Blanket food assistance with behavior change communication to prevent malnutrition in Haiti

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Collaboration between IFPRI, Cornell University, World Vision-Haiti

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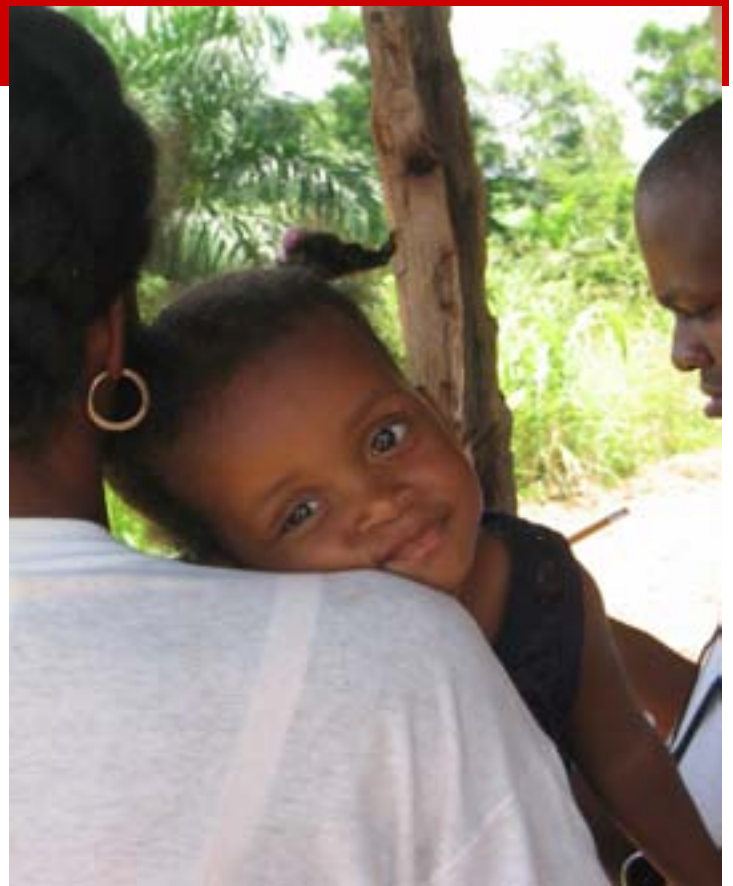


Background

- Underlying hypothesis: Prevention is more effective than « recuperation »
- Food-assisted MCHN programs typically target underweight children < 5 y
- In spite of evidence that 1st 2 years is the « window of opportunity » for nutrition interventions
- Missing: programmatic evidence that targeting children < 2 y is effective in ↓ undernutrition

Main objective of the study:

Compare impact on childhood undernutrition of 2 approaches of targeting FA-MCHN programs:

***The recuperative approach*:** targets underweight children < 5 y (WAZ < -2 SD)

***The preventive approach*:** targets all children 6-24 months of age to *prevent* undernutrition

*Both program models also target pregnant/lactating women

The Context: FA-MCHN (WV-Haiti)

Rally Posts

Identification of beneficiaries
Primary health care & nutrition services

CHILD BENEFICIARIES

-**Rally Posts**
-**Mothers' Clubs**

PREG/LACTATING WOMEN

- Pre/post natal clinics
- Mothers' Clubs

Eligible to receive food at:

Food distribution points

* Home visits are also scheduled for severely malnourished children and mothers soon after delivery

