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# Community-based Health and Nutrition to Reduce Stunting Project

## Baseline results

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# Outline

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- 1. Background on the project and the evaluation**
- 2. Study design**
- 3. Results: household baseline characteristics**
- 4. Results: extent of program implementation**
- 5. Results: outcomes**
  - A. Healthcare service provision and access
  - B. Food security and dietary diversity
  - C. Breastfeeding, micronutrients, and service provider counseling about feeding and nutrition
  - D. Sanitation
  - E. Anthropometry and anemia
- 6. Conclusions**

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# **1. Background on the project and the evaluation**

# Indonesia has a high rate of stunting

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- **Defined as height or length for age more than 2 standard deviations below median according to WHO standards**
- **In 2013, Indonesia's national stunting rate was 37.2% among children under 5 according to the National Basic Health Research study (Riskesdas)**
  - Higher in study provinces: 38.6% in West Kalimantan, 41.3% in Central Kalimantan and 36.7% in South Sumatra (Department Kesehatan RI 2010)
- **Indonesia's stunting rate is high relative to the country's level of economic development**

# Indonesia's high stunting rate could constrain the country's economic development

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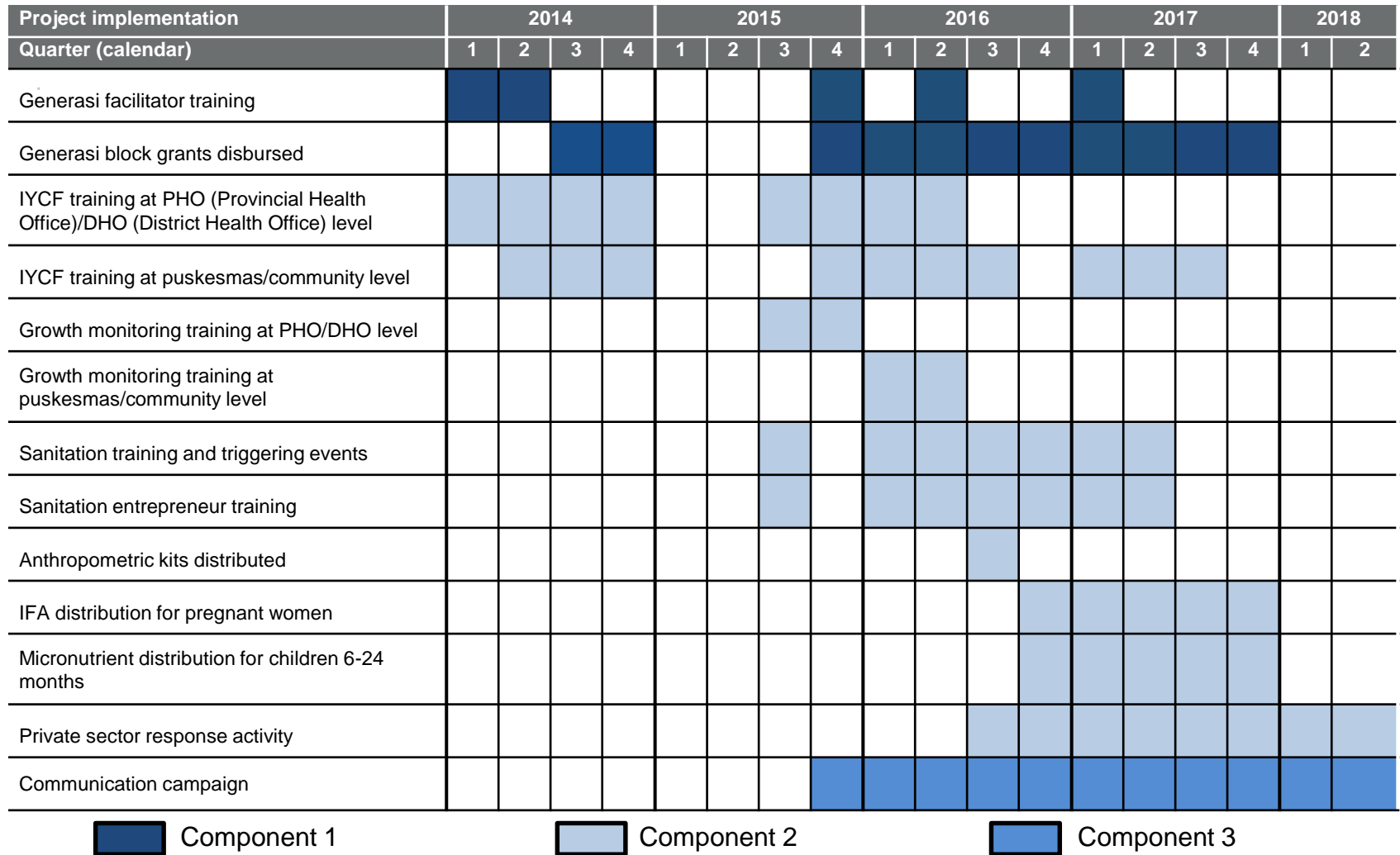
- **Potential consequences: impaired cognitive ability, higher morbidity and mortality**
  - Lifelong effects of lower wages and lost productivity
  - Stunting is a cyclical problem since stunted mothers are more likely to have stunted offspring
- **Potential causes: poor maternal nutrition, inadequate early childhood nutrition, severe and repeated infections, environmental factors**
  - Undernutrition and infection can become a vicious cycle

# **The Community-based Health & Nutrition to Reduce Stunting Project**

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- **One of three projects under the MCC Indonesia Compact**
  - Nutrition project is for five years, US\$131.5 million
- **Focus on improving health and nutrition of pregnant women, infants, and children under 5**
- **Three program components**
  1. Expanding existing community-driven development program (“Generasi”) to rural areas of three new provinces and strengthening emphasis on health and nutrition in program indicators in all 11 participating provinces
  2. Supply-side trainings (infant & young child feeding, growth monitoring, sanitation), provision of equipment for growth monitoring, distribution of micronutrients, and private sector response activity
  3. National communications campaign

# Project timeline



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## 2. Study design



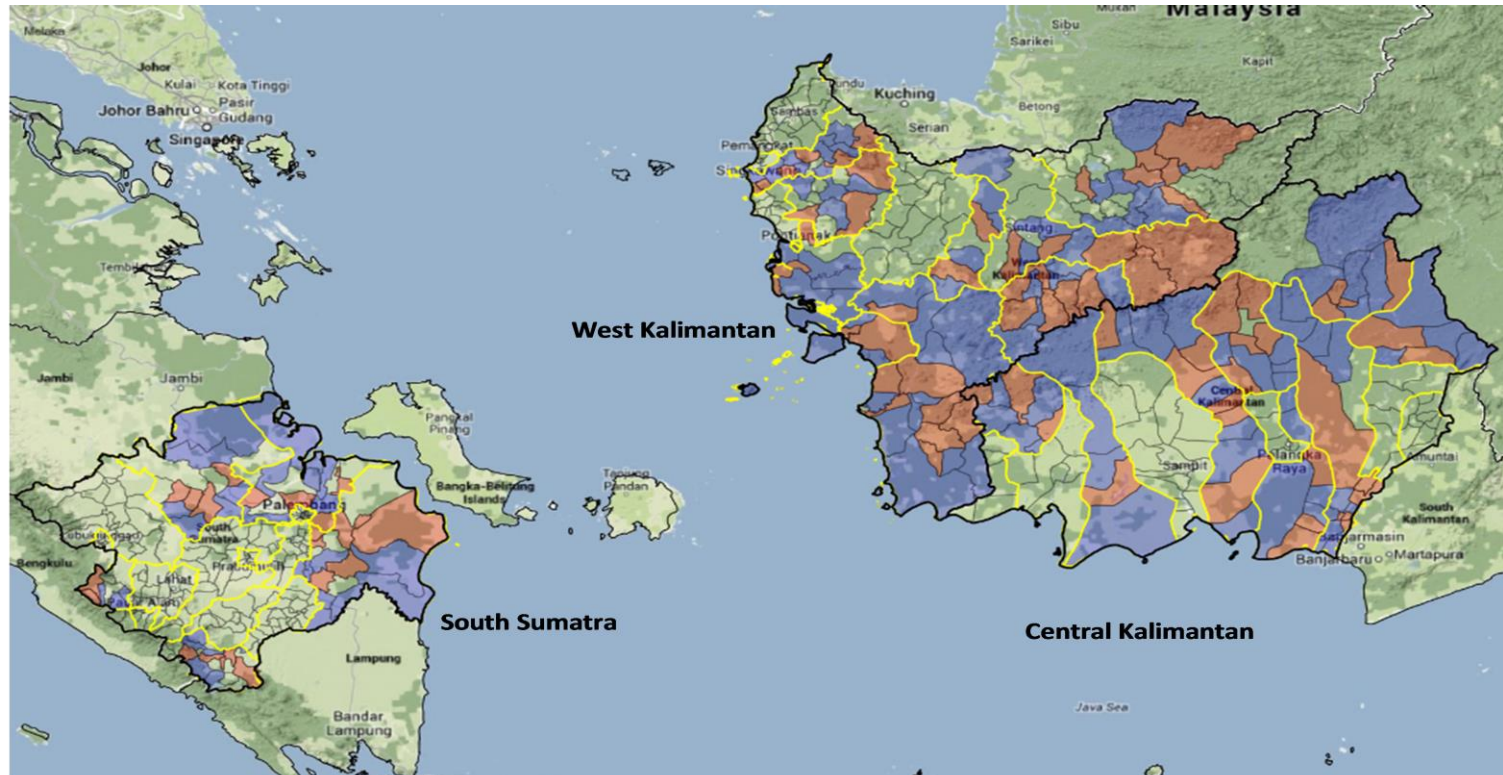
# **An independent impact evaluation**

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- **Randomized design to estimate causal impacts**
  - Randomization at the kecamatan (subdistrict) level
- **Baseline and endline surveys allow us to control for changes over time that would have occurred in the absence of the program**
- **Mathematica worked closely with MCC and MCA-I on the evaluation design. SurveyMETER carried out the baseline data collection**

# Random assignment across three provinces

95 treatment and 95 control kecamatan in West Kalimantan, Central Kalimantan and South Sumatra



Source: MCA-I

Purple indicates treatment kecamatan, red indicates control kecamatan. Yellow lines indicate district boundaries.

# Surveys took place across 22 districts, 190 kecamatan, and 760 desa in three provinces

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Province	Districts	Kecamatan	Desa
West Kalimantan	9	79	316
Central Kalimantan	8	68	272
South Sumatra	5	43	172
Total	22	190	760

Source: SurveyMETER (2015).

The sample was representative of households in sampled kecamatan, but not of province as a whole

# Surveys with multiple types of respondents

Type of respondent	Key topics covered
<b><u>Household</u></b> Household head Pregnant woman Caregiver	Demographics, income/assets, water/sanitation/hygiene, community engagement, participation in Generasi, health seeking behaviors / knowledge, nutrition (including food security, dietary diversity, infant & young child feeding practices, micronutrient coverage & compliance), care of child, household decision-making, anthropometry & anemia
<b><u>Desa</u></b> Desa head Posyandu volunteer Generasi volunteer Midwife	Training, health knowledge, participation in Generasi
<b><u>Health facility</u></b> Puskesmas management Nutritionist Midwife coordinator Sanitarian	Equipment, services, supervision/outreach, knowledge

# Sampling procedure

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- **4 desa sampled per kecamatan; 1 sampling unit per desa**
  - Sampling units depend on local context but were no more than 250 households
- **Complete listing of all households in sampled unit to identify eligible respondents**
- **Random sample of eligible households (including a pregnant woman or a caregiver of a child 0-35 months old)**
  - 8 pregnant women per kecamatan
  - 16 caregivers of children 0-35 months old per kecamatan

# Sample sizes and response rates by instrument type

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Instrument	Sample size	Response rate (percent)
Household head	4,547	85
Caregiver	3,034	84
Pregnant Woman	1,513	86
Posyandu Volunteer	732	100
Desa head	760	100
Generasi volunteer	358	94
Midwife	570	75
Facility management	251	100
Midwife coordinator	245	97
Nutritionist	214	88
Sanitarian	203	88

# Goals of the baseline data and analysis

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## 1. Describe conditions at baseline

- Provide MCC and MCA-I with information that can improve the design of project activities

## 2. Test for balance between treatment and control areas

**In order to achieve these goals, we first consider the timing of program implementation relative to baseline data collection.**

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## **3. Results: household baseline characteristics**



# Treatment and control respondents were balanced on demographic characteristics

	Treatment mean	Control mean	Difference
<b>Household head</b>			
Female (percent)	1.8	2.7	-0.9*
Age (years)	38.2	38.6	-0.4
Muslim (percent)	71.0	70.5	0.5
Completed junior high (percent)	41.0	45.3	-4.3*
<b>Pregnant woman</b>			
Age (years)	26.5	26.5	0.0
Completed junior high (percent) <sup>a</sup>	54.0	49.5	4.4
<b>Caregiver</b>			
Age (years)	28.3	28.3	0.0
Completed junior high (percent) <sup>a</sup>	49.0	51.1	-2.1

\* / \*\* / \*\*\* Significantly different from zero at the .10 / .05 / .01 level, two-tailed test.

Source: Household, pregnant woman and caregiver baseline surveys, 2015

<sup>a</sup> Individual has completed junior high or above. In Indonesia, junior high is most commonly called SMP (*Sekolah Menengah Pertama*) and usually ends at grade 7.

# Pregnancies and child characteristics were also balanced between treatment and control groups

	Treatment mean	Control mean	Difference
<b>Pregnant woman sample</b>			
Second trimester (percent)	46.9	43.9	3.0
Woman has buku KIA (percent)	65.5	53.7	11.8***
<b>Caregiver sample</b>			
Caregiver is the child's mother (percent)	98.5	98.4	0.1
Child age (months)	16.6	16.8	-0.2
Child is female (percent)	51.2	49.9	1.3
Child has buku KIA or KMS (percent)	58.0	52.4	5.6*

\* / \*\* / \*\*\* Significantly different from zero at the .10 / .05 / .01 level, two-tailed test.

Source: Pregnant woman and caregiver baseline surveys, 2015

# Treatment and control households had similar dwellings and WASH infrastructure

Household Dwelling Characteristics	Treatment mean	Control mean	Difference
House had electricity	87.7	87.7	-0.1
Had a motorcycle	77.1	75.1	2.0
Used wood for cooking fuel	43.8	37.7	6.1*
Used an improved water source	49.8	46.8	3.1
Treated water	81.8	79.5	2.2
Soap was observed	69.5	70.9	-1.4
Household had toilet	84.5	85.6	-1.1

\* / \*\* / \*\*\* Significantly different from zero at the .10 / .05 / .01 level, two-tailed test.

