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**SCHOOL OF PUBLIC HEALTH**

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and Population

# Integrated Nutrition and Child Development Interventions

1 December 2016

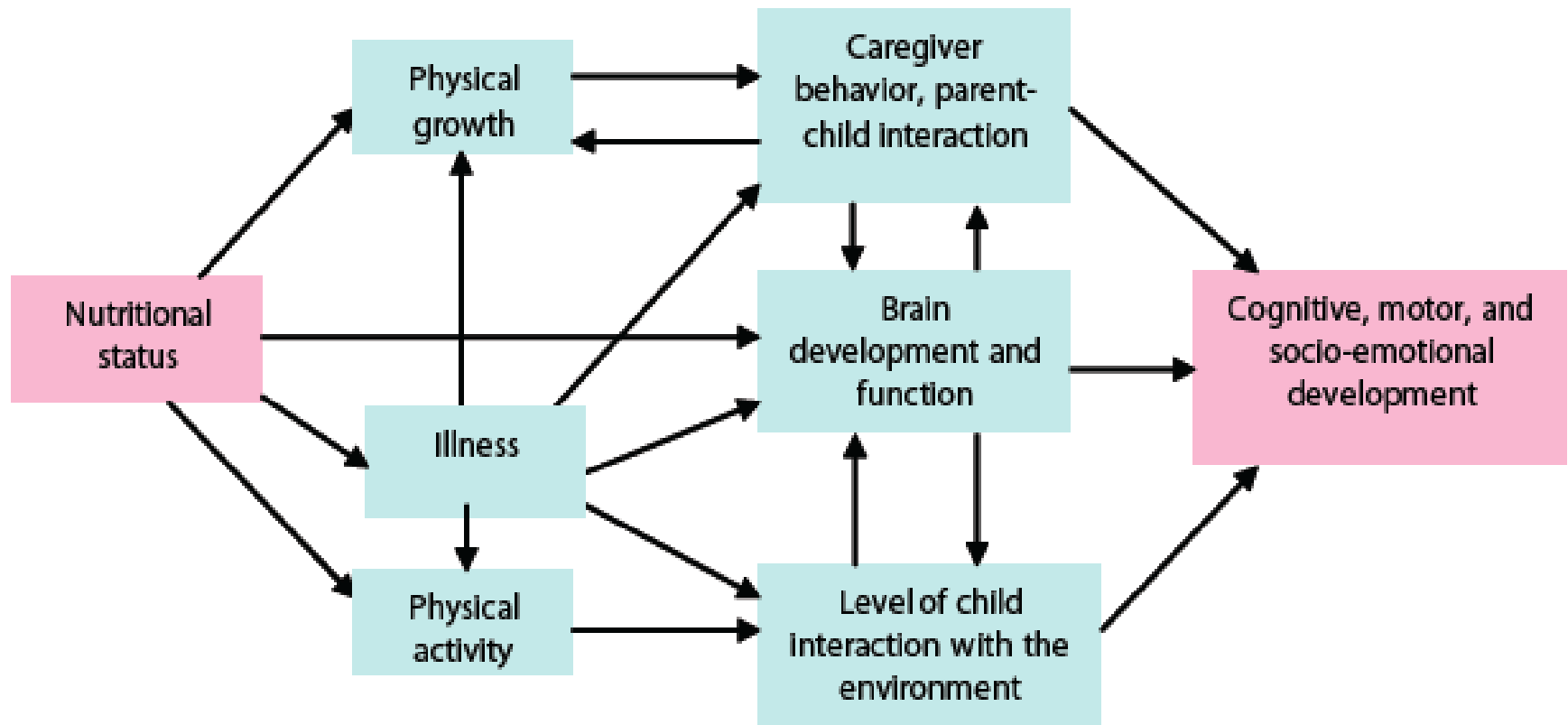
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Associate Professor of  
Global Health



