

VALIDITY AND RELIABILITY OF AN ARABIC VERSION OF AGES AND STAGES QUESTIONNAIRE FOR DEVELOPMENTAL SCREENING  
OF 2-18 MONTHS AGED CHILDREN

Iman Fawzy Darwish, Nadia Fouad Farghaly, Tarek El said Ismael Omar,\* Hend Abdallah Abd Elkader

Department of Public Health Preventive and Social Medicine, Department of Pediatric ,\* Faculty of Medicine, University of Alexandria

Introduction

Developmental milestones are achieved by children across the multiple domains of development in the early years of life. The AAP Committee on Children with Disabilities states that: “All infants and young children should be screened for developmental delay”. Developmental screening identifies those who may need further evaluation and referral for services. Ages and stages questionnaire (ASQ) third edition is a Parent-completed effective developmental screening tool. Its success lies in its parent-centric approach and inherent ease-of-use .

Aim of the work

To develop an Arabic version for "Ages and Stages questionnaire" to be used for early detection of developmental delay among children aged 2-18 months and to assess its psychometric properties.

Subjects and Methods

**A. Study Design:**  
A Cross sectional survey was conducted to achieve the study objectives.  
**Study setting:**  
- Family health centers and units affiliated to Eastern Medical District in Alexandria  
- Delayed children were referred to the Pediatric neurology clinic in Alexandria University Hospital to confirm the diagnosis.  
**Study time:** The field work was conducted from first of April 2018 till October 2018.  
**Target population:** All infants and children aged from one to 18 months attending the family healthcare center or unit for compulsory vaccination.  
The total number of children screened was 600.

**B. Research tools and methods:** data was collected using the following tools:  
**1. A Structured self-administered questionnaire: it consists of 2 parts**  
- Part I: include personal data for infants and their parents or caregivers.  
- Part II: The translated Arabic version of ASQ3. The questionnaire were developed through the following steps:

**a. Forward & backward translation**  
**b. Pre-testing of the Arabic version :** Ten parents for each age group were selected. To assess parents’ opinion regarding the clarity and ease of comprehension of the questions.  
**2. Clinical examination of children:** Complete neurological examination was conducted  
**Investigations** (including MRI brain and MRS according to the guidelines)  
**Plan for data collection**  
**Getting permission:** An official approval was taken from the Ministry of Health  
**Retesting:** 60 care givers out of the initial sample included in the survey were approached to refill the questionnaire 7-10 days later to assess test retest reliability .

Results

Table 1: Comparison between normal and delayed children regarding the total ASQ score

Age group	Total ASQ score		P value #
	Normal Mean ±SD (n)	Delayed Mean ±SD (n)	
2 months	269.08 ±30.0 (97)	131.67 ±55.08(3)	0.003*
4 months	265.65 ±23.92(97)	156.67 ±35.12(3)	0.003*
6 months	255.05 ±30.25(95)	198.00 ±73.87(5)	0.017*
9 months	256.71± 30.74(97)	112.50 ±80.67(4)	0.001*
12 months	266.00±30.30 (98)	168.33± 89.63(3)	0.003*
18 months	259.32 ±21.41(98)	168.67 ±107.94(3)	0.039*

#P value for student t test

Table 2: internal consistency reliability of the translated Arabic version of ASQ<sub>3</sub>

Age group	Communicatio n	Gross motor	Fine motor	Problem solving	Personal- social
2 months	0.47	0.31	0.62	0.71	0.59
4 months	0.41	0.29	0.27	0.35	0.34
6 months	0.50	0.46	0.61	0.59	0.56
9 months	0.38	0.57	0.27	0.44	0.69
12 months	0.54	0.54	0.31	0.51	0.57
18 months	0.44	0.41	0.33	0.35	0.34

Conclusion

The Arabic version of the ASQ3 questionnaire considered suitable, reliable and easy to use instrument for assessment and follow up of child development. It could be administered to caregivers during the regular visits to the primary health care for vaccination . The questionnaire should be scored by the primary health care physician.  
An easy, quick and cheap screening tool as ASQ3 is considered very helpful for early detection of developmental delay which will lead to early intervention and subsequent reduction in the incidence of disability, better life for the children with special needs and reduction of its burden on the community and government.