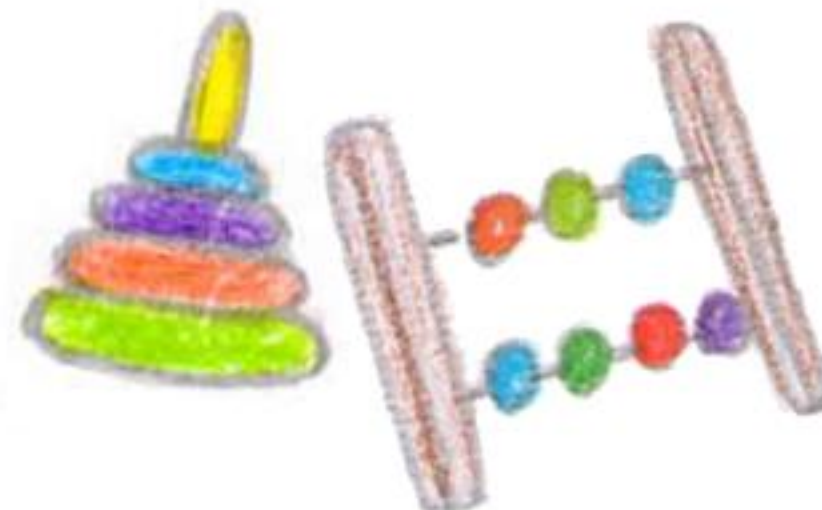# *Go Baby, Go! – the "Equalizer" Intervention–control study*

World Vision Armenia

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Presentation outline

- GBG model overview
- Description of intervention
- Challenges
- Measurements and analysis
- Results
- Study strengths and limitations
- Conclusion
- Next Steps

Project details

Research project – funded by Grand Challenge Award (Bill and Melinda Gates foundation)

Duration -18 months (November 2014-April 2016)

Joint efforts: between WV SC, MEER Health Learning Hub, WV US, Consultants from Agha Khan University, Vanderbilt University

GBG Model Purpose

Primary objectives:

- improve child under three (CU3) neurocognitive development (cognitive, language, motor)

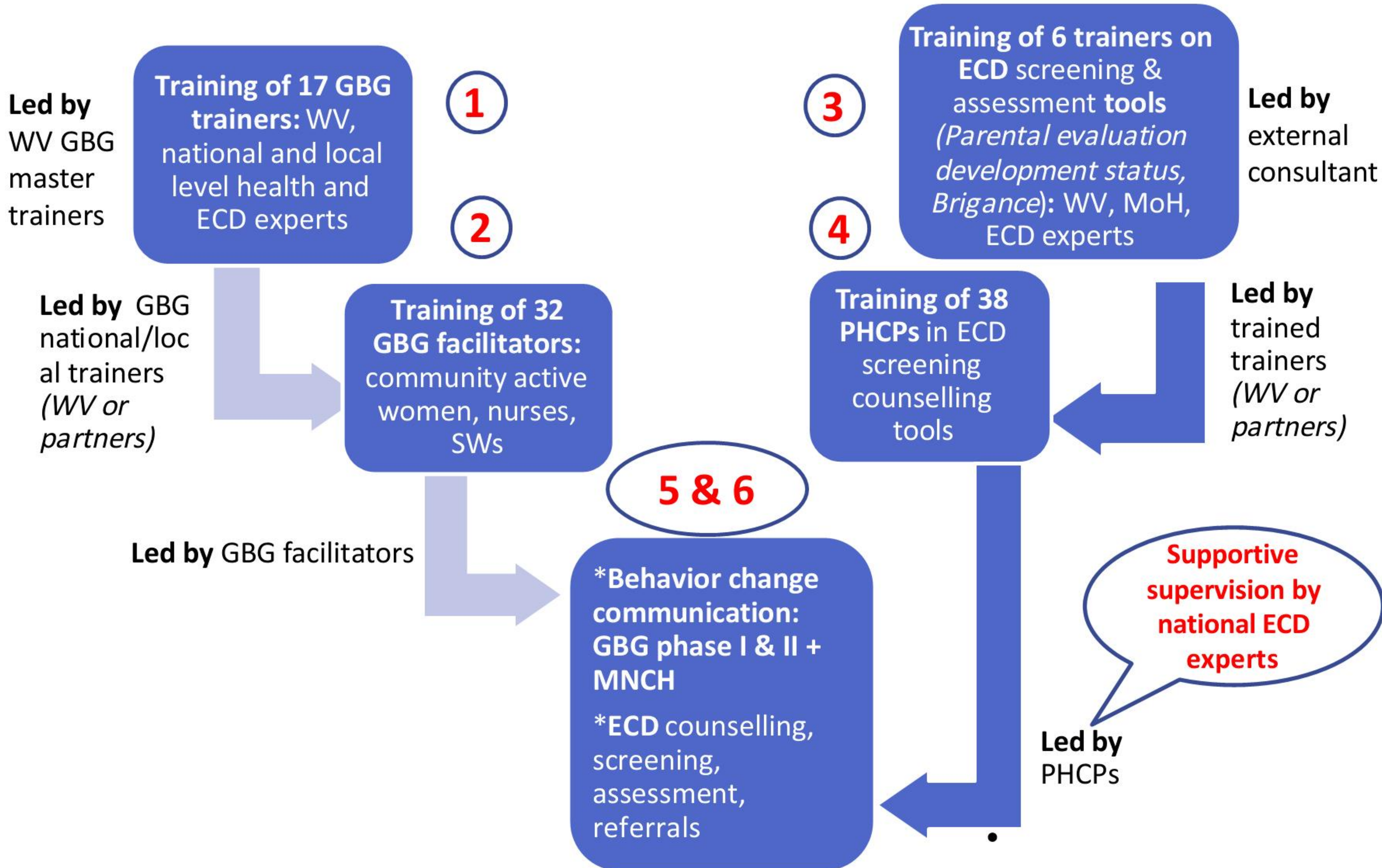- improve CU3 nutritional status

Secondary objectives:

- Improve caregiver practices on child care and nutrition (minimum dietary diversity, support for learning, violent disciplining)
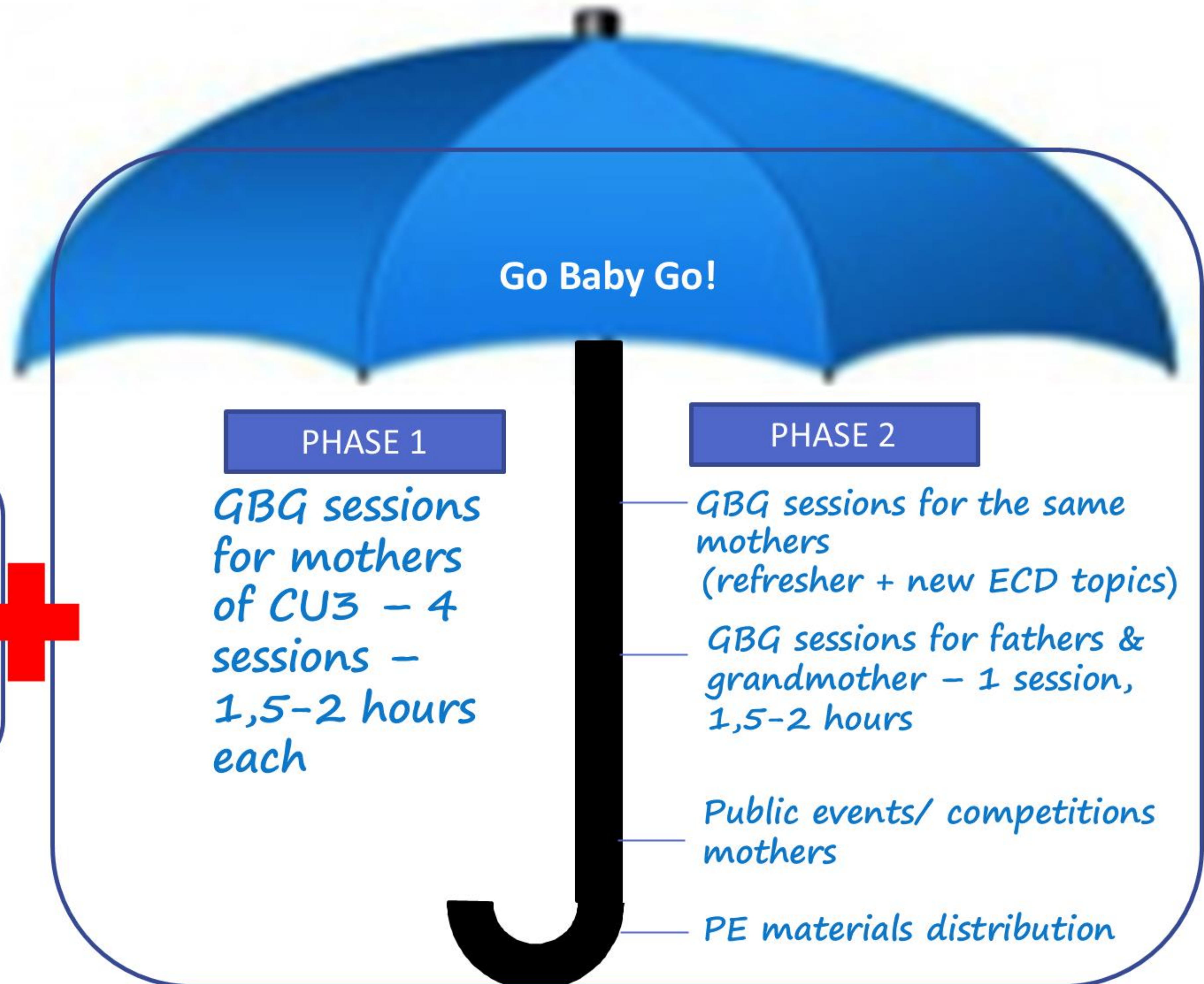
GBG Interventions

