



# Feasibility and acceptability of the Griffiths Scales in measuring child development in Malawian urban settings

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## Background

- Early detection of mental health problems in Low to Middle Income Countries (LMICs) is a prominent issue due to the lack of standardized and culturally appropriate tools for preschool children<sup>1,2</sup>
- To address this detection gap, we have developed a scalable mobile platform known as Scalable TRans-diagnostic Early Assessment of Mental health (STREAM) tool
- The construct validity of the STREAM app will be verified by comparing the app scores with the Griffiths Mental Development Scales (GMDS) scores
- The GMDS is an established gold-standard measure of development used to map and track child's development over time<sup>3,4</sup>
- Although the GMDS has been adapted and implemented in different countries, it has never been used in Malawi

## Aims

1. Adapt the GMDS tool for use in Malawi
2. Study the sensitivity of the adapted GMDS to capture changing abilities as children get older

## Methods

### Sample

A total of 72 children (33 females) aged 0 to 6 years old have been tested to date. Of this total:

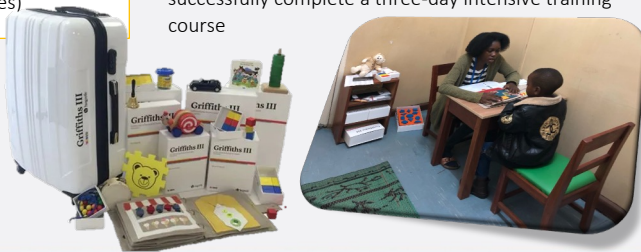
- 32 were 0 to 2 years old ( $M_{age} = 10.56$  months, 17 females)
- 25 were 2 to 4 years old ( $M_{age} = 37.12$  months, 10 females)
- 15 were 4 to 6 years old ( $M_{age} = 58.67$  months, 6 females)

### Measures

#### Griffiths Mental Development Scales (GMDS)

- Has five subscales (Foundations of Learning; Language and Communication; Eye and Hand Coordination; Personal-Social-Emotional; and Gross Motor)
- Takes approximately 60 minutes to complete
- It is restricted for use mainly by paediatricians, psychologists and allied health professionals who successfully complete a three-day intensive training course

**Acknowledgement:** Thanks, and gratitude goes towards the entire STREAM team and all parent/guardians of children enrolled within our study. Special mention also goes to Hogrefe for their support in the adaptation work



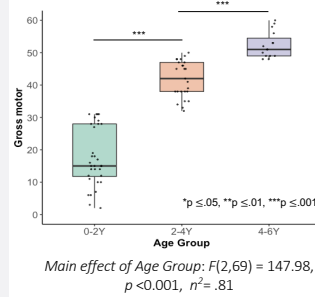
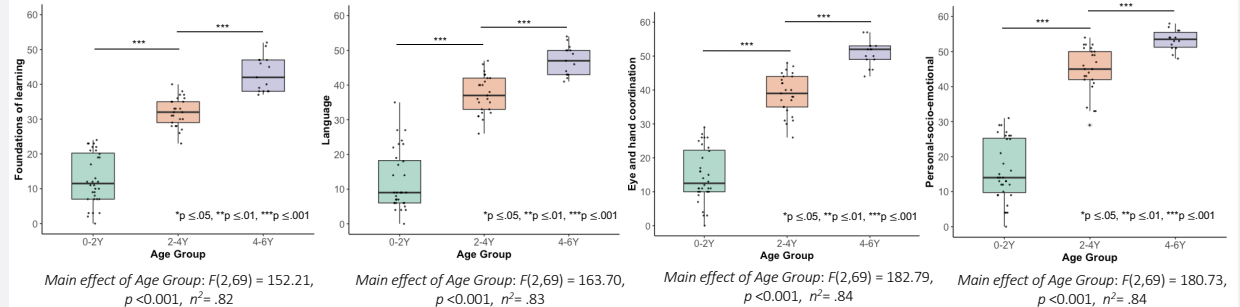
## Adaptation work

- The GMDS was first piloted on small sample of children (N = 13) to test the acceptability of the tool
- Few items, mainly from the language domain, had to be adapted to be culturally appropriate (see Table 1 below for some examples)
- The adaptation process was supervised by the developers of GMDS III. All items were translated, and back translated

ITEM	CHALLENGE	ADAPTATION
<b>Name of Bear - Griffith</b>	- Hard to pronounce - Cultural differences	- Name changed to 'Yankho'
<b>Bricks/ blocks items</b>	- Malawian children were unable to name block/brick - No definite translation for block	- Chichewa translation for 'wood' is used to name these items
<b>Understands opposites: "coal is black, snow is..."; "fire is hot, ice is..."</b>	- It does not snow in Malawi, therefore it is culturally irrelevant - Most Malawian children do not know the word ice	- 'Snow' was changed to 'ufa' - 'Ice' was changed for 'water'
<b>Sentence repetition: 5-words, 10-words, 15-words sentences</b>	- Literal translation led to sentences with the wrong word count - Some sentences were not culturally relevant	- Created new Chichewa sentences, which were more culturally appropriate and had the right word count
<b>Knows address (two parts)</b>	- Street names and addresses are not common in Malawi	- Allow children to describe how they get to their homes

## Preliminary findings

### Between subjects ANOVA with Age Group as a factor



## Discussion

All children were able to provide meaningful data for all subscales. When looking at the raw scores for each domain, significant differences across age groups were found in all domains. Pairwise comparisons revealed that for all domains, 0-12m group had significantly lower scores than both 25-48m and 49-72m groups. Similarly, 25-48m group had significantly lower scores than the 49-72m group. Thus, it looks like the adapted version of the GMDS is appropriate to use with children in Malawi, is well received by caregivers and their children, and can capture changes by age

**References:** 1. Bhavnani, S. et al. *Global Health Action*, 12, e1548005 (2019); 2. Semrud-Clikeman, M. et al. *Child Neuropsychology*, 23(7), 761-802 (2017); 3. Stroud, L. et al., *GMDS 3rd edition* (2016); 4. Cronje, J. et al. *Psychology*, 13, 353-360 (2022)