Source: Household baseline survey, 2015

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## **4. Results: extent of program implementation**

# Some project activities had launched before the baseline survey

Project implementation	2014				2015				2016				2017				2018
Quarter (calendar)	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1
Quarter (Compact)	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Generasi facilitator training	■	■															
Generasi block grants disbursed			■	■			■	■	■	■	■	■	■	■	■	■	
Infant and young child feeding (IYCF) training	■	■	■	■			■	■	■	■							
Growth monitoring training							■	■	■								
Anthropometric kits distributed									■	■	■	■	■	■			
Micronutrient distribution									■	■	■	■	■	■	■	■	
Sanitation program						■	■	■	■	■	■	■	■	■	■	■	
Private sector response activity									■	■	■	■	■	■	■	■	■
Communication campaign							■	■	■	■	■	■	■	■	■	■	

Baseline Survey

Endline Survey



Component 1

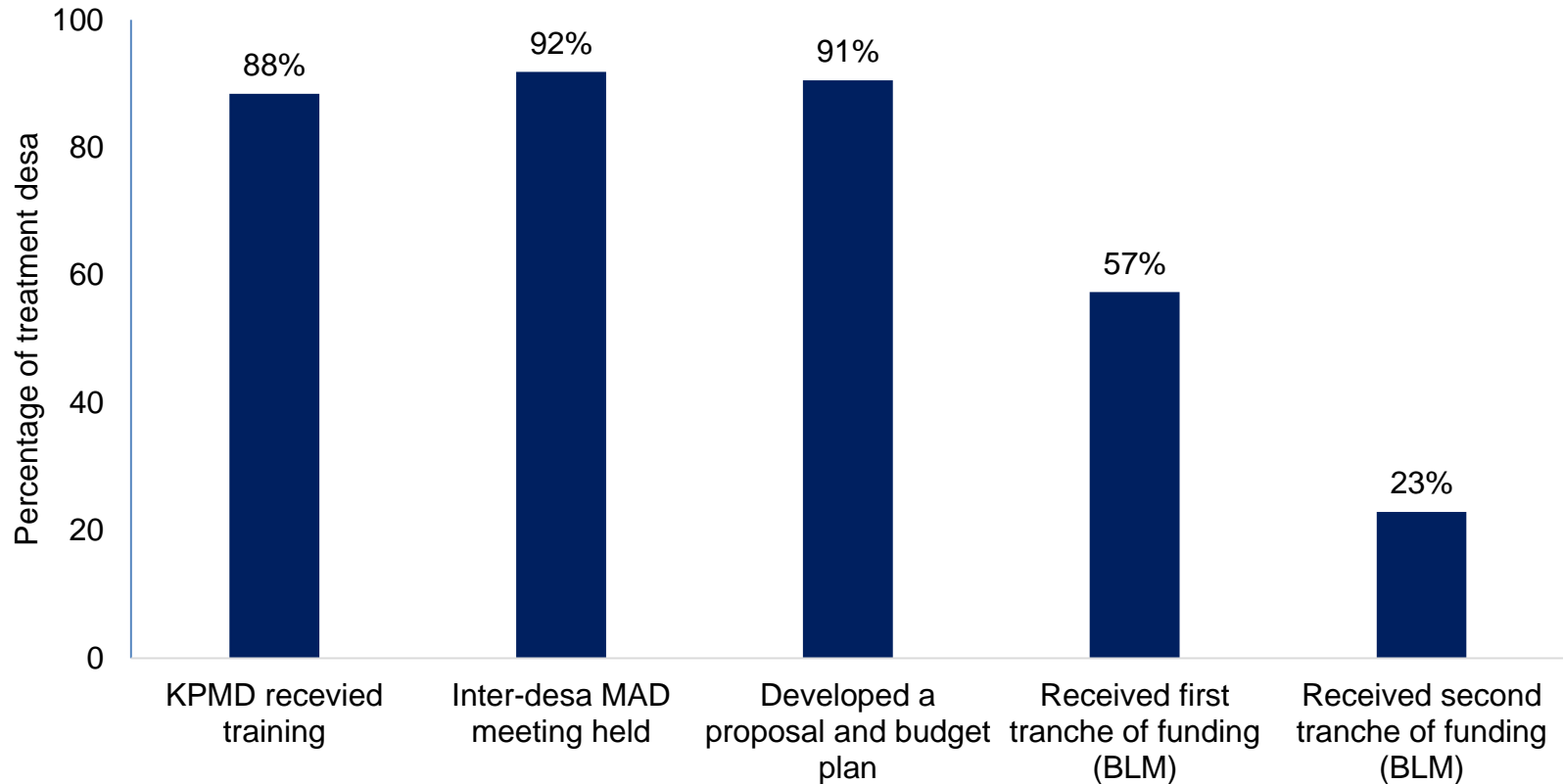


Component 2



Component 3

# At baseline, nearly all treatment desa had developed a plan for utilizing Generasi funds and over had half received funds

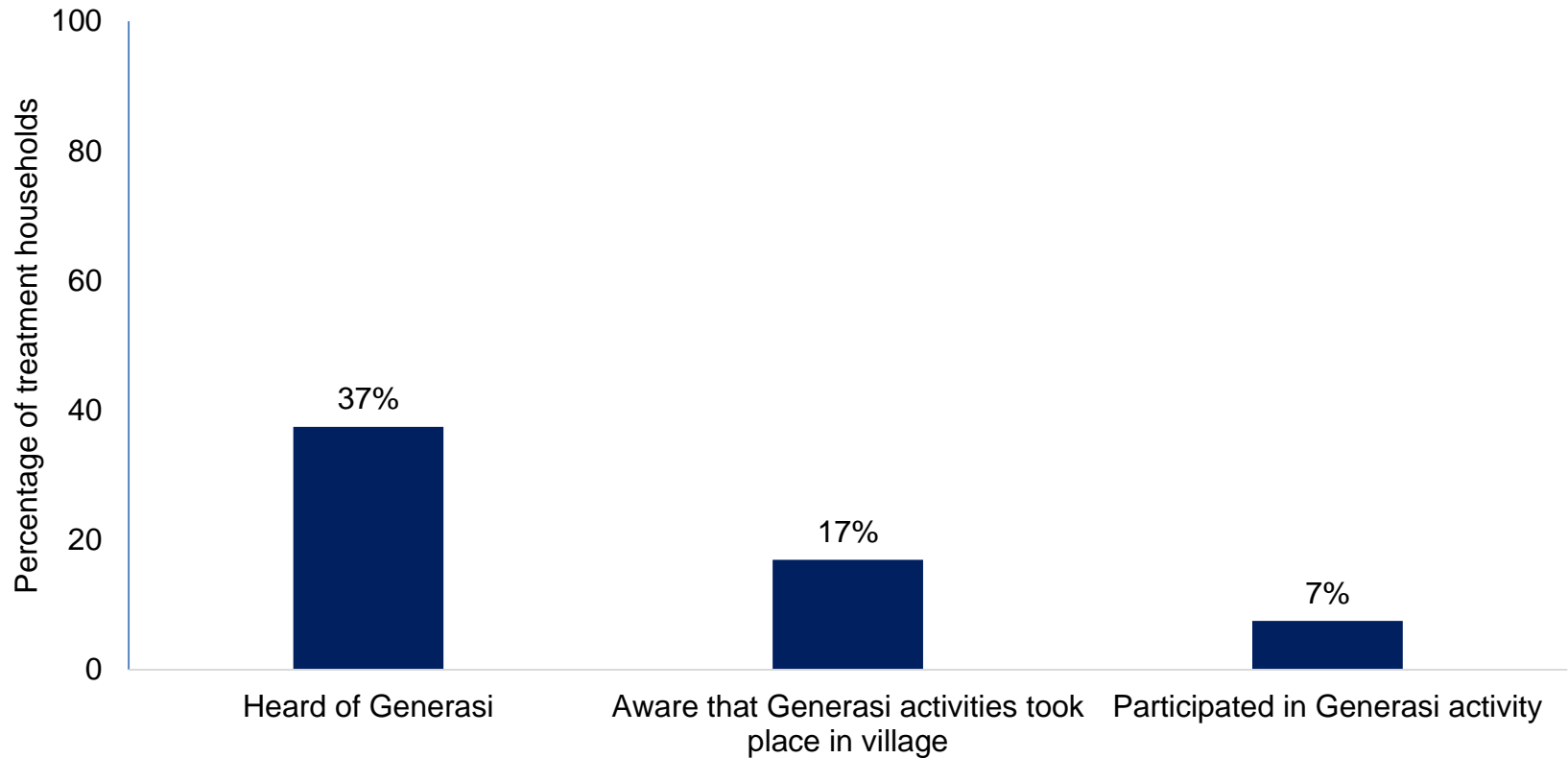


Source: Generasi volunteer and desa head baseline surveys, 2015.

Sample size: 380.

# The majority of treatment households were not aware of or participating in Generasi activities

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Source: Household baseline survey, 2015.

Sample size: 2,280.

# Posyandu activities were mostly unaffected

Posyandu activities	Treatment mean	Control mean	Difference
Pregnant woman had buku KIA/KMS	65.5	53.7	11.8***
Child had buku KIA/KMS	58.0	52.4	5.6*
Weighing provided	95.7	95.9	-0.2
Distributed vitamin A in past 12 months	92.1	93.6	-1.5
Distributed IFA in past 6 months	60.7	65.9	-5.2
Had stock of Taburia	5.1	8.7	-3.6*
Had stock of Oralit	26.5	29.6	-3.1
Ever held kelas ibu hamil	31.0	31.5	-0.5
Ever held kelas balita	18.0	18.1	-0.1

Source: Pregnant women, caregiver, and kader posyandu baseline surveys, 2015.

\* / \*\* / \*\*\* Significantly different from zero at the .10 / .05 / .01 level, two-tailed test.



# Performance on Generasi KPIs was balanced with the exception of weighing and immunization

Generasi indicator (percentage of women or children)	Treatment mean	Control mean	Difference
1. Four prenatal visits <sup>a</sup>	43.2	35.7	7.5
2. Received 90 iron pills during pregnancy <sup>a</sup>	27.2	24.8	2.3
3. Delivery by trained professional <sup>a</sup>	69.1	68.7	0.4
4. Three postnatal visits <sup>a</sup>	8.3	10.6	-2.3
5. Complete childhood immunizations <sup>b</sup>	31.5	41.2	-9.7 ***
6. Weighed in last month <sup>c</sup>	58.5	44.5	14.1***
7. Vitamin A twice / year <sup>d</sup>	28.2	26.7	1.5
8. Ever attend kelas ibu hamil <sup>a</sup>	15.7	10.3	5.5
9. Husband ever attend kelas ibu hamil <sup>a</sup>	2.3	1.3	1.0
10. Ever attend kelas balita <sup>c</sup>	7.9	6.7	1.2
11. Husband ever attend kelas balita <sup>c</sup>	1.2	0.5	0.7

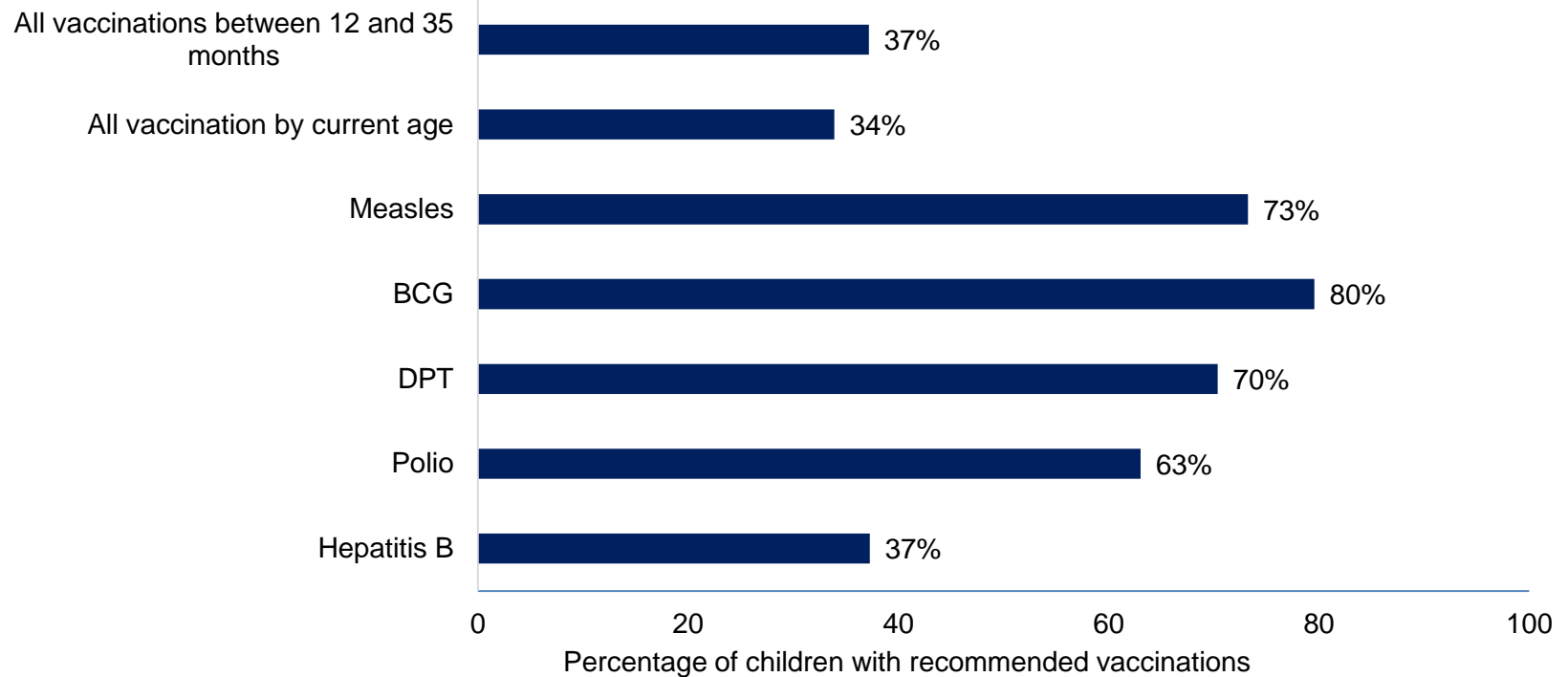
Source: Caregiver and pregnant woman baseline surveys, 2015.

<sup>a</sup> Among children/mothers of children 0–5 months of age. <sup>b</sup> Among children 12–35 months of age. <sup>c</sup> Among children/mothers of children 0–23 months of age.

<sup>d</sup> Among children 6-35 months of age.

\* / \*\* / \*\*\* Significantly different from zero at the .10 / .05 / .01 level, two-tailed test.

# Many children had not received recommended vaccines and control area rates were higher



Source: Caregiver baseline survey, 2015.

Sample size: 3,039.

