



## Autistic Spectrum Disorders: The Challenge of Early Detection in the Arab Region

Author

**Dr Ebtihal Elameen Eltyeb**

MD Pediatrics and Child Health, Assistant Professor of Pediatrics, Jazan University, KSA

Corresponding Author

Email: [bebotyb@gmail.com](mailto:bebotyb@gmail.com)

### Abstract

*The prevalence of autistic spectrum disorders (ASD) seems to be increased world widely with unknown exact prevalence in the Arab region. The development of early detection tools for diagnosis and screening of these disorders was mandatory to decrease the burden of ASD and to facilitate early interventions. There are great challenges to develop specific tool that respectful to the diversity of Arab region with many obstacles that interfere for early detection.*

**Keywords:** *Autistic spectrum disorders, early detection, Arab region, screening tools.*

### Introduction

Autistic spectrum disorders (ASD) is neurodevelopment disorders that affect the children in early childhood, with increasing incidence and prevalence world widely<sup>1-2</sup>. It represents lifelong cognitive and developmental disabilities that make a huge burden in the families of affected children and their communities. Since the ASDs have broad spectrum of affection, the diagnosis is frequently later after the first three years of life when the affected child supposed to join the kindergarten; with exceptional early recognition in severe cases that could be picked and diagnosed easily<sup>2</sup>. The purpose of this paper is to describe the current ASD research situation in Arab region, the available screening tools, and to summarize the possible factors which might influence the application and implementation of these variable tools.

### Current situation of ASD research in Arab region

In Arab region the research of autism is scarcity, scattered, and individually dependent on modest efforts rather than multinational centers programs, so it showed lots of discrepancies in the prevalence and characteristics of this disorder. The prevalence in Arab countries in some studies showed lower ASD rates as in Oman and Libya compared to western countries; however these results may be attributed to collection of data technique from clinical backgrounds instead of community based samples<sup>3,4</sup>. Many other factors were also contributed to the under estimation of ASD like decreased awareness about this disorder between parents and health care providers, Lack of early detection tools, and lack of special services to detect and manage this condition<sup>3-6</sup>. On the other hand the prevalence of ASD reached 29 per 10,000 in United Arab Emirates and this

attributed to using wide screening scale that inclusive to other types of developmental disorders<sup>7</sup>.

### **The delay in the diagnosis of ASD**

Although there is clear evidence stated that ASD can be diagnosed as early as two years old<sup>8, 9</sup>, the majority of the confirmed cases were delayed in the diagnosis. This delay might be ranging between the delays in parental observations of the abnormality in their child, reaching the professional assessment, up to confirmation<sup>10</sup>. There have been little studies exploring factors that contribute to the delay of ASD detection. Usually ASD with severe impairment is associated with earlier detection than the mild form<sup>11-13</sup>. Advanced maternal age was proved to be associated with early diagnosis of ASD and this attributed to increase knowledge and experience with increase in the mother age<sup>14</sup>, this in contrast to ADHD that is usually associated with late detection due to The intersection between these two disorders<sup>14</sup>. Moreover there are confirmed regional variations that might be due to presence or absence of easy accessible facilities and tools of ASD detection<sup>11, 12</sup>. The early detection is mandatory for early interventions that contribute to better outcomes<sup>15, 16</sup>.

### **Tools of early detection of ASD**

Currently there are more than 20 internationally validated ASD tools, some of which were for diagnosis, while other testing tools were for identifying the suitable intervention and others were for monitoring of the progress of this disorder. Generally Children aged 18 months and older who are at risk of ASD should be examined earlier for the presence of any symptoms or signs of this disorder, and this can be simply accomplished by non professional personnel using the early screening tools. Many screening tools have been established to diagnose children at risk with ASD, these include the Checklist for Autism in Toddlers (CHAT)<sup>17</sup>, Pervasive Developmental Disorders Screening Test (PDDST), Screening Tool for Autism in Two year olds (STAT)<sup>18</sup>,

Checklist for Autism in Toddlers-23 (CHAT-23), the Modified Checklist for Autism in Toddlers (M-CHAT), the Autism Spectrum Screening Questionnaire (ASSQ), and Autism Screening Questionnaire (ASQ)<sup>19</sup>.

The screening tool help early detection of ASD but the confirmation of the diagnosis is mainly based on clinical evaluation. one study in united Arab of emirates evaluated 694 children and estimated the prevalence of ASD as 58 per 10,000 and after further clinical assessment it declined to 29 per 10000; so the screening tools is not accurate to estimate the exact prevalence and burden of these disorders<sup>20</sup>.