QUALITY ASSUARANCE

Led by WV GBG master trainers

Training of 17 GBG trainers: WV, national and local level health and ECD experts ①

Led by GBG national/local trainers *(WV or partners)*

Training of 32 GBG facilitators: community active women, nurses, SWs ②

Led by GBG facilitators

③ **Training of 6 trainers on ECD** screening & assessment **tools** *(Parental evaluation development status, Brigance)*: WV, MoH, ECD experts

Led by external consultant

④ **Training of 38 PHCPs** in ECD screening counselling tools

Led by trained trainers *(WV or partners)*

5 & 6

*Behavior change communication: GBG phase I & II + MNCH

*ECD counselling, screening, assessment, referrals

Supportive supervision by national ECD experts

Led by PHCPs

GBG phase 1 & 2 + MNCH components

Go Baby Go!

MNCH package:
* Well Child visits
* Maternal/parental schools, sessions
* PE materials

+

PHASE 1

GBG sessions for mothers of CU3 – 4 sessions – 1,5–2 hours each

PHASE 2

GBG sessions for the same mothers (refresher + new ECD topics)

GBG sessions for fathers & grandmother – 1 session, 1,5–2 hours

Public events/ competitions mothers

PE materials distribution

Monitoring

GBG 1 phase session content

1. Who we are as caregivers?
2. Safeguarding Baby's first need
3. Ready...Set... Go Baby Go!
4. Experience that last lifetime
5. Pay as work for baby
6. We are confident caregiver
7. ECD as family affaire
8. It takes a village

Key Messages Promoted

H - hug, hold

T - talk, touch, turn off TV, make time

S - sing

P - play, point, protect (toxic stress)

R - read, respond

GBG Phase 1

- 62 GBG sessions for 678 mothers of CU3

"The brain" learning activity

Making "Learning tree"

GBG Phase 1

Toy and book making exercises

GBG Phase 2

Two sessions for mothers (678) on new topics
- Coping with aggressive behavior (tantrum)
- Coping with sleep challenges
- Coping with defiance
- Supporting a child who is slow to warm up
- Supporting a child with eating difficulties

One session for adult family members
- 78 fathers
- 179 grandmothers

GBG Phase 2

Competitions between communities

"The brain" learning activity with grandmothers group

GBG Project Challenges

1) At the Family Level:
- Low socioeconomic status
- Mothers' education
- Gender roles distribution — child caregiving as mothers' affair
- Permission from mother-in-low, husband to attend the session

2) At the Community Level:
- Low paid health-care providers
- Poor application of governmental and new ECD tools
- Participants' mobilization
- Space and equipment for GBG sessions

3) At the National Level:
- IRETON tool low sensitivity in identifying ECD delays or deviations early

GBG Next Steps

GBG horizontal scale-up

- model is part of NO ECD Technical Program for 0-5 years old children, and is in all 14 AP logframes

GBG vertical scale-up

- Fundraising for:
    a) model institutionalization into PHC and social worker pre-service and in-service training,
    b) research for model validation at scale,
    c) longitudinal study (children exposed to GBG – their school readiness, health status compared to those who did not)
    d) testing of new ECD population level screening tool

GBG Research Study Purpose

Assess the effectiveness of "Go Baby, Go!" model vs. country adapted 7/11.

Hypothesis tested

Population in GBG vs. control will have ...

Cognitive, language and motor development

Stunted

Early learning support

Child feeding practice

Violent disciplining

Design
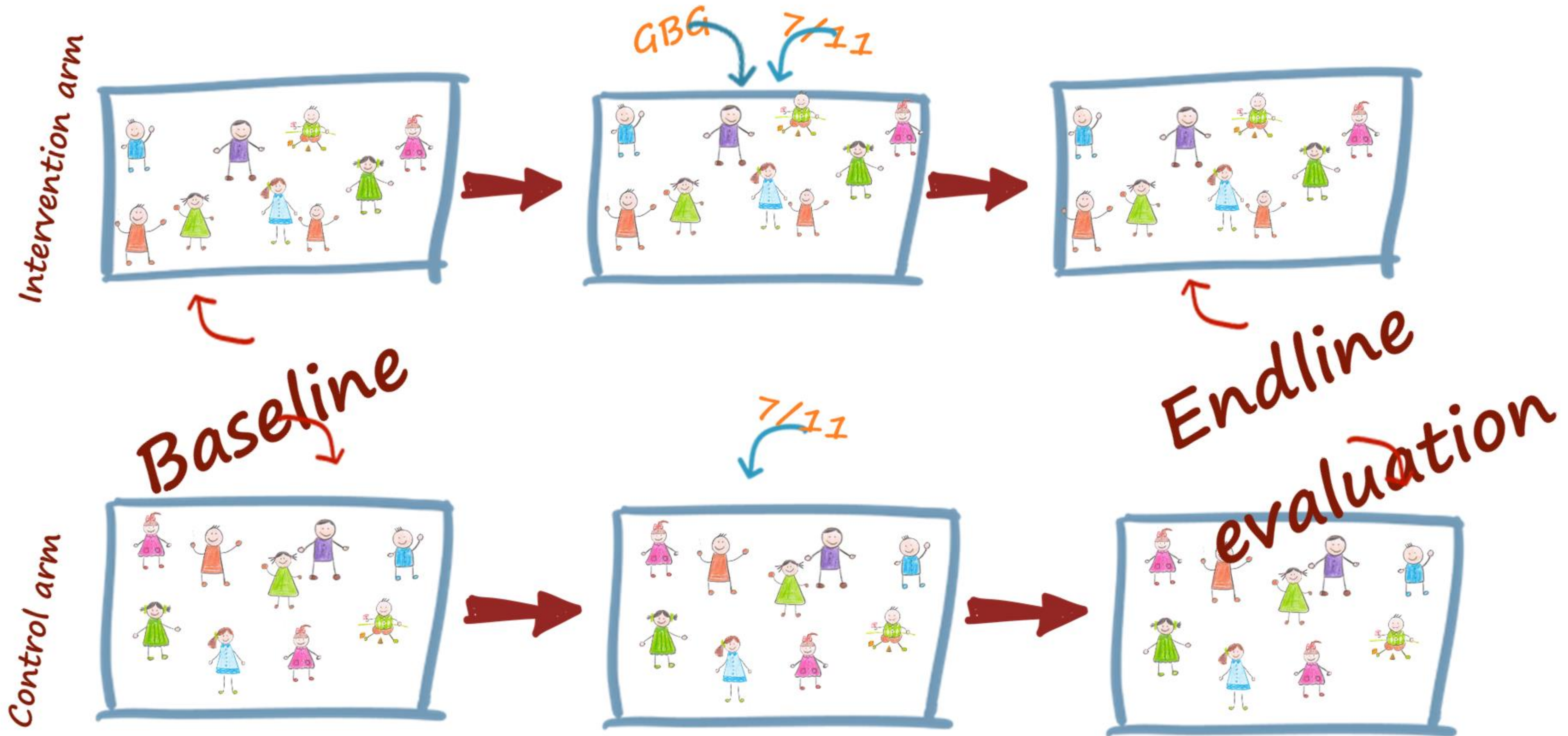
Measurements

1. Caregiver's survey (adapted MICS tool)

2. Weight and height assessment

3. Ireton scale

4. Bayley III

5. Focus group discussions

BSID III measurements

BSID III measurements

BSID III measurements

Statistical analysis

- Outcomes of interest

Primary
- Neurocognitive development
- Nutrition status

Secondary
- Nutrition practice
- Caring practice
- Disciplining

Outcome indicators

1. % of children scoring above 85 in all 3(cognitive, language, and motor composited sub-scales per BSID III)
2. % children stunted

3. % children whose household members in the past 3 days were engaged at least in 4 early leaning support activities (UNICEF MICS)
4. % of children receiving minimum diversity in last day.
5. % of parents with violating disciplining practice (MICS)

