and experiences of individuals (Thanh and Thanh, 2015, p. 24). The interviews used in this research are based on interpretivism in that the data collected will provide insight into the experiences and perspectives of those who have experienced ABA interventions in the realm of ASD in Lebanon and Dubai.

### **3.3 Data Collection**

#### **3.3.1 Research Instruments**

Three research instruments are used for the collection of data in this research: interviews, open-ended questionnaires and surveys. The survey is also a closed-ended instrument with a graduated Likert type scale where responses are measured from 1-5 representative of Strongly Agree (1); Agree (2); Neutral (3), Disagree (4); Strongly Disagree (5). The scaled responses to questions on culture and its impact on ABA as an intervention tool for ASD allows for the researcher to measure this phenomenon. The open-ended questionnaire is fashioned after structured interview where the respondent can provide his/her own responses in detail.

The interview is an open-ended series of questions designed to shed light on the experiences and perspectives of the participants regarding the intervention of ABA for ASD sufferers in Lebanon and Dubai. The interviews are semi-structured permitting the researcher to go off-script when something not contemplated or informative comes up in the interview and requires further exploration (See Appendix C).

The questionnaires and surveys were distributed among the population samples in Lebanon and Dubai with an accompanying consent form (See Appendix D). Upon receipt of a signed consent form and completed surveys and questionnaires the instruments were studied for completion and used in this research if they fit the research criteria established in the sampling. The interviews were set up upon receipt of a signed consent form. The interviews were set up at a neutral place to avoid discomfort on the part of the interviewees. The interviews were scheduled to last for at least a half hour, but no more than an hour.

### **3.4 Sampling**

#### *Sampling Technique*

This research used a purposive sampling technique. What this means is that the researcher established a criterion for what the researcher needed to know and how well the population sample were able to provide that knowledge (Palys, 2008, p. 697). The researcher wants to know how effective the ABA intervention tool is for helping learners with ASD in Lebanon and Dubai. The researcher therefore looked to special needs teachers who have experience in Lebanon and Dubai. Specifically, the researcher used a stakeholder sampling method of purposive sampling. Stakeholder sampling is especially appropriate with one is evaluating research and analyzing policies (Palys, 2008, p. 695). This necessarily involves the identification and utilization of the “major stakeholders who are involved in designing, giving, receiving, or administering the program” and those “who might otherwise be affected by it” (Palys, 2008, p. 697). Special education teachers in Lebanon and Dubai are stakeholders for their respective government ASD policies and for administering the ASD programs.

Specifically, the researcher contacted contact special needs and ASD centers and those associated with it in Lebanon and Dubai looking for putative participants in this study. The centers contacted were the Secobel Center/Lebanon; the Step Together Association Lebanon; Orphan Welfare Society of Saida; Association “Phenix group homes; National Rehabilitation and Development Center; the Jerusalem Princess Basma Center and Ibn Sina Center Tunis.

#### *Sample Size*

The researcher targeted a sample population of more than 25 special needs teachers in Lebanon and Dubai. The population was sought at the various ASD centers in both Lebanon and Dubai.

The researcher sought to interview at least five of these special needs' teachers in Lebanon and another five in Dubai. The remaining sample population is intended for participation in the close-ended questionnaire and the close-ended survey.

### **3.5 Data Analysis**

The interview/qualitative data will be analyzed using a qualitative data analysis (QDA) technique. QDA involves classifying and interpreting “linguistic (or visual) material to make statements about implicit and explicit dimensions and structures of meaning-making” found in the “material and what is represented in it” (Flick, 2013, p. 5). The researcher will generally compare the results looking for commonalities and discrepancies while looking for meaning and will attempt to generalize the results (Flick, 2013, p. 5).

In carrying out a QDA, the researcher will create codes for separating and classifying the data as it is interpreted. The coded data will separate the commonalities and discrepancies in the interview responses. For example, if some special needs teachers share positive experiences and the reasons for these positive experiences with ABA and others blame culture for negative experiences, the research will use codes to classify and segregate the commonalities and discrepancies among the respondents.

The quantitative data collected via close-ended surveys and questionnaires will be analyzed through measuring the strengths of independent and dependent variables and to determine whether there is a relationship between the variables. The dependent variable in this research is ABA. The independent variables are culture, policies, practices, perspectives and attitudes impacting ASD and ASD interventions. The survey and questionnaire will measure the strengths of both independent and dependent variable with a view to determining the extent to which the

independent variables impact the success of ABA as an intervention tool for children diagnosed with ASD in Lebanon and Dubai.

### **3.6 Credibility, Reliability and Trustworthiness**

Credibility, reliability and trustworthiness of a research report means that anyone reading the research report knows that the results are valid and can be trusted (Ridenour and Newman, 2008, p. 35). The researcher took steps during the collection and handling of data to ensure its credibility, reliability and trustworthiness. One step taken was member checking. Member checking is also known as “response validation or informant feedback” (Midgley, Danaher and Baguley, 2013, p. 30). Member checking occurs when the researcher reads back a response to the participant and seek confirmation that the response is an accurate reflection of what the respondent intended to say. In addition to member checking during the interview, the researcher will also look for non-verbal cues. Non-verbal cues will indicate whether a respondent is comfortable with a question or wants to add additional information.

Member checking will be used through the interviews by having the respondents confirm a response when there are doubts or a need for further clarification. The survey and questionnaire have been constructed so that internal consistency ensures the credibility, reliability and trustworthiness of the results. The internal consistency is indicated by lining up the variables so that they all flow in the same “direction” and are significantly (Larvakas, 2008, p. 169). For example, two questions may appear as follows: 1: What is your age? 18-20-30 2: How long have you been a special needs teacher? 0-2-5. If the respondent’s age is 18, one can expect him or her to select 0 years experiences as a special needs teacher any other reply puts significant doubt on the age and years of experience.

The researcher will also keep an audit trail in order to keep track of the data as it is collected, analyzed and stored. The data will be stored in the researcher's password protected computer and the researcher will have sole custody of the data and the password. The data will be destroyed by deletion within six months of submitting this dissertation.

### **3.7 Ethical Considerations**

Pursuant to research ethical standards, the researcher ensured that consent was obtained based on legal competency, voluntariness and informed. In other words, the respondents were determined to be of the age of consent and they were informed of the nature of the research and their contributions via participation in the study. To ensure that the respondents' consent was voluntary, no threats were made and no rewards were offered the respondents were also informed that they were free to pull out of the study after giving their consent. To protect the privacy of the respondents they were also informed that their identities would not be revealed in any shape or form in the final version of this dissertation.

### **3.8 Limitations of the Study**

The limitations of the study are those things that the researcher cannot control. In this regard, the researcher confronted significant limitations in obtaining the targeted sample size despite repeatedly contacting the centers associated with special needs and ABA in Lebanon and Dubai and listed in this chapter. The researcher contacted several teachers and SENCos with only six usable replies. The replies received from teachers which stated that they were not aware of what ABA was.

## **Chapter 4: Results and Analysis**

### **4. Introduction**

This chapter presents the results of interviews, surveys and questionnaires and an analysis of the results. There were 10 interviews, with five in Lebanon and five in Dubai. In addition, there were ten open-ended questionnaires were completed by parents with children who have been diagnosed with ASD in either Lebanon or Dubai. Ten more open ended questionnaires were completed by ASD, ABA and special needs experts and teachers in Dubai and Lebanon. Twenty closed-ended surveys were completed by ASD, ABA and Special needs teachers and experts in Lebanon and Dubai. The results of these research instruments are set out and analyzed in this chapter.

### **4.1 Results**

The response rate was satisfactory. There were 7 interviews and 10 questionnaires and 20 surveys completed. The results of the surveys, interviews and questionnaires are reported in this chapter below.

#### **4.1.1 Interviews**

The interviews were carried out with:

An honorary life member of Inclusion International who is also the president of LCPD, NIUC and Friends of the Disabled Association in Lebanon.

A lady who works in a SENCo Department in a school in Dubai.

Two ABA therapists in Dubai.

Three ABA therapists in Lebanon.

The interview carried out with a lady who works in a SENCo Department in a Dubai school (Interviewee 1) stated that ASD was not her expertise, but based on her knowledge and experience within an inclusive school she can state definitively, that:

*...nowadays, because of extensive awareness on autism and therapeutic approaches on how to control it to alleviate its symptoms..., parents and teachers are all collaboratively working together to attend to students' needs.*

She did point out that ABA was among the treatments available and used for children with autism although it “used to be frowned upon whenever SENCos used to suggest it to parents since it was a taboo subject.” However, with the “HH’s” vision and the government’s policies on all children including those with disabilities, Federal Law 29, awareness has increased. As a result, parents and stakeholders have begun to “accept and encourage ABA therapy to cater for the students’ needs with support” from the government, KHDA and the Ministry of Education.