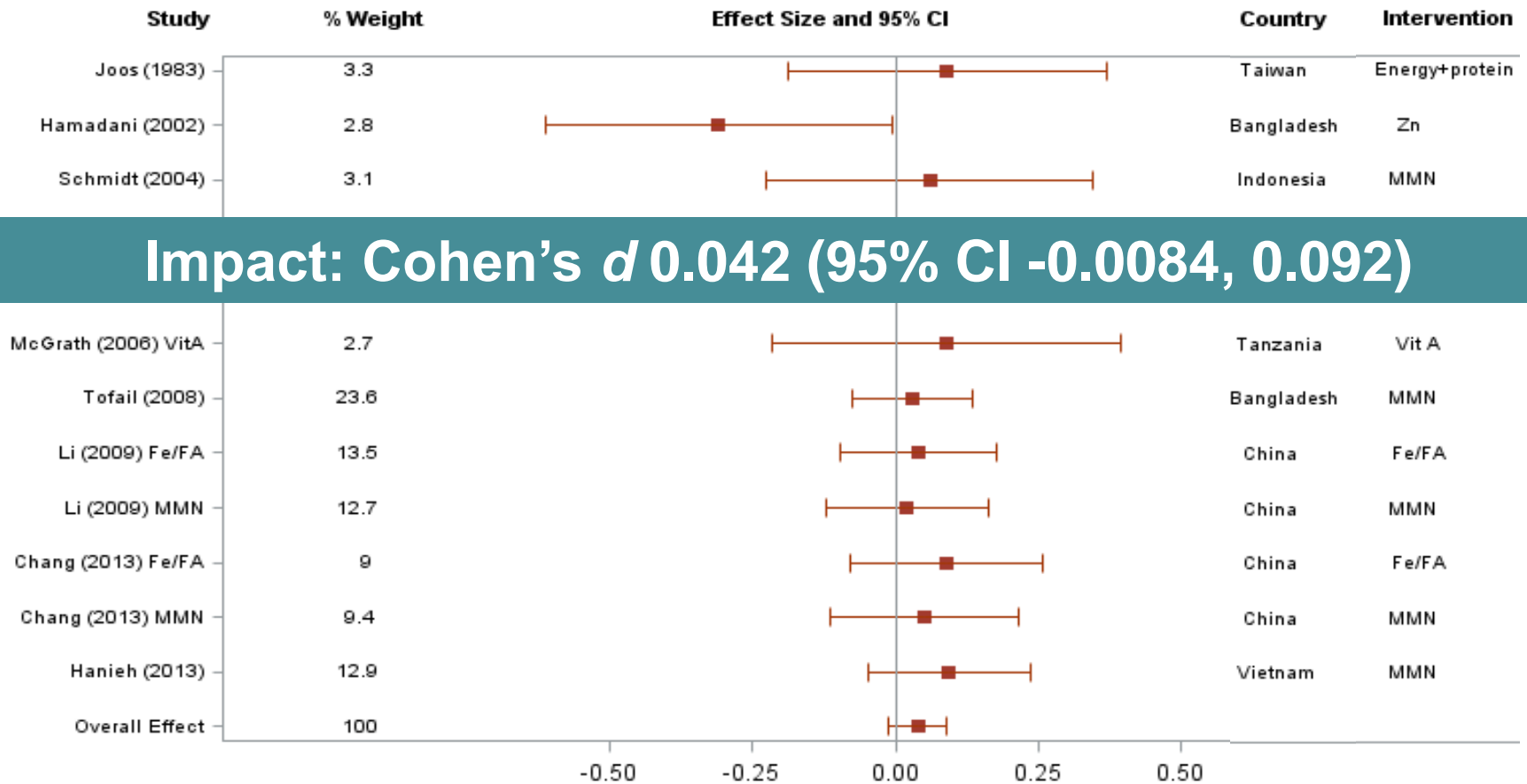
# Overview

- The effect of nutrition interventions on child development.
- The effect of stimulation interventions on child development.
- Evidence-based design and implementation for nutrition and stimulation interventions in the first 2000 days of life.

