

Community of Practice Summary Report

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This report details the goals, scope, impact, and implementation phases of the AfriBCD Community of Practice.

During Phase I, we asked members of the AfriBCD network to complete a survey to create a preliminary ‘wish list’ of cognitive measures that may need more adaptation or data collection. This report also includes the survey results from 42 members and a brief summary of Phase II of the Data Collection Protocol.



Goal

To create a Community of Practice (CoP) centered around measuring cognition in Africa. Our focus is on measuring cognition, fostering collaboration, and sharing knowledge in scientific research. We embrace open science principles, encourage active engagement, and support researchers in networking, collaborative projects, and accessing funding opportunities. Together, we can create an environment of knowledge sharing and intellectual growth.



Scope

Our focus is cognition across development (with many researching child development) because of the growing evidence that cognition is both shaped by, and shapes the impact of adversity on an individual's well-being. "Cognition" is purposefully a broad label, as it is still unknown which aspects of cognition (and which measures of those aspects) are most important for health and well-being. For example, aspects of cognition our team focuses on are executive function (e.g., cognitive flexibility, working memory, inhibition) as well as autobiographical memory, visual attention, and reasoning.

Impact

Our vision is that this CoP will be a long-lasting space to share ideas, methods, best practices, challenges, and data. This community and its ongoing methods development will be useful across many research teams and partners in Africa, given the ubiquity of these basic cognitive functions across so many areas of health and wellness. This project can also serve as a model for how to catalyze research in other underrepresented communities.

Funding

This CoP is the result of merging a 2-year project funded by a Social Sciences and Humanities Research Council of Canada Insight Development Grant focused on catalyzing cognitive research in Africa and a networking project funded by the UKRI ESRC Secondary Data Analysis Initiative Grant focusing on bringing together researchers who study child development in Africa.

Plan

Although our main objective is to create a thriving CoP, a major component of this will involve collaborations to help identify, adapt, or develop a set of contextually appropriate, open access measures that can be used to grow cognition research in Africa. These measures, along with protocols for data collection, validation, and sharing will be open access and made available to the community.

As our primary focus is building a strong community, we are actively inviting members, developing the AfriBCD website, and fostering ongoing development of resources. We are also working on Phase II of the Data Collection Protocol.

LACK OF APPROPRIATE METHODS IS A MAJOR BARRIER TO INCREASING COGNITION RESEARCH IN AFRICA.



COMMUNITY OF PRACTICE



PHASE I

- Create a Community of Practice (CoP) to bring researchers working on cognition in Africa together.
- Survey members to identify the best candidate measures for Phase II.

COGNITIVE MEASURES



PHASE II

- Use the cumulative knowledge in this community to identify and begin to develop a set of useful, culturally appropriate, and feasible measures of cognition
- Share our results with the CoP to select the best measures for Phase III.

INFRASTRUCTURE



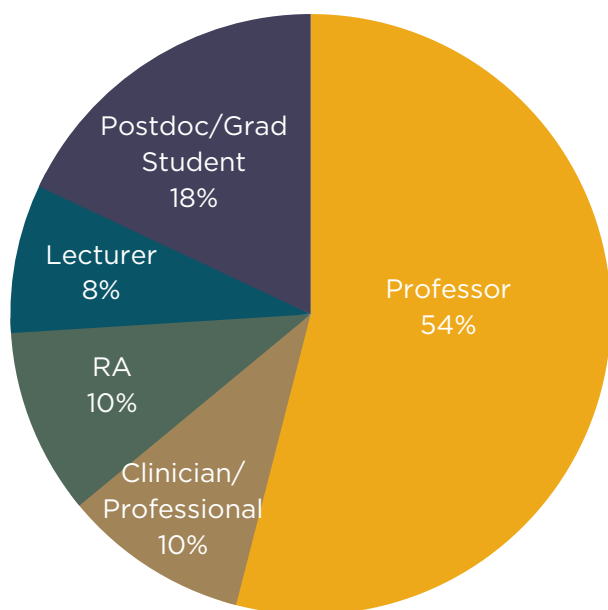
PHASE III

- Use this process to create infrastructure for ongoing methods development and data sharing.
- Evaluate the relationship between measures of cognition and measures of adversity/demographics/context.
- Share our results with the CoP in a virtual conference.

Survey results

During Phase I, we asked members of the AfriBCD Network to complete a survey to create a preliminary 'wish list' of cognitive measures that may need more adaptation or data collection. The following is an overview of survey results.

