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Should Early Educational Programs For Children With ASD Be Adapted To The M.E.N.A[1]. Cultures?

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Abstract

On one hand, living environments for children with autism spectrum disorder (ASD), these days, benefit from numerous successful educational programs. Knowing them is of great importance for parents to be highlighted in their parental choices. On the other hand, cultural or own parental beliefs and wishes linked to child education are recommended to be considered in most programs, due to their influence on parental educational practices and the good appliance of the programs' principles at home. However, this article addresses an uncommon question: due to their culture, to what extent do these programs accommodate the peculiar requirements of children with ASD in the Middle East and North Africa (MENA) region? Namely, educational cultural differences have been found in parental style and care. This article tries to analyze the adequacy of existing programs with the cultural educative preferences of the MENA region. In order to ensure inclusion of ASD children and maximize the impact of programs, we would like to know if culturally grounded changes are required to ensure that such programs are feasible and practical for children with ASD in the MENA region.
The article discusses the risk of cultural barriers that could make the implementation of these programs unsuccessful in the MENA region, such as the coordination of care.

Keywords : Autism · Culture · training programs. Children with ASD

Introduction:

Autism spectrum disorder (ASD) is a complex developmental condition involving persistent challenges with social communication, restricted interests, and repetitive behaviour, sensory features. While autism is considered as a lifelong disorder, the degree of impairment in functioning because of these challenges varies between individuals with autism (APA, 2016).

Autism severely compromises functioning in multiple developmental domains, including social relatedness and reciprocity, nonverbal and verbal communication, cognitive and adaptive functioning. In the last decade, ASD diagnosed cases are on the rise worldwide, with known and still unknown causes, there have been many ASD intervention programs worldly used to support children with ASD in different prevention levels for many years now.

They all explain that parental involvement improves transferability of the skills trained. Many researches have been conducted to prove it (Garbacz et al., 2016, Rogers & Dawson, 2010, Santiago, McIntyre & Garbacz, 2021).

As examples for those programs or methods to address in this article: ESDM (Denver) - 2010 TEACCH (Schopler) – 1960, AEPS (Bricker) – 2002-2006, TED (Lelord - Barthélémy) – 1978-1995, ABA (Lovaas)/and PECS (Bondy and Frost, 1994) – 1960 /1994.

Before examining the relationship between these programmes and the cultural aspects currently characteristic of the M.E.N.A., we must first present the cultural differences found which could possibly influence the benefit of the programs.

Are there any cultural specificities that need to be considered at the moment in the countries of the M.E.N.A. zone?

MENA countries refer to several countries stretching from Morocco to Iran, with medium to significant economic development, with a partially common history and a common state religion, Islam (Talahite, 2013). Since the 1990s, these countries have undergone significant changes, such as the decline in infant mortality, the systematic enrolment of girls in school (which has become free), the development of a health policy (which has also become free) and family planning, strong migration to the areas richest in terms of employment and resources, and the employment of women to replace the insufficient male workforce (ibid).

However, we can think that cultural differences remain with Western countries and can influence the educational care of children with disabilities. For example, the distribution of parental roles is quite "traditionalist" in the countries of this zone. This places parental care exclusively on mothers, who are more available to the child for various reasons, and extended family when mothers are not available. One indicator is, for example, the number of days of leave currently granted to mothers and fathers. While the number of days of paid paternal leave in Western countries has increased

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significantly over the last 50 years to the point where it is possible to request a one-year parental leave in some countries, in M.E.NA., paternal leave varies on average from 0 day to 14 days for the most generous countries (although 28 countries have no legislation on parental leave), Hyland and Shen, 2022. Another index could be women's work, ranging from 0% to 35% of the working population (35% in Saudi Arabia), but by an average of 25% for the whole of the MENA region, the world average being 51% (Talahite, 2013). If the mothers and women of the family care for the child, shouldn't intervention programs for young people with autism be worked with the extended family, beyond the nuclear family, if only to facilitate the coherence of interventions? It is likely that the proportion of women's work has increased further since then, but we did not find a more recent study on this topic.