Differences between Program Models

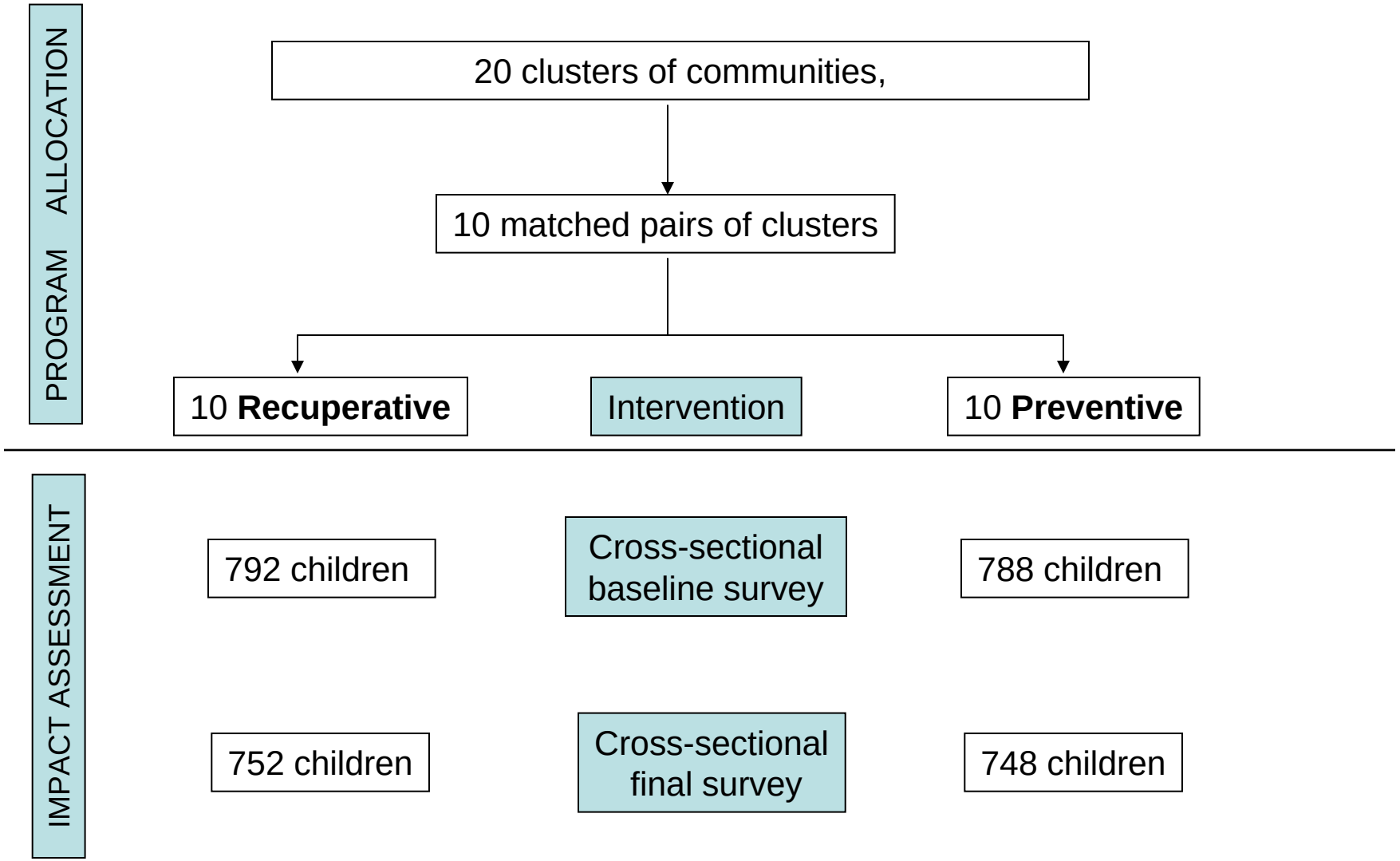
Preventive	Recuperative
Eligibility:	
-ALL 6-23 mo -24-59 mo, malnourished (WAZ < -3)	- 6-59 mo, malnourished (WAZ < -2)
Duration in program, focus, timing	
-**Duration** (for child): **18 sessions** -**Focus**: prevention -**Timing of education**: age-specific	-**Duration** (for child): **9 sessions** -**Focus**: malnourished child -**Timing**: when child malnourished

Food Assistance Package

Commodity	**Children 6-24 mo or malnourished <5 years**		**Pregnant/lactating women**	
	Direct ration (kg)	Indirect ration (kg)	Direct ration (kg)	Indirect ration (kg)
WSB	8			
SFB		10	5	5
Lentils		2.5	2	2
Oil	2		1.5	1.5

WSB=Wheat-soy blend; SFB=Soy-fortified bulgur; oil is fortified with vitamins A & E

Trial Profile: Cluster Randomized Trial



Outcomes

- Prevalence of stunting, underweight and wasting
- Mean HAZ, WAZ, WHZ

Age group: 12-41 mo old:

- Fully exposed
  - 24-35 mo at final
- Partially exposed
  - 12-23 mo (at final)
  - 36-41 mo (at final)

Survey data

- Anthropometry – children and mothers
- Community characteristics
- Household demographics, socioeconomic status, food security
- Maternal characteristics
- Behavior change outcomes
- Program participation

Statistical Analyses

- Comparisons of preventive/recuperative at final survey (“intent to treat”):
  - Cluster-level pairwise comparisons (t-tests)
  - Child-level: random effects models (adj. cluster effect, child age, sex)
- WHO 2006 reference standards used

Baseline Characteristics (2002): No differences between groups

Characteristic	Preventive (n=788)	Recuperative (n=792)
Stunting (%)	36.7	37.4
Underweight (%)	17.6	17.8
Wasting (%)	5.2	4.3
Maternal height	158	158
% women farming	42	43
HH size	6.7	6.8
% sanitation	56	57
% electricity	2	2

