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# A comparison of the Ages and Stages questionnaire3 (ASQ-3) with the gold standard- Bayley Scales of Infant Development III in South Africa.

**Omar, Zaheerah**

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# A comparison of the Ages and Stages questionnaire-3 (ASQ-3) with the gold standard- Bayley Scales of Infant Development III in South Africa.


# ABSTRACT

## Introduction

Globally, over 200 million children in low-middle income countries (LMIC) have disabilitiesor developmental delay. In South Africa and other LMIC due to the high burden of health- related disorders, early identification of developmental delays is often not prioritised.
Assessment tools help us screen and assess if an infant or toddler is reaching their milestonesand are developing accordingly.

The Bayley Scales of Infant and Toddler Development (version 3) (BSID-III) has been deemed the "gold-standard" of developmental assessment globally. It has been used worldwide and has been translated into many languages. The Ages and Stages Questionnaire(ASQ-3) is a global, frequently used parental screening tool with good psychometric characteristics and it is considered cost effective and appropriate for developing countries. Ithas been used in a variety of cultures and countries and literature suggests that it's an appropriate tool to be used cross-culturally.

This study aimed at comparing the results obtained from the ASQ-3 completed by the parentto the BSID-III completed by the physiotherapist.

## Method

This study was a cross sectional study, conducted in Charlotte Maxeke Johannesburg Academic Hospital (CMJAH) in South Africa at the neonatal high risk follow up clinic. A total of 60 children aged two months, four months, six months, eight months, ten months andtwelve months were assessed. Parents completed the ASQ-3 and the researcher conducted theBSID-III thereafter. Data was collected from both tests and documented. Both assessments were scored so that the subtests from the ASQ-3 and BSID-III results could be compared.

The scaled scores of the BSID-III were compared to total ASQ-3 scores. Results were analysed to see if there was a correlation and agreement between that attained by the physiotherapist using the BSID-III and the parent completed ASQ-3.

**Results**

Sixty infants up to the age of 12 months were assessed using both the ASQ-3 and the BSID-III. A weak non-significant correlation was found between all domains of the BSID and the ASQ. The only significant correlation (0.04) was found between the fine motor domains of both tools. When investigating whether participants were categorised as normal, at risk and delayed on the two tests, there was only a significant difference in categorisation for thelanguage/communication domains (p=0.01).

The sensitivity and specificity of the ASQ-3 was estimated with the BSID-III as the referencemethod. Sensitivity ranged from 12.5%-42.9% and specificities ranged from 71.1%-93.2%.

**Conclusion**

In the South African context, the ASQ-3 is a simple and cost-effective screening tool for developmental delay. Despite the BSID-III and ASQ-3 not correlating strongly, the ASQ-3 can be used to identify infants who may need further detailed developmental assessments as itcan indicate if they are at risk for developmental delay.