On the other hand, while childcare services for young people (with or without disabilities) are systematically present in Western countries, MENA countries are facing a significant increase in their youth population and are still seeking to develop and articulate appropriate services to cope with it (Hoel, 2014). The lack of available services does not currently allow for the same opportunities for support, respite and accompaniment of families as in Western countries.

Regardless of reception, the issue of care coordination and its proven impact on effectiveness in patient follow-up is an issue of importance at a global level (Misra et al., 2020, Peterson et al., 2019). Indeed, when coordination is lacking, the quality of care, its access and the quality of life of people with disabilities is reduced (Schoen et al., 2011). This issue is far from being resolved, even in Commonwealth countries. However, this coordination seems even more complex to implement in MENA.

From a "religious" point of view, it is not impossible that a strict application of the Muslim religion could eventually lead to a tendency not to intervene with young people with disabilities. Indeed, if young people with disabilities are well accepted as creatures "of God/Allah", in order to take care of them in the best possible way, one might think that it would be enough to exempt them from all tasks that appeal to the senses perceived as deficient, to do it for them, or even to exempt them from any task. The causality of disability could be experienced as mysterious and belonging only to God/Allah and that one should not seek to understand or deepen it. Seeking to understand would then be perceived as pride (Rabahi, 2023, Stiker, 2017). What could fuel him, in the Koran, are the verses evoking the very story of Muhammad, who may have experienced "open-heart surgery", who may have sometimes behaved strangely (hoarse and inarticulate cries coming out of his mouth), senseless words, "trances" that could pass for pathological, having communications with God through unusual auditory and visual perceptions, all of these manifestations pass for a "divine" marking (Stiker, 2017). In a possible strict application of beliefs about disability, perhaps also a mark of the divine, the risk of not mentioning these elements is not to support everything that has to do with the self-determination of young people with disabilities. A possible argument of the staff who deliver the programs for autistic children, to help go beyond this strict interpretation and encourage adherence to the programs, could be consider the very arguments of the Muslim faith. In this case, to make it appear that "the prophet" himself gave important responsibilities to all his disabled companions and that he always sought to integrate them as much as possible into life in the community. In this way, the self-determination of young people can be aimed at without major opposition to the family faith, and the search for intervention programs can then resonate with families.

What are those programs?

After years for those programs to exist, in this article we will try now to challenge those programs against three main questions:

1- Can we identify common points for effective programs in ASD already diagnosed (and not yet) in 1st & 2nd prevention[4]?

2- Are cultural particularities treated in those programs, if yes, how? To answer this question and to compare the programs, we will use the eco-systemic model of Bigras and Japel (2007) adapted by Caublot, Poli and Arnouil-Deu (2014). The cultural traits belong to the “macrosystem” and exosystem in the model of Bigras and Japel.

In this model, taking into account the diversity of points of view, before any intervention, is a co-construction that identifies and evolves over time both the macrosystem (culture, values, ideologies relating to the reception and education of children), the exosystem (family policy, legislation on childcare facilities, the socio-economic context), the mesosystem (family-reception/therapeutic team relations, family-external partners-follow-up coordinator), the microsystem (the family and extra-family environment, the specific or non-specific layout of spaces), the ontosystem (the personal characteristics of the young people, biological, psychological, behavioural, etc.).

3- How possible is the needed care coordination? Is it important for the effectiveness of the treatment received? (the coordination belongs to the “mesosystem” in Bigras and Japel’s model).

To which extent do those widely known programs consider those three questions in their approach, and are adaptations required? We gathered the arguments of each program in the table 1 (below).