Note: The share of children receiving the complete suite of childhood immunizations was over 9 percentage points higher in control areas—32 percent in treatment areas and 41 percent in control areas

# **Even in desa with more engaged posyandu, individual behavior change is still needed**

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**Restricting the analysis to desa where the posyandu had:**

- **Held kelas ibu hamil, only 10% of pregnant women report having attended**
  - Compared to 13% of all pregnant women
- **Held kelas balita, only 11% of caregivers reported having attended**
  - Compared to 7% among all caregivers
- **Similarly, even though over 90% of posyandu offered weighing, just approximately 50% of all caregivers reported having their children weighed in the last month**

# The overwhelming majority of bidan and kader posyandu had received any training, and half received training in 2014

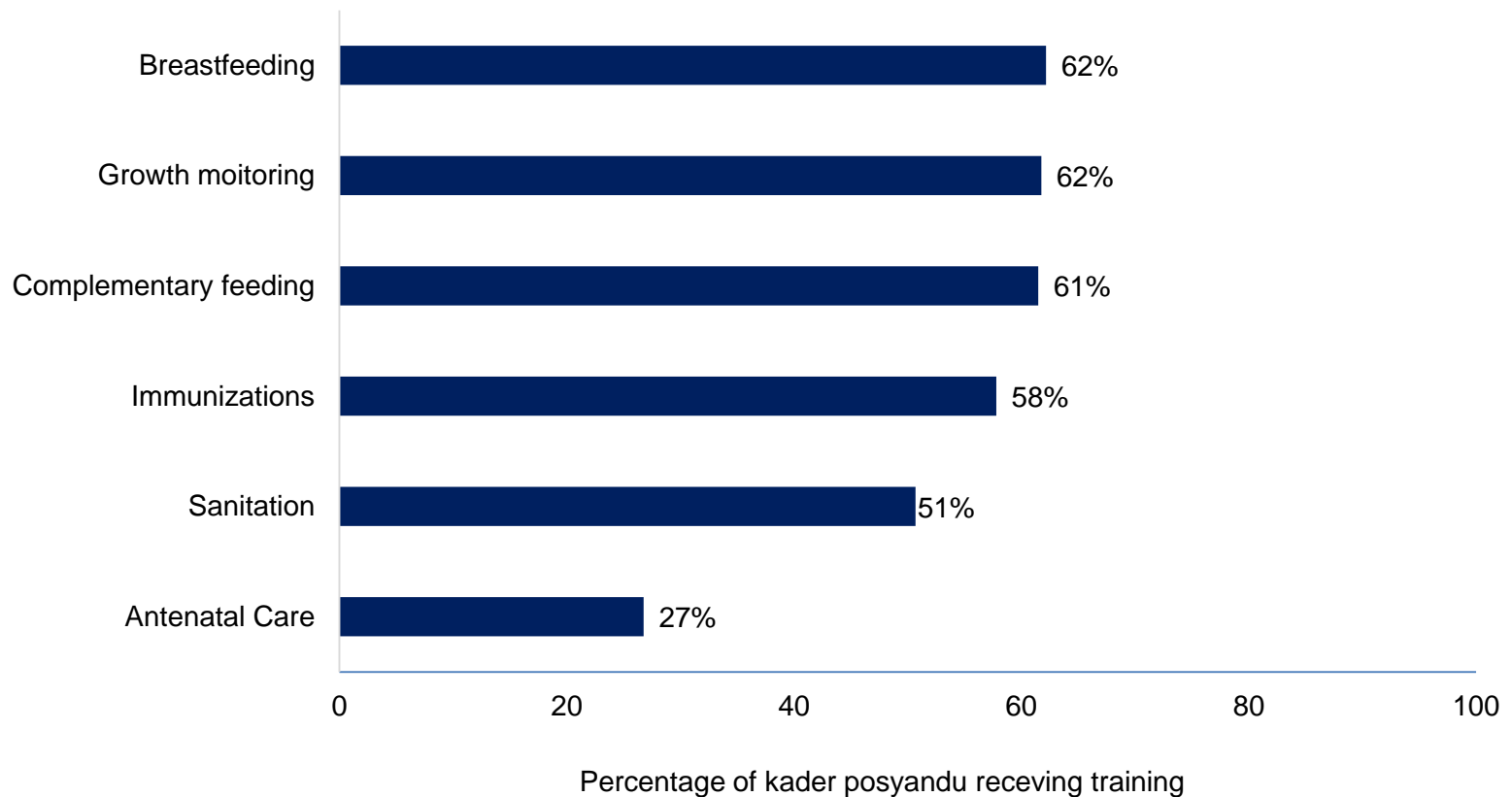
Respondent	Treatment mean	Control mean	Difference
<b>Kader posyandu</b>			
Ever received any training	76.3	70.4	5.9
Received training in 2014	52.9	38.5	14.4***
Received training on IYCF funded by MCA-I	8.8	3.0	5.8***
<b>Bidan</b>			
Ever received any training	89.2	88.8	0.4
Received training in 2014	48.4	46.0	2.5
Received training on IYCF funded by MCA-I	2.8	1.1	1.8
Years worked as bidan	9.1	9.4	-0.3
Had CPM or Akademi Bidan certification	85.7	86.7	-1.0

\* / \*\* / \*\*\* Significantly different from zero at the .10 / .05 / .01 level, two-tailed test.

Source: Kader posyandu, bidan baseline surveys, 2015

# Kader posyandu had relatively high levels of training on core posyandu functions

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Source: Kader posyandu baseline survey, 2015.  
Sample size: 732.

# Program implementation: conclusions

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- **Some program implementation had begun before the baseline survey**
  - Nearly all treatment desa had begun some program activities
  - Over half of treatment desa had received first tranche of funding
- **We found very few indications that Generasi activities or program funding had affected health services at baseline.**
  - Caregivers in treatment desa were 14% more likely to attend monthly weighing sessions, which may have been a result of Generasi activities occurring before baseline.
  - Only 7% of households in treatment desa had participated in Generasi activity
  - Pregnant women in treatment desa were no more likely to receive prenatal visits or iron tablets during pregnancy

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# **5. Results**

## **A. Health care service provision and access**

# Travel time and cost to access basic maternal and child health services were minimal

	Sample size (N=)	Full sample median	Standard deviation
<b>Travel time (minutes)</b>			
Puskesmas	2,149	15	2.17
Polindes	1,018	10	1.39
Bidan	1,357	10	2.42
Posyandu	3,361	9	1.07
<b>Travel cost (rupiah)</b>			
Puskesmas	2,153	4,000	3,686.72
Polindes	1,018	0	2,597.41
Bidan	1,366	3,000	1,281.72
Posyandu	3,366	0	287.78

Source: Household baseline survey, 2015.

Notes: One U.S. dollar is approximately 14,000 Rupiah.

Sample is caregivers and pregnant women who report having visited these facilities.



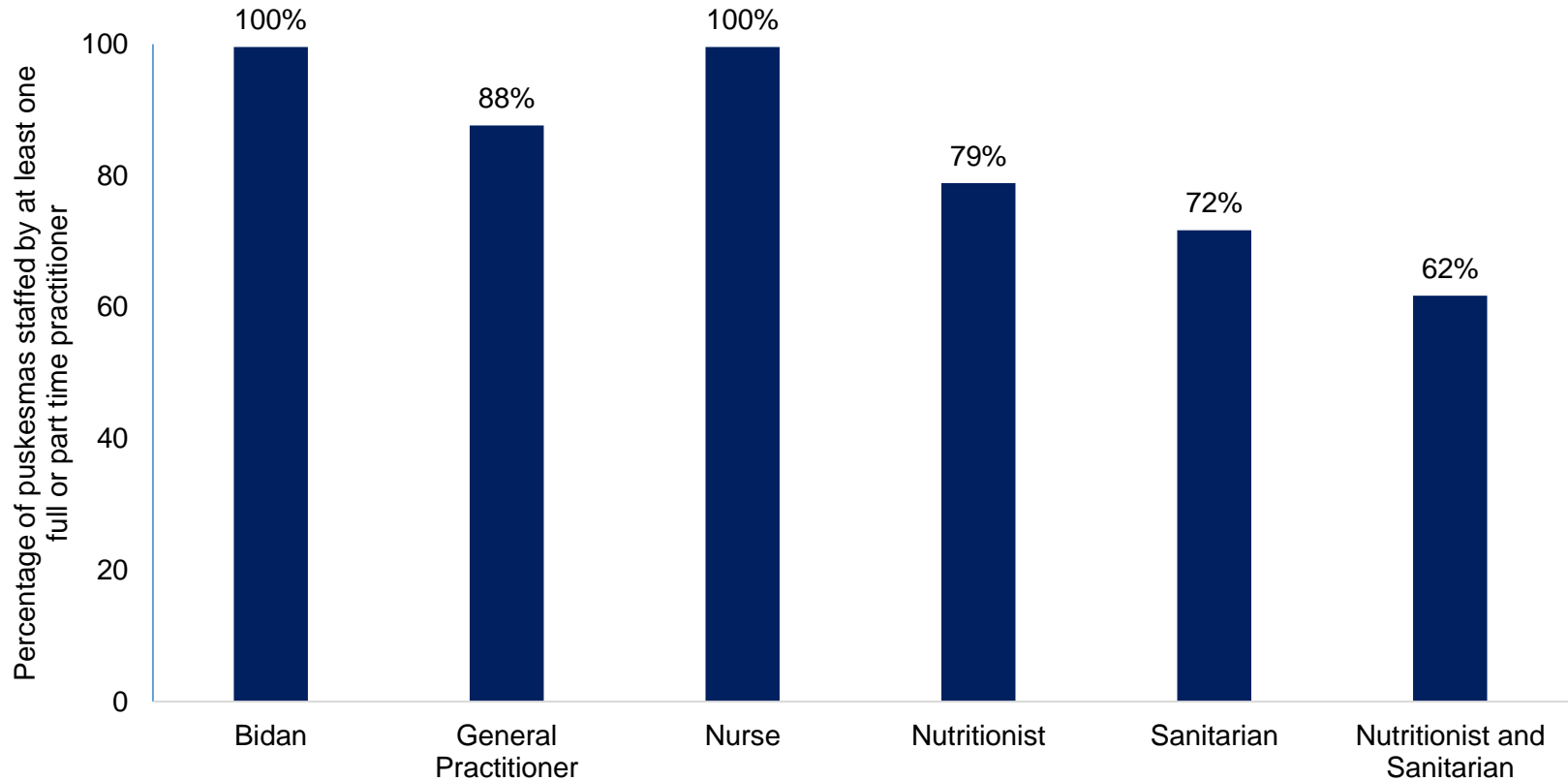
# Bidan appear to have been accessible in terms of proximity and work load

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	Full sample mean	Standard deviation
Live in desa where they work	76.8	2.10
Work in at least one other desa	23.0	2.20
Number of other bidan working in desa	1.0	0.07
Number of pregnant women currently serving	12.1	0.62

Source: Bidan baseline survey, 2015.