An interview with an Honorary Life Member of Inclusion International, and President of LCPD, NIUD and Friends of the Disabled Association in Lebanon (Interviewee 2) also spoke of the heightened awareness policies in the Middle East. It was notable in Global Day for Autism which was sponsored by Sheikha Moza of Qatar. He stated that the ABA program is successful but depends largely on individual funding and techniques for its success. His major concern was the impact of culture/society on the success of the program. As he stated:

*Many behavioral disorders that are the characteristics of an ADHA person can also be found on an autistic person, not because he has a behavioral problem but because of the frustration he faces from society, as such,*

*ADHD may result as a secondary issue because of the society surrounding it.*

While ABA is not a cure, much of its success depends on the individual's ability to "adjust to his society".

The interviewee did speak of the advances in policies in Lebanon and pointed out that there is a new disability law: 220/2000 which added Autism, simple autism and severe autism although the government failed to establish specific rules for autism despite including rules for mental disabilities. There are, however, rules for day care, autism day care but there is no definition. One must look to associations for elaboration on autism which is typically obtained from the French laws which is in turn, influenced by the United Nations. Essentially, under Lebanese laws and policies, autism is considered a disability and is treated as such.

A third interview with an ABA therapist in Lebanon (Interviewee 3) spoke positively of the ABA program and in fact suggested that ABA be used with all children with disabilities and not merely children with ASD. She expressed a preference for the ABA to be used in classroom settings and that teachers should be qualified to use it. This is what is missing "in our Arab countries schools, that we should give each student a direct feedback about anything he/she do. This means we are enabling them to show their best and give their best".

The therapist from Lebanon did state that the ABA therapist did state that parents in Lebanon have become more aware of the ABA program and have learned how to use it. This is manifested by the AUBmc which "takes a big part in parents' guidance and this helps parents to be aware, yet we are still talking about people who have kids with autism. Parents that have kids with other disabilities are still not aware that ABA interventions can be helpful for their kids as well. People only related ABA with autism."

Although some schools embrace the ABA program and permit some teacher training, it is not enough for increasing awareness of the program. In the meantime, NGOs are “funding ABA therapists to be certified” and are providing “funds to parents” to take up ABA interventions. The Open Minds is one of the most significant NGOs dealing with this ABA funding and works with individuals to improve their mental health.

The second therapist from Lebanon (Interviewee 4) was also concerned that parents and society were obstacles to the full benefits of ABA which he felt was an effective and efficient intervention tool for learners with ASD. Parents tended to have difficulties adjusting and then there were children who had difficulty benefitting because of this. The third ABA therapist (Interviewee 5) also said that it was primarily a problem from society which trickled down to the parents. Society and culture were not yet fully prepared to accept ASD and this makes it difficult for “these learners to adjust”.

The two ABA therapists from Dubai (Interviewees 6 and 7) seemed to believe that Dubai’s general population were growing more at ease with ASD. Interviewee 6 pointed out however, that there were still a lot of hesitancy among parents and while it was getting better, there was still and long road ahead.

#### ***4.1.2 Questionnaires***

One questionnaire was completed by an ABA/VB and Education consultant with UK certification. This respondent is the President and Clinical Director of Autism Learning Institute for Applied Behaviour Analysis/ALI for ABA. The respondent is also the Clinical Director of the Diagnostic Lebanese Centre for Training, Communication and Behaviour Development. The respondent is also the President of Education and Development Committee for Arab Network for Autism/ANA.

The respondent has been an ABA specialist for more than five years. The intervention used for children with autism is ABA/VB from a “comprehensive scientific approach” which includes:

*...integrating many therapies in our children’s daily lives including sensory integration therapy, play therapy, auditory integration (the Listening Program) and many more.*

According to this respondent, the program is implemented through both parents and children with Autism. The intervention process is “functional for the child and generalized in every setting.” In the meantime, the ABA intervention involves training parents “to generalize their child’s acquired skills at home”.

In answering the question regarding the definition of ABA, the ABA/VB is the Autism Learning Institute for Applied Behavior Analysis/ALI for ABA center’s primary method of teaching. It is a science which permits “us to teach others in a meaningful and loving way and generalized across all environments.” The respondent went on to state that:

*ABA is a structured teaching program built on a discipline devoted to the understanding and improvement of human behaviors. ALI for ABA uses AVB program to deliver a broad curriculum in line with each child’s Individual Education Plan/IEP.*

With regard to the question on challenges experienced with the implementation and application of the ABA intervention program, the respondent pointed out that some of the parents fail to “follow the scientific implementation of ABA/VB in order to apply the correct procedure for the specific function of a behavior.” To overcome these challenges, the respondent said that “further training and meeting” are required.

As for diagnosis, the respondent stated that children are diagnosed with ADSD through “standardized assessments such as ADOS II and RDI. Children are placed in the ABA program after being thoroughly assessed for needs. An IEP is “designed and implemented at the center utilizing the Assessment of Basic Language and Learning Skills/ABLSS and many more protocols”.

In response to the question on the challenges relative to parents and their concern and participation in the ABA program, the respondent stated:

*They might have difficulties working on the program and teaching their child an alternative appropriate behavior.*

In describing the cultural barriers to diagnosis and treatment of ASD the respondent stated:

*Some parents are in denial and they prefer to label their children as having communication difficulties and not autism, therefore they might only seek a speech therapist as a solely treatment.*

The respondent also stated that in order to improve implementation and application of the ABA program it is suggested that the program is generalized and functionalized for children “where parents should be involved in the training.” The respondent has great confidence in the ABA intervention output. According to the respondent the ABA intervention program has proven its capabilities. There are significant scientific studies confirming its ability to successfully change the behavior and social skills of children with ASD.

Four SENCos from Dubai, three with more than five years’ experience and one with less than five years completed the questionnaire and survey. In the questionnaire responses, one of the SENCos from Dubai pointed out that the approaches used for children with autism are: “Treatment and

Education of Autistic and Related Communication Handicapped Children TEACCH” and “Picture Exchange Communications PICS”. As for ABA, it is used through “working on modifying the child’s behavior through the functional behavior analysis”. There is also a second part of the ABA intervention which includes “working on helping the child to learn new skills” academically, daily and socially.

One of the four respondents see ABA as an “effective treatment approach for children with autism”. The respondent also points out that he never had the “opportunity to implement the ABA program” for his students as he is currently using TEACCH. As for the diagnosis of children with ASD, one of the respondents pointed to DSM-5 and stated that the child should show three deficits in social/emotional skills, verbal and non-verbal communication, and in developing, maintaining and understanding relationships.

As for the challenges confronted with parents and their concerns and participation in the ABA program, one of the respondents said:

*In general, the parents usually have concerns about the financial cost of the sessions, efficiency of the training and the time frame.*

Another respondent also recommended the implementation of “awareness workshops” for illustrating how important ABA is for children with ASD. He also pointed out that he “met some parents who indicated that the ABA program was effective and beneficial for their children”.

One of the SENCos from Dubai with less than five years’ experience explained that when treating children with autism, ABA with “some aspects of TEAACH – zoning and routines” are used. The ABA intervention is implemented primarily via individual learning assistants and “in class support

by an inclusion teacher trained in ABA who assists the teacher and learning assistant.” There is also an initiative to train parents similarly.

For this SENCo, ABA is perceived as a “system of behavior training through rewards and consequences”. The challenges confronted with implementing ABA is finding consistency and following up with the program “at home”. These challenges are addressed by a “lot of conversations and additional visits to the classrooms”. In response to the question about how children are diagnosed the SENCo from Dubai with less than five years’ experience respondent stated:

*The majority of my students are undiagnosed and the parents are unwilling to get a label or get a diagnosis. We are trying to overcome this with inviting guest speakers to provide more discussion and open dialogue.*

With regards to how children with ASD are placed in the ABA intervention program, one of the respondents said that at first, a teacher’s observation will start the placement process. This is followed by “Year group leader consideration across a year group, classroom strategies being implemented and reviewed over a month period”. If there are no changes, then “observation and in-class support by the inclusion team implementing ABA strategies, parents are trained also and where possible ABA therapist after school is recommended”.

As for the challenges confronted with respect to parents’ concerns and participation in the ABA program, the respondent pointed toward inconsistency. The respondent also stated that there was an unwillingness to “recognize any behavioral issue”. In response to the question about cultural barriers to the diagnosis and treatment of ASD via the ABA intervention program, the respondent said:

*With a school with 71% EAL parents say it is a language barrier and not a communication/social barrier. Unwillingness to accept anything could be wrong.*

This respondent recommended that improvements to the implementation and application of the ABA program for children with ASD would include a “full time therapist within the school” who works “alongside the inclusion team.” The therapist would “provide sessions through the day and after school, with an open-door policy for parents to come and observe sessions.” The respondent did not answer the last question about whether she was satisfied with the ABA program as an instrument for helping children with ASD develop and learn.

The teachers from Lebanon who are not confronted with inclusion practices were unhelpful in that they could only indicate as they did, that they were not familiar with the ABA program and completed their questionnaires and surveys accordingly.