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[4] 1st & 2nd prevention: primary prevention: when problems/ difficulties of children have not yet appeared. The idea is to prevent difficulties to appear. Secondary prevention: when problems-difficulties of children have appeared. The idea is to prevent difficulties from getting worse, from becoming disorders

Programs (authors)	Preferred audience	**Macro-system**	**Exo-system**	Meso-system	Micro-system	Onto-system
		Culture, values, ideologies related to education and handicap	Family policy, legislation for medical and social institutions, social and economic context	Relations partners/ families, coordination between partners	Familial environment, other environments, adaptation of equipment, spaces and environments	Personal traits (biological, psychological, behavioural…)
ESDM (Denver 2010)	12-36 months/		The authors wrote an explanatory book for the parents who intend to deepen the principles of the program (Rogers, Dawson and Vismara, 2020). This makes it easier for families to understand and apply the method.	-supervision of parents and professionals by a psychologist trained in the method - 20 to 25 weekly hours recommended for an effective application of the method (Rogé, in Rogers and Dawson, 2013). - A grid of developmental skills is used as first and regular assessment by all partners, it is helpful to share the progress of the child with parents.	six principles (individualized intervention, naturalistic environment, developmental framework, joint attention and emotional regulation, positive reinforcement) to guide the parent-child and professional-child interactions in ESDM. Children learn the principles from their parents with help from therapists. They are further applied to daily routines by the children to give their everyday routine concerning development.	Aim: Support natural, playful interactions and social engagement to encourage language, play, social and motor skills, emotional and cognitive regulation (joint attention, imitation, behaviour, autonomy). -Personal traits of the child identified in the different tests
TEACCH, Schopler	effective in treating ASD regardless of an individual's age—specifically in children and teenagers.	Noni et al. (2021): the focus on adapting the program's content to various cultural frameworks had been integrated through aspects of cultural **values**	Help as needed but not formalized	A supervisor coordinates the program among the partners (Godel et al., 2022). A special tool assesses and follows the children: PEP (psycho educational Profile, Schopler and Reichler, 1979 and 2004).	Activities build and prepared according to the profiles of needs identified in the tests	structured, person-centered treatment and education program for people with ASD and speech-language impairments. It also points to visual support

	Zeng et al. (2022): there is flexibility in what is to teach (relying on the family priority)	**and styles** of communication in the curriculum		The PEP has two parts: the first one consists in assessing the skills of the child in ten domains (verbal and not verbal cognition, receptive and expressive communication, oculomotor imitation, gross and fine motor skills, not adapted behaviours…) and a family report. In this report, parents have to give -according to their mind- information about the current developmental level reached, the diagnostic categories heard about their child, the degree of severity, the behaviour problems, the personal autonomy and adaptative behaviour. It is a good opportunity to talk with families and identify their questions about how their child is functioning and ways to help him or her. A close relationship with families is necessary, the material is often duplicated (home and school), a daily liaison notebook circulates between the child's living environments to record any success, emergence and any information facilitating the child's learning.		for a flexible schedule and emphasizes primary focus on individual strengths and interests. Personal traits of the child identified in the different tests

A- AEPS (Assessment Evaluation and Programming System for infants and children, Bricker, 2002, 2006)	0 to 6 years old children: People who were diagnosed with IDT or ASD before they attained age three or at a high risk of developing ASD (0 to 6 years old children).	This report allows to collect representations of perceived skills, discuss about them and about the disorder perceived of the child. It is also an opportunity to note the wishes of the family to choose priority objectives. Both parents have to complete the questionnaire (report) and then discuss with the psychologist who coordinates the program.	Help as needed but not formalized	intensive, individualized treatment provided in many environments (home, clinic, community) by an interdisciplinary team of professionals. The program proposes three methods to get information about the child with the same developmental grid used at: observation (in daily activities and routines, in the different situations and contexts of life), direct assessment and family reported information (“family report”). The common grid is regularly shared between the educative team (with parents) and is only based on abilities and emergent abilities of the child, to be trained in the different environments. Effective collaboration is targeted among therapists, educators, and other professionals responsible for the child's care. The team has constant regular meetings, and it communicates with the family	Activities build and prepared according to the profiles of needs identified in the tests Empowering parents with techniques to guide their child's development in everyday activities and social engagements. After working with the family to design the individualized intervention plan for the child, they engage the family by giving them the techniques to use at home with their child as well (Godel et al., 2022). Adapting the child's environment to minimize the symptoms of sensory overload and increase the level of involvement	Personal traits of the child identified in the different tests