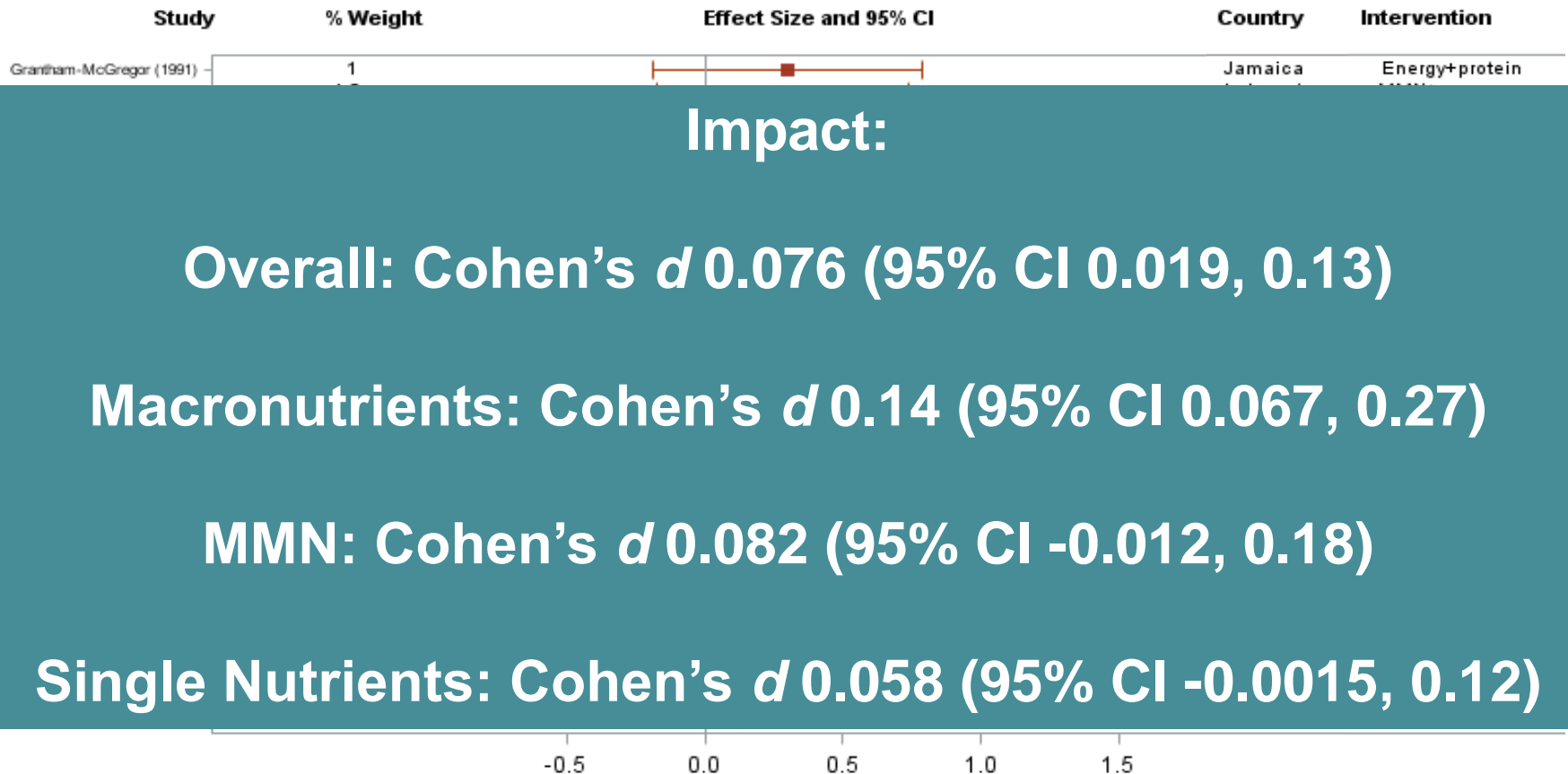
# How Nutritional Status Might Affect Development