#### ***4.1.3 Survey Results***

While several of the surveys were completed, only twenty-five were usable. The unusable surveys were completed by teachers in Lebanon who revealed that they did not have experience with ABA. This may be since inclusion is not practiced in schools in Lebanon. The unusable surveys and questionnaires yielded the same results. They were completed by teachers primarily those with less than five years’ experience. Each questionnaire and survey revealed that the teachers did not have any experience with ABA intervention. Some of the replies were merely responded to by indicating N/A (non-applicable).

The twenty-five usable surveys were completed by 10 Autism and ABA experts/counselors in Lebanon and 12 SENCos in Dubai. In addition to supporting the quantitative method employed

in this study, the survey data is also useful for triangulating the qualitative data. Triangulation means the use of multiple sources of data for crosschecking the data collected (Fusch, Fusch and Ness, 2018, p. 19). Triangulation is important because it can add “depth to the data that are collected” (Fusch, et al., 2018, p. 19). In this regard, the twenty-five surveys will add depth to the data collected from the questionnaires and the interviews.

The SENCos from Dubai for the most part did not agree with the statement that parents are uncomfortable with ABA’s effectiveness. The SENCos from Lebanon were mostly neutral. Similarly, the majority of Dubai SENCos did not agree that they had students with ASD and parents that were in denial. Meanwhile, the SENCos from Lebanon mostly strongly agreed with this statement. The SENCos from Dubai was primarily neutral on the statement that it took a lot of hard work to convince parents to allow their children with ASD to participate in ABA intervention. The experts/counselors from Lebanon strongly agreed.

Most of the SENCos from Dubai disagreed that parents are hesitant to talk to him about their child’s progress in ABA intervention. The counselors/experts from Lebanon largely agreed. The SENCos from Dubai also mostly disagreed that parents do not seem to be interested in discussing the possibility that their child has ASD. The experts in Lebanon strongly agreed for the most part. The counsellors/experts from Lebanon also primarily agreed with the statement that they were having a difficult time with the application of ABA due to cultural obstacles. However, most of the SENCos from Dubai were neutral on this issue.

The SENCos from Dubai and experts/counselors from Lebanon all agreed that it was possible to tailor ABA intervention to cultural expectation and exigencies. None of the SENCos elaborated nor provided examples as requested in the survey. Nearly all the experts from Lebanon and Dubai were neutral on the statement that they did not believe that their ABA intervention tool is culturally

specific enough for their parents and students. The SENCOs from Dubai agreed that if the cultural aspects of their ABA intervention tool were improved parents and students would be more comfortable with its application. The experts from Lebanon were neutral on this issue.

Table 1

Scores of SENCOs from Dubai by Variable

Variables	Mean	Standard Deviation
1. The parents with children in my ABA intervention is not comfortable with its effectiveness.	4.95	0.5
2. I have students that I suspect have ASD but their parents disagree.	1.5	3.6
3. It took a lot of hard work to convince parents to allow their children with ASD to participate in ABA intervention.	1.9	3.2
4. Parents are hesitant to talk to me about their child's progress in ABA intervention.	1.6	3.3
5. Parents do not seem to be interested in discussing the possibility that their child has ASD.	2.00	2.74

6. I am having a difficult time with the application of ABA due to cultural obstacles.	2.5	2.45
7. I believe that it is possible to tailor ABA intervention to cultural expectations and exigencies.	4.95	0.5
8. I do not believe that our ABA intervention tool is culturally specific enough for our parents and students.	.95	4.00
9. I believe that if we improve the cultural aspects of our ABA intervention tool our parents and students would be more comfortable with its application.	4.55	0.45
Aggregate Totals:	2.76	2.3

Table 2

Scores of Experts/Counsellors from Lebanon by Variable

Variables	Mean	Standard Deviation
1. The parents with children in my ABA	4.80	.15

intervention is not comfortable

with its effectiveness.

2. I have students that I suspect have ASD but their parents disagree.	4.90	.10
3. It took a lot of hard work to convince parents to allow their children with ASD to participate in ABA intervention.	3.85	1.10
4. Parents are hesitant to talk to me about their child's progress in ABA intervention.	3.94	1.00
5. Parents do not seem to be interested in discussing the possibility that their child has ASD.	3.50	1.40
6. I am having a difficult time with the application of ABA due to cultural obstacles.	3.65	1.45
7. I believe that it is possible to tailor ABA intervention to cultural expectations and exigencies.	4.99	.1
8. I do not believe that our ABA intervention	4.00	.50



Culture has an impact on the diagnosis of ASD in Lebanon and Dubai, but more admittedly in Lebanon. This is due to parents' greater hesitancy to generally discuss their possibility that their child may have ASD in Lebanon.

Null H1: Culture has no impact on the diagnosis of ASD in Lebanon and Dubai.

The Null hypothesis is therefore disproved.

H2: Culture has an impact on perceptions of ASD in Lebanon and Dubai.

This hypothesis can neither be proven nor disproved. It can be implied based on hypothesis 1 that culture is more likely to have an impact in Lebanon than in Dubai.

Null H2: Culture has no impact on perceptions of ASD in Lebanon and Dubai.

The Null hypothesis is also neither proven nor unproven.

H3: Culture has an impact on amenability to ABA interventions for ASD in Lebanon and Dubai.

This hypothesis can neither be proven nor disproved. It can be implied based on hypothesis 1 that culture is more likely to have an impact on amenability to ABA interventions in Lebanon than in Dubai.

Null H3: Culture has no impact on amenability to ABA interventions for ASD in Lebanon and Dubai.

Again, this null hypothesis is neither proven nor disproven.

H4: Culture has an impact on the application and implementation of ABA intervention for ASD children in Lebanon and Dubai.

This hypothesis can neither be proven nor disproved. It can be implied based on hypothesis 1 that culture is more likely to have an impact on application and implementation of ABA in Lebanon than in Dubai.

Null H4: Culture has no impact on the application and implementation of ABA intervention for ASD children in Lebanon and Dubai.

This Null hypothesis has neither been proven nor disproven although it can be implied.

### Research Question #1

To what extent is ABA culturally affected as a tool for intervention for learners with ASD in Dubai?

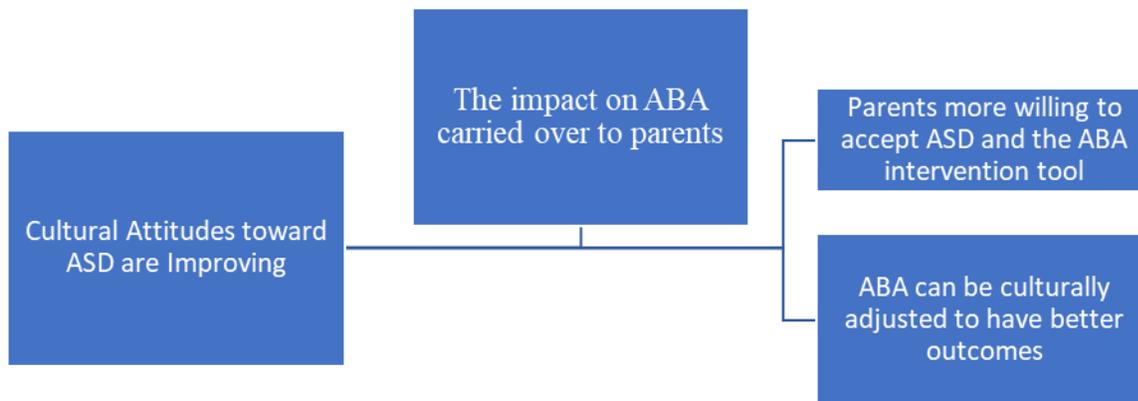
Findings from interviews: Interviewee 1: Attitudes have improved due to His Highness' inclusion policies. However, previously, ASD and any other learning disability was "taboo." Now, ABA is successful and accepted.

Interviewees 6 & 7: Still some stigma attached to ASD although things have improved. Parents are still having a difficult time accepting and adjusting to their children having ASD and the ABA program.

Findings from the Questionnaires: Concerns about parents' participation and ability to carry on with the ABA program at home were expressed by all the respondents from Dubai

Findings from quantitative data:

The concern in the surveys were not as intense of the concern in the questionnaires.