				to give forthright interventions in response to the progress of the child and those needs that may change (Godel et al., 2022). The program is oriented collaboratively, hence placed to ensure that the families receive the required support and take an active role in the development of their children.		
TED (Lelord et al., 1978, Barthélémy, Hameury et Lelord, 1995)	Training of Exchange and Development (TED) is a Francophone intervention program providing early support to infants and toddlers aged 18-36 months with severe Autism Spectrum Disorder (ASD), even if his principles may have been transferred beyond this age	Therapists have the autonomy to implement TED with some adaptations that encompass the values and family arrangements of the parents. These adaptations ensure interventions are implemented to provide relevant respect and a successful fit for the unique cultural clients (Wang et al., 2021)	Help as needed but not formalized	***Care coordination*** *f*ocuses on improvement regarding developmental and sensory integration issues among young children with ASD. This network of relations guarantees the position of therapeutic activities in the child's daily routines, providing homogeneity and continuity in the intervention process of the child.	It highlights the parent-child relationship at play as the child responds to sensory experiences. Then, play activities (toys already prepared in the room, the same from one session to the next) are organized in a space that is poor from a sensory point of view, between a therapist and the child. Based on the child's interests, the therapist will support interactions and facilitate reciprocal adjustments, the consolidation of skills and their generalization (Bataille et al., 2016). It is based on an approach to play and relationship coordination.	The therapy is based, like the other programs, on an initial assessment (by the ECA-R, revised Autistic Behaviour Scale, the EFC-R, functional scale of behaviours: attention, perception, association, tone, motor skills, imitation, intention, regulation, communication, cognition, contact, and emotion.) and supplemented by the BECS (cognitive and socio-emotional assessment battery) as well as other assessments.

					Coordination in TED is based on establishing a supportive network among therapists, educators, and families (Zeng et al., 2021).	
ABA (Applied Behaviour Analysis**,** Lovaas, 1960, 1981**) /PECS (**Picture Exchange communication System**,** Bondy and Frost, 1994)	Children and adults with ASD, specifically those with limited or no functional verbal skills	Kruger (2022) explicitly specifies such interventions to be culturally sensitive, including fully adapting PECS symbols and modes of communication within the bounds of concrete cultural environments. This subtlety of culture is just what is referred to, and it makes interventions that are accessible not only to the diverse population group but also ones that have meaning to the lives of these different people.	Help as needed but not formalized	The child is generally cared for in the family's home (then in other places frequented) for 30 to 40 hours a week, by psychologists and educators. It is an intensive method, coordinated by a psychologist trained in the method, which focuses on learning/supporting: imitation, learner behaviour, language, play skills, ability to make choices, basic social skills, recognition of basic emotions, spontaneity, pre-school skills. The family is therefore, as in the other programs (may be even more closely), a full-fledged member of the therapeutic team, always in close contact with the intervention coordinator. the coordination of care that provides smoothness across behaviour analysts, speech therapists, educators, and the	Environment and material adapted: These tasks are divided into components in ABA, and Through PECS, individuals are trained to give picture cards in exchange for selected objects or activities to ultimately engage in more advanced forms of communication. As with previous programs, priorities are defined with families and translated into specific sub-objectives. However, One of the goals of this program is to reduce problematic behaviours (anger, self-harm), Leaf & McEachin, 1999. It is therefore external workers who deal with the "heaviest" part of the intensive work, but	This intervention aims to reinforce desirable behaviours and reduce challenging behaviours, using ABA principles and PECS to help individuals with ASD learn to communicate using picture cards. positive reinforcement is used for desired behaviours, while time-out and extinction are used to reduce undesirable behaviours. before implementing any intervention, a skills assessment is carried out by psychologists trained in the method.

				family will be achieved. In this case, frequent team meetings and standard documentation are set to align all parties to matters in intervention strategies, behavioural goals, and communication milestones (Kruger, 2022).	families are supposed to use the remaining time to work on play skills, social adaptation and autonomy (dressing, care, meals) in all the environments frequented in common, with the same principles as those used by the therapists (ibid).	