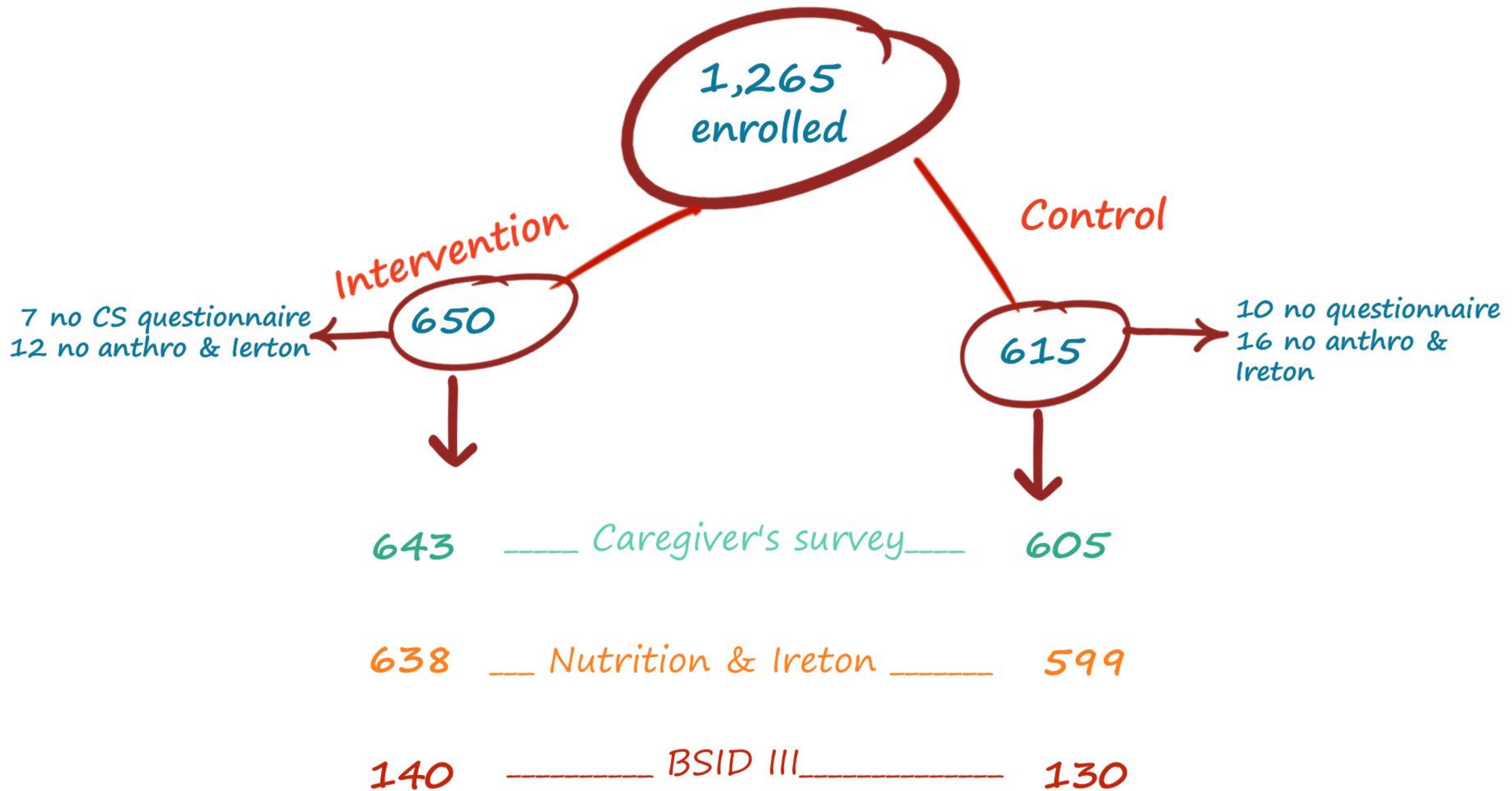# Statistical analysis

- **Exposure of interest**

Intervention

- **Possible confounding factors**

Wealth status, maternal education, father's education, size of households, maternal age, region, type of fuel used for cooking, number of children, child age, sex, birth term
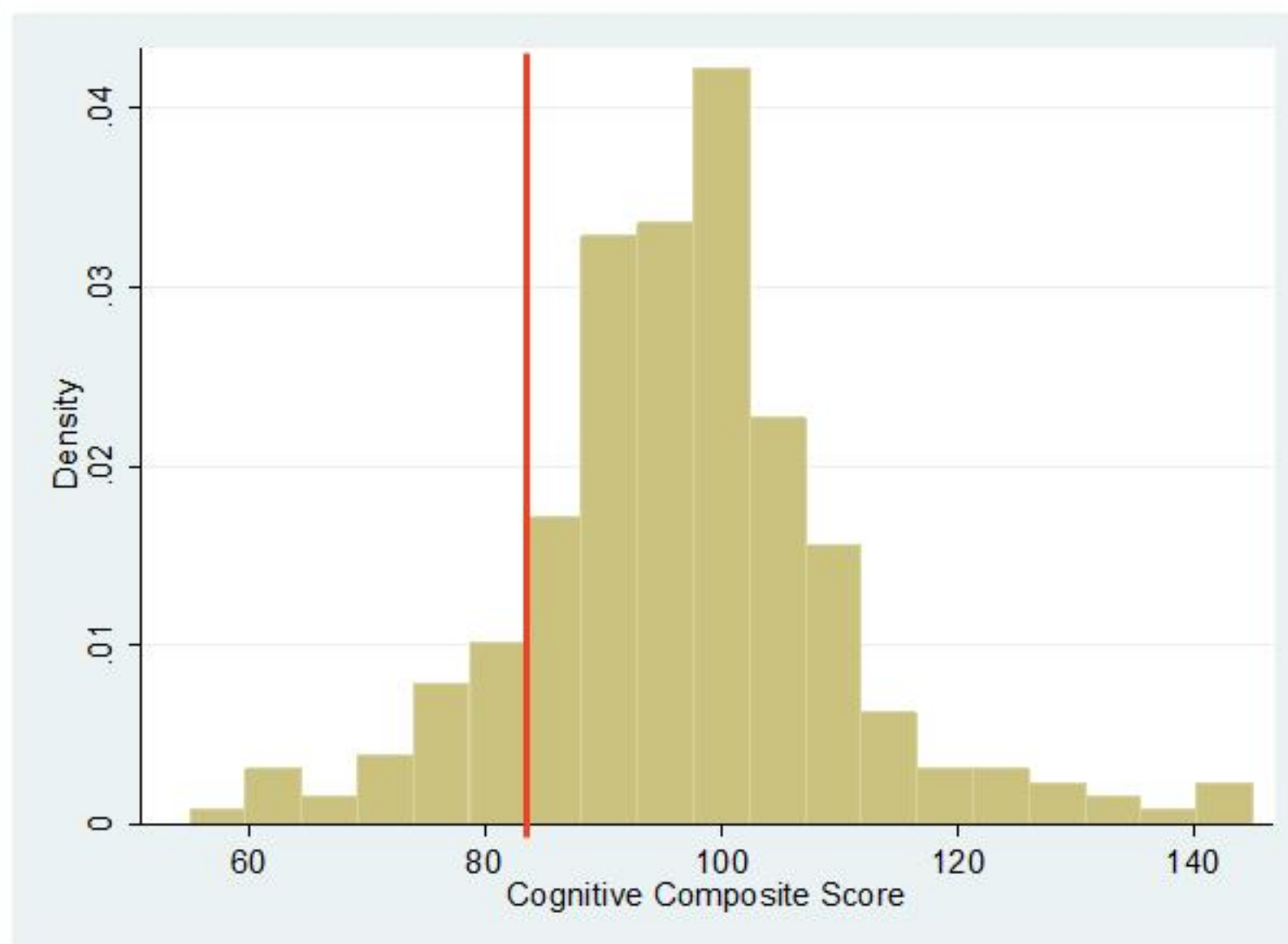
Statistical analysis

- Comparison of characteristics of population between intervention vs. control (Chi2)

- Comparison of each of outcome of interests in intervention vs. control (OR- Chi2 test)