**Figure 2: Quantitative Data Related to Dubai**

\*Author's creation

Research Question #2

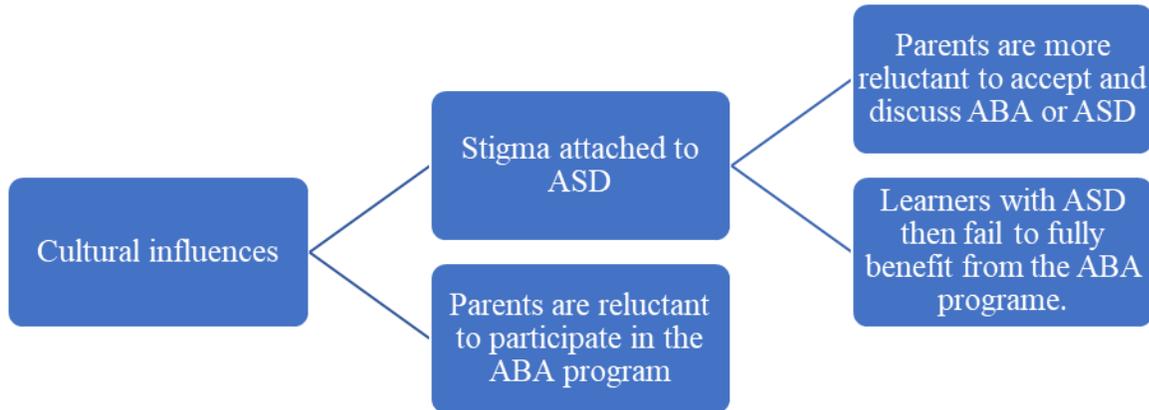
To what extent is ABA culturally affected as a tool for intervention for learners with ASD in Lebanon?

Findings from interviews: Interviewee 1 Culture has an effect of ABA as an intervention tool and as a result, there has been a significant effort in Lebanon to heighten awareness of ABA and other learning disabilities.

Interviewees 3,4 &5 all reported concerns for the impact of culture on parents' willingness to participate proactively in the ABA program. The hesitancy is a fall out from the cultural influences.

Findings from Questionnaire: Parents are learning to cope with ASD and the ABA program. However, parents are continuing to have difficulties with accepting and participating in the ABA program due to stigma attached to it.

Findings from quantitative data: Culture is a significant problem. Cultural influences have trickled down to parents of children with ASD who in turn are not fully benefitting from the ABA intervention tool.



**Figure 3: Quantitative Data from Lebanon**

\*Author's creation

Research Question 3: What are the similarities between the cultural impact on the use of ABA as an intervention tool for learners with ASD in Lebanon and Dubai?

The cultural impact in both locations appear to affect the parents' willingness to participate and this influences the effectiveness of the ABA program.

Research Question 4: What are the differences between the cultural impact on the use of ABA as an intervention tool for learners with ASD in Lebanon and Dubai?

The cultural impact is lessening in Dubai at a more appreciable rate than it is in Lebanon.

#### **4.2 Analysis**

An examination of Lebanon's Disabilities Education Act 1990 and Law No. 220 of 2000 together with Dubai's ratification of the UNCRPD, and the Federal Law 2006 and 2009, inclusion policies are strong in both countries. What this means is that both countries have the legal basis for ensuring the social and educational inclusion of students with disabilities such as ASD in their school programs. Dubai has also devised an inclusive plan addressing students with disabilities' inclusion via its KHDA. Unfortunately, the evidence for inclusion is not all that promising based on the results of the study.

In the course of collecting data, the researcher came across Special Kids Clinic (SKILD), Autism Awareness Association Lebanon/AAA, 123 Autism School, ABA Lebanon and ALI for ABA all of which are in Lebanon. Each of these entities are contributing to the ABA for learners with ASD in Lebanon in one way or another. ALI has a Facebook page although it does not have a website yet. ABA is focused on heightening awareness of evidence-based practices and is determined to ethically deliver the best version of ABA possible. Each of the entities provide ABA and have systems for diagnosis and intervention.

While it is obvious that both Dubai and Lebanon have ABA programs for intervening on the part of children with ASD, it is not altogether obvious that these programs are not thwarted by cultural issues. From the data collected there are themes that can be constructed. There is a lot of confidence in the government policies and laws in both Lebanon and Dubai. There is also a lot of

confidence in the ability of ABA as an intervention tool for children with ASD in Dubai and Lebanon. At the same time, there is a lot of blame on parents' ability to participate and follow through which is a trickle -down affect from culture.

Table 3: Patterns Compiled from the Results

THEMES	WHAT THIS MEANS
Laws and policies for inclusion of disabled children in Lebanon and Dubai	Schools can facilitate ABA programs
ABA programs are used in Lebanon and Dubai	The programs are available for children with ASD in both Lebanon and Dubai
Service providers have confidence in ABA as an intervention tool for children with ASD	ABA can be an effective intervention tool for children with ASD in Dubai and Lebanon
Parents are the greatest challenge to the effectiveness of ABA as an intervention tool for children with ASD	The ABA program can work if parents participated and followed through
Culture impacts parents who are typically in denial or hesitant to admit that their child suffers from ASD.	Cultural issues need to be addressed

\*Author's creation

There is also a concerning issue discovered among teachers. Each of the responses returned, the teachers admitted that they had no knowledge of ABA. Therefore, while parents may be a problem for follow through with the ABA program and its effectiveness, teachers are just as likely to prevent the effective use of ABA. This can also have a negative impact on the inclusion program that Dubai and Lebanon are committed to putting into practice. If children with ASD and on the ABA intervention program are placed in classrooms with teachers who are unaware of the program and how it works, students will not be able to reap the full benefits of the ABA intervention program. It is no different than the problems confronted by service providers when students return home to their parents who do not follow the protocols and instructions necessary for continuing with the ABA intervention program.

It is not clear how and why teachers are unaware of the ABA program. It does appear to be a simple lack of training. If teachers are going to have children with ASD in their classrooms due to government inclusion policies and laws, they should be qualified to include them. This means being fully aware of the intervention tools their disabled students are subjected to and their role in ensuring that the program is uninterrupted in this application and use. This is apparently lacking in both Lebanon and Dubai.

What is obvious is that parents who are aware of the ABA program and their role in its uninterrupted continuance seem to struggle with it. The reason they struggle with it appears to be connected to culture and beliefs about what ASD means. In a home setting where there are other children and other social connections, it may be difficult for parents to admit that their children are suffering from a disability. This is consistent with social theory of ecological systems based on critical realism.

Social theory of ecological systems informs that disability is complex because it is based partly on people's beliefs and perceptions which culminate in what is essentially segregated from what "humans believe" (Wide, 2016, p. 205). There are several layers to disability which interact to cause output and input (Wise, 2016, p. 205). What this means is that the environment is very important to how an individual respond to and accepts a disability. It therefore makes sense that cultural influences that infiltrate the parents' attitudes towards disabilities and therefore their willingness to accept and commit fully to ABA has an impact on its effectiveness.

Combaz (2018) reported on this in research on Lebanon. According to Combaz's (2018) findings, social, political, cultural and economic disadvantages exist and effect individuals with disabilities in Lebanon (p. 6). A similar problem exists in Dubai where due to cultural and policy shortcomings, nationals go undiagnosed (Al-Abbady, et al., 2017, p. 1-2). Therefore, while the problem in Lebanon is due to follow through and submission to treatment for ASD, the problem in Dubai is primarily due to diagnosis which is also impacted by cultural issues.

There is no doubt that in both Dubai and Lebanon culture has an impact on the effectiveness of ABA as an intervention tool for children with ASD. Both locations are equipped with the law and policies necessary for implementing and applying ABA as an intervention tool for children with ASD. Both locations have complained about parents' ability to follow through and this is inevitable due to cultural policies. Teachers are unable to help with follow through in both Lebanon and Dubai because they are not aware of the use of ABA and largely have no prior training to enable effective and full inclusion policies for these children who are suffering from ASD and participating in ABA programs. It can therefore be concluded that both parents and teachers need to be targeted to ensure the effectiveness of the ABA program as an intervention tool for children

with ASD. This is because inclusion will not have full benefits if students' ABA programs are ignored.

The results of the questionnaires and interviews also confirm that there is no misunderstanding about what autism is among experts in Lebanon and Dubai. Their concepts definitions are consistent with Ousley and Cermak's (2014) definition that it is a neurodevelopmental disorder (p. 20). The definitions and concepts offered by the participants are consistent with the definition offered by Reynolds and Kamphaus (2013) who emphasizes social communications deficits (p. 2).

Research findings are consistent with findings in the literature in that cultural impacts found in this study were also identified in the literature. For example, Obeid, et al.'s (2015) study showed that culture can impact how ASD is conceptualized. This was more obvious in Lebanon where SENCos expressed that parents were more reluctant to communicate about the possibility that their child or children may have autism.

Al Rayess' (2014) study raises some concerns because the study discovered that teachers were prepared to include their students with Autism. While Lebanon and Dubai have inclusion policies and laws, there is no indication that Lebanon's teachers are prepared to take this step as there appears to be a need for autism training. Dubai on the other hand is aggressively attempting to implement and practice inclusion without exception by next year, 2020 (Al Karam, 2017, p. 3). The lack of research available on Dubai in the context of ASD and ABA treatment programs leaves open many possibilities as to the status of ABA and ASD in Dubai.

## **Chapter 5: Conclusion**

### **5. Introduction**

This chapter looks back on the research plan and the results and in doing so draws a conclusion.