Table 1: arguments of the early educative programs in ASD children related to the model of Bigras and Japel (2007)

Discussion:

What do these different intervention programs for children with autism spectrum disorders (ASD) have in common? They all share an **evidence-based approach:** This means that their strategies and techniques are founded on the research that shows they are effective and can lead to positive outcomes for ASD children and their families. This dedication to evidence-based practice makes sure that the interventions have been proven effective clinically, and they are based on complete scientific principles (Blanc et al., 2021, Kruger, 2022, Yu et al., 2020, Zeng et al., 2021).

They all allow **individualized intervention:** Every program acknowledges the significance of adapting interventions to the specific needs of every autistic child. They accept the fact that autism is a spectrum disorder and that for any autistic person, there will be a variety of strengths, challenges, and preferences that might differ widely. Therefore, interventions are often tailored to address the problems while reinforcing the strengths. Some are mostly adult-led and adult-chosen (ABA, TEACCH), other are mostly both child-led, adult-led and adult-chosen (ESDM).

They all recommend **early intervention:** Early intervention is the basis of all these programs. They focus on the necessity to detect and treat developmental issues at the earliest time possible to make effective the child's development outcomes. Early intervention has been widely demonstrated as the most successful in long-term results for people on the autism spectrum. Thus, starting the interventions in the formative years of development is key.

Many programs adopt a **Family-centered approach:** Several of the programs adopted the family-centered approach in which they acknowledge the importance of families in the development of ASD in children. These interventions engage parents and caregivers in the intervention process and equip them with the appropriate information, training, and support to implement the strategies at home and at natural environments.

We may think that the programs require so much parental involvement that it can be too emotionally burdensome for some families. It assumes that both parents are involved in a significant way. Similarly, depending on the agreements with the health systems of the countries, the methods may be financed more or less entirely by the families. The less fortunate may not have the means to set it up.

Most of the programs have inbuilt **Structured, visual supports** to help ASD people to comprehend and move through their environments. These may include visual schedules, picture communication systems, structured teaching strategies as well as visual supports for learning and communication. These support resources are especially effective for persons with ASD who may be facing some challenges such as communication, social interaction, and flexibility.

The programs require a **Collaborative, multidisciplinary approach:** These programs usually incorporate collaboration among many specialists including therapists, educators, psychologists, speech therapists, and others. The multidisciplinary team approach guarantees that treatment methods comprehensively deal with the complex needs of individuals with ASD.

Goal-oriented interventions: Each program focuses on the definition of specific, measurable activities. These objectives aim at the realization of the individual's strengths, needs, and developmental priorities among others. It is crucial to acknowledge that although many interventional programs for kids with an autism spectrum disorder (ASD) aim to consider the cultural aspects, there could still be areas where specific cultural factors are not fully or systematically considered. For instance, how much do these programs cover cultural aspects of different locations that belong to the MENA region? If we look at the cultural specificities of the MENA region on one hand and the content of those programs, on the other hand, we find some cultural considerations that may not be adequately addressed in some programs:

1- Intersectionality (Cross-cultural): Many programs seem to ignore the intersectionality of cultural identities, like ethnicity, gender, disability and socio-economic status. Individuals with ASD from the marginalized or under-represented communities likely experience special challenges because of the confluence of multicultural identities.

2- Spirituality and beliefs linked to religion: the programs do not consider the significance of spirituality and religion in a family's life. Spiritual beliefs and practices are key factors able to impact families' views of ASD and their choice of treatment options. The MENA region is well-known for its spirituality and religion seems the main foundation for its people. Programs must be mindful and sensitive to multiple spiritual and religious beliefs. In the ESDM program, when parental Faith is considered, it is to help them accepting that they are not responsible for the disorder of their child and fetch deep raisons to keep going optimistic in the possible positive change, with the involvement of all partners (Rogers and Dawson, 2010, 2013). This point depends mostly on the clinical supervisor who establishes and maintains the link between parents and medical-educative staff during all the time of the program. Most programs furnish a technical guidance for parents so that generalization of behaviours may occur. This "instrumental" and technical support, however, cannot be compared to "emotional" support that is closer to the faith of the families. Should it? Our practice with families from the M.E.N.A. leads us more often than expected to exchange with parents, on their own initiative, their beliefs and reasons for their child's disability in order to seek adherence to an intervention.