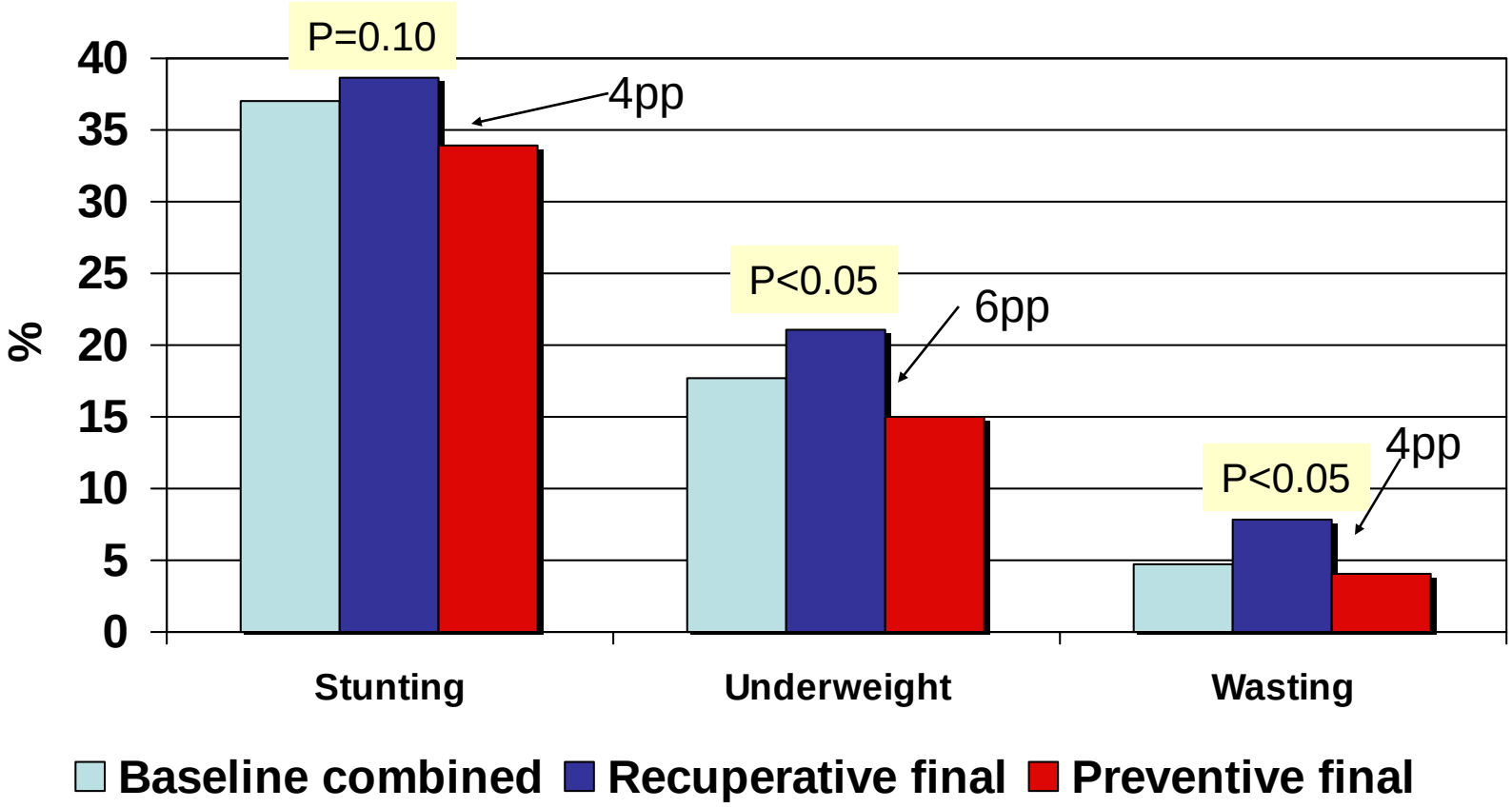
Using WHO 2006 standards

Preventive communities had higher HAZ, WAZ, WHZ than recuperative at final survey

Outcome (final survey)	**Preventive** (n=752) Mean	**Recuperative** (n=748) Mean	**Difference (preventive – recuperative)**
HAZ	-1.53 *	-1.67	+ 0.14
WAZ	-0.96*	-1.20	+ 0.24
WHZ	-0.22*	-0.46	+ 0.24

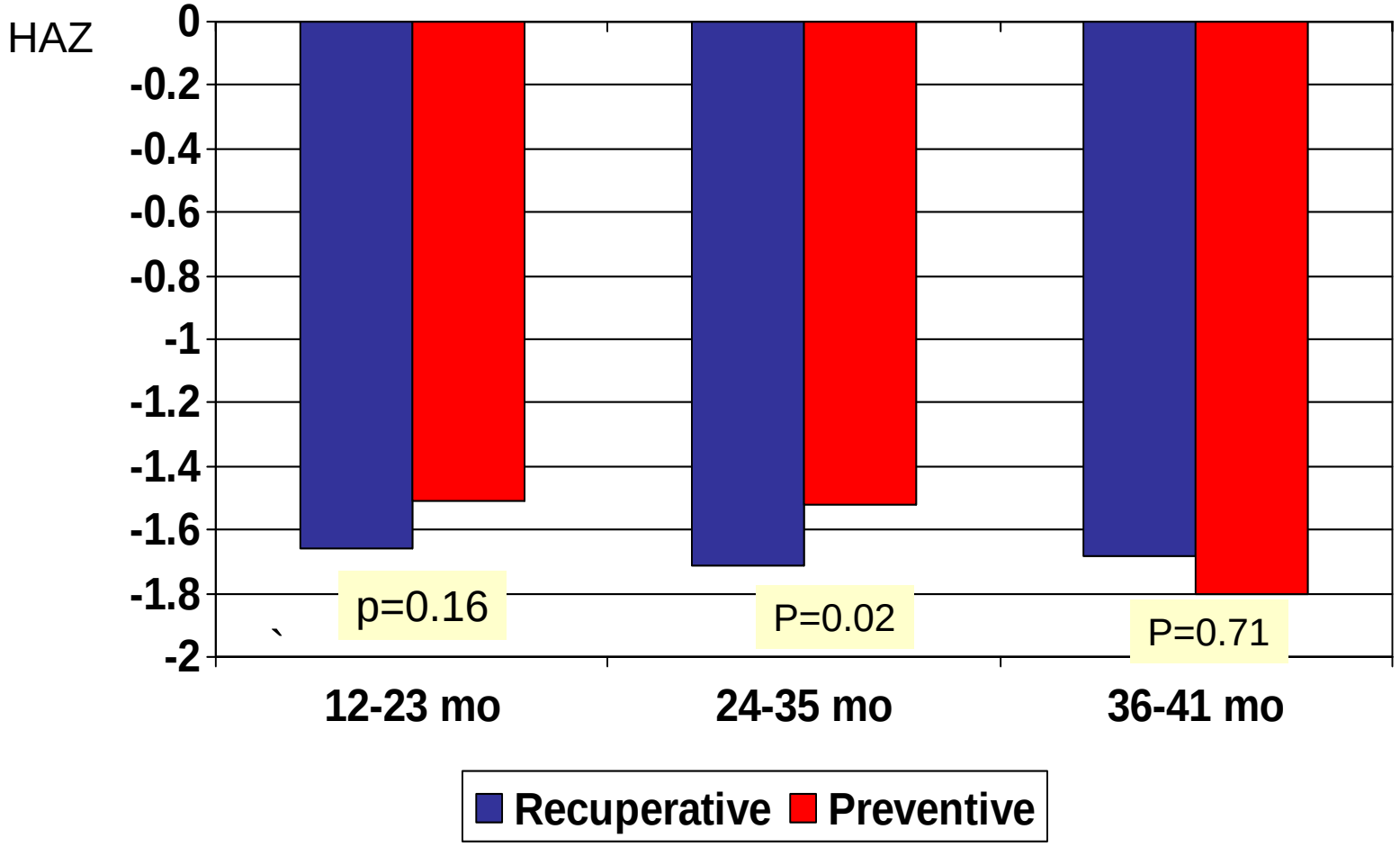
*p<0.05; random effects regression using child-level data, controlling for child age, gender, and adjusting for clustering at pair-level