# Prenatal Nutrition Interventions and Cognitive Development



# Postnatal Nutrition Interventions and Cognitive Development



# Advancing the Evidence on Nutrition Interventions and the Promotion of Early Child Development

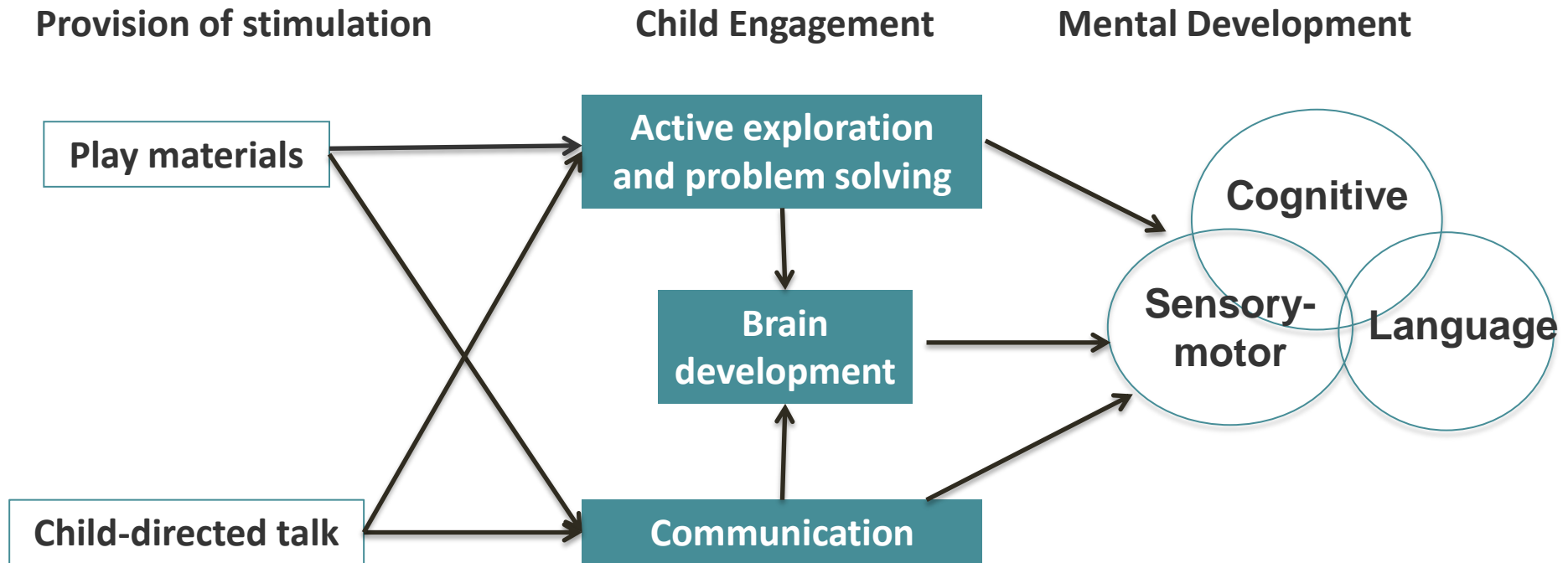
- Improving Outcomes:
  - Longer intervention duration
  - Improved targeting of context specific nutrition risks
  - Improved study of behaviour change techniques that support strengthening of parenting (feeding) skills and nutritional practices.
- Knowledge Gaps:
  - Interventions to reduce risks of over nutrition and early child development outcomes.
  - Role of nutrition interventions in supporting early motor and social-emotional development



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# How Stimulation Might Affect Mental Development



Larson & Yousafzai: Oral Presentation, Micro-Nutrient Initiative Conference, Ethiopia, June 2014





