

ORGANIZATION NEWS

Highlights From the Rehabilitation Measures Database

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Brief Review of Psychometric Properties and Clinical Utility of the Ages and Stages Questionnaires, Third Edition for Evaluating Pediatric Development

Aliza Rothstein, MS, OTR/L, Ana Miskovic, BA, Kristian Nitsch, MS

The Ages and Stages Questionnaires, Third Edition (ASQ-3) was developed for use in pediatric developmental screening to determine the need for further evaluation of developmental delay.^{1,2} This screening tool is a system of 21 age-specific questionnaires for children 1 to 66 months of age.^{1,2} The ASQ-3 measures 5 developmental domains: gross motor, fine motor, communication, problem-solving, and personal-social, with items rated as typical development, need for monitoring, and need for further assessment. A professional or caregiver can complete the ASQ-3, allowing this tool the potential to be completed by a parent or caregiver before being seen by a clinician. The ASQ-3 has shown to be a reliable and valid instrument for determining the need for further developmental evaluation. The ASQ-3 was found to have excellent test-retest reliability among 4 of the 5 domains measured by the tool.^{1,3} This measure has shown to have both excellent interrater reliability⁴ and excellent concurrent validity in children >30 months of age.³ The ASQ-3 has been translated and validated into multiple languages,⁵ and studies have shown both the disadvantages³ and the effectiveness of the measure when translated and culturally adapted for use in various countries.^{6,7}

This abbreviated summary provides a review of the psychometric properties of the ASQ-3 in pediatric populations. A full review of the ASQ-3 and reviews of nearly 370 other instruments for patients with various health conditions can be found at www.rehabmeasures.org.


Please address correspondence to rehabmeasures@ric.org.

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This instrument summary is designed to facilitate the selection of outcome measures by trained clinicians. The information contained in this summary represents a sample of the peer-reviewed research available at the time of this summary's publication. The information contained in this summary does not constitute an endorsement of this instrument for clinical practice. The views expressed are those of the summary authors and do not represent those of authors' employers, instrument owner(s), the *Archives of Physical Medicine and Rehabilitation*, the Rehabilitation Measures Database, or the U.S. Department of Education. The information contained in this summary has not been reviewed externally.

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	Measure Name: Ages and Stages Questionnaires-3rd Edition		Acronym: ASQ-3	Authors: A. Rothstein, A. Miskovic & K. Nitsch														
	Population: Pediatric: 1- 66 Months	Administration Time: 21 questionnaires: 10-15 minutes per questionnaire		Cost of Measures: Starter Kit: \$275	Items: 30 per questionnaire													
Required Equipment: <ul style="list-style-type: none"> Questionnaires and key forms. Additionally, a materials starter kit is available to encourage children to participate and facilitate administration of the questionnaires. Kit includes: Baby bottle, large ball, small ball, beads, wordless picture book, storybook with pictures, small blocks, bowl, coloring book, crayons, cup, child-sized fork, multiple jars, mirror, puzzle, child-safe scissors, shoelace, child-sized spoon, stuffed doll, keys on a ring, toys, storage container, use manual/booklet, and itemized kit list. 		Purpose and Administration Instructions: <ul style="list-style-type: none"> The ASQ-3 is a system of 21 age-specific developmental questionnaires that are designed to evaluate five domains of child development, including: 1) gross motor, 2) fine motor, 3) communication, 4) problem solving, and 5) personal-social. Screeners to identify children who may be at risk for development delays and with children who are developing typically. Age intervals include: 2, 4, 6, 8, 9, 10, 12, 14, 16, 18, 20, 22, 24, 27, 30, 33, 36, 42, 48, 54, and 60 months. Questionnaire-specific instructions are included on each form; respondent is asked to consider a range of questions regarding the child's ability to perform a range of developmentally-appropriate tasks and indicate responses on the form. Scores calculated by summing individual item responses for each domain (Yes= 10, Sometimes= 5, and Not Yet=0). 																
Training Required: Self-study digital training with DVDs and onsite training seminars are available through the test publisher. Additional Training of Trainers Institute Support is available.		Validity^{1,2} <i>Content:</i> <ul style="list-style-type: none"> Parents, clinical practitioners, and experts were involved in the development of the ASQ-3. <i>Predictive / Sensitivity:</i> <ul style="list-style-type: none"> The ASQ-3 correctly identified 85.9% of children ages 27-36 months at risk for developmental delay. The ASQ-3 correctly identified 82.5% of children ages 42-60 months at risk for developmental delay. <i>Discriminant / Specificity:</i> <ul style="list-style-type: none"> The ASQ-3 correctly identified 85.7% of children ages 27-36 months not at risk for developmental delay. The ASQ-3 correctly identified 92.1% of children ages 42-60 months not at risk for developmental delay. 																
Reliability: <i>Test-Retest:</i> <ul style="list-style-type: none"> 92% agreement between parents' first and second administrations of the ASQ-3, with a 2-week delay.¹ Excellent (ICC= .75 - .82)¹ <i>Interrater / Intrarater:</i> <ul style="list-style-type: none"> 93% agreement between parents and trained examiners.¹ Adequate: (ICC= .43-.69)¹ <i>Internal Consistency:</i> <ul style="list-style-type: none"> Poor to Excellent: (Cronbach's Alpha = .51-.87 for age intervals from 2-60 months across five domains)¹ 		Normative Data⁸ <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th rowspan="2">Domains</th> <th colspan="2">Participant Group</th> </tr> <tr> <th>DCD</th> <th>TD</th> </tr> </thead> <tbody> <tr> <td>Overall Motor</td> <td>Mean (SD) 95.5 (16.2)</td> <td>Mean (SD) 106.7 (14.7)</td> </tr> <tr> <td>Gross Motor</td> <td>49.5 (11.5)</td> <td>55.4 (7.8)</td> </tr> <tr> <td>Fine Motor</td> <td>46.1 (11.3)</td> <td>51.3 (10.4)</td> </tr> </tbody> </table> <p>DCD = Developmental Coordination Disorder TD= Typically Developing Months 42, 48, 54, and 60</p>			Domains	Participant Group		DCD	TD	Overall Motor	Mean (SD) 95.5 (16.2)	Mean (SD) 106.7 (14.7)	Gross Motor	49.5 (11.5)	55.4 (7.8)	Fine Motor	46.1 (11.3)	51.3 (10.4)
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Considerations: <ul style="list-style-type: none"> Available from publisher in English, Spanish and French; previous versions available in Korean. Culturally validated and published in: Spanish, Arabic, Persian, French, Korean, Chinese, Portuguese, Hindi, Dutch, Thai, Norwegian, Turkish, and Afrikaans. Used in many countries and cultural groups: Chile, Brazil, Canada, Lebanon, Spain, United Kingdom, United States, Colombia, Australia, Aboriginal communities, and Canadian Nation/Mohawk communities. Validity decreased from original validation in US when translated for use in another country. 																		
Cut-off Criteria: <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th></th> <th><i>r</i></th> <th>ICC</th> </tr> </thead> <tbody> <tr> <td>Excellent</td> <td>≥ 0.6</td> <td>≥ 0.75</td> </tr> <tr> <td>Adequate</td> <td>0.31-0.59</td> <td>0.40-0.74</td> </tr> <tr> <td>Poor</td> <td>≤ 0.3</td> <td>< 0.4</td> </tr> </tbody> </table>			<i>r</i>	ICC	Excellent	≥ 0.6	≥ 0.75	Adequate	0.31-0.59	0.40-0.74	Poor	≤ 0.3	< 0.4					
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