Member occupation



At a Glance



Responses

42



Home institution in Africa

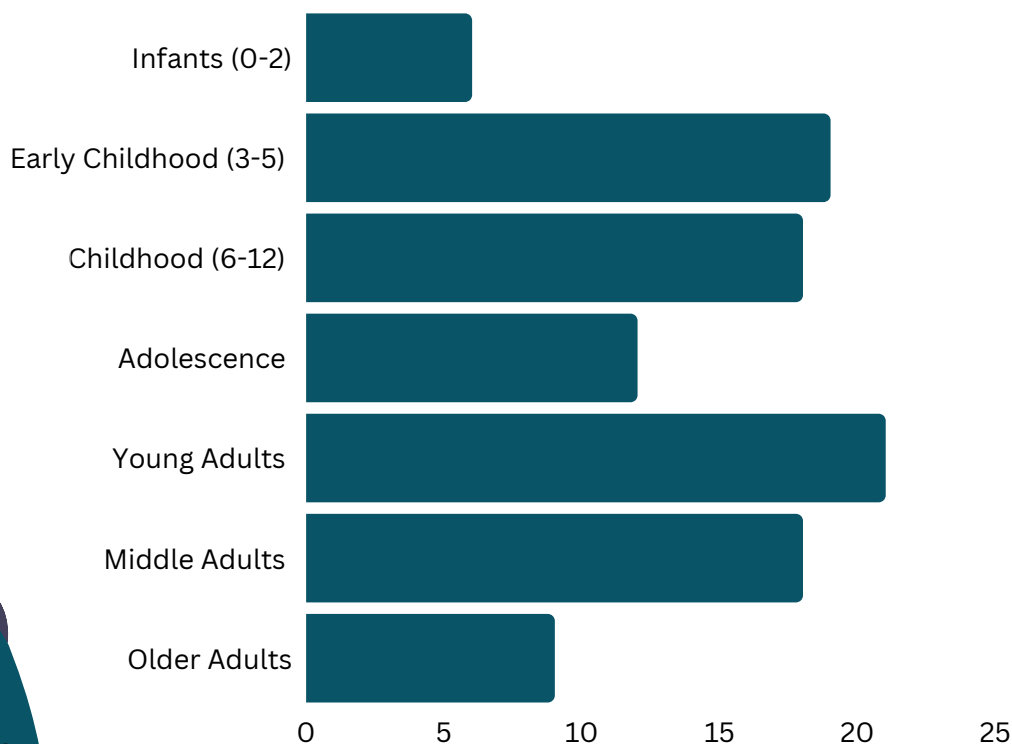
20



Countries Represented

12

Age group members typically work with



Survey results



Members had a wide range of research expertise and listed many cognitive measures that they found in need of further development (e.g., contextual adaptation, additional testing). The following is a broad view of the work to be done. For more information, see the deidentified data from the survey (available on the CoP Teams).

Executive Function

- Contextual adaptation
- Local norms
- Develop self-report
- Broader validation

Early learning

- Contextual adaptation
- Local norms
- Accessibility
- Construct validity

Self-regulation

- Additional testing and validation
- Consider challenges
- Development of report measures

Memory

- Contextual adaptation
- Local norms
- Broader validation

Reasoning

- Contextual adaptation
- Local norms
- Broader validation

ToM & Social Cognition

- Development of tools

CONTEXTUAL ADAPTATION

ACCESSIBILITY

TRANSLATION

CONSTRUCT VALIDITY

TASK CREATION

BROADER TESTING

LOCAL NORMS

IMPORTANT

Phase II of Data Collection Protocol

Data Collection

We will invite adults (18-55) and children (5-17) from our current research sites (Democratic Republic of the Congo, South Africa, Sub-Saharan African refugees or immigrants in Québec) to participate in a 60-minute test session comprising a set of short cognitive tasks.

Adults will provide demographic information about themselves and their children (if applicable) before starting the tasks. The cognitive tasks for children will follow the same tasks and procedures as those used with adults, with appropriate adjustments made to the difficulty level of the items to suit their age and abilities. Unless otherwise specified, the tasks will be performed on a touchscreen tablet.

Sociodemographic Information

The sociodemographic information to be collected includes age, sex, gender, education level, employment status, marital status, country of origin, years in Québec (if applicable), number of children, income, household composition, languages spoken, and the main language spoken.

For children, additional information such as birth weight (if known), school attendance profile, number of siblings, and the main language spoken will be collected.

Cognitive Tasks

The following are brief summaries of cognitive tasks used in data collection. Complete descriptions, references, and examples are available for each task in the original protocol (available on the CoP Teams).



Reasoning

(~5 minutes)

To assess abstract nonverbal reasoning, participants will complete an adapted open-access version of the Raven matrices task. They will be presented with a 3x3 matrix of colored shapes, with one shape missing. The task involves selecting the missing shape based on the relationship between the shapes in terms of shape, color, size, and position. Participants have up to 5 minutes or 50 items to complete the task.



Working Memory

(~5 minutes)

Verbal working memory will be tested using a front and reverse digit spanning task. Participants will be presented with sequences of numbers to repeat in the correct order. The task starts with sequences of two digits, and if participants pass, the sequences increase in length. The task ends when participants make two consecutive mistakes or reach a maximum of 9 digits.



Cognitive Tasks

Cognitive Flexibility

(~5 minutes)

To assess cognitive flexibility, a modified version of DCCS (Dimensional Change Card Sort) will be used. Participants will see four cards and must associate a fifth card with one of the four based on rules related to shape, color, or number. Rules can change without notice, and participants must learn the new rule through trial and error.



Cognitive Flexibility/Inhibition

(~3 minutes)

The Hearts and Flowers task will test inhibition and cognitive flexibility. Participants respond to hearts displayed on one side of the screen and flowers displayed on the other side. The task involves switching responses based on congruent and incongruent conditions, and participants are encouraged to respond quickly.

Verbal Reasoning

(~10 minutes)

Abstract verbal reasoning will be assessed by asking participants to reason about proverbs from various African countries. Participants will explain the meaning of the proverbs and receive scores based on the abstractness of their answers. They will also provide information about their familiarity with the proverb and any related proverbs from their culture.



WHEN TWO ELEPHANTS FIGHT, IT IS THE GRASS THAT IS TRAMPLED.

(Kikuyu, Kenya)

Advancing Cognition Research in Africa Together

The findings and progress outlined in this report contribute to the ongoing development and advancement of cognition research in Africa through the collaborative efforts of the AfriBCD Community of Practice.

Through our collective efforts, we aspire to cultivate an environment that nurtures knowledge sharing and intellectual growth in the field of cognition research. If you would like to join the CoP or learn more about us, please connect with us.



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