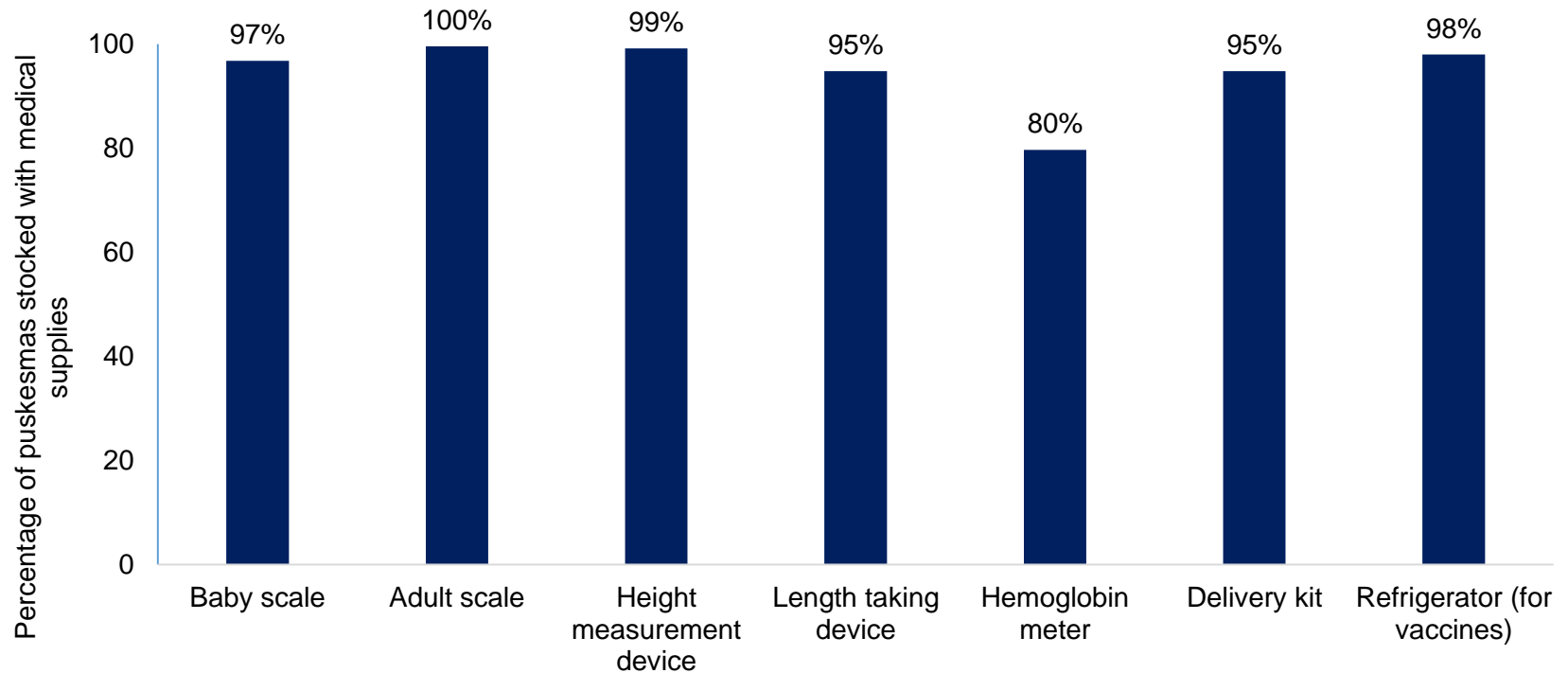
# Puskesmas were well staffed



Source: Puskesmas baseline survey, 2015

Sample size: 251

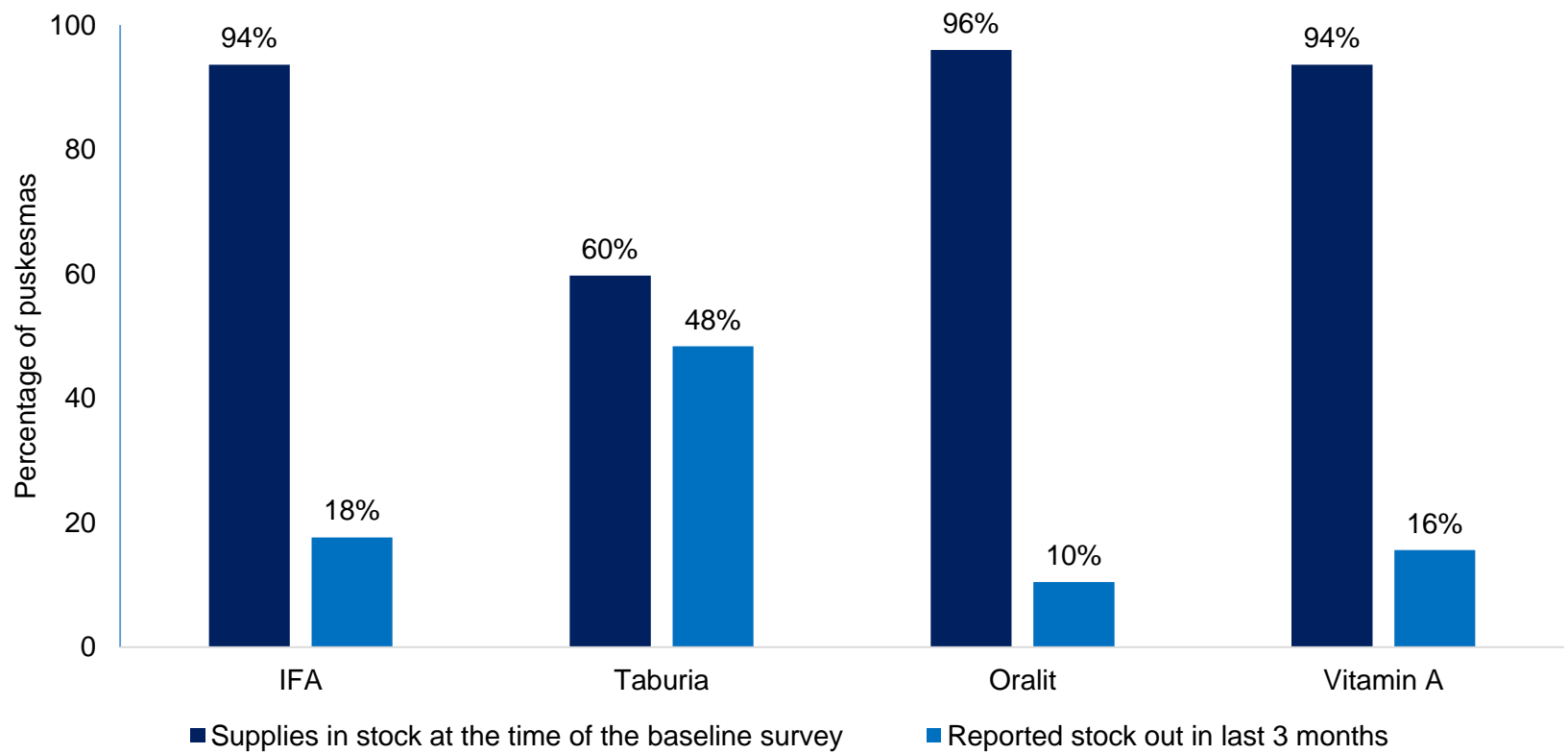
# Puskesmas were well equipped



Source: Puskesmas baseline survey, 2015

Sample size: 251

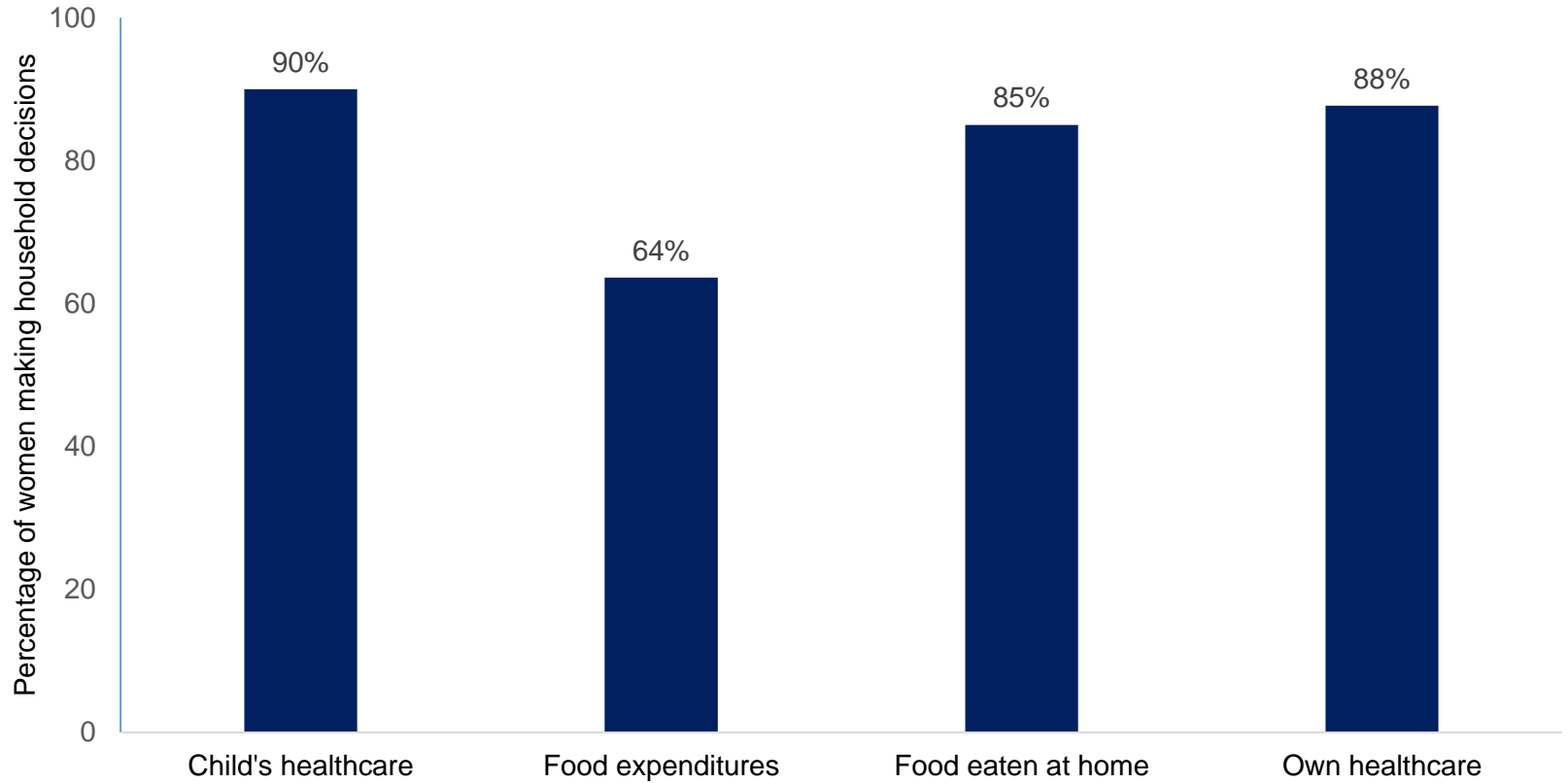
# Most puskesmas had nutritional supplies in stock at the time of the survey



Source: Puskesmas baseline survey, 2015  
Sample size: 251

# Women had agency over decisions that affect themselves and their children

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Source: Pregnant woman and caregiver baseline surveys, 2015.

Sample size: 4,554.

# Health care service: conclusions

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- **Travel time and costs were relatively low**
  - Caregivers traveled a median of 15 minutes or less to key health services
  - There was no cost to travel to posyandu and very minimal cost to travel to puskesmas
- **Access to bidan was high with 75% of bidan living in the same desa where they work**
- **Most puskesmas possessed the vitamin supplements and equipment needed to provide basic maternal and early child health services**
- **Most women reported having at least some say in the health and nutrition decisions that affect them and their children**
  - Approximately 90% of caregivers and pregnant women reported being part of the decision-making process over their own healthcare and their children's.

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# **5. Outcomes**

## **B. Food security and dietary diversity**

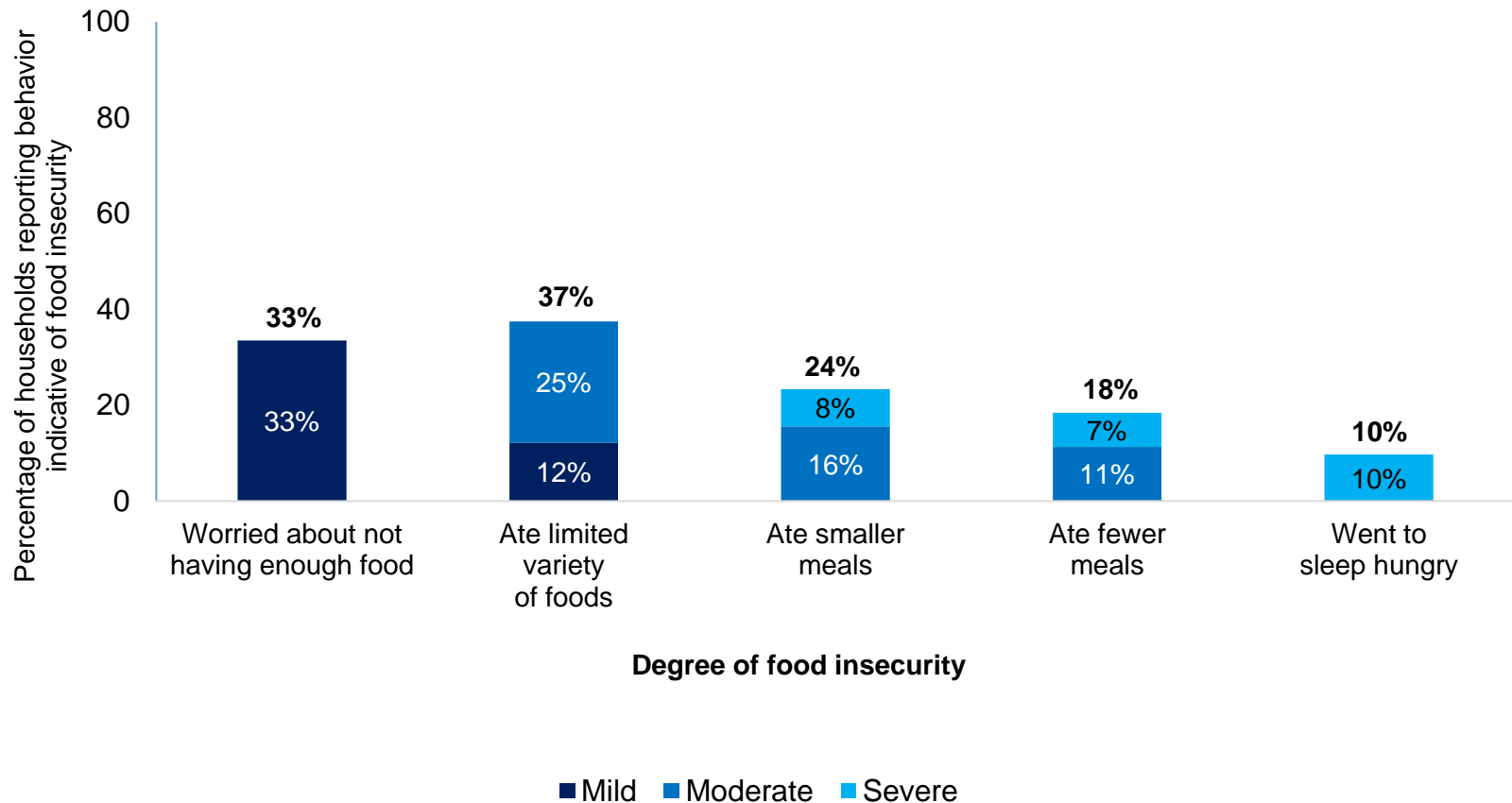
# Food security and dietary diversity

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- **Food security:** whether there is **enough food** to eat
- **Dietary diversity:** whether the diet is **sufficiently nutritious**
- **The objective of these data were to describe conditions at baseline while minimizing the time required of respondents**
  - Food security: Questions about strategies for coping with not having enough to eat (household survey)
    - 5 out of the 9 questions that comprise the internationally-validated Household Food Insecurity Access Scale (HFIAS)
  - Dietary diversity: 7 day recall of consumption of various food groups (pregnant women and children)
    - Not comparable with standard 24 hour measure, but captures more variety than 24 hour recall for food groups consumed less frequently



# Households experienced varying degrees of food insecurity



Source: Household baseline survey, 2015.

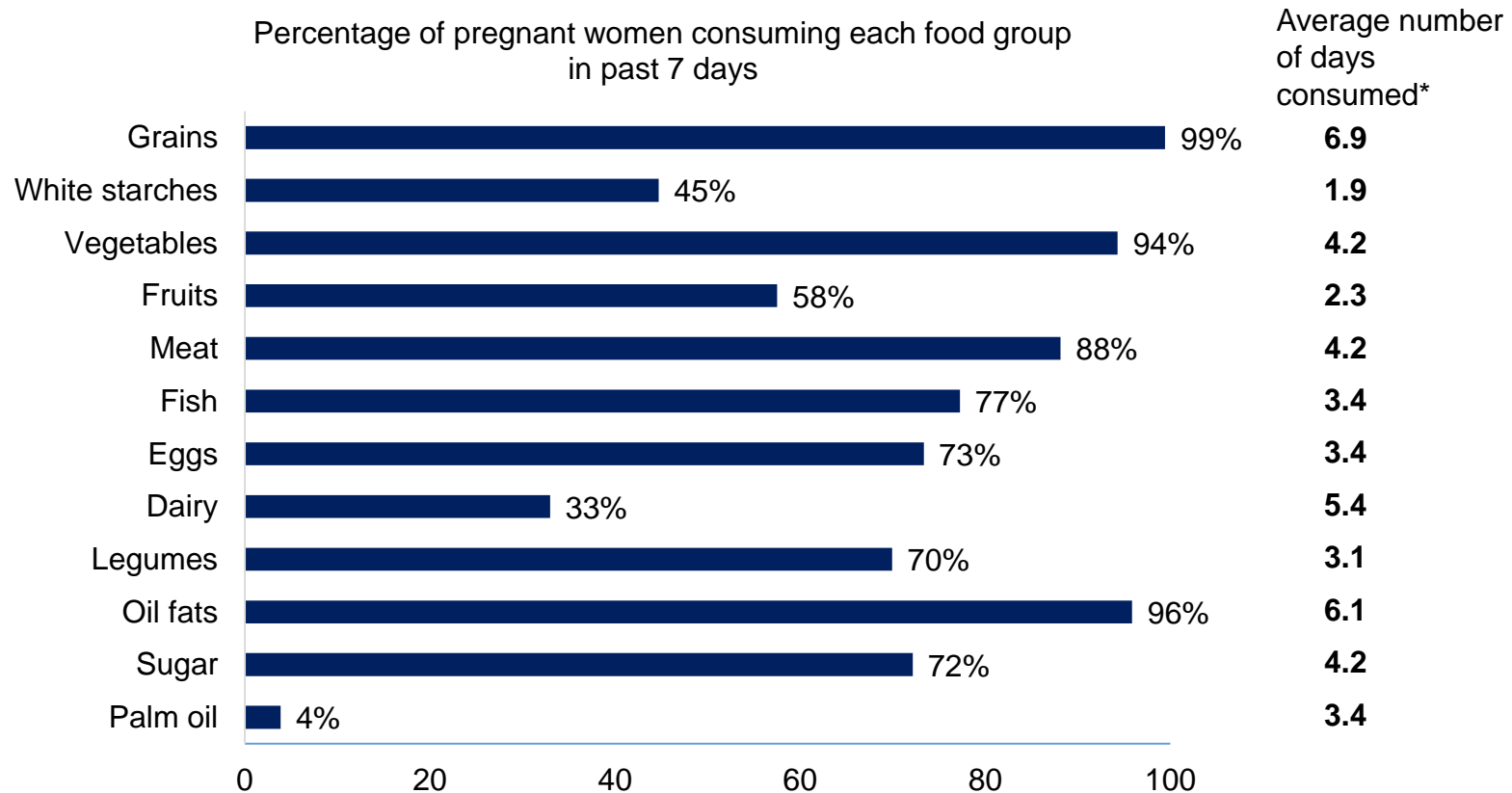
Sample size: 4,560.