3- **Community support**: in the MENA region, community is an essential pillar in the daily life, which must be strongly considered in those programs' strategy, whether the developed community support or the humble ones, not to forget that in some area community support can be negative or considered as an obstacle for parents to implement those programs. Although programs frequently mobilize families to be part of the interventions, they fail to fully explore the community supports and resources. Communities can provide useful resources for an immigrant such as cultural and linguistic resources, peer networks, and community organizations. Programs could work together with community partners to create strong family support structures.

4- **Alternative healing practices**: Many families can be seen depending on alternative healing based in the families' traditional culture, such as natural medicine, traditional medicine or alternative treatment. This is the case in the MENA region. Although it is a big part of their life, they pay lots of attention and take some consideration for that factor. Programs do not always integrate or respect these practices, which could lead to a disconnect between families and intervention providers. The AEPS program includes a questionnaire for each parent, in order to discuss the different "names of disorders" heard about their child and to homogenize representations about the reasons for the disorder. This questionnaire could be a pretext to further discuss everything that can help the child and what cannot help him/her, without offending care beliefs.

5- **Cultural norms**: Cultural norms and the stigma regarding disability and mental health are different from one culture to another. For those families in the MENA region, the stigma or cultural inhibitions that come with the ASD diagnosis may prevent them from seeking/accepting treatments, which in turn affects the parents' engagement in the interventions. Interventions should deal with the stigma and the cultural practices gently and support the families as they face to this situation. As we may notice in table 1, cultural traits (columns macrosystem and exosystem) are the least developed in the programs.

6- **Accessibility and inclusion**: Some families from disadvantaged backgrounds coming from many MENA countries could face language barriers, transportation problems, or financial difficulties. Programs and interventions should take measures to remove these obstacles and to ensure the interventions are available and inclusive for all families despite the culture or socio-economic background they belong to. This point is not a peculiarity of MENA countries, people from disadvantaged backgrounds all over the world encounter the same needs, the family stress being useful to integrate in the educational monitoring. Anyway, differences in the possibility of free care and access to educational services may weaken any effective support. Even in MENA countries, there is a wide variety of situations and services don't seem to be as numerous as in Europe or USA (Hoel, 2014).

7- **Paternal Involvement & Father's Role**: A lot of intervention programmes fail to consider the role of fathers in the care of children with autism, although some research indicates the importance of fathers in this area. Fathers in the MENA region may find such obstacles like the workload, ignorance about autism, feelings of insecurity, and the traditionally regarded male image in their society. The cultural norms and expectations of the MENA region also show the way for the dads' participation, pointing out the necessity for the programs to address barriers and involve fathers actively.

8- **Integrated Approach to Screen Time Management:**

Many digital applications, specifically aimed at children with ASD, have emerged. Some families, thinking they are occupying the child while they have to manage other activities, may resort to it more than necessary. Without concluding with Kushima et al. (2022) that excessive screen time can trigger autism, it seems clear that excessive exposure to screens can worsen social functioning, as it can lead to isolation and missed opportunities to interact. With the fast expansion of device usage, it is useful to assess the health consequences of screen time in babies and put a limitation to excessive device time. The intervention programs must acknowledge the potential dangers of too much screen time to the development of children, including children with autism, and suggestions and guidance should be provided to the families. This includes providing parents and caregivers with information about the risks of early and long-term screen exposure, which can include language delays, social-emotional difficulties, and attention problems. Interventions should offer methods of how to manage screen time in family relations, giving great emphasis on the posting of borders, involving activities that promote development and socialization, and modeling healthy media use. Moreover, an intervention plan that caters to the specific requirements and vulnerability of the child with autism with regard to screen time should be considered. By including screen time management skill advice into their curriculum and parent education programs, providing sustained monitoring and support, and encouraging awareness of the significance of balanced media use practices, intervention programs can promote better developmental results for children with autism and, thus, improve overall family wellbeing.

Conclusion

In this article, we had two objectives:

-examine the interest, for care, of considering the cultural factors of families of children with ASD from countries in the MENA zone.