ASD detailed symptoms are firstly diagnosed in 1943 by Kanner<sup>21</sup>, after that many tools were developed based on the symptoms analysis of what stated. The diagnostic tools for ASD are not conclusive to diagnose these disorders but they give clue about developmental delays. The gold slandered practice for the diagnosis of ASD is multidisciplinary clinical assessment which based on the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)<sup>22</sup>. The DSM-V then developed and used currently, in spite it made global debate and increased concern of some professionals because they thought it might not be inclusive to some developmental disorders, Moreover it was criticized for having poor cultural diversity<sup>23</sup>. Childhood Autism Rating Scale (CARS), Autistic Behavior Checklist (ABC), Gilliam Autism Rating Scales (GARS), and Autism Diagnostic Observation Schedule (ADOS) were other well developed scales for ASD diagnosis in the second stage by trained professionals.

### **Application of the ASD tools in Arab region**

No published data to confirm any specific Arabic version of early screening tool for detection of ASD, but there is one study which was done in nine Arab countries that used the M-CHAT to validate its use and to compare its sensitivity and specificity between Arab speaking countries, after translation, and the universal values. It concluded

that there are no significant differences between these communities and the western communities, and stated that the M-CHAT can be used as multinational screening tool as it does not need intensive training<sup>24</sup>. This result is conflicted with another study that confirmed the presence of racial and ethnic disparities and proclaimed for respect of heterogeneity of ASD presentation<sup>25</sup>.

### Challenges of ASD early detection in Arab region

In spite of some efforts to translate and validate certain ASD screening tools<sup>24</sup>, there are still covertly obstacles and challenges that might confront its application and usage<sup>26</sup>. These include:

- The heterogeneity of the spectrum which might be under reported if present in the milder, borderline area of the spectrum.
- The need of different methods based on the age and developmental disability.
- The reaching out of children earlier may constitute a major obstacle in some countries which have weak health system, and less follow up programs.
- The possibility of the presence of co morbid conditions that might be distracters from the diagnosis.
- The need to respect the diversity of communities in Arab region, values, and beliefs.
- Necessity of establishment of special diagnostic tool, or to validate the present tools with Arab cultural, socio-economical and geographical diversities.
- The urgency to develop of community based multinational researches that provide evident based data to facilitate the starting points in establishing early detection program.

### Conclusion and Recommendations

ASD research in Arab region is evidently lagging behind, that is emergently need of robust efforts to assess the current programs, implement of the modern validated screening and diagnostic tools

(that should be feasible, applicable, and suitable for non professional training), to monitor its progress, and to reassess its relevance. Calling for regional consensus to validate the current tools according to the child age, co morbid condition, and to fit the general context of the target communities is an urgent recommendation that might have fruitful impact in early detection and management of ASD.

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### References

1. American Psychiatric Association. Diagnostic and statistical manual of mental disorders: DSM-5. 5th ed Washington, D. C: American Psychiatric Association; 2013.
2. Fombonne, E. Epidemiological surveys of autism and other pervasive developmental disorders: an update. *Journal of Autism and Developmental Disorders* 2003; 33: 365–382.
3. Al-Farsi, Y., Al-Sharbati, M., Al-Farsi, O., Al-Shafae, M., Brooks, D., & Waly, M.). Brief report: Prevalence of autistic spectrum disorders in the Sultanate of Oman. *Journal of Autism and Developmental Disorders* 2011; 41(6):821–825.
4. Zeglam A, Maouna A. Is there a need for a focused health care service for children with autistic spectrum disorders? A keyhole looks at this problem in Tripoli, Libya. *Autism*. 2011;16(4):337-339. DOI: 10.1177/1362361310393535
5. Taha, G. R. A., & Hussein, H. Autism spectrum disorders in developing countries: Lessons from the Arab world. In V.B. Patel, V. R. Preedy, & C.R. Martin (Eds.), *Comprehensive guide to autism* New York: Springer 2012 : 2509–2531.
6. Manning-Courtney P, Murray D, Currans K, Johnson H, Bing N, et al. Autism spectrum disorders. *Curr Probl Pediatr*