- Adjustment- multivariate logistic regression analysis
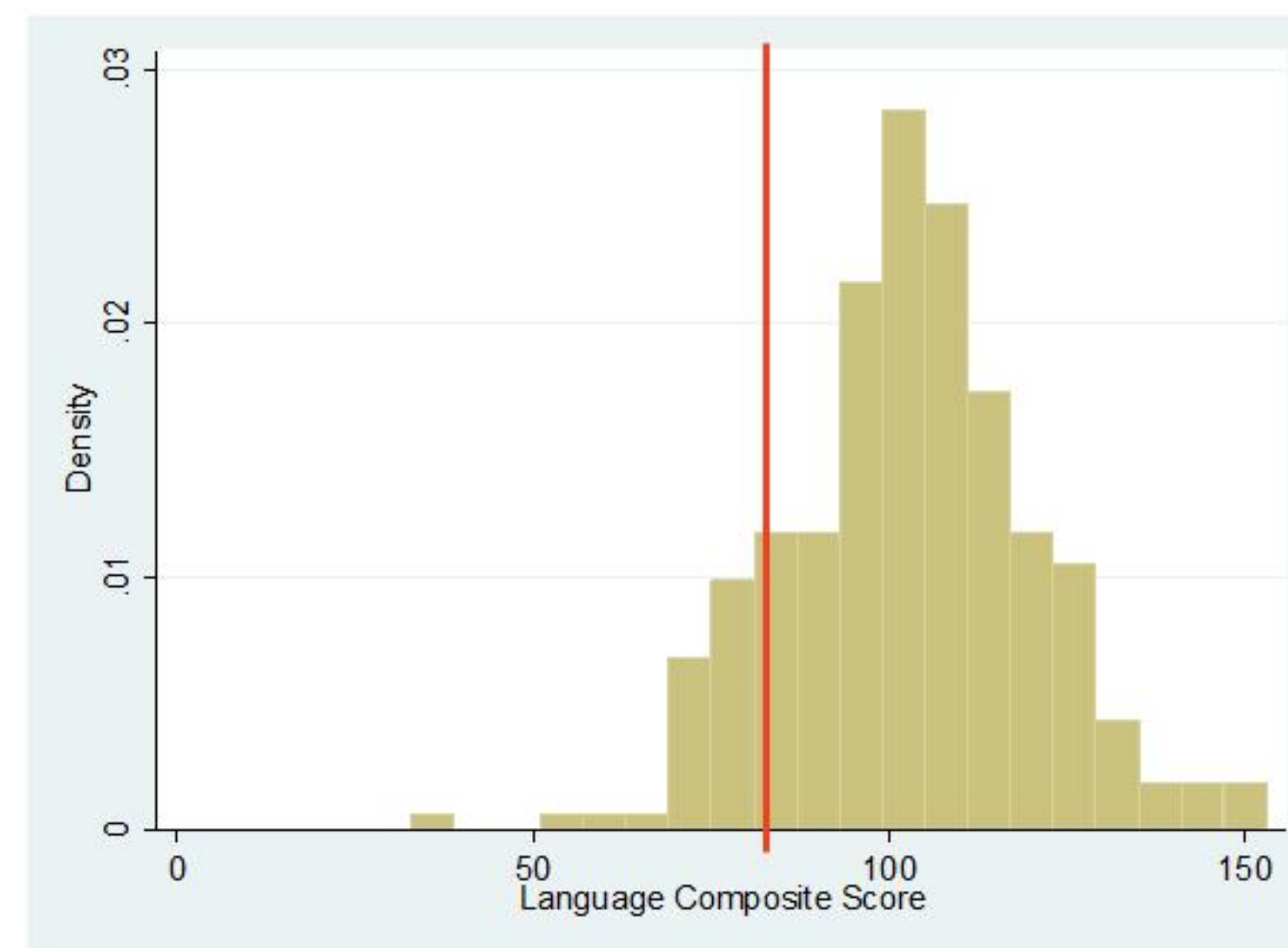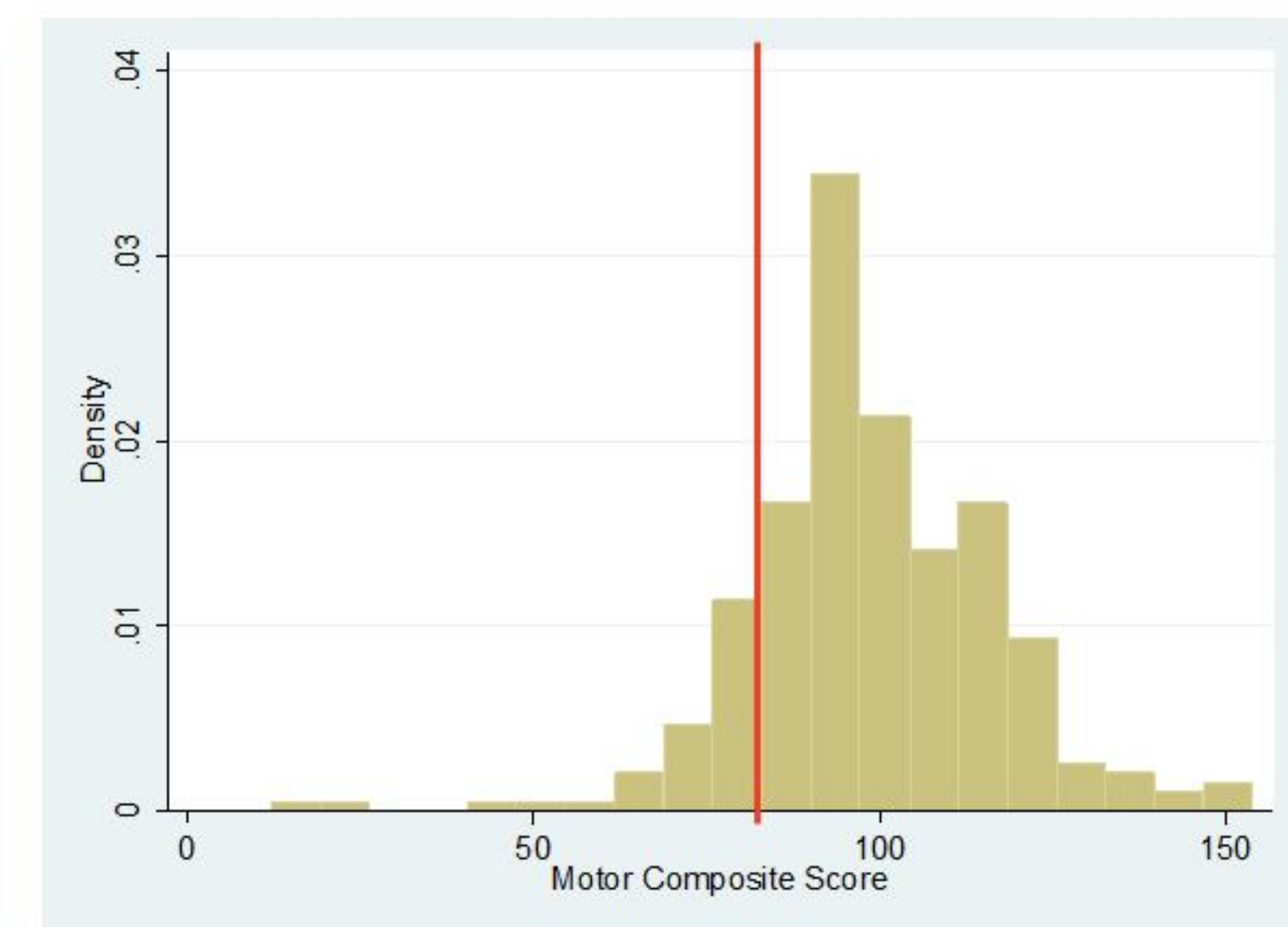
Results