This study was constructed around aim and objectives. The aim and objectives of this study were:

The Aim was to determine the effectiveness of the ABA program for children with ASD in Lebanon and the UAE.

The objectives were

- To shed some light on the ABA program as a form of treatment for children with ASD.
- To gain insight into the effectiveness of the ABA program.
- To identify the strength of the ABA program in the context of children with ASD in the UAE and Lebanon.
- To identify methods for improving the effectiveness of the ABA program for children with ASD in the UAE and Lebanon.

In order to achieve the aim and objectives of this student, research questions were created to guide this research. The research questions were:

To what extent is ABA culturally affected as a tool for intervention for learners with ASD in Dubai? This research found that culture had a trickle-down effect on parents whose participation and follow through is necessary for the effectiveness of the ABA programme as an intervention tool for ASD in Dubai.

To what extent is ABA culturally affected as a tool for intervention for learners with ASD in Lebanon? This result was the same as it was for Dubai.

What are the similarities between the cultural impact on the use of ABA as an intervention tool for learners with ASD in Lebanon and Dubai? Parents are the culprits in both Lebanon and Dubai. Parents can also be instrumental in both countries for bringing the ABA program to the attention of teachers who might be more inclined to learn how to use it and promote the inclusion policies of both Lebanon and Dubai more effectively.

What are the differences between the cultural impact on the use of ABA as an intervention tool for learners with ASD in Lebanon and Dubai? Culture does not seem to have different effects on the use of ABA as an intervention tool in Lebanon and Dubai.

Due to the low volume of responses to the surveys, this research did not test the hypotheses set out. It is impossible to test hypothesis when the quantitative data consist of two responses. What the results tell us is unreliable because two individuals cannot reliably represent the general population of teachers, SENCos and ASD or ABA experts. Therefore, the surveys were only used to triangulate the data collected via questionnaires and interviews.

## **5.1 Conclusion**

This research student results confirm findings in the literature that culture has an impact on the effectiveness of the ABA program as an intervention tool for children with ASD. This confirmation was discovered by examining and comparing the cultural impacts on the ABA program as an intervention tool in Dubai and Lebanon. Both locations have strong and enforceable policies and laws for the inclusion of students with disabilities. However, there is no specific law or policy on the inclusion of ASD students. This may also account for the lack of knowledge and continuation of the ABA program by teachers who are ultimately responsible for the inclusion policies.

This research also demonstrated how culture impacts the effectiveness of the ABA program as an intervention tool for students with ASD. To begin with, the ABA program is well understood and respected by SENCOs and other ASD and ABA experts and therapists in both Lebanon and Dubai. Both jurisdictions expressed a concern and issue with parents and their inability to admit, discuss, follow through and participate in the ABA program. This reluctance is clearly a result of cultural stigmatism of ASD and impacts parents' ability to fully embrace this problem. In Dubai this may be more apparent due to the diagnosis shortcomings revealed in the literature review.

## **5.2 Recommendations**

Based on research findings and the conclusion the following recommendations are made for both Lebanon and Dubai for improving the effectiveness of the ABA program as an intervention tool for students with ASD:

- Then first and most important step is heightening awareness of ASD and the ABA intervention program. Parents and the public in general should be made aware of just how destructive untreated ASD can become for children and just how important the effectiveness of ABA is for their affected children. Parents should be made aware of how their participation and follow-through can have a positive impact on their children's ability to cope with and succeed despite having ASD.
- Teachers should be trained to identify the signs of ASD and talk to parents about those signs if they spot them.
- Teachers should be trained to ensure that parents are aware of how important treatment is for the child's ability to cope and succeed.

- Teachers in Dubai should also be trained to understand how the ABA program works and to speak to parents about it so that they can also encourage parents to follow through and participate.
- Both Lebanon and Dubai should implement special policies for advancing the ABA program as an intervention tool for children with ASD. The results of this study and reports in the literature review all indicate that ABA is a successful and effective intervention tool.
- Laws should be passed in both Lebanon and Dubai for specifically identifying compulsory intervention program such as ABA for children with ASD.
- Given its effectiveness and susceptibility to cultural effects, the ABA program should be implemented and applied in both Lebanon and Dubai with cultural adjustments so that parents are more likely to follow through and participate.

### **5.3 Weakness of the Research**

As discovered and reported in the limitations of this research, the participation of SENCos, experts and teachers were not as well as the researcher expected. It was difficult to collect data in two different jurisdictions. However, the researcher wanted to carry out this comparison between two different countries and the travelling back and forth was necessary to achieve this research purpose.

### **5.4 Strengths of the Research**

This research was strengthened by the fact that there were a variety of participants with firsthand knowledge of the use of the ABA program as an intervention tool in Lebanon and Dubai. Although the teachers did not complete the questionnaires and surveys it was still informative because it reveals that teachers in both Lebanon and Dubai need training and education on the use of the ABA as an intervention program for students with ASD in both jurisdictions. The data collected

from each of the participants served to triangulate each other and as such improved the validity, reliability and credibility of the research findings.

### **5.5 Areas for Further Research**

Based on the research findings indicating cultural barriers preventing the full participation of parents and their ability to follow through on the ABA program, further research is necessary in this area. Some research is necessary for identifying exactly why and how culture impacts parents' ability to participate and follow through on the ABA program. This research can be carried out in Lebanon and Dubai or any other pair of countries in the Arab Middle East. This is because the point of such a study is to identify ways in which these cultural obstacles can be countered. If we have specific data on how and why culture interferes, we will be able to address these issues more effectively.

Another issue identified in this research is the lack of knowledge teachers have about ABA and its use as an intervention tool. It is therefore necessary to carry out research where classroom observations are carried out and teachers are interviewed. The interviews will help us to understand why teachers have little or no knowledge of the ABA program as an intervention tool for children with ASD. Observations in the classroom will help us to understand just how important teachers' knowledge and application of ABA knowledge is for ensuring that inclusion program are effectively carried out and how important this knowledge is for the success of the ABA program.

## Appendix A

### Questionnaire to Parents

1. What approach do you apply when treating kids with autism?
2. Is ABA being used as an intervention to treat your child?
3. If yes, please describe how the ABA program implemented/and or applied among students with ASD?
4. How do you define ABA?
5. What challenges do you confront with the implementation and application of the ABA program?
6. How do you overcome those challenges?
7. How was your child diagnosed with ADSD?
8. Do you face any challenges or concerns when participating in the ABA program?
9. Do you believe that there are cultural barriers with regards to the diagnosis and treatment of ASD via the ABA program?
10. What recommendations would you make for improving the implementation and application of the ABA program for children with ASD?
11. Are you satisfied with the ABA program as an instrument for helping children with ASD develop and learn? Please explain.

## Appendix B

### Questionnaire

**Name:** \_\_\_\_\_

**Name of Center/Entity you represent:** \_\_\_\_\_

#### **Part I: Demographics**

1. Profession in Relation to ASD
  - a. Special Needs Teacher
  - b. ABA specialist
  - c. ASD Therapist
2. Years of ASD experience
  - a. Less than five years
  - b. More than five years

#### **Part II. Questionnaire**

1. What approach/intervention(s) do you use when treating kids with autism, ABA and other?
2. How is the ABA program implemented/and or applied among students with ASD?
3. How do you define ABA?
4. What challenges do you confront with the implementation and application of the ABA program?
5. How do you overcome those challenges?
6. How are children diagnosed with ADSD?
7. How are children with ASD placed in the ABA program?
8. What challenges to you confront with regards to parental concern and participation in the ABA program?

9. What cultural barriers do you confront with the diagnosis and treatment of ASD via the ABA program?
  
10. What recommendations would you make for improving the implementation and application of the ABA program for children with ASD?
  
11. Are you satisfied with the ABA program as an instrument for helping children with ASD develop and learn? Please explain.

## Appendix C

### Survey

#### Part 1: Demographics

1. Gender
  - a. Male
  - b. Female
2. Profession in Relation to ASD
  - a. Special Needs Teacher
  - b. ABA specialist
  - c. ASD Therapist
3. Years of ASD experience
  - a. Less than five years
  - b. More than five years

#### Part 2: Survey

Circle the answer you feel most accurately reflects your response to the statements and questions bellow

1. The parents with children in my ABA intervention are not comfortable with its effectiveness.

a. =Strongly agree    b.=Agree    c.=Neutral    d.=Disagree    e.= Strongly Disagree

If strongly agree or agree, please state the reasons:

- 
2. I have students that I suspect have ASD but their parents disagree

a. =Strongly agree    b.=Agree    c.=Neutral    d.=Disagree    e.= Strongly Disagree

If strongly agree or agree, please state the reasons:

---

3. It took a lot of hard work to convince parents to allow their children with ASD to participate in ABA intervention  
a. =Strongly agree    b.=Agree    c.=Neutral    d.=Disagree    e.= Strongly Disagree
4. Parents are hesitant to talk to me about child's progress in ABA intervention  
a. =Strongly agree    b.=Agree    c.=Neutral    d.=Disagree    e.= Strongly Disagree
5. Parents do not seem to be interested in discussing the possibility that their child has ASD  
a. =Strongly agree    b.=Agree    c.=Neutral    d.=Disagree    e.= Strongly Disagree
6. I am having a difficult time with the application of ABA due to cultural obstacles  
a. =Strongly agree    b.=Agree    c.=Neutral    d.=Disagree    e.= Strongly Disagree

If you agree or strongly agree, please list what these cultural obstacles are, i.e. political, social, religious, economic status, etc.