-Identify, through effective programmes for intervention with children with ASD, the extent to which they were already taking these cultural aspects into account or might need to take them into account more.

On the first point, some cultural aspects seem to be common to the MENA:
- the distribution of parental roles with a greater weight for the first education (0-6 years old) almost exclusively provided by mothers, a school that begins at 6 years old,
- a frequent relay of the extended family, all the more frequent since 25% of mothers work
- an importance of the Muslim faith (potentially a bearer of a non-interventionist representation with children with disabilities)
-an insufficient number of services in relation to the population (strong population growth, Verdeil, 2017) and a lack of coordination of care (this is not a cultural dimension but a cyclical one, as is school dropout, especially in adolescence and poverty, families displaced due to the wars in Syria, Iraq, ibid); This leads to a wide variety of family situations to consider,
- a different education and expectation of success for girls and boys (Verdeil, 2017), schooling is not always accepted by schools for children with disabilities, with families then finding themselves without an institutional solution (UN, 2019).
Other aspects are obviously specific to each family (level of education, income, etc.). Some studies show that, in families from the Maghreb (without disabilities) and living in the West, a high level of education equalizes the chances of success and erases possible cultural effects (Felouzis et al., 2016). We do not know if this is also true for families with children with disabilities living in the West and MENA, but studies could be carried out on this subject. The fact that representations of health in general are influenced by culture, on the other hand, no longer needs to be demonstrated (Jodelet, 2006).

Finally, are culturally grounded changes required to ensure that the effective programs are feasible and practical for children with ASD in the MENA region? (our second aim).
Most programs show a willingness to work closely with parents, provide for coordination of follow-up and show a particular benefit when practiced before the age of 6. Some of the programmes (TEACCH, EAPS) provide for a specific questionnaire on the initial representations of families, the names of the "diagnoses" heard about their child and the expectations, allowing time to be devoted to the representations of the families. This time could be used to go as far as religious representations related to disability, especially if they risk hindering the proper implementation of interventions.
All programs share progress with families (father/mother) whom they consider to be members of the therapeutic team. The extended family (beyond siblings) is rarely considered, even if communication tools (PECS) and the generalization of methods are recommended in all contexts of the child's life. This would also deserve support.
Families in the MENA with ASD may not start follow-up until the age of 6 (the school cannot play a scouting role). Other services should be able to take over to facilitate this identification and the early start of interventions.
All this leads us to conclude that family support remains a priority (Sankey, 2019, Who, 2014) or, with the HAS (2012), that parental models, the extended environment, and cultural resources could be considered in a more specific way in intervention programs for MENA populations. This proposal could be implemented, for example, in the recommendations to professionals in Lavallée and Marquis (1999, pages 18 to 24), which recommend to teams of early childhood professionals (working in intercultural environments) concrete and systematic avenues for reflection, both individually (to better understand the culture of families) and a collective approach by all professionals to better understand the overall context of the child in a situation of disability and his family. This could be part of the approach to welcoming young children with disabilities. This approach could complement the existing family questionnaires, which are already very useful for harmonising the representations of the family/therapeutic team on the functioning of the child, the expectations of the families, the existing services and the possibilities of care (for example, TEACCH programmes through the "educator" questionnaire of the PEP3 or the parent questionnaire of the AEPS).

These proposals seem to be in line with the ecosystem model of the quality of childcare for young children inspired by Bronfenbrenner (1979), Bigras and Japel (2007), adapted by Caublot, Poli and Arnouil-Deu (2014). As we can notice, the macrosystem seems the least supported in the different programs. Additional tools relating to the macrosystem (the closest to “culture”) could only magnify the effects of the interventions provided for in psycho-educational programs with young children with autism. It should be noted that there are specific programs for forming families (for example, the "Triple P: *Positive Parenting Program",* by Whittingham *et al.*, 2009 or the "*Incredible Years Parent Training program",* by Lee McIntyre, 2008). However, they[5] do not seem to include elements on the "macrosystem".

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[5] When they are offered in the Middle East, training schedules are often adapted (during the day) while they take place in the evening after the working day in the West (Al-Khalaf, Dempsey and Dally, 2014).

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