1,265 enrolled

Intervention — 650

Control — 615

7 no CS questionnaire
12 no anthro & Ierton

10 no questionnaire
16 no anthro & Ireton

643 ____ Caregiver's survey ____ 605

638 __ Nutrition & Ireton ____ 599

140 _____ BSID III _____ 130

Results

- Children were split into 2 groups at 85 BSIDIII cut-off
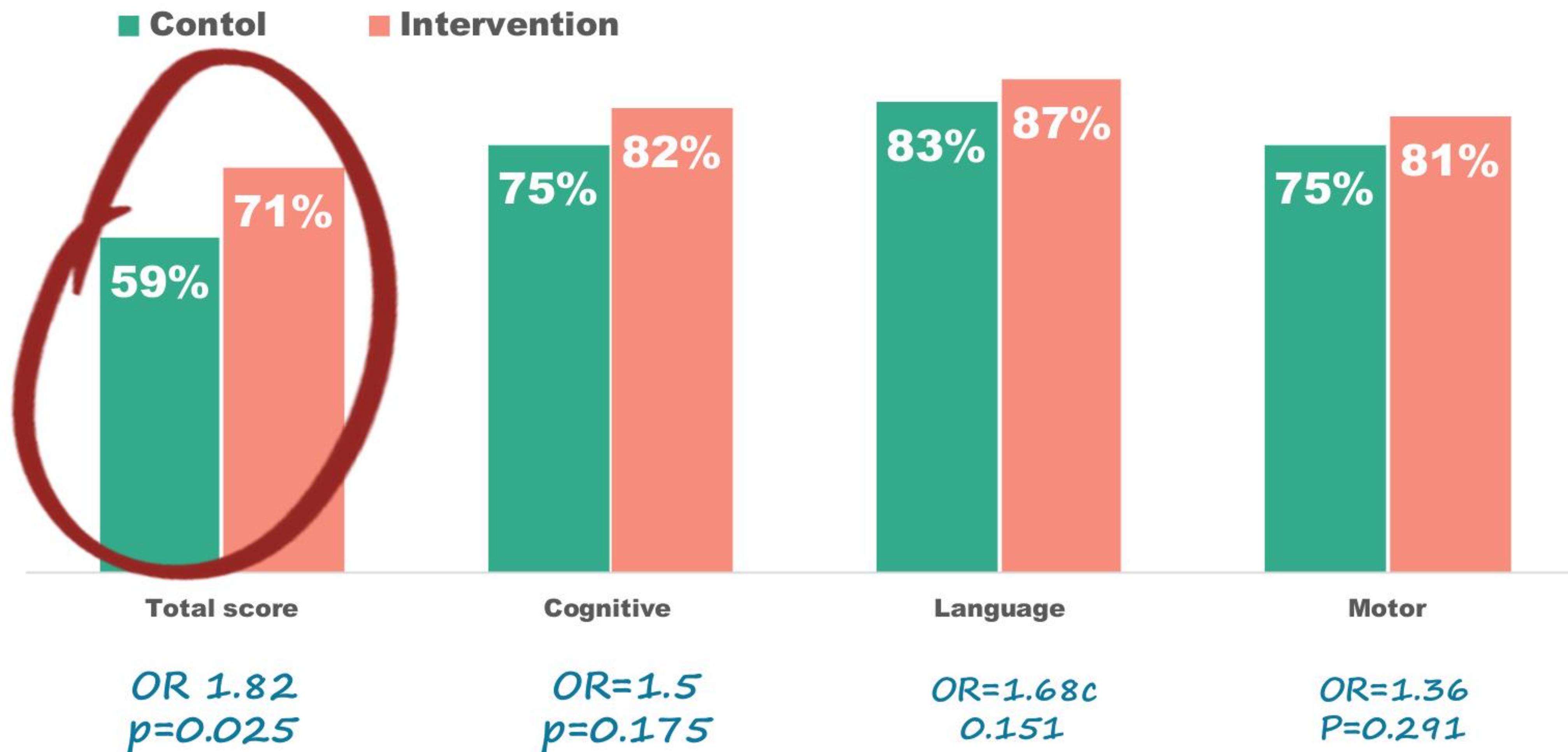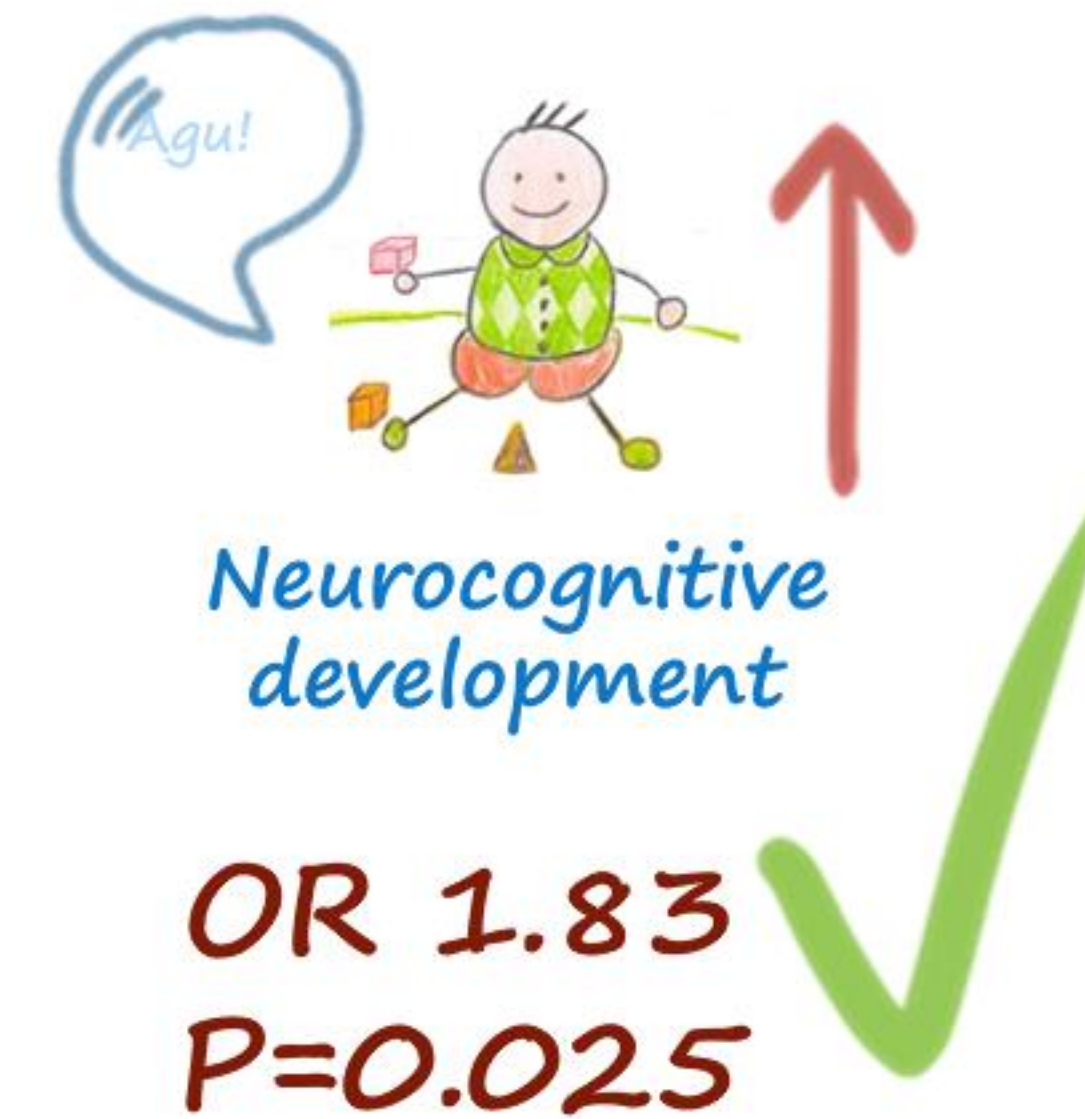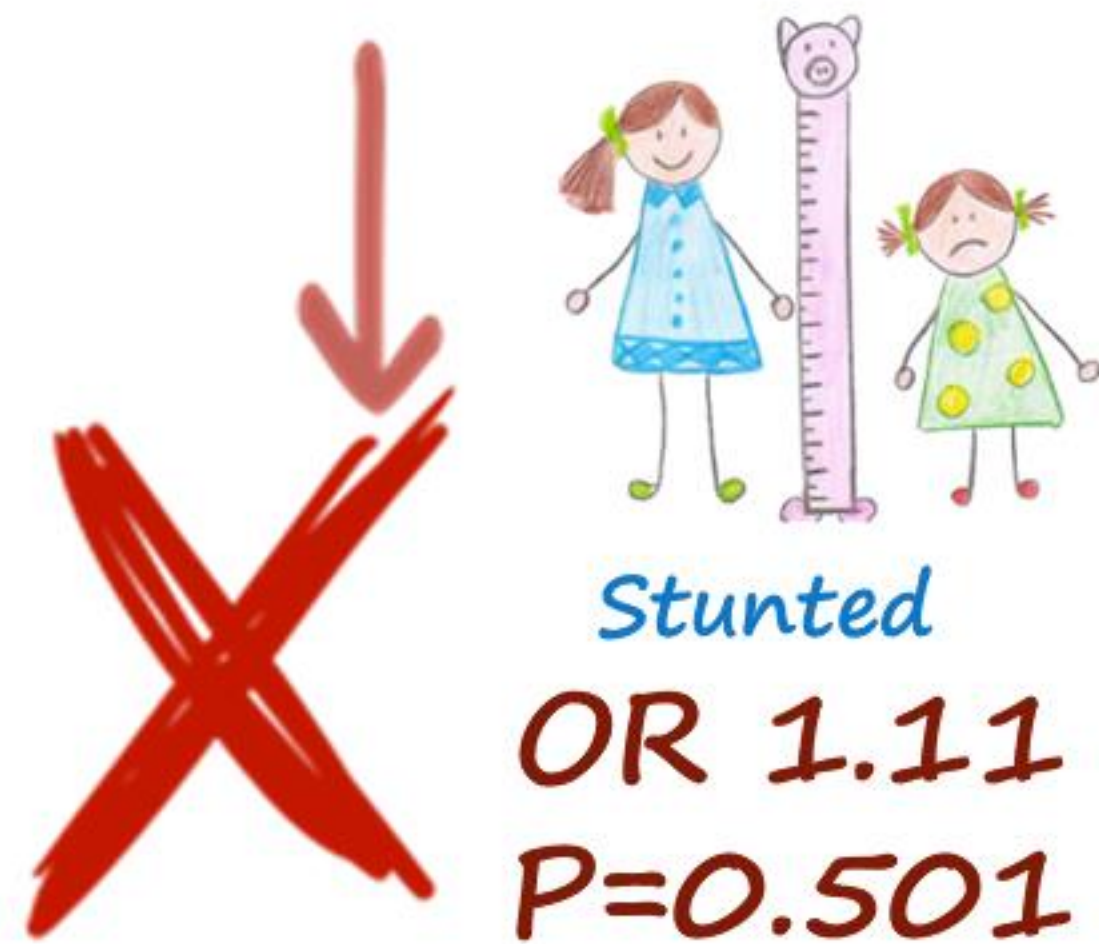