Preventive communities had lower stunting, underweight & wasting than recuperative at final survey



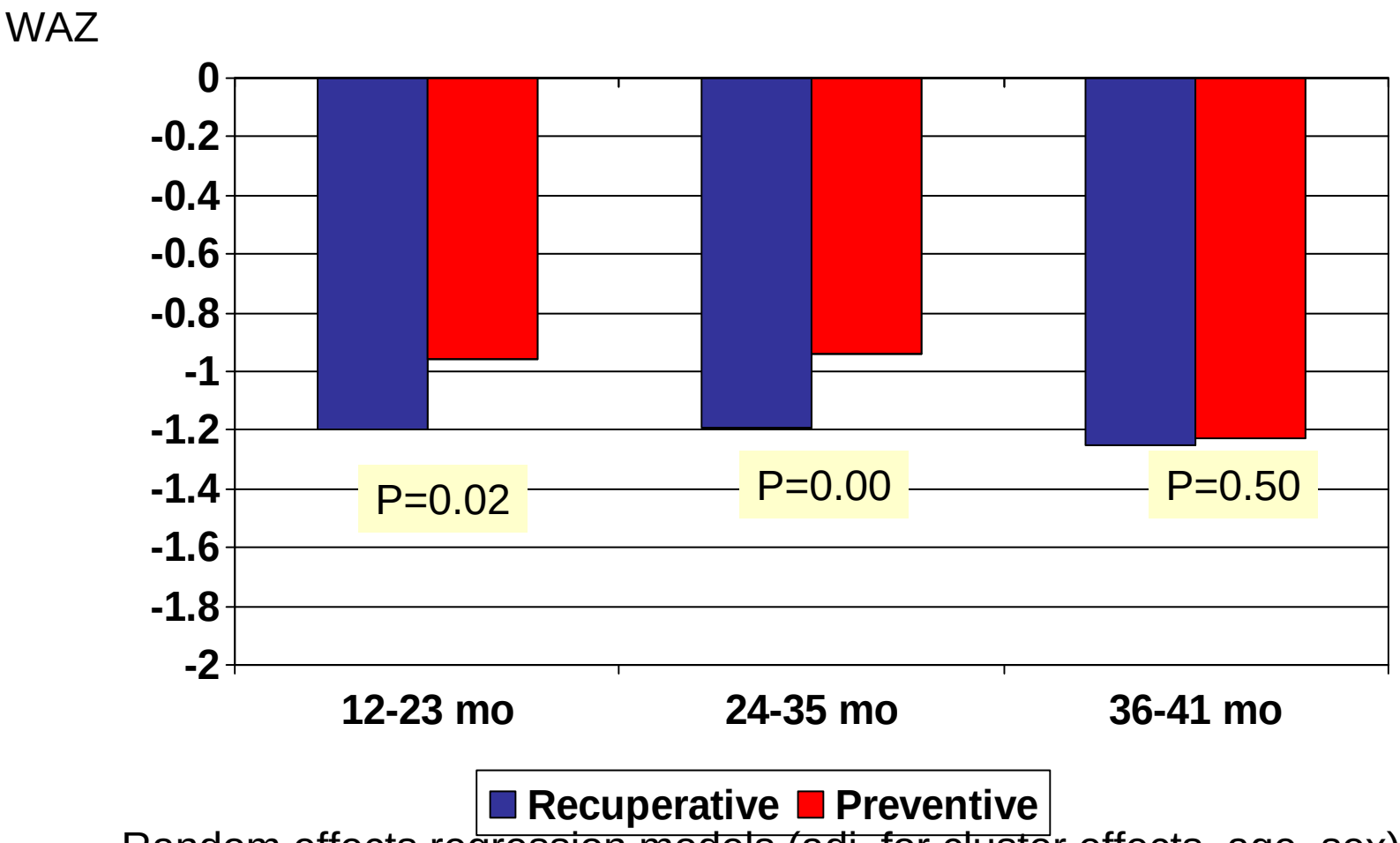
Random effects logit models (adj. for cluster effects and controlling for age, sex)