---

7. I believe that it is possible to tailor ABA intervention to cultural expectations and Exigencies  
a. =Strongly agree    b.=Agree    c.=Neutral    d.=Disagree    e.= Strongly Disagree

Please elaborate more on the option you have chosen by giving either reasons or examples:

---

8. I do not believe that our ABA intervention tool is culturally specific enough for our parents and students  
a. =Strongly agree    b.=Agree    c.=Neutral    d.=Disagree    e.= Strongly Disagree

9. I believe that if we improve the cultural aspects of our ABA intervention tool our parents and students would be more comfortable with its application.

a. =Strongly agree    b.=Agree    c.=Neutral    d.=Disagree    e.= Strongly Disagree

Appendix D

Consent Form

I, \_\_\_\_\_ the undersigned give my consent to participate in a study on the effectiveness of the ABA intervention tool for children with ASD in Lebanon and Dubai. I have been informed that I am free to withdraw my consent at any time after signing this document. I have not been offered rewards for participating in this study, nor have been coerced into participation. I have been informed that my privacy will be protected. Based on these undertakings and understandings, my signature below represents my consent to participate in the study described herein.

\_\_\_\_\_

Researcher

\_\_\_\_\_

Date

\_\_\_\_\_

Participant

## Appendix E

Rachid El Ayleh

[Rachid.pt@gmail.com](mailto:Rachid.pt@gmail.com)

+96170373375

PT Syndicate- Order of Physiotherapists in Lebanon

Reda Hammoud Unplb

[Rida\\_9000@hotmail.com](mailto:Rida_9000@hotmail.com)

+9613574286

Imdad

Rma Masoud

[acsauvel@acsauvel.com](mailto:acsauvel@acsauvel.com)

+96170831309

Acsauvel- Civil Association for the Safety of the Children in Lebanon

Sabin Saad

[Sabine.t.saad@gmail.com](mailto:Sabine.t.saad@gmail.com)

+9613840440

Autism Nort

Salwa Zaatari

[Szaatari@yahoo.com](mailto:Szaatari@yahoo.com)

+9613139373

Director, Daleel-Madani - Social Care Institution- Islamic Orphanage

Sami Hammoud

[lamhc@cyberia.net.lb](mailto:lamhc@cyberia.net.lb)

+9611651943

Director, LAMHC-- Lebanese Association for Special Education

Weam Abou Hamdan

[info.shouf@nrdbl.org](mailto:info.shouf@nrdbl.org)

+96171918342

NRDC-- National Rehabilitation and Development Center

## Bibliography

Abdulrahim, Sawsan; Ajrouch, Kristine, J. and Antonucci, Toni, C. (August 2015). Aging in Lebanon: Challenges and opportunities. *The Gerontologist*, 55(4), pp. 511-518.

[https://www.researchgate.net/publication/267043030\\_Aging\\_in\\_Lebanon\\_Challenges\\_and\\_Opportunities](https://www.researchgate.net/publication/267043030_Aging_in_Lebanon_Challenges_and_Opportunities)

Al-Abbady, Kadim; Hessian, Hamid Yahya and Alaam, Mohamed, Wasif. (2017). Prevalence, trend, determinants and prediction of autism spectrum disorders among Dubai population, diagnostic approach and management contexts. *Pediatrics & Health Research*, 2 (2:12), pp. 1-5.

<https://medcraveonline.com/JPNC/JPNC-07-00278.pdf>

Al-Ayadhi, Laila, Y.; Halepoto, Dost Muhammad; Al-Dress, Abdul, M.; Mitwali, Yasmine and Zainah, Rana. (2015). Behavioral benefits of camel milk in subjects with autism spectrum disorder. *Journal of the College of Physicians and Surgeons Pakistan*, 25(11), pp. 819-823.

<https://pdfs.semanticscholar.org/a5e2/ca5f2181210dcc2aff8d11814fa446a8e611.pdf>

Al Karam, Abdulla, Dr. (2017). Dubai inclusive education policy framework.” *Dubai Knowledge and Human Development Authority*, 2017, pp. 1-30.

[https://www.khda.gov.ae/cms/webparts/texteditor/documents/Education\\_Policy\\_En.pdf](https://www.khda.gov.ae/cms/webparts/texteditor/documents/Education_Policy_En.pdf)

(Accessed 3 August 2019).

Almalki, Sami. (2016). Integrating quantitative and qualitative data in mixed methods research – Challenges and benefits. *Journal of Education and Learning*, 5(3), pp. 288-296.

<https://files.eric.ed.gov/fulltext/EJ1110464.pdf>

Al Rayess, H.D. (June 2014). Teachers’ attitudes towards the inclusion of children with autism and their peer social acceptance across schools in Mount Lebanon and Beirut. *A Thesis*

*Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Arts in Education, Lebanese American University, School of Arts and Sciences, 1-107.*

Anderson, K.A.; Roux, A.M.; Kuo, A. and Shattuck, P.T. (2018). Social-ecological correlates in adult autism outcome studies: A scoping review. *Pediatrics*, 141 (s4), pp. s306-s317.

[https://pediatrics.aappublications.org/content/141/Supplement\\_4/S306.long](https://pediatrics.aappublications.org/content/141/Supplement_4/S306.long)

Chaaya, M.; Saab, D.; Maalouf, F.T. and Boustany, R.M. (Feb. 2016). Prevalence of autism spectrum disorder in nurseries in Lebanon: A cross sectional study. *Journal of Autism Dev Disord.* 46(2), pp. 514-522.

[https://www.researchgate.net/publication/323150326\\_National\\_Prevalence\\_and\\_Correlates\\_of\\_Autism\\_A\\_Lebanese\\_Cross-Sectional\\_Study](https://www.researchgate.net/publication/323150326_National_Prevalence_and_Correlates_of_Autism_A_Lebanese_Cross-Sectional_Study)

Combaz, Emilie. (15 July 2018). Situation of persons with disabilities in Lebanon. *Helpdesk Report, K4D*, pp. 1-176.

[https://assets.publishing.service.gov.uk/media/5b584da340f0b633af812655/Disability\\_in\\_Lebanon.pdf](https://assets.publishing.service.gov.uk/media/5b584da340f0b633af812655/Disability_in_Lebanon.pdf) (Accessed 8 August 2018).

Cuvo, A. J. and Vallelunga, L.R. (Fall 2007). A transactional systems model of autism services. *Behav. Anal.*, 30(2), pp. 161-180. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2203637/>

Dirani, Leyla, Akoury and Raad, Hala. (2018). Lebanon and autism. In Volkmar, Fred, R. (Ed.). *Encyclopedia of Autism Spectrum Disorders*. SpringerLink, (2018).

[https://link.springer.com/referenceworkentry/10.1007%2F978-1-4614-6435-8\\_102256-1](https://link.springer.com/referenceworkentry/10.1007%2F978-1-4614-6435-8_102256-1)

Accessed 3 July 2019.

Elsabbagh, Mayada; Gauri, Divan; Koh, Yun-Joo; Kim, Young Shin, et al. (June 2012). Global prevalence of autism and other pervasive developmental disorders. *Global Perspectives on Autism*, 4(3), pp. 160-179. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3763210/>

Elzein, Heyam, Lutfi. (April 2009). Attitudes toward inclusion of children with special needs in regular schools (a case study from parents' perspectives). *Educational Research and Review*, 4(4), pp. 164-172.

<https://www.researchgate.net/publication/228855456> Attitudes toward inclusion of children with special needs in regular schools A case study from parents' perspective

Ennis-Cole, Demetria; Durodoye, Beth A and Henry L. Harris. (2013). The impact of culture on autism diagnosis and treatment: Considerations for counselors and other professionals. *The Family Journal: Counseling and Therapy for Couples and Families*, 00 (0), pp. 1-9.

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.826.9962&rep=rep1&type=pdf>

Flick, U. (2013). *The SAGE handbook of qualitative data analysis*. Los Angeles: SAGE.

Fong, Elizabeth Hughes and Lee, Helen. (2017). Sociocultural perspective on autism intervention." *Open Access Peer-Reviewed Chapter*. 2017.

<https://www.intechopen.com/books/autism-paradigms-recent-research-and-clinical-applications/sociocultural-perspective-on-autism-intervention> (Accessed 18 July 2019).