# Lack of Stimulation

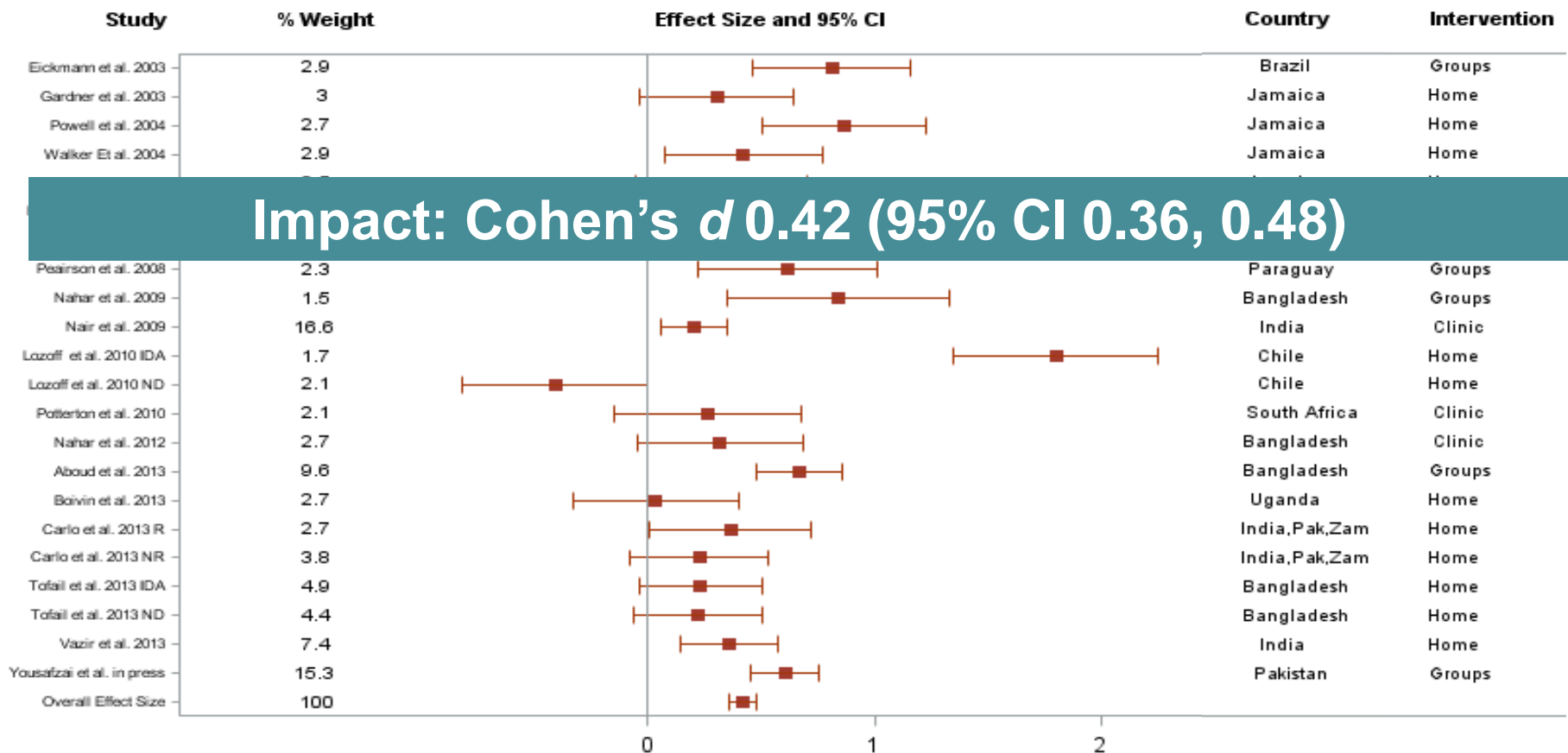


Photo Credit: Professor S Walker

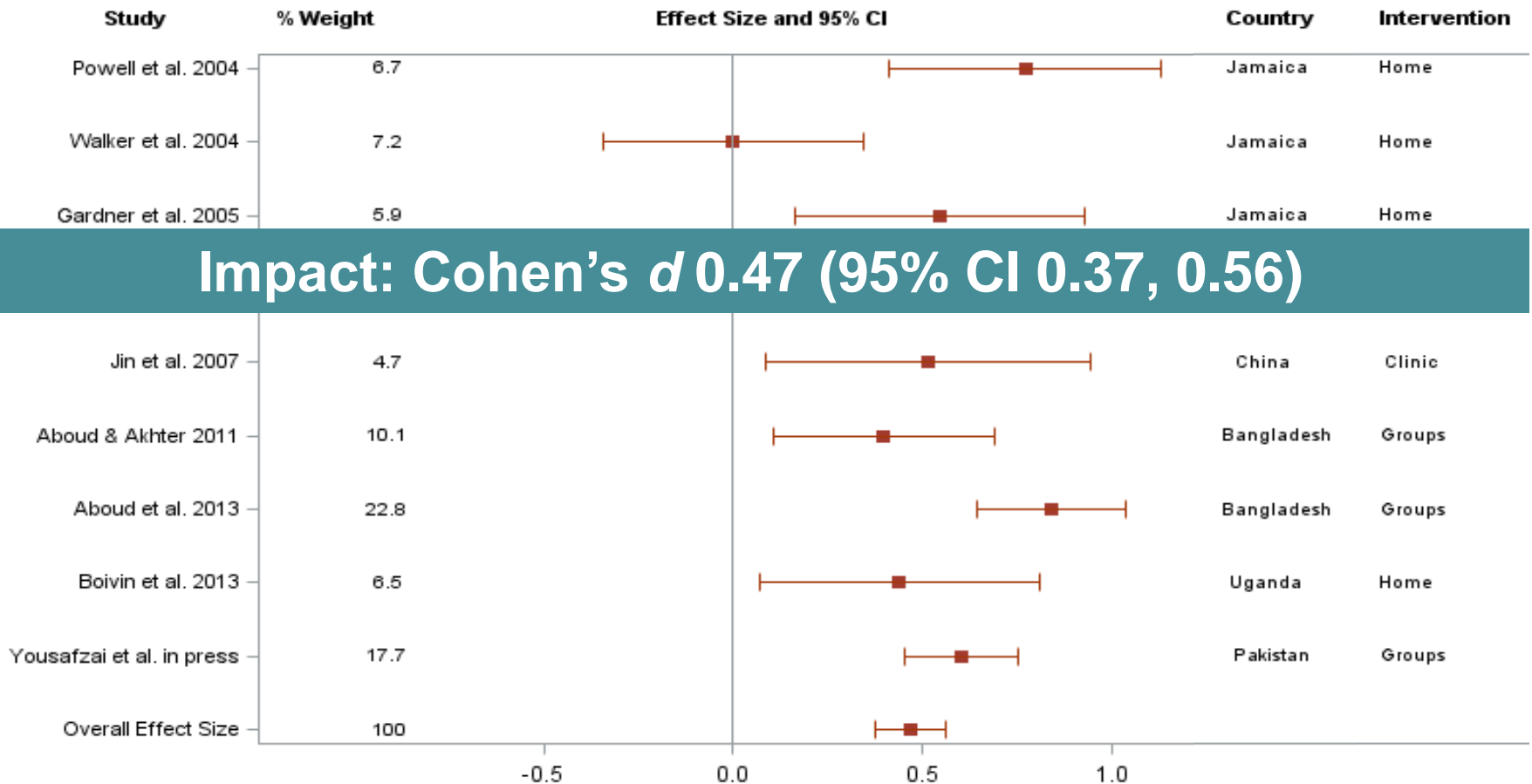
- 10-41% of households in LAMIC provided stimulation materials.
- 11-33% of parents involved in play with children.