78.9% cognitive

85.2% language

78.2% motor

% of those with at least 85 score in all 3 quotients -**65.6%**

% of children that achieved at least 85 scores on BSID III

	Control	Intervention
Total score	59%	71%
	OR 1.82	
	p=0.025	
Cognitive	75%	82%
	OR=1.5	
	p=0.175	
Language	83%	87%
	OR=1.68c	
	0.151	
Motor	75%	81%
	OR=1.36	
	P=0.291	

Overall effect of intervention

Stunted
OR 1.11
P=0.501

Neurocognitive development
OR 1.83
P=0.025

Early learning support
OR 2.22
p=0.012

Minimum diversity
OR 1.55
p=0.013

Violating disciplining
OR 0.96
p=0.787

Developmental outcomes	Control (n=130)		Intervention (n=140)		Univariate analysis			Multivariate analysis		
	N	(%)	N	(%)	OR	(95% CI)	P value	aOR	(95% CI)	P value
Total composite										
Lower	53	(40.8)	40	(28.6)	Ref			Ref		
Higher (at least 85 in all 3)	77	(59.2)	100	(71.4)	1.72	(1.04-2.86)	0.036	1.83	(1.08-3.09)	0.025
Cognitive composite										
Below 85	32	(24.6)	25	(17.9)	Ref			Ref		
85 and above	98	(75.4)	115	(82.1)	1.50	(0.83-2.71)	0.175	1.50	(0.83-2.71)	0.175
Language composite										
Below 85	22	(16.9)	18	(12.9)	Ref			Ref		
85 and above	108	(83.1)	122	(87.1)	1.38	(0.70-2.71)	0.349	1.68	(0.83-3.43)	0.151
Motor composite										
Below 85	32	(24.6)	27	(19.3)	Ref			Ref		
85 and above	98	(75.4)	113	(80.7)	1.36	(0.77-2.44)	0.291	1.36	(0.77-2.44)	0.291

1 Total composite: adjusted for wealth score

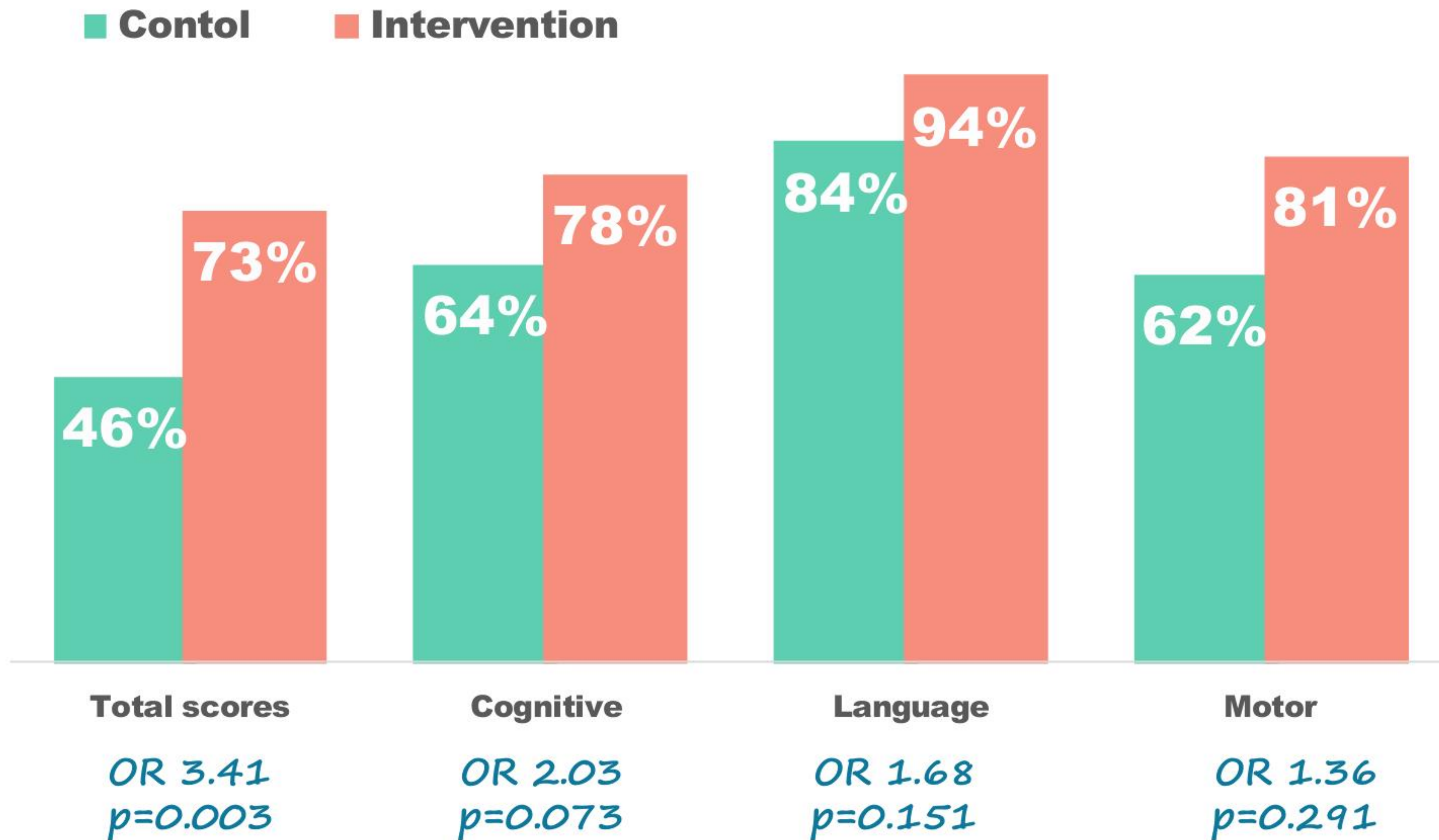2 Cognitive composite: no co-variate to distort OR over 10%

3 language composite: adjusted for fuel, age and wealth score

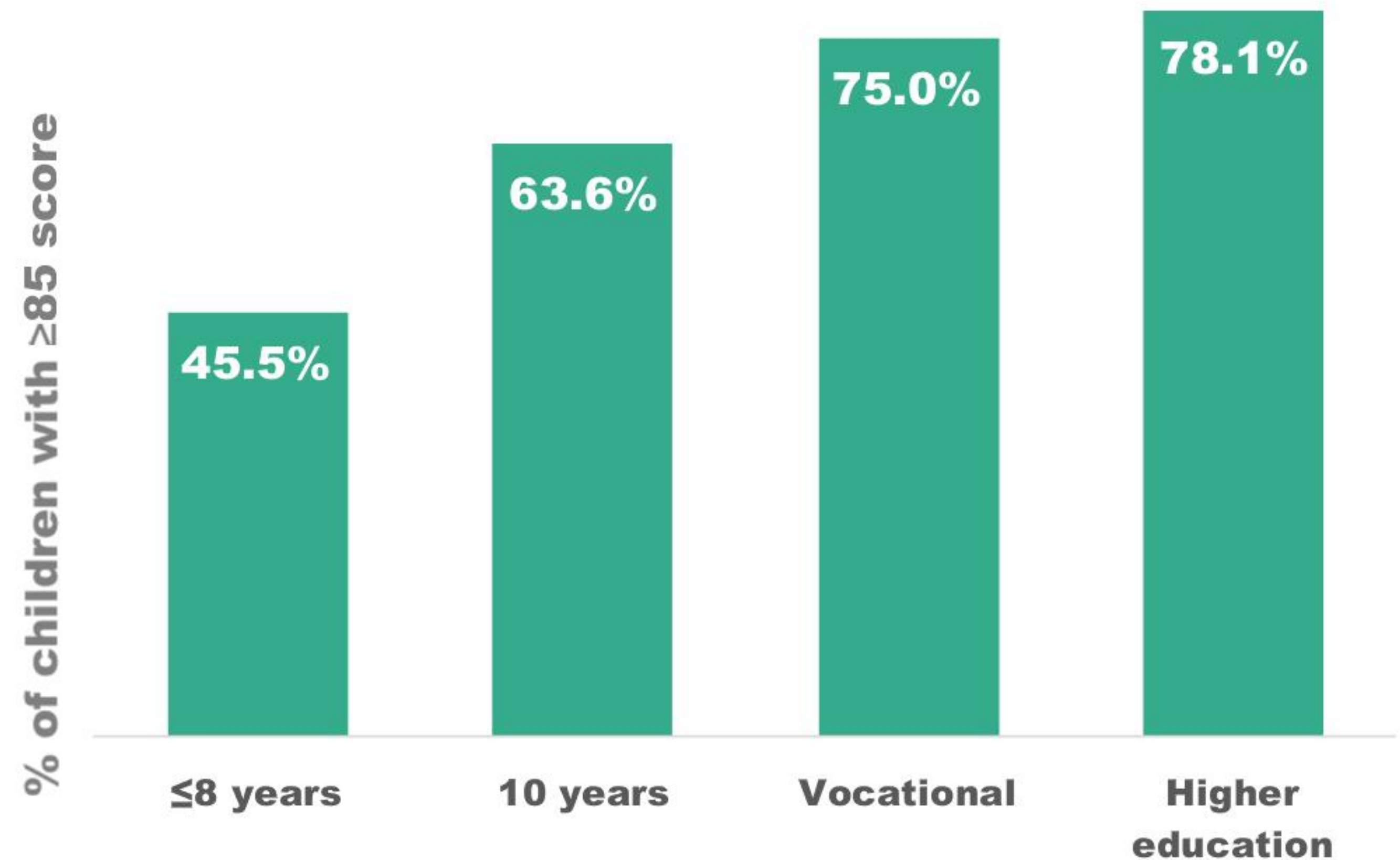4 Motor composite: no-covariate to distort OR over 10%