Greater benefit of preventive model among children exposed from 6-24 months of age: HAZ



Random effects regression models (adj. for cluster effects, age, sex)

Greater benefit of preventive model among children exposed from 6-24 months of age: WAZ



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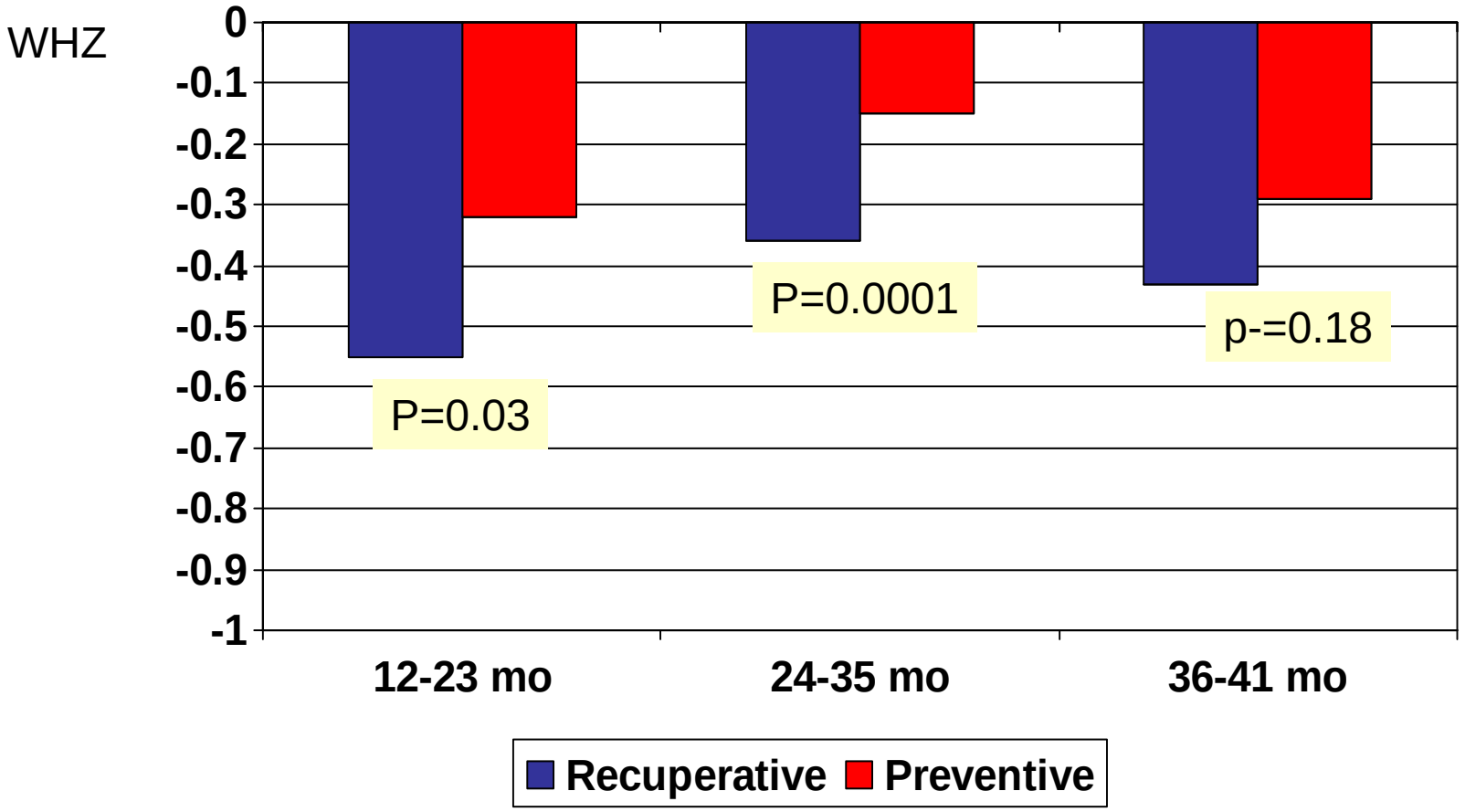
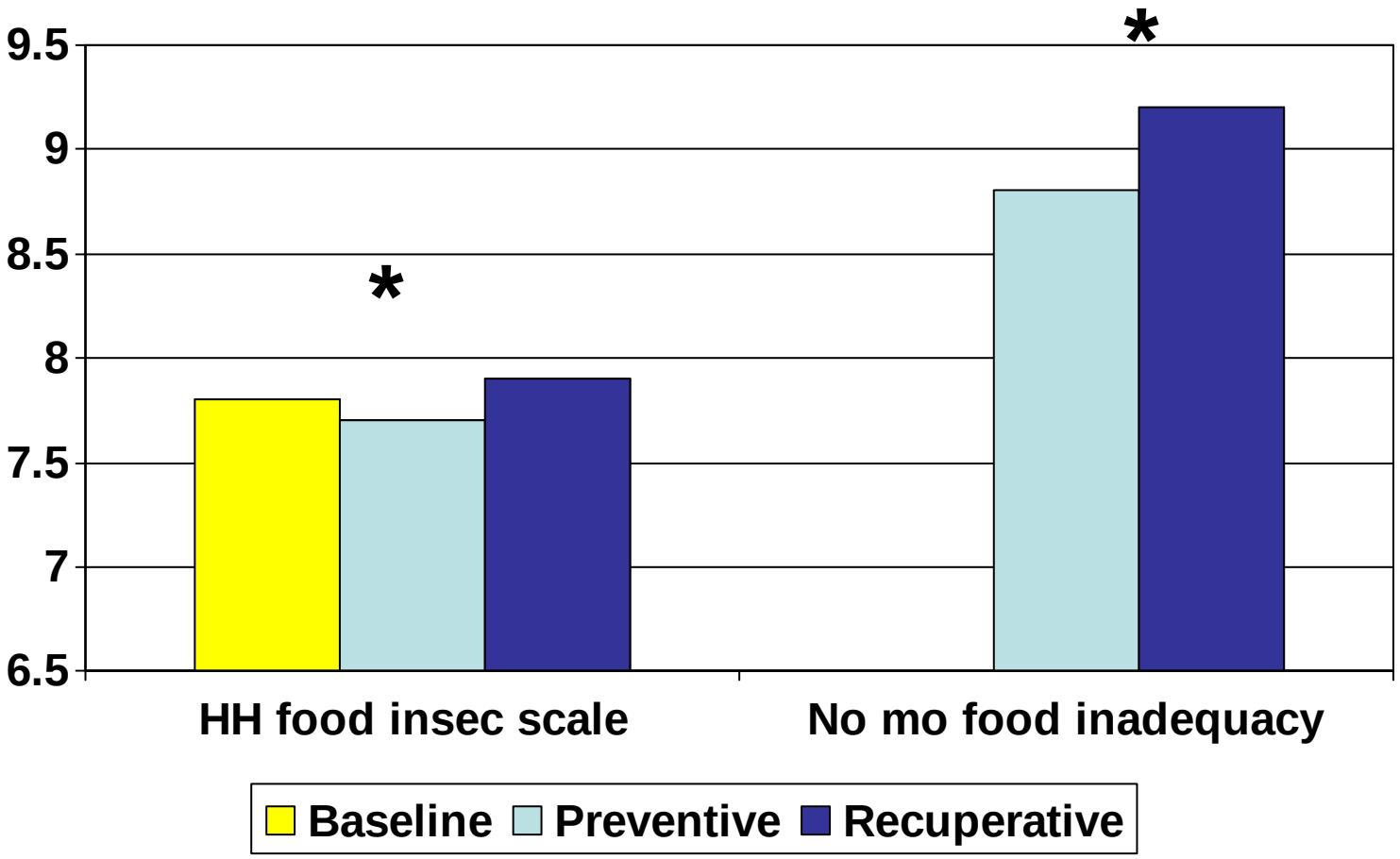
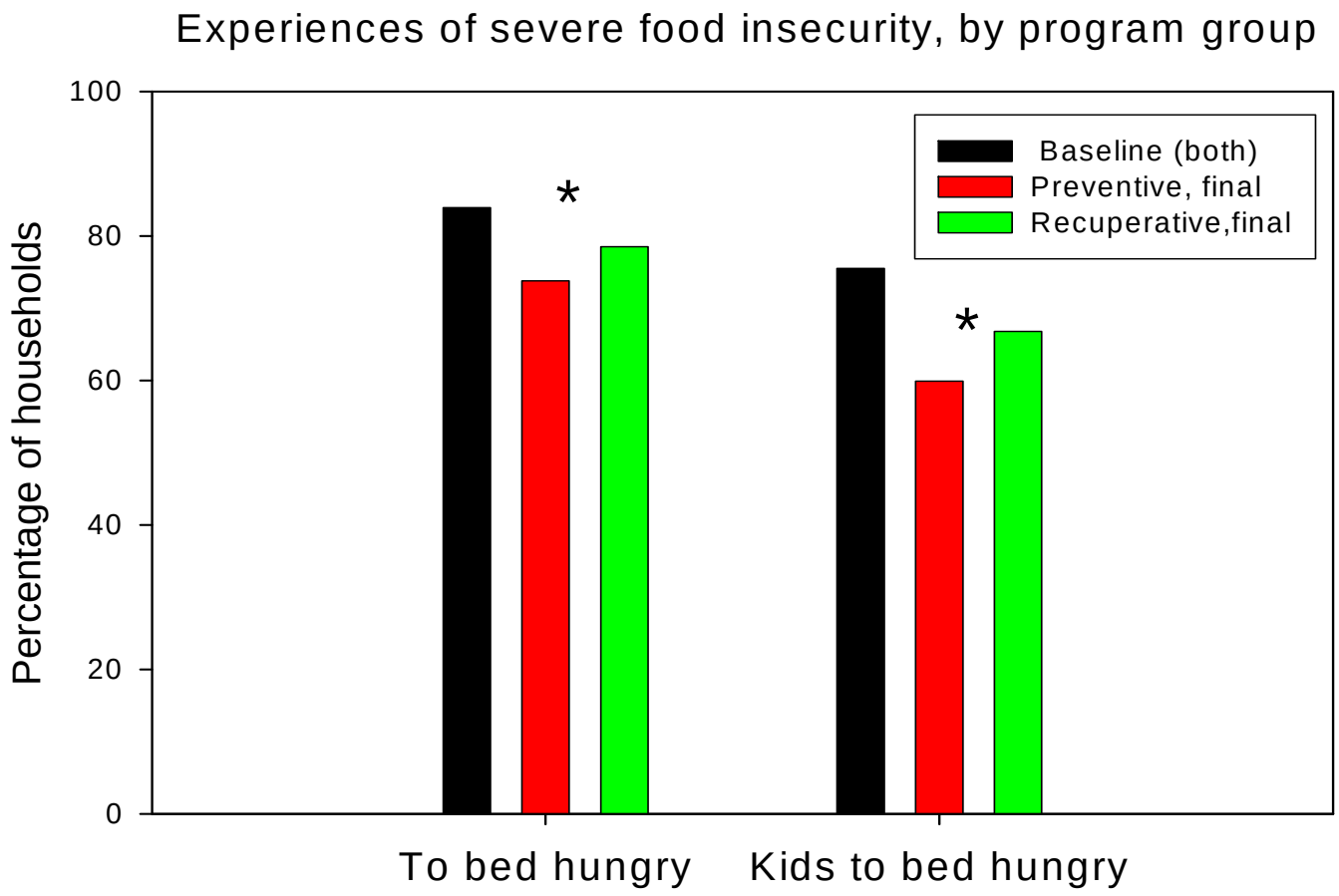