Data Source: UNICEF MICS

# Stimulation Interventions and Cognitive Development



# Stimulation Interventions and Language Development



Aboud & Yousafzai, Annual Review of Psychology, 2015



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# Stimulation Intervention Features Associated with Successful Outcomes

- Implementation of a structured curriculum
- Coaching and feedback to strengthen responsive and positive parenting interactions.
- Application of several behaviour change techniques
- Clear defined theory of change
- Inclusion of problem solving during the contact time with parents.

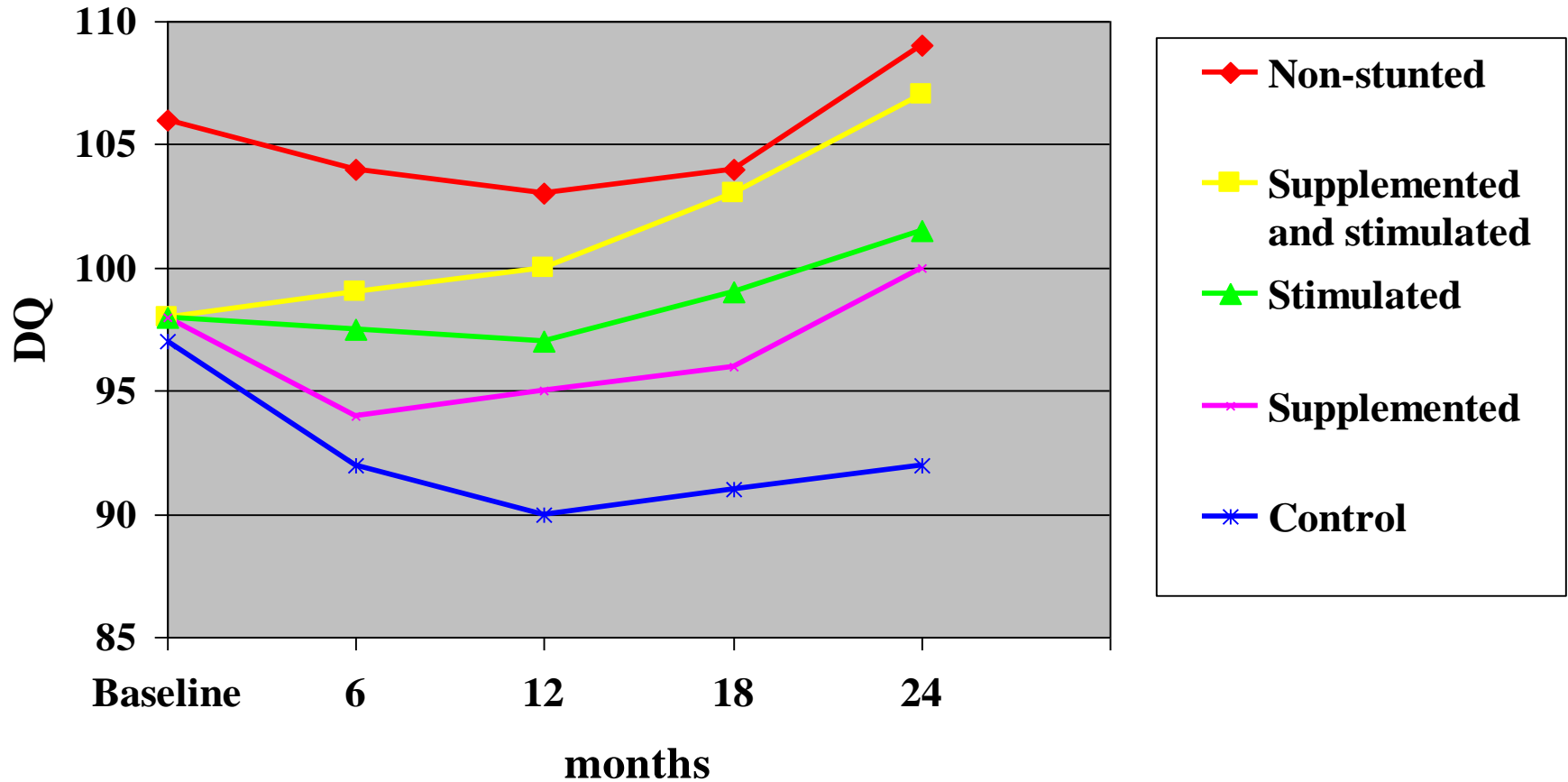
# Advancing the Evidence on Stimulation Interventions and the Promotion of Early Child Development