Fong, Elizabeth, Hughes; Catagnus, Robyn, M.; Brodhead, Matthew, T.; Quigley, Shawn and Field, Sean. (2016). Developing the cultural awareness skills of behavior analysts. *Behav. Analysis Practice*, 9, pp. 84-94. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4788642/>

Fong, Elizabeth, Hughes; Ficklin, Seana and Lee, Helen, Y. (2017). Increasing cultural understanding and diversity in applied behavior analysis. *Behavior Analysis: Research and Practice*, 17(2), pp. 103-113. <https://psycnet.apa.org/fulltext/2017-07128-001.html>

Hamada, A.; Salameh, P.; Meldei-Hashim, M.; Haji-Moussa, E.; Saadallah-Zeidan, N. and Rizk, F. (September 2013). Autism in children and correlates in Lebanon: A pilot case-control study. *J Res Health Sci*, 13(2), pp. 119-124.

[https://www.researchgate.net/publication/256462625\\_Autism\\_in\\_children\\_and\\_correlates\\_in\\_Lebanon\\_a\\_pilot\\_case-control\\_study](https://www.researchgate.net/publication/256462625_Autism_in_children_and_correlates_in_Lebanon_a_pilot_case-control_study)

Harvard Medical School, Center for Global Health Delivery-Dubai (30 March – 1 April 2017). *Proceedings: System of care for autism spectrum disorder: A global perspective*. [https://ghd-dubai.hms.harvard.edu/files/ghd\\_dubai/files/autism\\_digital.pdf](https://ghd-dubai.hms.harvard.edu/files/ghd_dubai/files/autism_digital.pdf) (Accessed 29 July 2019).

Howell, Kerry, E. *An Introduction to the Philosophy of Methodology*. London: SAGE, 2013.

Human Rights Watch. (March 22, 2018). *Barriers to education for children with disabilities in Lebanon*. <https://www.hrw.org/report/2018/03/22/i-would-go-school/barriers-education-children-disabilities-lebanon> (Accessed 26 July 2019).

Hussein, Hanan and Taha, Ghada, R.A. (2013). Autism spectrum disorders: A review of the literature from Arab countries. *Middle East Current Psychiatry*, (20), pp. 106-116.

[https://journals.lww.com/mecpsychiatry/Fulltext/2013/07000/Autism\\_spectrum\\_disorders\\_a\\_review\\_of\\_the.2.aspx](https://journals.lww.com/mecpsychiatry/Fulltext/2013/07000/Autism_spectrum_disorders_a_review_of_the.2.aspx)

Kelly, Michelle, F.; Alireza, Busch, Heather, E.; Northrop, S.; Al-Attrash, Mohammad;

Ainsleight, Susan and Bhuptani, Nipa. (2016). *An overview of autism and applied behavior analysis in the Gulf Cooperation Council in the Middle East*. Springer.

<https://www.researchgate.net/publication/298907470> An overview of autism and applied behavior analysis in the Gulf Cooperation Council in the Middle East

Kelly, M.P.; Tennant, L. and Al-Hassan, S. (2016). Autism treatments used by parents in Abu Dhabi, United Arab Emirates. *Austin Journal of Autism and Related Disabilities*, 2(3), pp. 1-7.

<https://www.researchgate.net/publication/313860532> Autism treatments used by parents in Abu Dhabi United Arab Emirates

Khalifeh, Simone; Yassin, Walid; Khourtian, Silva and Boustany, Rose-Mary. (2016). Autism in review. *Lebanese Medical Journal*, 64(2), pp. 110-115.

<https://www.researchgate.net/publication/306213069> Autism in Review

Kimbi, Yael. (2014). Theory of mind abilities and deficits in autism spectrum disorders. *Top Lang Disorders*, 34(4), pp. 329-343.

<https://alliedhealth.ceconnection.com/files/TheoryofMindAbilitiesandDeficitsinAutismSpectrumDisorders-1415277337340.pdf>

Larvakas, P.J. (2008). *Encyclopedia of survey research methods*. Thousand Oaks: SAGE.

[https://books.google.com/books?id=Lp\\_v7SrFL\\_sC&printsec=frontcover&dq=Encyclopedia+of+survey+research+methods.&hl=en&sa=X&ved=2ahUKEwiS4JyunZDkAhUJQ60KHUf3CbwQ6AEwAHoECAAQA#v=onepage&q=Encyclopedia%20of%20survey%20research%20methods.&f=false](https://books.google.com/books?id=Lp_v7SrFL_sC&printsec=frontcover&dq=Encyclopedia+of+survey+research+methods.&hl=en&sa=X&ved=2ahUKEwiS4JyunZDkAhUJQ60KHUf3CbwQ6AEwAHoECAAQA#v=onepage&q=Encyclopedia%20of%20survey%20research%20methods.&f=false)

Leaf, Justin, B.; Cihon, Joseph, H.; Ferguson, Julia, L. and Weinkauff, Sara M. (2017). An introduction to applied behavior analysis. In J.J. Matson, (Ed.). *Handbook of childhood psychopathology and development disabilities treatment*. Springer International Publishing, (2017), pp. 25-42.

[https://books.google.com/books?id=3xXVBwAAQBAJ&pg=PA116&dq=An+introduction+to+a+pplied+behavior+analysis.+In+J.J.+Matson,++\(Ed.\).+Handbook+of+childhood+psychopathology+and+development+disabilities+treatment.&hl=en&sa=X&ved=2ahUKEwj\\_k-yrYbkAhUHWqwKHca6A9AQ6AEwAHoECAEQAg#v=onepage&q&f=false](https://books.google.com/books?id=3xXVBwAAQBAJ&pg=PA116&dq=An+introduction+to+a+pplied+behavior+analysis.+In+J.J.+Matson,++(Ed.).+Handbook+of+childhood+psychopathology+and+development+disabilities+treatment.&hl=en&sa=X&ved=2ahUKEwj_k-yrYbkAhUHWqwKHca6A9AQ6AEwAHoECAEQAg#v=onepage&q&f=false)

Liao, Yini; Dillenburger, Karola and Buchanan, Ian. (November 2017). Does culture matter in ABA-based autism interventions?: Parent and professional experiences in the UK and China. *European Journal of Behavior Analysis*, pp. 1-17.

[https://www.researchgate.net/publication/321328234\\_Does\\_culture\\_matter\\_in\\_ABA-based\\_autism\\_interventions\\_Parent\\_and\\_professional\\_experiences\\_in\\_the\\_UK\\_and\\_China](https://www.researchgate.net/publication/321328234_Does_culture_matter_in_ABA-based_autism_interventions_Parent_and_professional_experiences_in_the_UK_and_China)

Lopez, Kristina; Magana, Sandra; Morales, Miguel and Iland, Emily. (2019). Parents taking action: Reducing disparities through a culturally informed intervention for Latinx parents of children with autism.” *Journal of Ethnic and Cultural Diversity in Social Work*, pp. 1-20.

<https://www.autismspeaks.org/sites/default/files/2019%20PTA%20Journal%20of%20ethnic%20and%20cultural%20diversity%20in%20SW.pdf> (Accessed 29 July 2019).

Midgley, W.; Danaher, P.A. and Baguley, M. (2013). *The role of participants in education research: Ethics, epistemologies, and methods*. New York, NY: Routledge.

<https://books.google.com/books?id=4v3RgLLuRYC&pg=PA6&dq=The+role+of+participants+in+education+research:+Ethics,+epistemologies,+and+methods.&hl=en&sa=X&ved=2ahUKEwiOzIbmnZDkAhUDSa0KHbtaA64Q6AEwAHoECAEQAg#v=onepage&q&f=false>

Nahad, Alia, L. (December 2015). One boy’s journey: Living with autism in the UAE. *Journal of Psychology and Behavioral Science*, 3(2), pp. 141-147.

[http://jpbsnet.com/journals/jpbs/Vol\\_3\\_No\\_2\\_December\\_2015/13.pdf](http://jpbsnet.com/journals/jpbs/Vol_3_No_2_December_2015/13.pdf)

Obied, Rita; Daou, Nidal; DeNigris, Danielle; Shane-Simpson, Christina; Brooks, Patricia, J. and Gillespie-Lynch, Kristen. (June 2015). A cross-cultural comparison of knowledge and stigma associated with autism spectrum disorder among college students in Lebanon and the United States. *J Autism Dev Disord*, pp. 1-17. [https://www.researchgate.net/profile/Kristen\\_Gillespie-Lynch/publication/277816405\\_A\\_Cross-Cultural\\_Comparison\\_of\\_Knowledge\\_and\\_Stigma\\_Associated\\_with\\_Autism\\_Spectrum\\_Disorder\\_Among\\_College\\_Students\\_in\\_Lebanon\\_and\\_the\\_United\\_States/links/558704f508aeb0cdade0ad5b/A-Cross-Cultural-Comparison-of-Knowledge-and-Stigma-Associated-with-Autism-Spectrum-Disorder-Among-College-Students-in-Lebanon-and-the-United-States.pdf](https://www.researchgate.net/profile/Kristen_Gillespie-Lynch/publication/277816405_A_Cross-Cultural_Comparison_of_Knowledge_and_Stigma_Associated_with_Autism_Spectrum_Disorder_Among_College_Students_in_Lebanon_and_the_United_States/links/558704f508aeb0cdade0ad5b/A-Cross-Cultural-Comparison-of-Knowledge-and-Stigma-Associated-with-Autism-Spectrum-Disorder-Among-College-Students-in-Lebanon-and-the-United-States.pdf) Accessed 13 July 2019.