Care and nutrition practice	Control (n=615)		Intervention (n=650)		Uni-variate analysis			Multivariate analysis[1]		
	N	(%)	N	(%)	OR	(95% CI)	P value	aOR	(95% CI)	P value
Minimum diversity										
Below 4 food groups	91	(15.0)	63	(9.9)	Ref			Ref		
4 food groups and above	515	(85.0)	573	(90.1)	1.61	(1.14-2.27)	0.006	1.55	(1.10-2.19)	0.013
Support for learning										
Below 4 activities	39	(6.3)	26	(4.0)	Ref			Ref		
4 Activities and more	576	(93.7)	624	(96.0)	1.63	(0.98-2.71)	0.059	2.22	(1.19-4.16)	0.012
Violating disciplining										
No	109	(17.7)	119	(18.3)	Ref					
Yes	506	(82.3)	531	(81.7)	0.96	(0.72-1.28)	0.787			

Adjusted for co-variate "solid fuel used for cooking"

% of children that achieved at least 85 in total composite in Vardenis region only

Results: independent predictor of total composite

% of children with ≥85 score

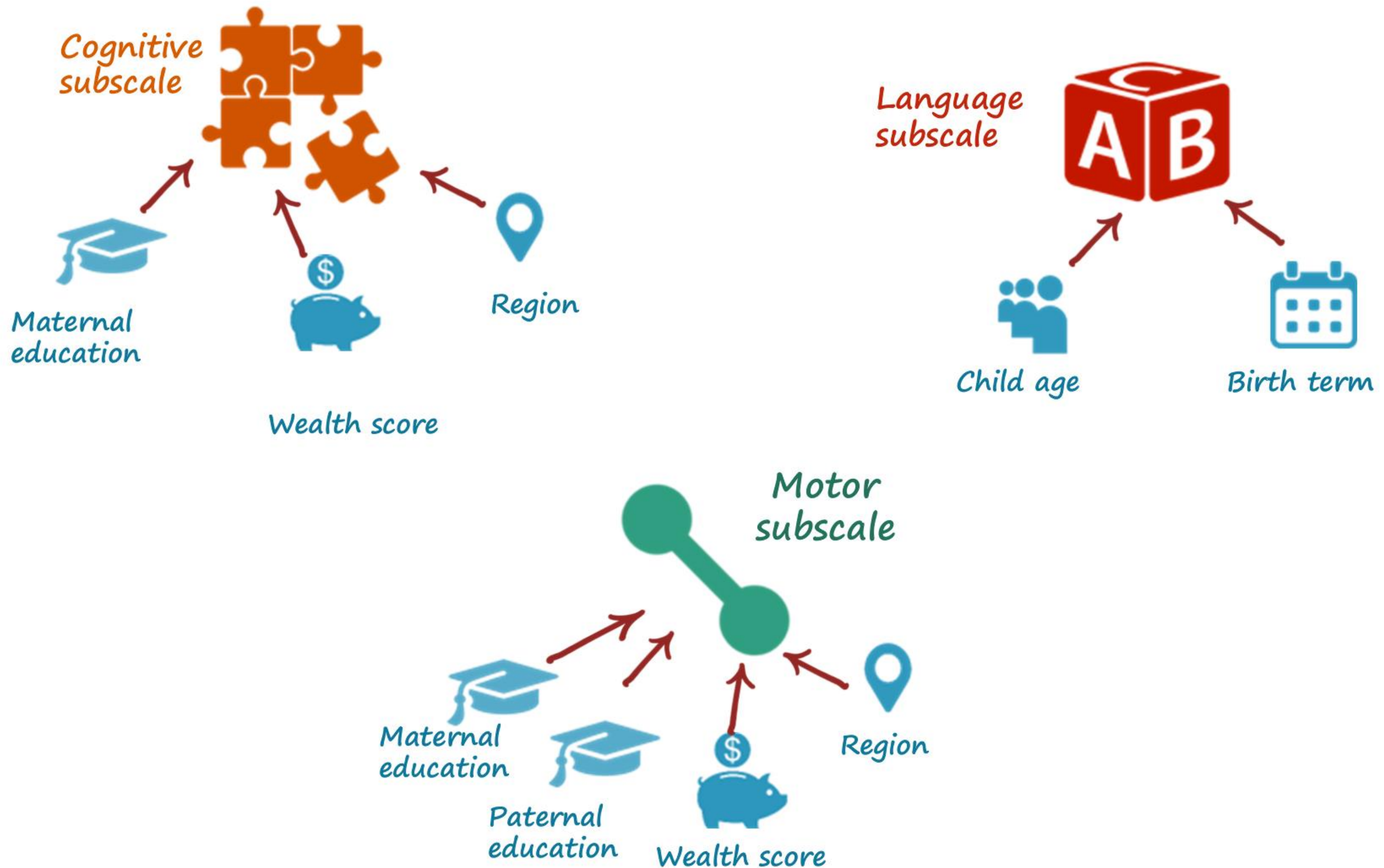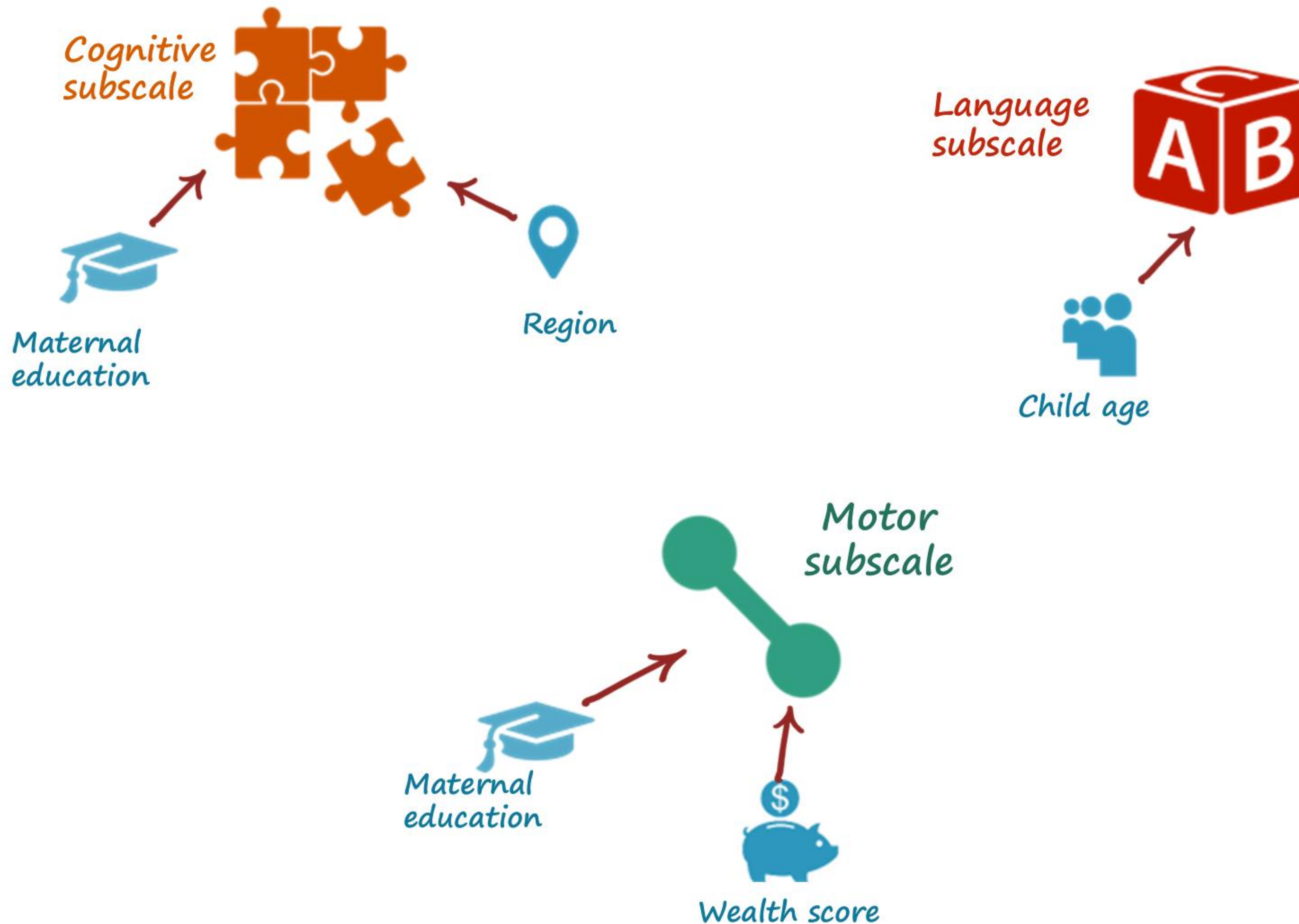| ≤8 years | 10 years | Vocational | Higher education |