- Improving Outcomes:
  - Improved analysis of process pathways (family care processes)
  - Analysis of delivery processes (group/individual, intensity)
- Knowledge Gaps:
  - Diverse settings- majority of studies on early stimulation in the last 10 years are from South Asia.
  - Role of stimulation interventions in supporting early social-emotional development under studied.

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# The Jamaica Study



Grantham-McGregor et al., Lancet, 1991



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# What Do We Know About Integrated Nutrition and Stimulation Interventions?

- Nutrition interventions promote early child growth and feeding practices.
- Stimulation (responsive care) interventions support feeding practices.
- Nutrition interventions have small impacts on child cognitive development, while stimulation interventions have moderate impacts on cognitive development.
- Some evidence to show additive benefits (primarily work from Jamaica), but few studies designed to test the independent and additive benefits of interventions.
- No evidence of harm as a result of combining interventions.
- Limited evidence on integration of stimulation with nutrition on children with SAM
- Limited evidence on longitudinal impacts of either intervention on developmental trajectories.



# Potential Benefits of Integrated Nutrition and Stimulation Interventions

- Mitigate common risks (e.g., sub-optimal care practices)
- Impact multiple child outcomes (growth, health, development)
- Programme efficiencies if using a common delivery platform.
- Common window of opportunity in the life course to begin interventions:
  - Nutrition- preconception through 1000 days
  - Stimulation- continue through to first 2000 days

# Integrated Design and Implementation

## Timing

- Organize messages guided by neuro, nutrition & developmental sciences (1000 days +)

## Intensity

- Boosters for less intense/shorter programmes

## Content

- Structured curriculum
- Concrete messages (#8-10)
- Adequate food + education

## Training & Supervision

- Competency based training
- Supportive supervision and feedback loops



# Integrated Delivery Approaches

## Home

- Min fortnightly
- 20-60 minutes
- Tailored to individual child and family
- Good compliance

## Groups

- Weekly-monthly (short intense or less intense & longer duration)
- 1 -2hrs for 8-25 caregivers
- Social support, positive attitudinal change, peer learning

## Clinics

- Value – visible in health service
- Shorter term outcomes (Knowledge-practice)

# Strengthening Family Capacity to Improve Child Nutrition and Development Outcomes

- Conditional cash transfers have significant indirect benefits to participation in prenatal services, growth monitoring, uptake of micronutrients (Britto et al., Lancet, 2016).
- Need to explore:
  1. Conditions linked to specific parenting and stimulation strengthening opportunities in the first 3 years of life.
  2. Multi-sector coordination opportunities to link poverty alleviation and early parenting programmes.

# Maternal Depression

## Prevalence

- 15.6% antenatal in LAMIC (10% in high income countries)
- 19.8% post partum in LAMIC (13% in high income countries)

Fisher et al., *Bulletin WHO*, 2012

## Consequences

- Low weight-for age.
- Increased episodes of diarrheal illness.
- Lower 'responsive' stimulation and child rearing.

Walker et al., *Lancet*, 2011

# Conclusions

- Nutrition intervention alone is inadequate to promote optimal child development.
- Integration of stimulation, with attention to parenting skills and capacities, with nutrition intervention has potential benefits.
- Research:
  - Focus on implementation features and processes that moderate multiple child outcomes (growth health, cognition, behaviour).
  - Focus on life course to determine best mix and intensity of messages over the first 2000 days.