Random effects regression models (adj. for cluster effects, age, sex)

Household food security is higher in preventive than recuperative communities at final survey



Impact on Food Security



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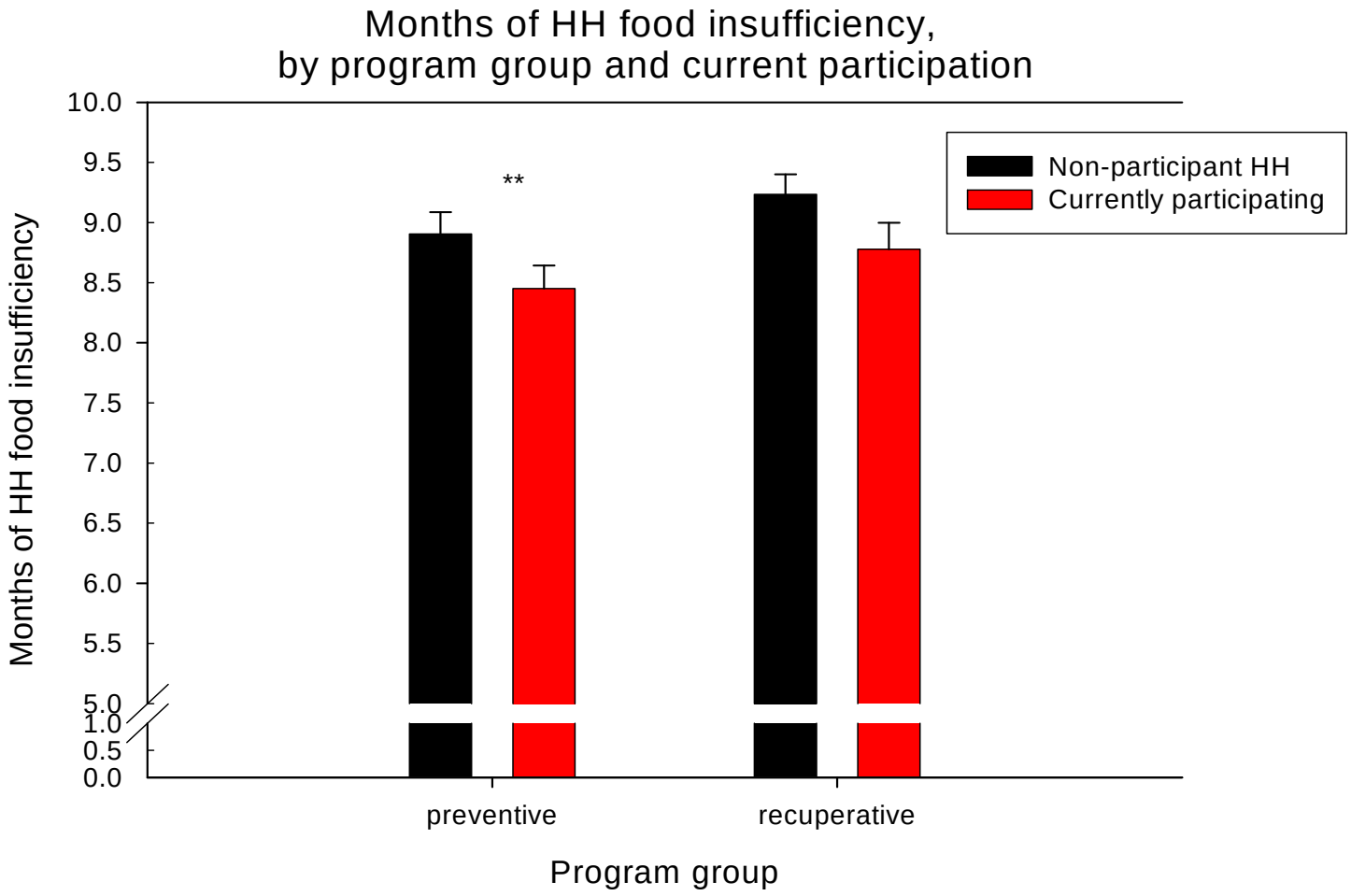
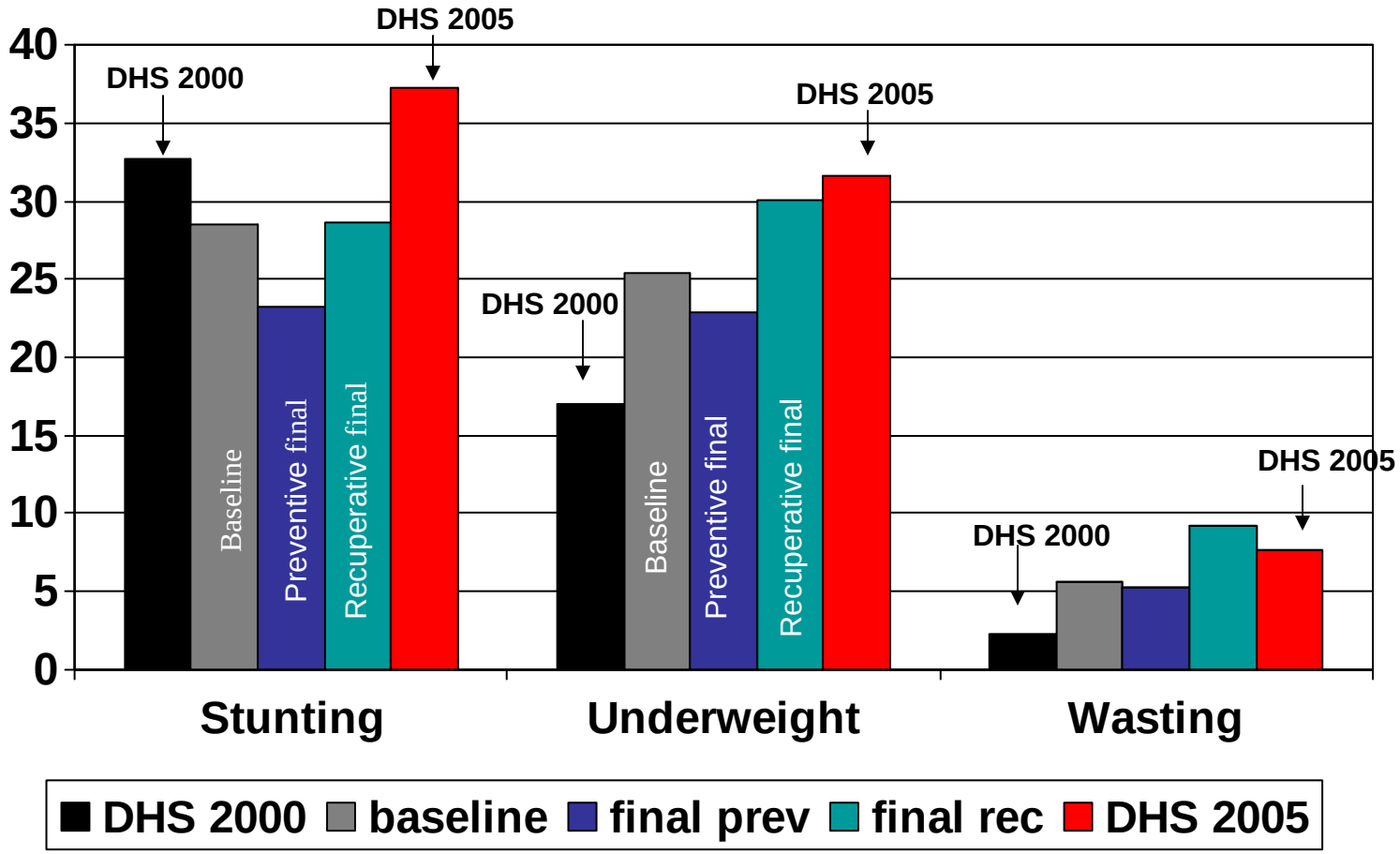


Conclusions

- Blanket age-targeting **(preventive)** of FA-MCHN is more effective at reducing undernutrition than targeting underweight children **(recuperative)**
- Impact is greater among children exposed between 6-24 months of age (24-35 mo at final survey)
- Before/after comparisons suggest some deterioration in undernutrition in recuperative communities (plausible given economic & political crisis in Haiti)

Comparing our sample with DHS surveys 2000 and 2005 (NCHS standards)



Prevalences used for EMMUS 2005 are for all kids < 5 y in Central Department

Conclusions (2)

- Both programs helped mitigate the crisis, but preventive was more effective at doing so
- Magnitude of differences (0.14-0.24 Z-scores): similar to effectiveness trials to improve complementary feeding practices (Caulfield, Huffman & Piwoz 1999); review of FA-MCHN (↓ 2 pp/year)
- Benefits of preventive model are not due to differences in implementation and organizational conditions, nor in program use

Generalizability of findings

- Good program design (formative research)
- Effective implementation & service delivery (operations research)
- Good incentive structure, staff motivation and effective supervision
- Similar levels of undernutrition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Program Participation

	Prev.	Recup.
During pregnancy (% received food)	58.2	57.2
During lactation (% received food)	66.3	62.2
After child was 6 mo old (% ever received food)	73.1*	28.2
Age at entry in program (mean, sd)	7.7*	13.6
No. of times child received food (mean, sd)	11.7*	7.5

* $p<0.05$