# Note: These are lower bounds on food insecurity

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- **The household survey only included 5 of the 9 questions** that are used to construct the internationally-validated household food insecurity access scale
- **The 4 behaviors not included in the baseline survey were:**
  - Being unable to eat preferred foods
  - Eating foods that you do not want to
  - Running out of food at home because of lack of resources
  - Going a whole day and night without eating because there was not enough food
- Without data on these other behaviors, **it is possible that we were unable to identify some households that experience food insecurity and cope with it using other means** than the subset that was included in the baseline survey

# Most pregnant women consumed a fairly diverse diet that included protein, fruit & vegetables



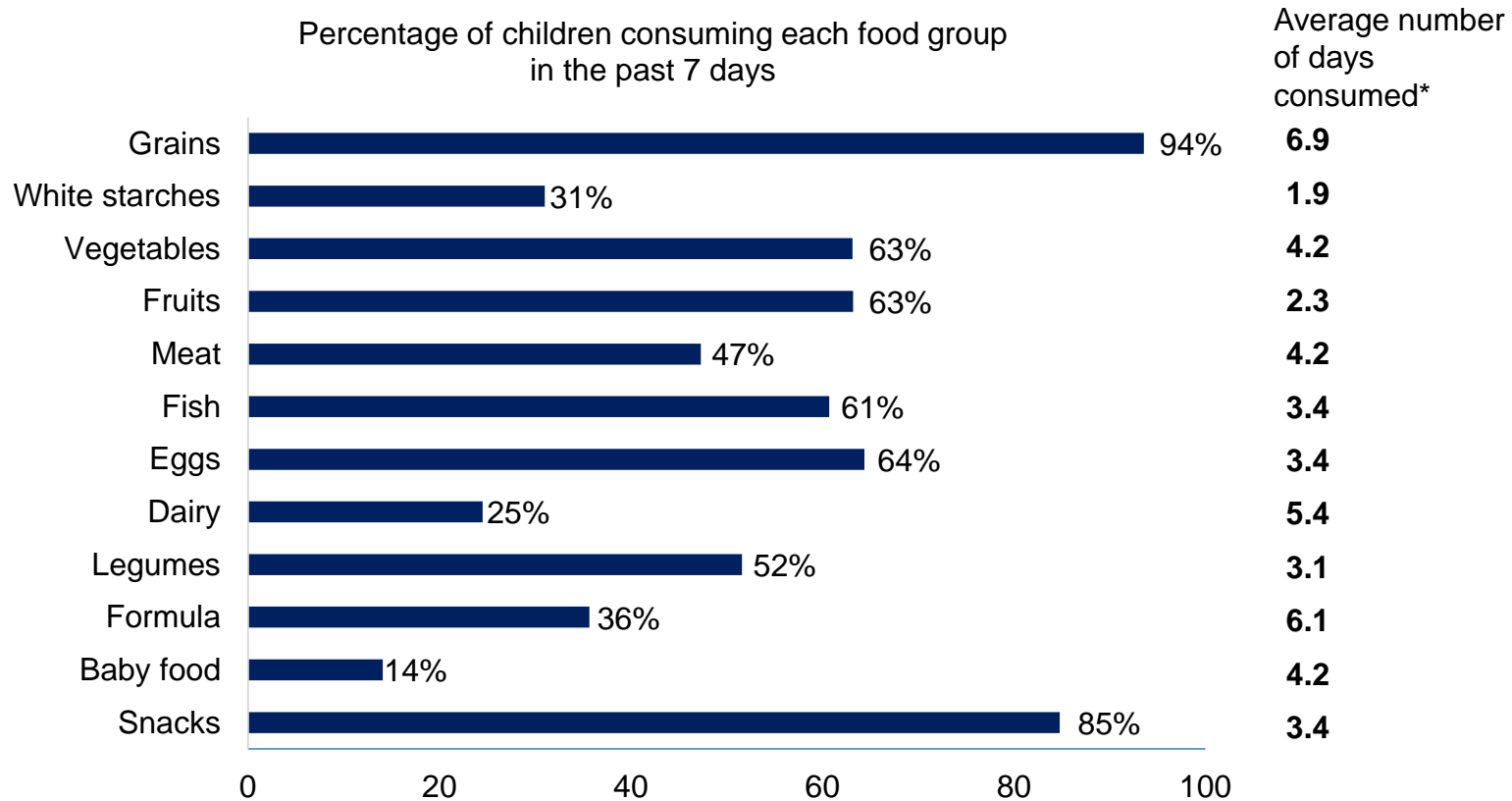
Source: Pregnant woman baseline survey, 2015.

Sample size: 1,520.

Note: One percent of pregnant women did not consume any protein source in past 7 days

\* Includes only those who reported eating the specified food group

# Children ate a lot of snacks and grains but also consumed protein, fruits, and vegetables



Source: Caregiver baseline survey, 2015.

Sample size: 2,560.

Note: Figure only represents children who have eaten semi-solid and/or solid foods regularly.

\* Includes only those who reported eating the specified food group.

# Dietary diversity: Conclusions

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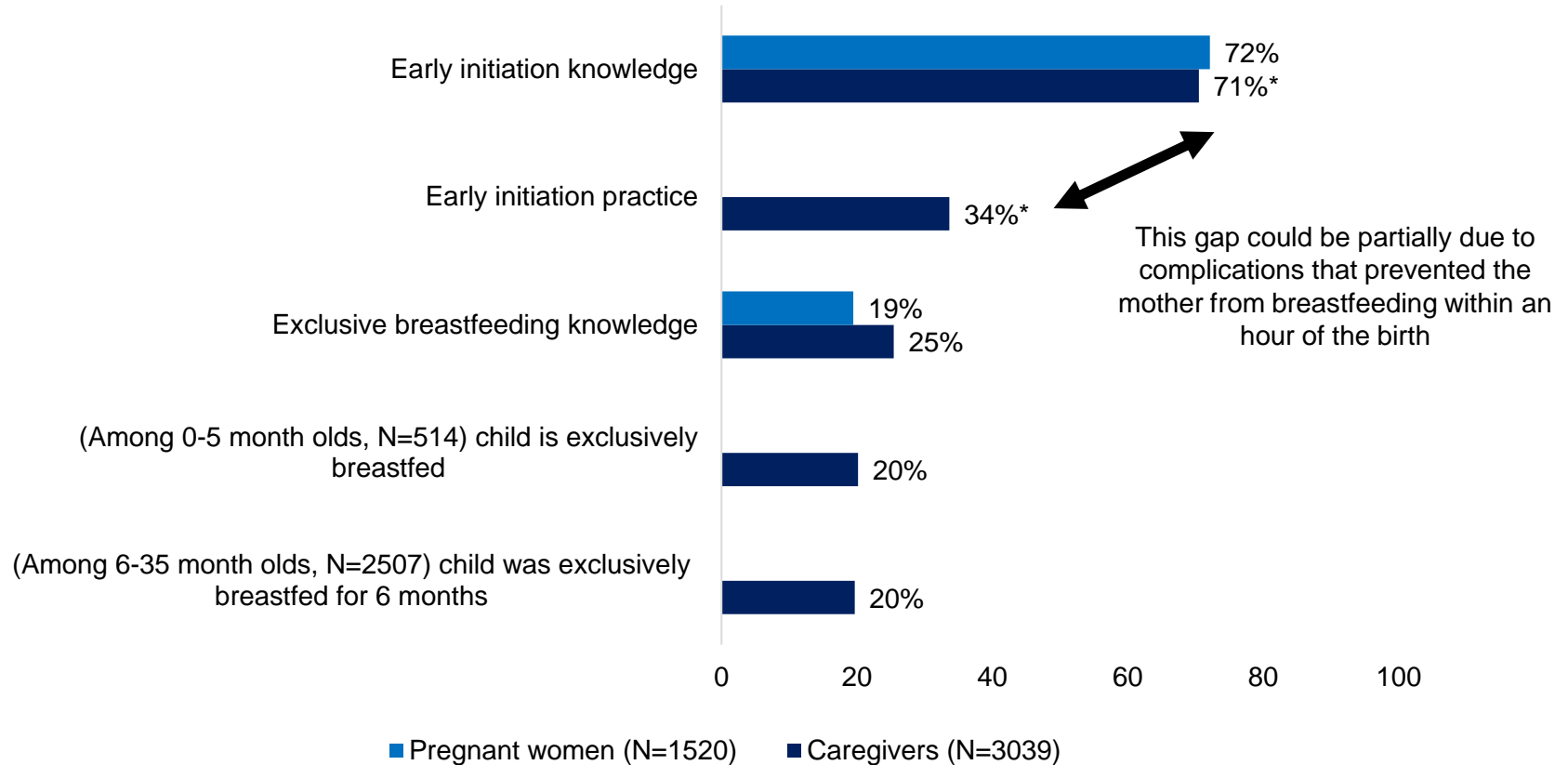
- **Over the course of a week, most pregnant women ate a variety of food groups and consumed protein daily**
- **Grains and snacks accounted for a large share of children's diet, but most children also had protein and vegetables or fruits several days each week**
- **These data must be interpreted with caution since we do not know the number or size of portions per day**
- **Some households lacked the resources necessary to provide a sufficient diet**
  - 33% of households claiming they were worried about not having enough food.
- **These data are not inconsistent with the very high rates of anemia identified in these populations**
  - The data are not rich enough to determine if pregnant women and children consume enough iron. Iron deficiency is only one of several causes of anemia

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## **5. Outcomes**

### **C. Breastfeeding, micronutrients, and service provider counseling about feeding and nutrition**

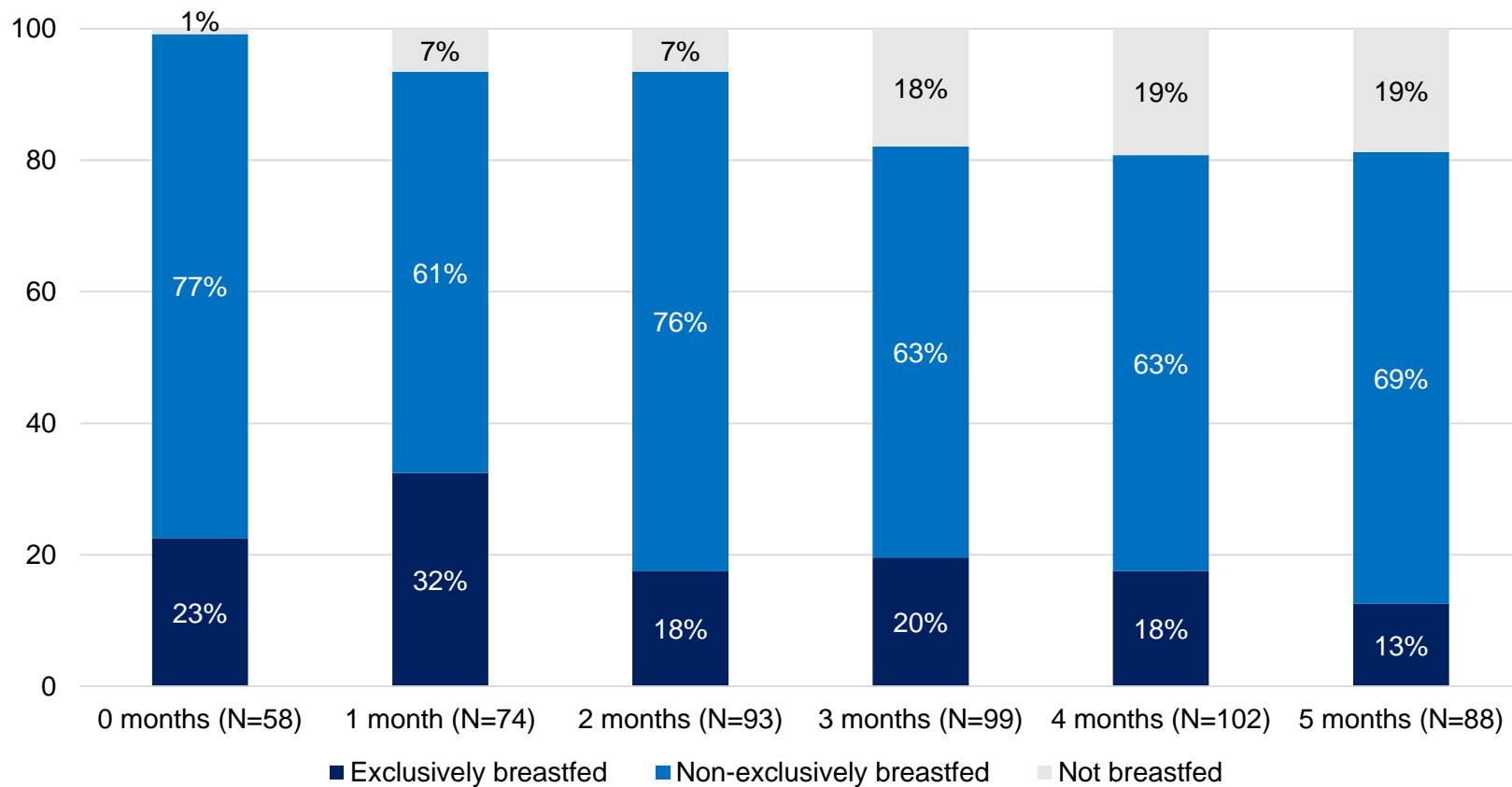
# There is opportunity to improve breastfeeding knowledge and practices



Source: Caregiver and pregnant woman baseline surveys, 2015.