- Adolesc Health Care.2013; 43:2–11.DOI:10.1016/j.cppeds.2012.08.001
7. Salhia HO, Al-Nasser LA, Taher LS, Al-Khathaami AM, El-Metwally AA. Systemic review of the epidemiology of autism in Arab Gulf countries. *Neurosciences*. 2014; 19(4):291-296.
  8. Chawarska K, Klin A, Paul R and Volkmar F .Autism spectrum disorder in the second year: stability and change in syndrome expression. *Journal of Child Psychology and Psychiatry and Allied Disciplines* 2007; 48(2): 128–138.
  9. Charman T<sup>1</sup>, Taylor E, Drew A, Cockerill H, Brown JA, Baird G. Outcome at 7 years of children diagnosed with autism at age 2: predictive validity of assessments conducted at 2 and 3 years of age and pattern of symptom change over time. *J Child Psychol Psychiatry*. 2005 May;46(5):500-13. DOI:10.1111/j.1469-7610.2004.00377.x
  10. Wiggins LD, Baio J, Rice C. Examination of the time between first evaluation and first autism spectrum diagnosis in a population-based sample. *J Dev Behav Pediatr JDBP*. 2006; 27:S79–S87.
  11. Mandell DS, Novak MM and Zubritsky CD .Factors associated with age of diagnosis among children with autism spectrum disorders. *Pediatrics* 2005; 116(6): 1480–1486. DOI:10.1542/peds.2005-0185
  12. Shattuck PT, Durkin M, Maenner M, Newschaffer C, Mandell DS, Wiggins L, et al. Timing of identification among children with an autism spectrum disorder: findings from a population-based surveillance study..*Journal of the American Academy of Child and Adolescent Psychiatry* 2009; 48(5): 474–483. DOI:10.1097/CHI.0b013e31819b3848
  13. Wiggins LD, Baio J and Rice C. Examination of the time between first evaluation and first autism spectrum diagnosis in a population-based sample. *Journal of Developmental and Behavioral Pediatrics*2006; 27(2 Suppl): S79–S87.
  14. Priscilla Frenette et al. Factors affecting the age at diagnosis of autism spectrum disorders in Nova Scotia,Canada. *Autism J* 2013;17 (2) 184–195. DOI:10.1177/1362361311413399
  15. Zwaigenbaum L, Bauman ML, Choueiri R, Kasari C, Carter A, et al. Early Intervention for Children With Autism Spectrum Disorder Under 3 Years of Age: Recommendations for Practice and Research. *Pediatrics*. 2015 Oct;136 Suppl 1:S60-81. DOI: 10.1542/peds.2014-3667E
  16. Dawson G. Early behavioral intervention, brain plasticity, and the prevention of autism spectrum disorder. *Dev Psychopathol*. 2008 Summer; 20(3):775-803. DOI: 10.1017/S0954579408000370
  17. Baron-Cohen S, Allen J, Gillberg C. Can autism be detected at 18 months? The needle, the haystack, and the CHAT. *Br J Psychiatry*. 1992 Dec;161:839-43. PubMed PMID: 1483172.
  18. Stone WL, Coonrod EE, Ousley OY. Brief report: screening tool for autism in two-year-olds (STAT): development and preliminary data. *J Autism Dev Disord*. 2000; 30(6):607-12. PubMed PMID: 11261472.
  19. Thyde Dumont-Mathieu and Deborah Fein. Screening for autism in young children: the modified checklist for autism in toddlers (M-CHAT) and other measures. *Mental retardation and developmental disabilities research* 2005; 11: 253–262
  20. Eapen V, Mabrouk AA, Zoubeidi T, Yunis F: Prevalence of pervasive developmental disorders in preschool children in the UAE. *J Trop Pediatr*. 2007, 53 (3): 202-5. 10.1093/tropej/fml091

21. Kanner, L. Autistic disturbances of affective contact..Nervous Child, 1943. (2) 217–250.
22. Filipek, P. A., Accardo, P. J., Baranek, G. T., Cook, E. H. J., Dawson, et al. The screening and diagnosis of autistic spectrum disorders..Journal of Autism and Developmental Disorders 1999; 29 (6), 439–484.
23. Pickersgil M. (2013). Debating DSM-5: diagnosis and the sociology of critique. Journal of Medical Ethics, 40(8),.521-525.
24. Seif Eldin, A., Habib, D., Noufal, A., Farrag, S., Bazaid, K., et al. Use of M-CHAT for a multinational screening of young children with autism in the Arab countries. International Review of Psychiatry2008,;20(3):.281-289.
25. Mandell DS, Wiggins LD, Carpenter LA, et al. Racial/Ethnic Disparities in the Identification of Children with Autism Spectrum Disorders. American journal of public health. 2009; 99(3):493-498. DOI:10.2105/AJPH.2007.131243.
26. Matson, J., Beighley, J. and Turygin, N. Autism diagnosis and screening: Factors to consider in differential diagnosis. Research in Autism Spectrum Disorders 2012, 6(1). 19-24.DOI: 10.1016/j.rasd.2011.08.003