45.5%   63.6%   75.0%   78.1%

Maternal education

P<0.001

Child development very strongly is associated with maternal education in linear pattern: with increase of maternal education % of children scoring ≥85 increases
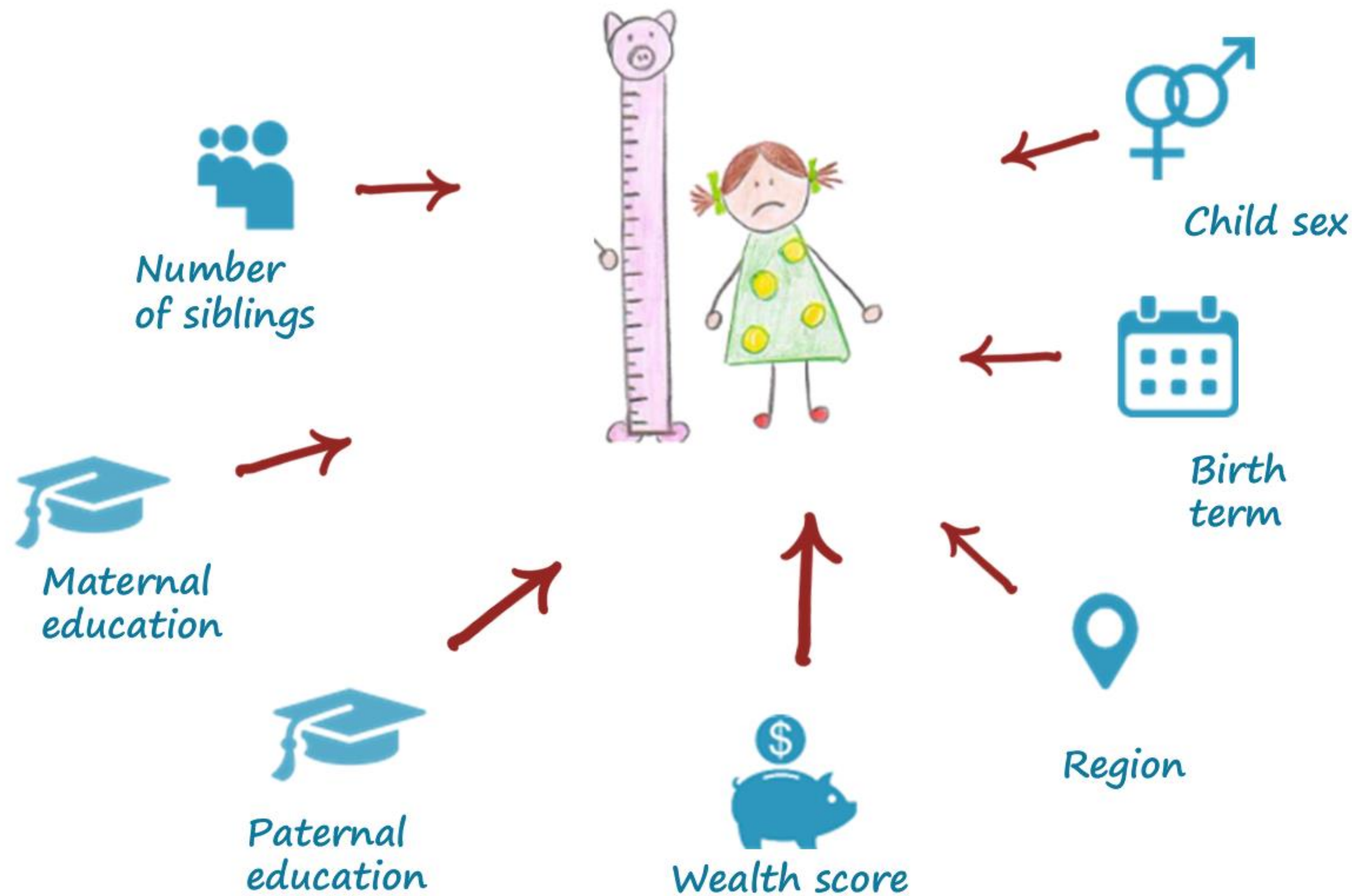
# Results: predictors of child development (univariate)

Cognitive subscale

Maternal education

Wealth score

Region

Language subscale

Child age

Birth term

Motor subscale

Maternal education

Paternal education

Wealth score

Region

Results: predictors of child development (multivariate)

Results: predictors of child stunting (univariate)

Number of siblings

Maternal education

Paternal education

Wealth score

Region

Birth term

Child sex

Results: predictors of child stunting (multivariate)
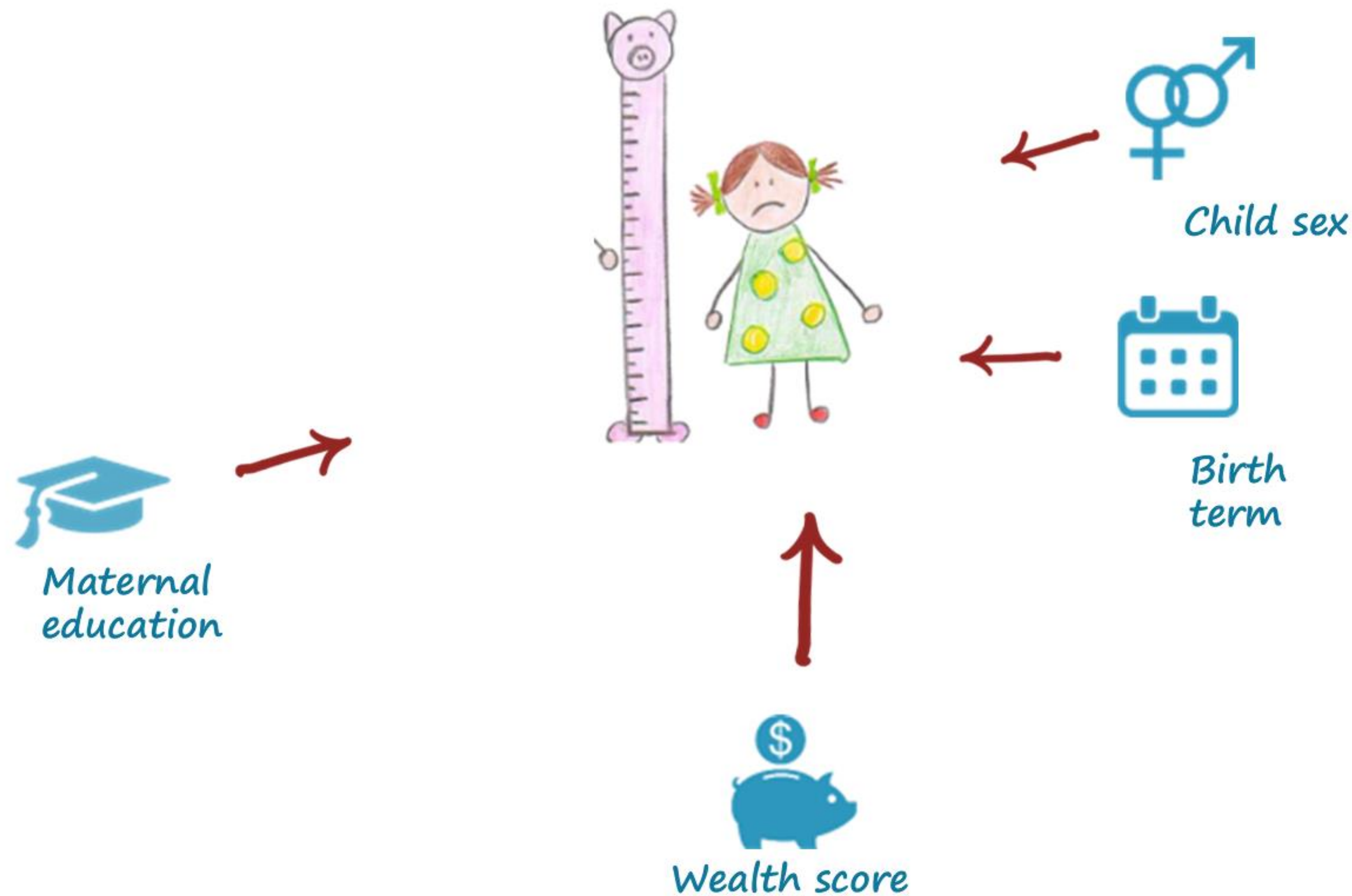
Advantages & Limitations

- Precise tools used for assessment of child development and EQA
- Successful randomization

- Short duration of intervention
- Small sample size for BSID III
- Lack of EQ control for anthropometric data
- Validity of MICS tools is concerning in Armenia context

Conclusions

- GBG is effective for all who participate
- Even more effective economically disadvantaged areas
- Longer duration studies are needed to view the long-term effects of GBG