\*Caregivers of children 0-23 months (N=2072)

# Rates of exclusive breastfeeding were very low, starting within the first month of life

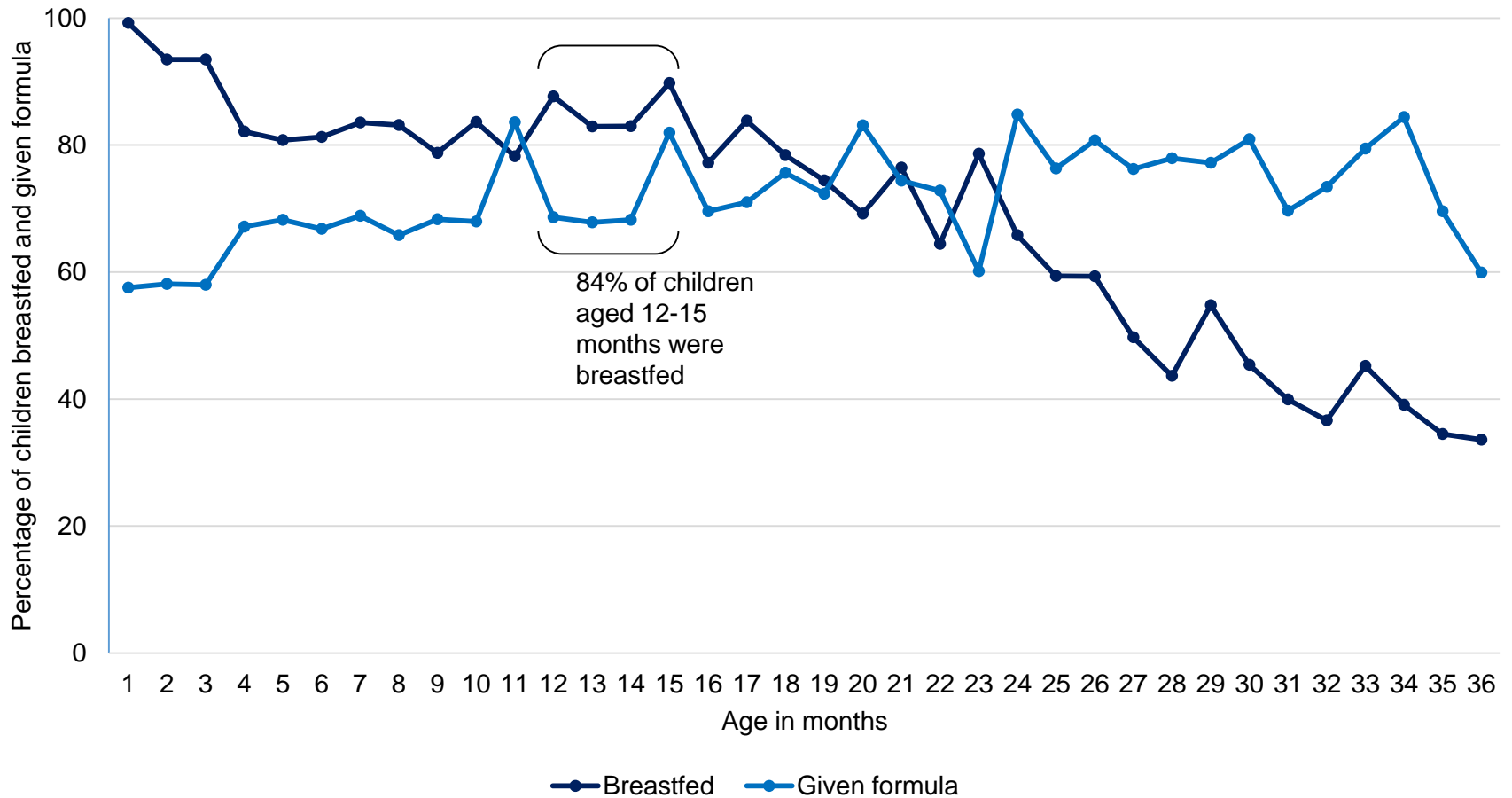


Source: Caregiver baseline survey, 2015.

Note: Some columns add up to 101 percent due to rounding

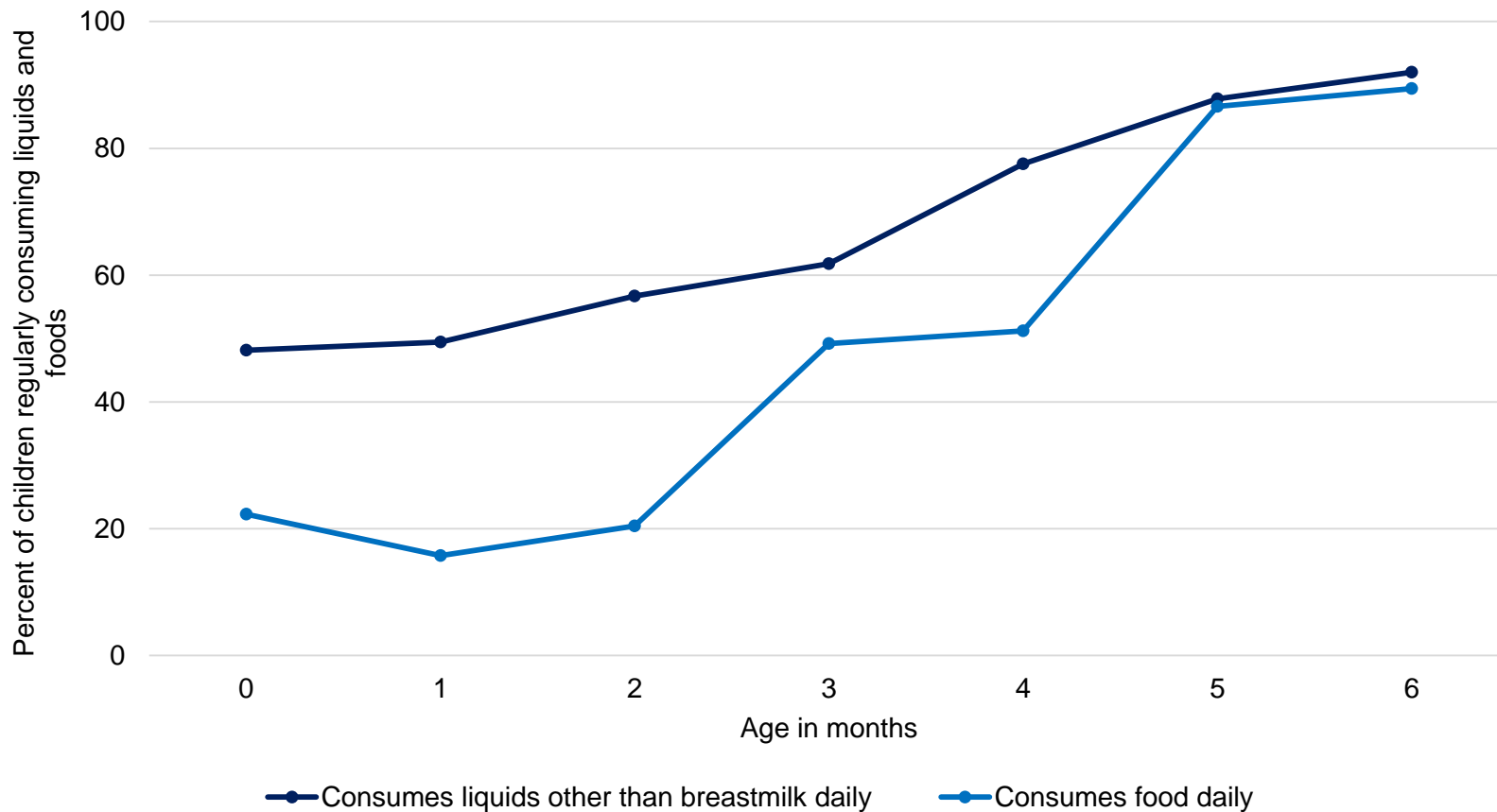


# Breastfeeding rates were high, but so was use of formula



Source: Caregiver baseline survey, 2015.  
Sample size: 58–102.

# Many children regularly consumed liquids and foods before the recommended introduction of complementary feeding



Source: Caregiver baseline survey, 2015.

Sample size: 25–100.

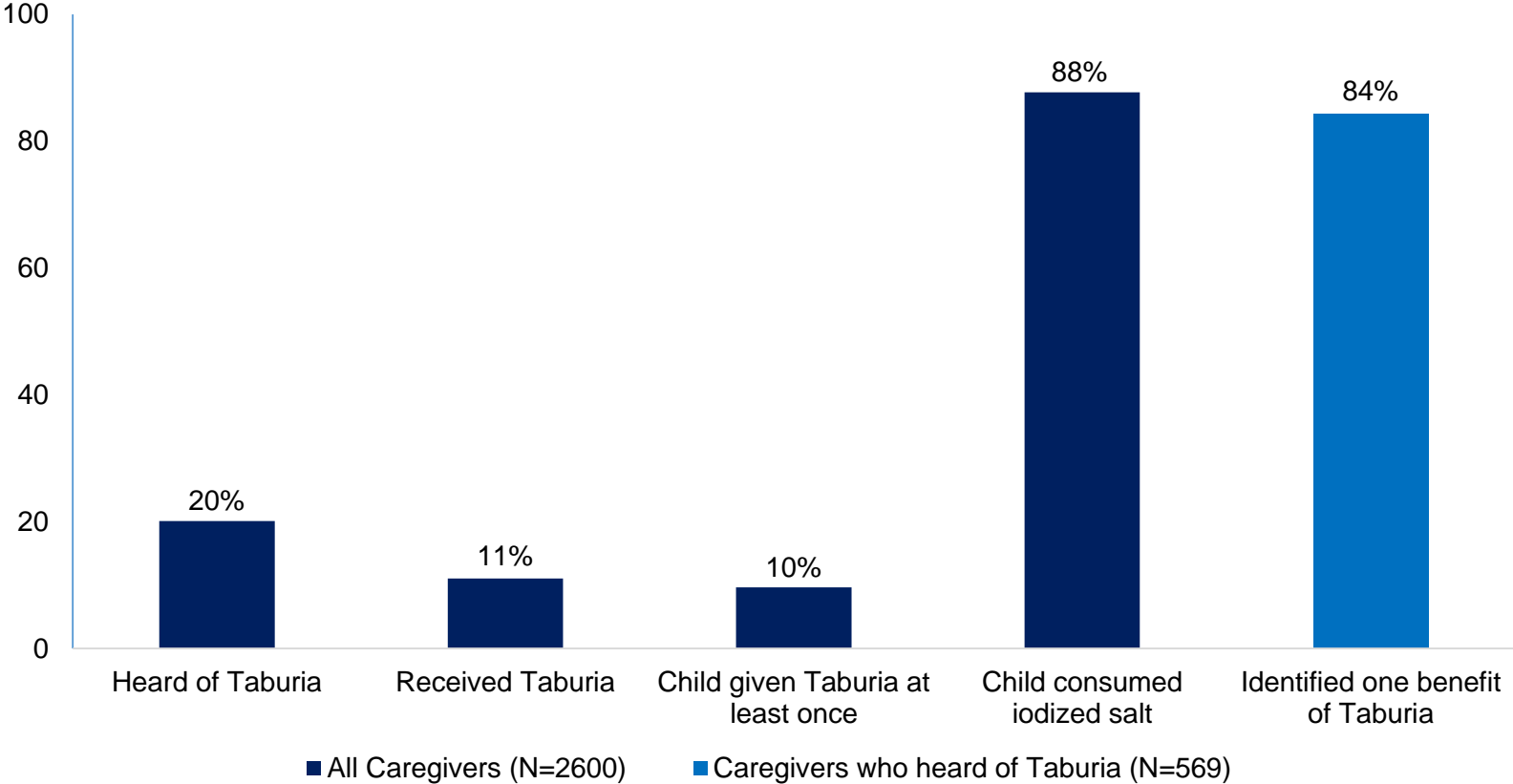
Note: 98.6 percent of 6-8 month olds consumed food in the previous week.

# Breastfeeding: Conclusions

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- **Breastfeeding rates and knowledge of the importance of initiation were high**
  - Almost all children were breastfed (84% among 12-15 month olds) and many were breastfed past their first year of life
  - Knowledge of initiating breastfeeding within the first hour of birth was high
- **Exclusive breastfeeding rates and knowledge about exclusivity need to be improved**
  - Less than a fifth of pregnant women and a quarter of caregivers knew that children should not be given any food or liquid other than breast milk for the first 6 months of life
  - Only 13% of 5 month old children were exclusively breastfed
  - A large share of children consumed formula daily from a very young age

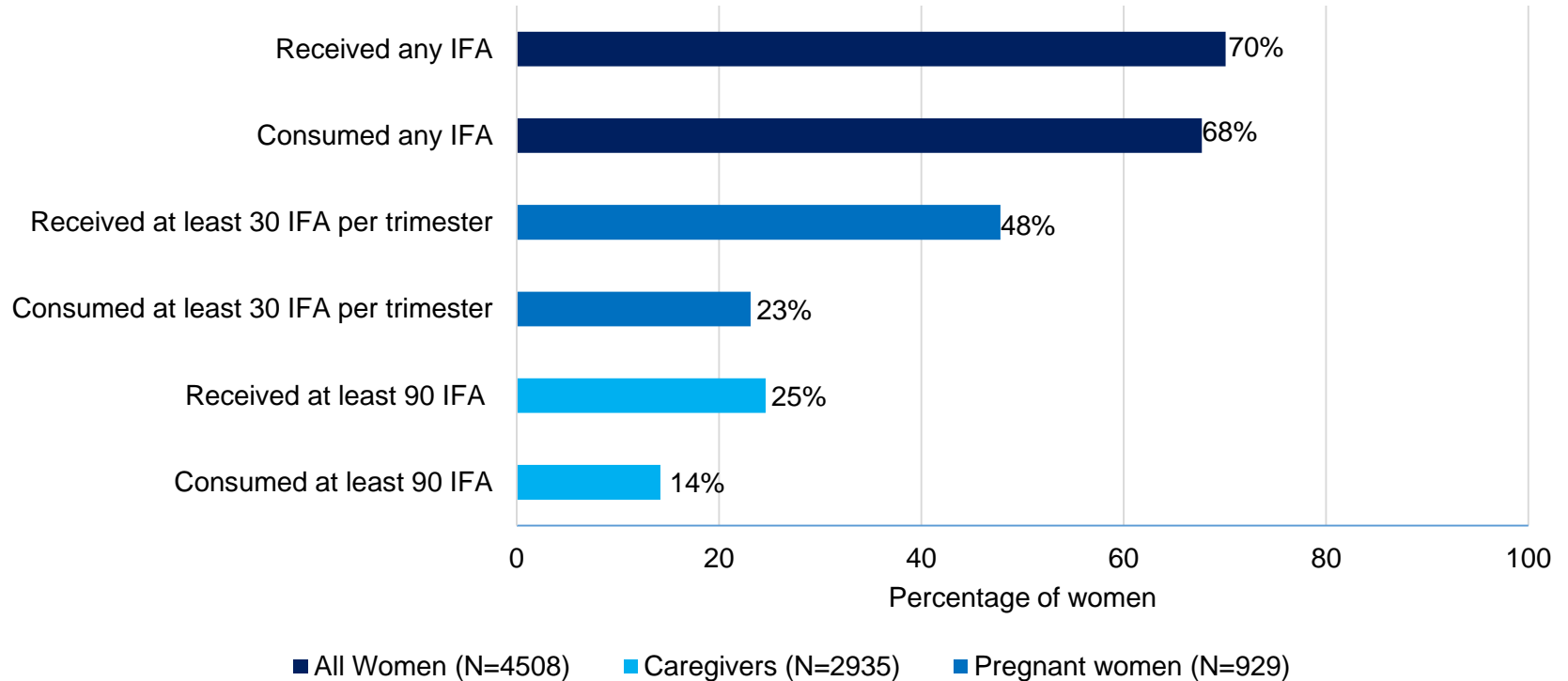
# Few caregivers were familiar with Taburia or had given it to their children



Source: Caregiver baseline survey, 2015.