Onaolaop, A.Y. and Onaolapo, O.J. (2017). Global data on autism spectrum disorders prevalence: A review of facts, fallacies and limitations. *Universal Journal of Clinical Medicine*, 5(2), pp. 14-23. <http://www.hrpub.org/download/20180228/UJCM2-16910947.pdf>

Ousley, Opal and Cermak, Tracy. (March 2014). Autism spectrum disorder: Defining dimensions and subgroups. *Curr Dev Disord Rep*, 1(1), pp. 20-28. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4111262/>

Palys, T. (2008). Purposive Sampling. In L. M. Given (Ed.) *The Sage encyclopedia of qualitative research methods*. (Vol. 2), Los Angeles: SAGE, pp. 697-698. <https://www.sfu.ca/~palys/Purposive%20sampling.pdf>

Reynolds, Cecil, R. and Kamphaus, Randy, W. (2013). Autism spectrum disorder. Pearson. <https://images.pearsonclinical.com/images/assets/basc->

[3/basc3resources/DSM5\\_DiagnosticCriteria\\_AutismSpectrumDisorder.pdf](#) Accessed 9 July 2019.

Ridenour, C.S. and Newman, I. (2008). *Mixed methods research: Exploring the interactive continuum*. Southern Illinois University.

[https://books.google.com/books?id=\\_aFmUhcPuAAC&printsec=frontcover&dq=Mixed+method+s+research:+Exploring+the+interactive+continuum.&hl=en&sa=X&ved=2ahUKEwjtgppqGn5DkAhUDQ6wKHfVBCbIQ6AEwAHoECAEQAg#v=onepage&q=Mixed%20methods%20research%3A%20Exploring%20the%20interactive%20continuum.&f=false](https://books.google.com/books?id=_aFmUhcPuAAC&printsec=frontcover&dq=Mixed+method+s+research:+Exploring+the+interactive+continuum.&hl=en&sa=X&ved=2ahUKEwjtgppqGn5DkAhUDQ6wKHfVBCbIQ6AEwAHoECAEQAg#v=onepage&q=Mixed%20methods%20research%3A%20Exploring%20the%20interactive%20continuum.&f=false)

Ringdahl, Joel, E. and Falcomata, Terry, S. (2009). Applied behavior analysis and the treatment of childhood psychopathology and developmental disabilities. In Matson, J.L., et. Al., (Eds.). *Treating childhood psychopathology and developmental disabilities*. Springer Science, pp. 29-54.

<https://books.google.com/books?id=3TtMDwAAQBAJ&printsec=frontcover&dq=Applied+behavior+analysis+and+the+treatment+of+childhood+psychopathology+and+developmental+disabilities&hl=en&sa=X&ved=2ahUKEwjOxaqVs4bkAhUIIqwKHS7SAaoQ6AEwAHoECAEQAg#v=onepage&q=Applied%20behavior%20analysis%20and%20the%20treatment%20of%20childhood%20psychopathology%20and%20developmental%20disabilities&f=false>

Roane, Henry, S.; Fisher, Wayne, W. and Carr, James, E. (August 2016). Applied behavior analysis as treatment for autism spectrum disorder. *The Journal of Pediatrics*, 175, pp. 27-32.

[https://www.jpeds.com/article/S0022-3476\(16\)30071-3/abstract](https://www.jpeds.com/article/S0022-3476(16)30071-3/abstract)

Saab, Dahlia; Chaaya, Monique and Boustany, Rose-Mary. (2018). National prevalence and correlates of Autism: A Lebanese cross-sectional study. *Autism Open Access*, 18, pp. 1-7.

<https://www.researchgate.net/publication/323150326> National Prevalence and Correlates of Autism A Lebanese Cross-Sectional Study

Samadi, Sayyed, Ali and McConkey, Roy. (2011). Autism in developing countries: Lessons from Iran. *Autism Res Treat*, 2011. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3420542/> Accessed 7 July 2019.

Sida. (December 2014). Disability rights in the Middle East and North Africa. <https://www.sida.se/globalassets/sida/eng/partners/human-rights-based-approach/disability/rights-of-persons-with-disabilities-mena.pdf> (Accessed 12 August 2019).

Slocum, Timothy, A.; Detrich, Ronnie; Wilczynski, Susan, M.; Spencer, Trina, D.; Lewis, Teri and Wolfe, Katie. (May 2014). The evidence-based practice of applied behavior Analysis.” *Behav Anal*, 37(1), pp. 41-56. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4883454/>

Smith, Tristram. (Spring 2012). Evolution of research on interventions for individuals with autism spectrum disorder: Implications for behavior analysis. *Behav Anal.*, 35(1), pp. 101-113. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3359846/>

Taha, G.R.A. and Hussein, H. (2014). Autism spectrum disorders in developing countries: Lessons from the Arab world. In Patel, V.; Preedy, V. and Martin, C. (Eds.). *Comprehensive guide to autism*. New York, NY: Springer, pp. 2509-2531. [https://link.springer.com/referenceworkentry/10.1007%2F978-1-4614-4788-7\\_98](https://link.springer.com/referenceworkentry/10.1007%2F978-1-4614-4788-7_98)

Thanh, Nguyen, Cao and Thanh, Tran Thi, Le. (2015). The interconnection between interpretivist paradigm and qualitative methods in education. *American Journal of Educational Science*, 1(2), pp. 24-27.

<https://pdfs.semanticscholar.org/79e6/888e672cf2acf8afe2ec21fd42a29b2cbd90.pdf>

UNESCO. (2013). Social inclusion of young persons with disabilities (PWD) in Lebanon: Where do we stand and what should be done to promote their rights? *Beirut Office*, pp. 1-28.

Uwaezuoke, Samuel, N. (2015). Autism spectrum disorder in children: The disparities between the developed and developing countries. *Autism Open Access*, 5(3), pp. 152-157.

<https://www.longdom.org/open-access/autism-spectrum-disorder-in-children-the-disparities-between-the-developedand-developing-countries-2165-7890-1000152.pdf>

Vietze, Peter and Lax, Leah Esther. (2014). *Early intervention ABA for toddlers with ASD: Effect of age and amount*. Springer.

[https://www.researchgate.net/publication/323767830\\_Early\\_Intervention\\_ABA\\_for\\_Toddlers\\_with\\_ASD\\_Effect\\_of\\_Age\\_and\\_Amount](https://www.researchgate.net/publication/323767830_Early_Intervention_ABA_for_Toddlers_with_ASD_Effect_of_Age_and_Amount)

Vismara, Laurie, A. and Rogers, Sally, J. (2010). Behavioral treatments in autism spectrum disorder: What do we know? *Annu. Rev. Clin. Psychol.*, 6, pp. 447-468.

[http://dcautismparents.org/yahoo\\_site\\_admin/assets/docs/ABA\\_6.9260059.pdf](http://dcautismparents.org/yahoo_site_admin/assets/docs/ABA_6.9260059.pdf)

Welch, Christie, D. and Polatajlo, H.J. (July/August 2016). Applied behavior analysis, autism, and occupational therapy: A search for understanding. *The American Journal of Occupational Therapy*, 70 (4), 2016, pp. 1-5.

<https://pdfs.semanticscholar.org/26e9/765e3f098e4e8a64a62e55f3345b33af6386.pdf>

Wise, James, B. (2016). Deepened ecological model: A fresh perspective on the experience of disability. *Therapeutic Recreation Journal*, L, (3), pp. 199-212.

[https://www.researchgate.net/publication/306069876\\_Deepened\\_Ecological\\_Model\\_A\\_Fresh\\_Perspective\\_on\\_the\\_Experience\\_of\\_Disability](https://www.researchgate.net/publication/306069876_Deepened_Ecological_Model_A_Fresh_Perspective_on_the_Experience_of_Disability)

World Health Organization. (2 April 2018). Autism spectrum disorders. Fact Sheets.

<https://www.who.int/news-room/fact-sheets/detail/autism-spectrum-disorders> Accessed 4 July 2019.

World Population Review. “Dubai population 2019.”. <http://worldpopulationreview.com/world-cities/dubai-population/> Accessed 18 July 2019.

Xu, Guifeng; Strathearn, Lane; Liu, Buyum and Bao, Wei. (January 2018). Prevalence of autism spectrum disorder among S Children and Adolescents, 2014-2016. *JAMA*, 319(1), p. 81.

<https://www.researchgate.net/publication/322217321> Prevalence of Autism Spectrum Disorder Among US Children and Adolescents 2014-2016