# There is scope to improve consumption of IFA during pregnancy

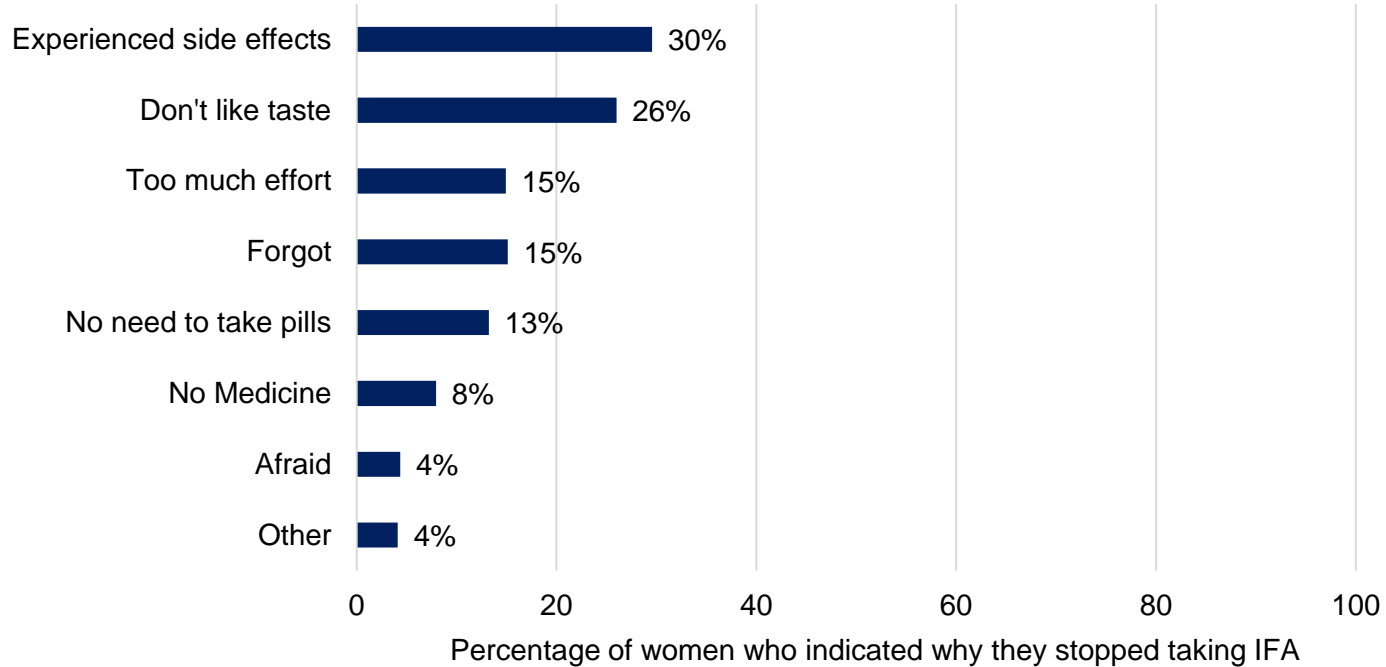
## Receipt and consumption of IFA



Source: Caregiver and pregnant woman baseline surveys, 2015.

# Side effects and forgetfulness can inhibit pregnant women from taking IFA regularly

## Reasons for not taking the recommended dosage of IFA



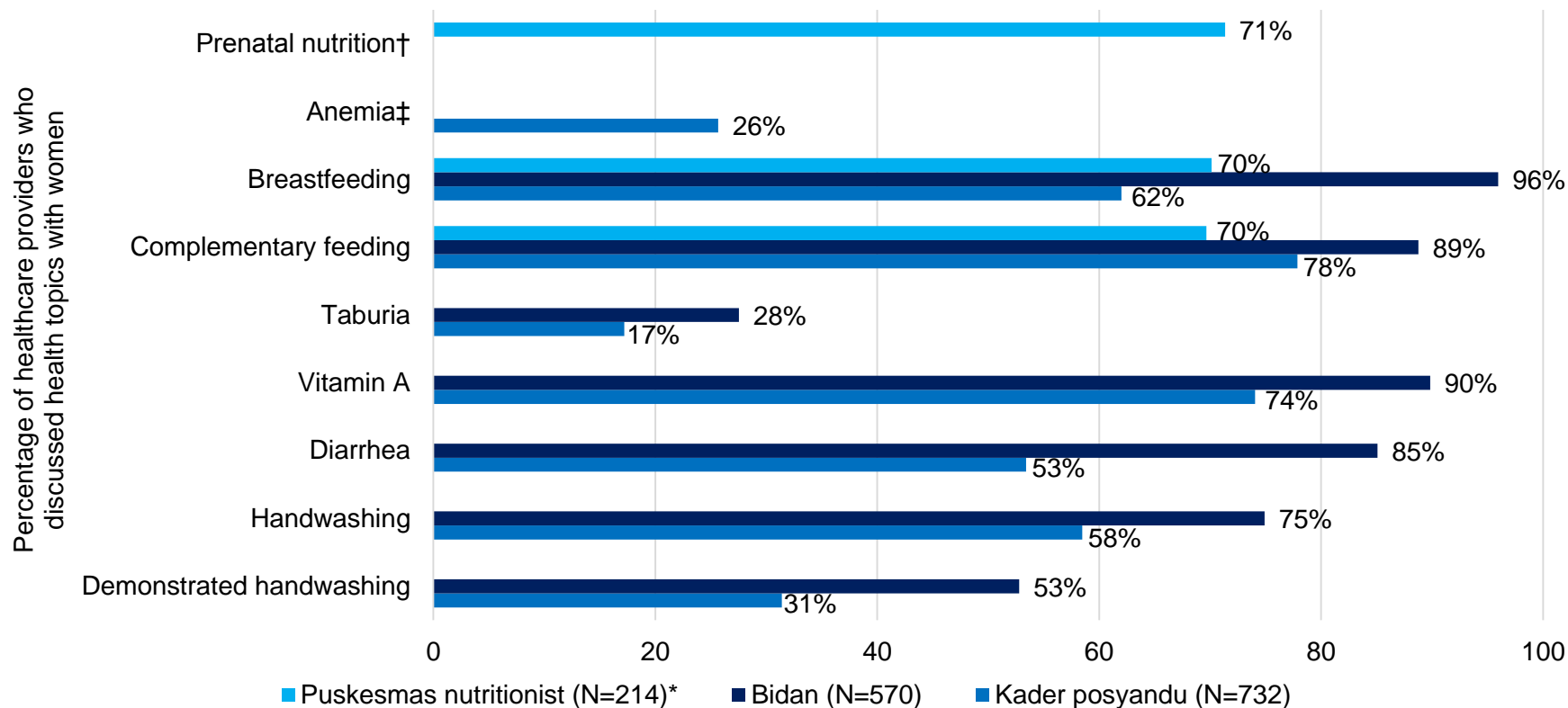
Source: Caregiver and pregnant woman baseline surveys, 2015.  
Sample size: 621

# Micronutrients: Conclusions

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- **Very few children were consuming Taburia**
- **Consumption of iodized salt was very common**
- **Micronutrient consumption during pregnancy was low**
  - 30% of pregnant women and caregivers reported not receiving any IFA pills and a quarter of caregivers reported having received the recommended 90 tablets
  - Almost all women who received IFA took some of it

# Most service providers reported discussing nutrition-related topics with women



Source: Puskesmas nutritionist, bidan, and kader posyandu baseline surveys, 2015

\*Nutritionist timeframe is 4 weeks compared to 6 months for bidan and kader posyandu. Nutritionists were only asked about prenatal nutrition, breastfeeding, and complementary feeding.

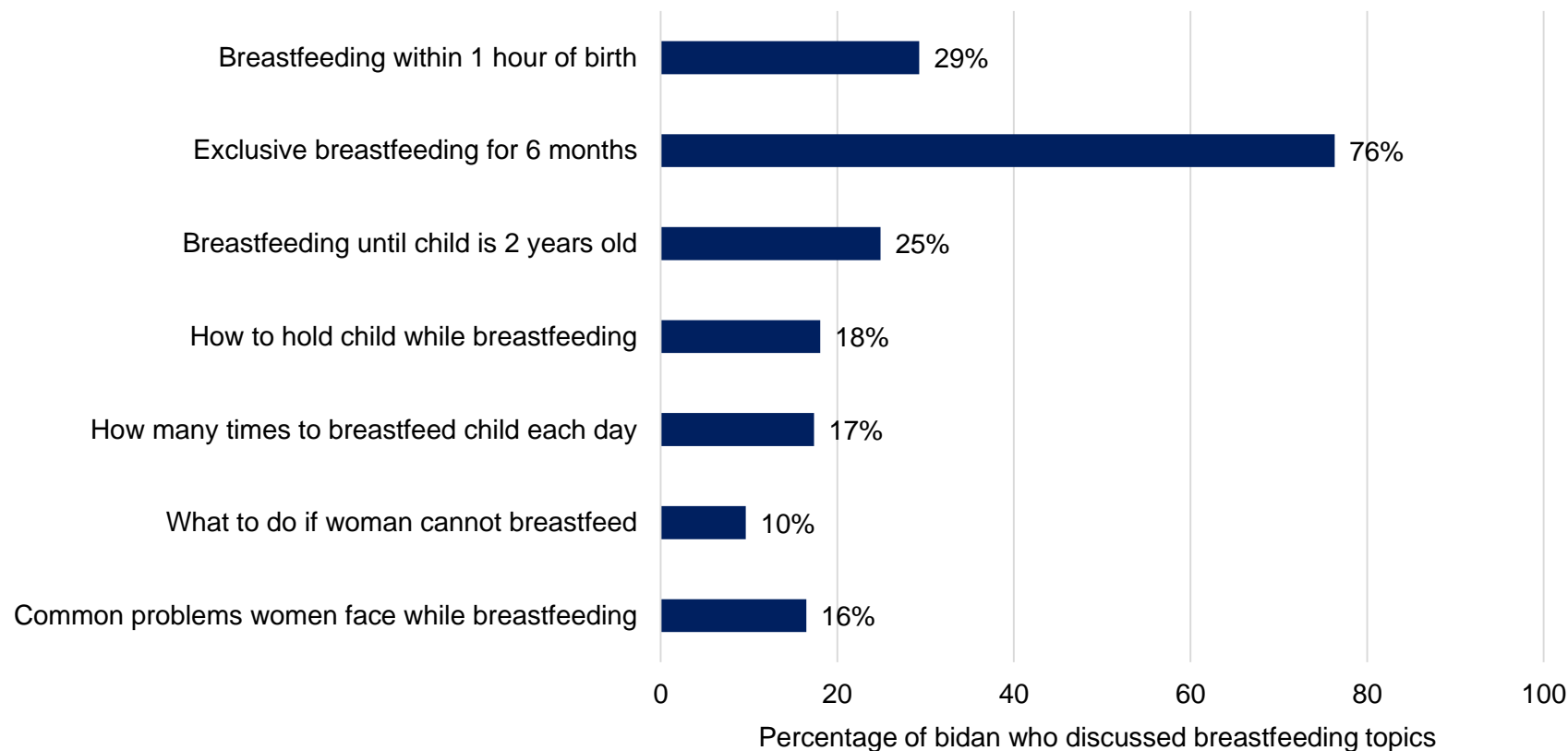
†Prenatal nutrition question was not included in bidan or kader posyandu surveys.

‡Anemia question was not included in nutritionist or bidan surveys.



# Bidan could do more to promote breastfeeding

## Bidan discussions about breastfeeding

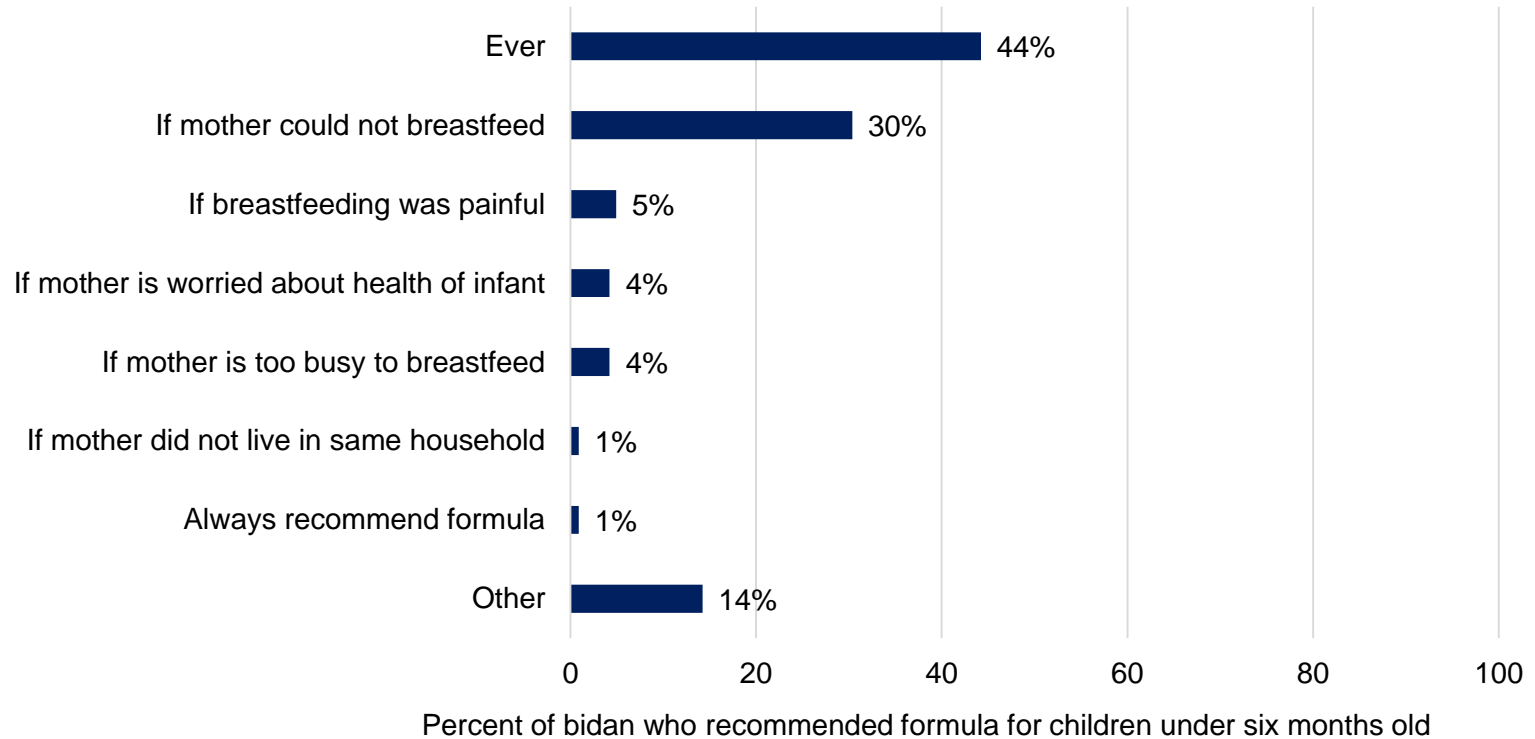


Source: Bidan baseline survey, 2015

Sample size: 570.

# Bidan could do more to promote breastfeeding over formula use

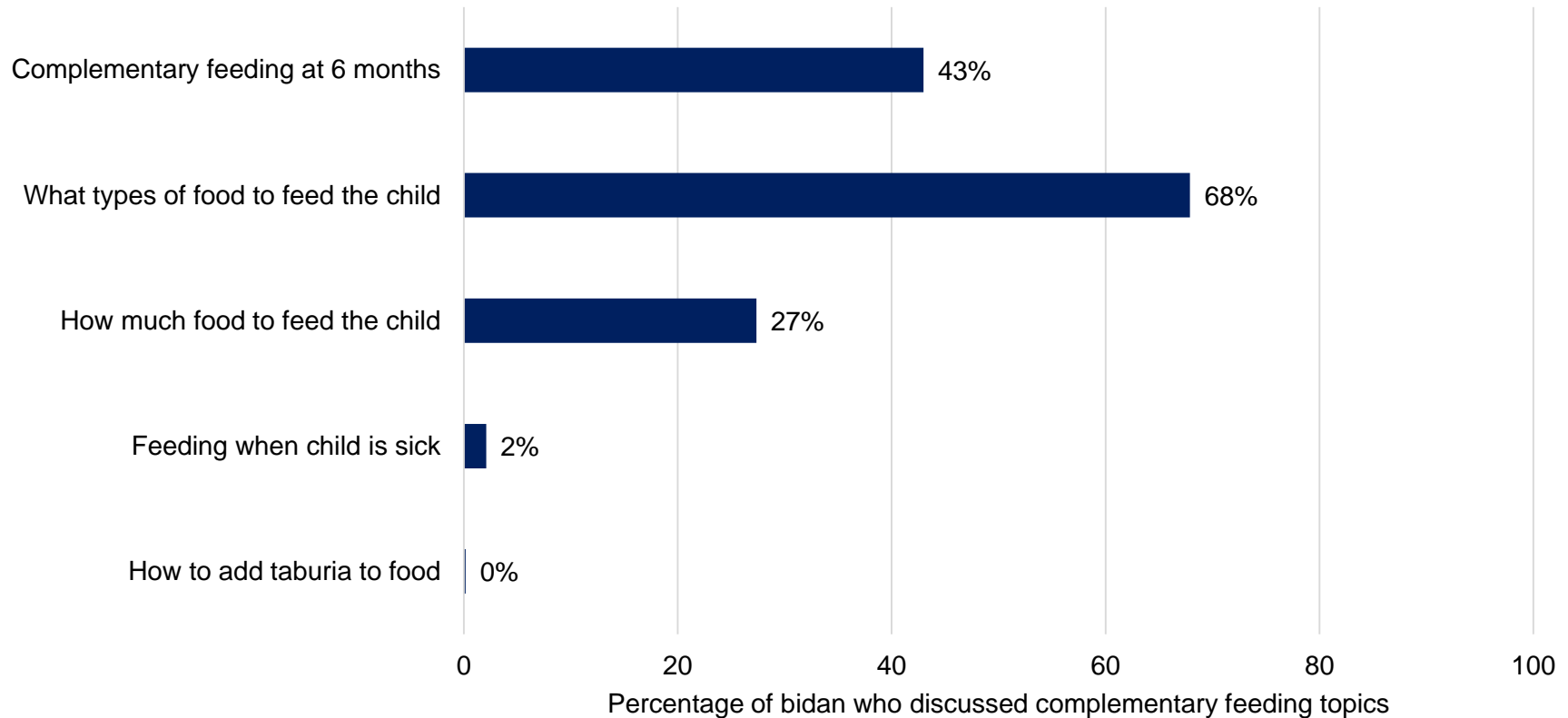
Situations in which bidan recommended giving formula to children under six months



Source: Bidan baseline survey, 2015  
Sample size: 570

# Bidan could do more to educate mothers about complementary feeding

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Source: Bidan baseline survey, 2015  
Sample size: 570

# **Service provider counseling about feeding and nutrition: Conclusions**

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- **The majority of nutritionists, bidan, and kader posyandu reported talking with pregnant women and caregivers about some topics relevant to the Nutrition Program but**
  - Only a quarter of kader posyandu counseled women on anemia
  - Less than a third of bidan and less than a fifth of kader posyandu report discussing Taburia
  - Only a third of bidan discussed early initiation of breastfeeding within one hour of birth. This is especially problematic because we know that early initiation is low (34%)
  - Just over 40% of bidan discussed complementary feeding after 6 months

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# 5. Outcomes

## D. Sanitation

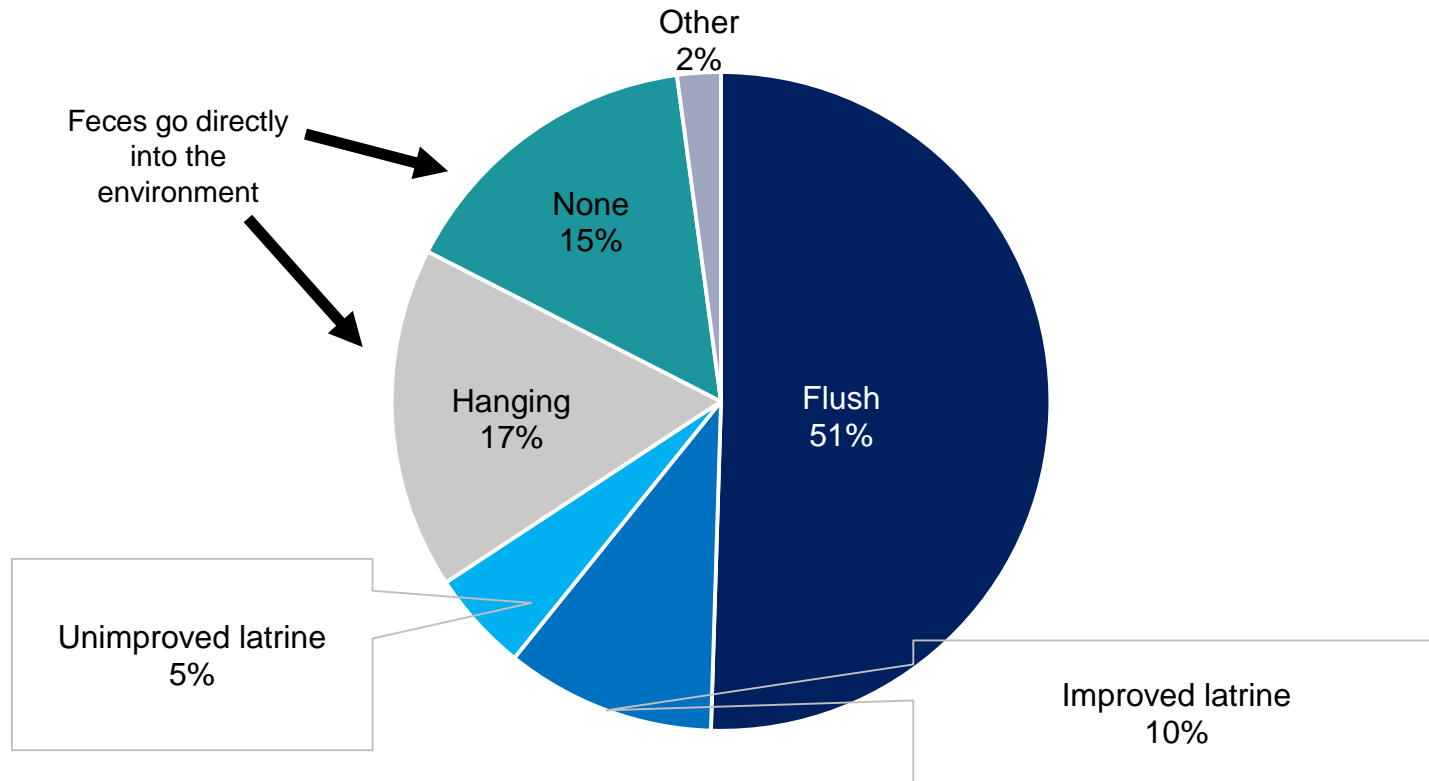
# Sanitation could be a cause of undernutrition

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- In addition to the quantity and quality of food that children consume, their ability to process those nutrients is important
- Undernutrition and infection are closely related
  - Correlations between stunting and diarrhea in particular
- Nutritionists now hypothesize that a subclinical condition called environmental enteropathy could compromise gut function and the immune system
  - Likely caused by exposure to a contaminated environment

# Nearly a third of households defecated directly into the environment

Percentage of households using toilet type

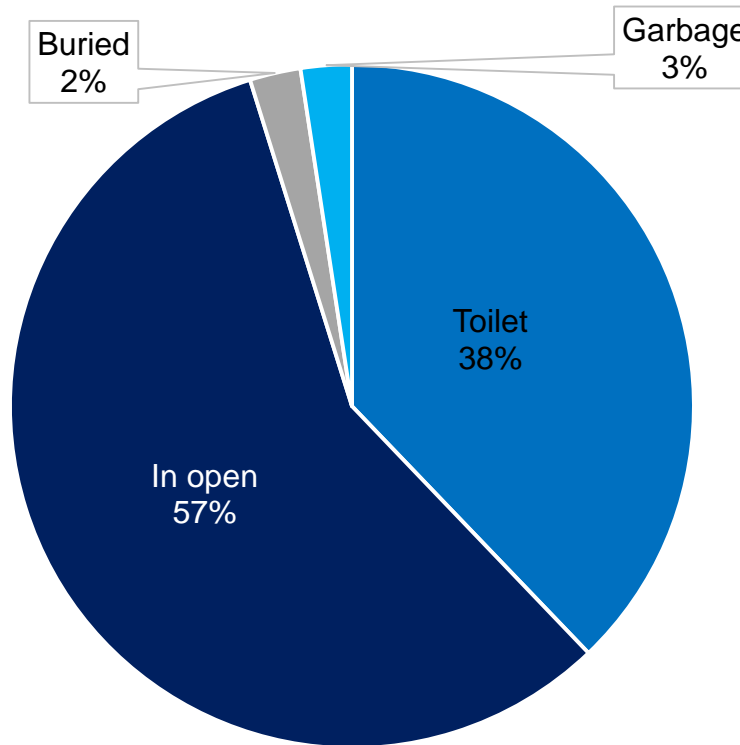


Source: Household baseline survey, 2015.  
Sample size: 4,558.

# Nearly 60% of children's feces were left in the open

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Percentage of children disposing feces (by location)



Source: Caregiver baseline survey, 2015.  
Sample size: 3,022



# **There had been very little momentum on sanitation issues at the desa level**

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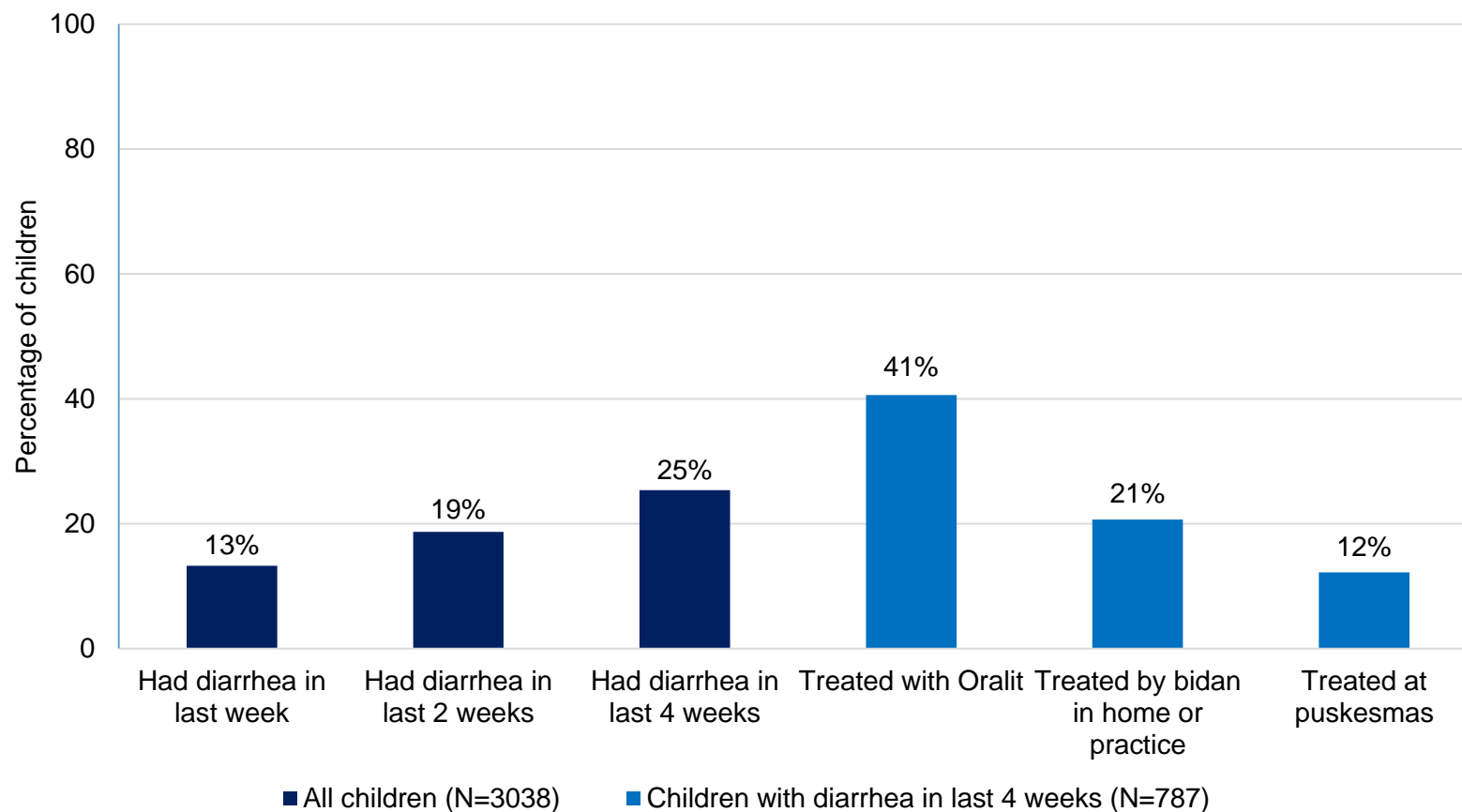
- **Less than 5% of households recalled any community meeting about sanitation being held in the past year**
- **Only 3% reported that a household member had participated in such a meeting**
  - 90% of the time it was only one or two households in the kecamatan that reported such a meeting occurring
  - There was no significant difference in meeting occurrence or participation between treatment and control areas
- **Less than 2% of desa were reported to be certified as open defecation free according to the surveyed desa head**
  - 3 out of 379 control desa and 8 out of 380 treatment desa

# Sanitation officers visited the dusun they supervise, but progress on triggering was slow

	Mean	Standard deviation
Number of dusun supervised	21.2	1.74
Visited dusun in area	97.0	1.20
Number of dusun visited in last month	5.0	0.52
Conducted trigger even in dusun as part of work	77.8	3.30
Number of trigger events in past six months	3.3	0.34

Source: Puskesmas (sanitation officer) baseline survey, 2015.

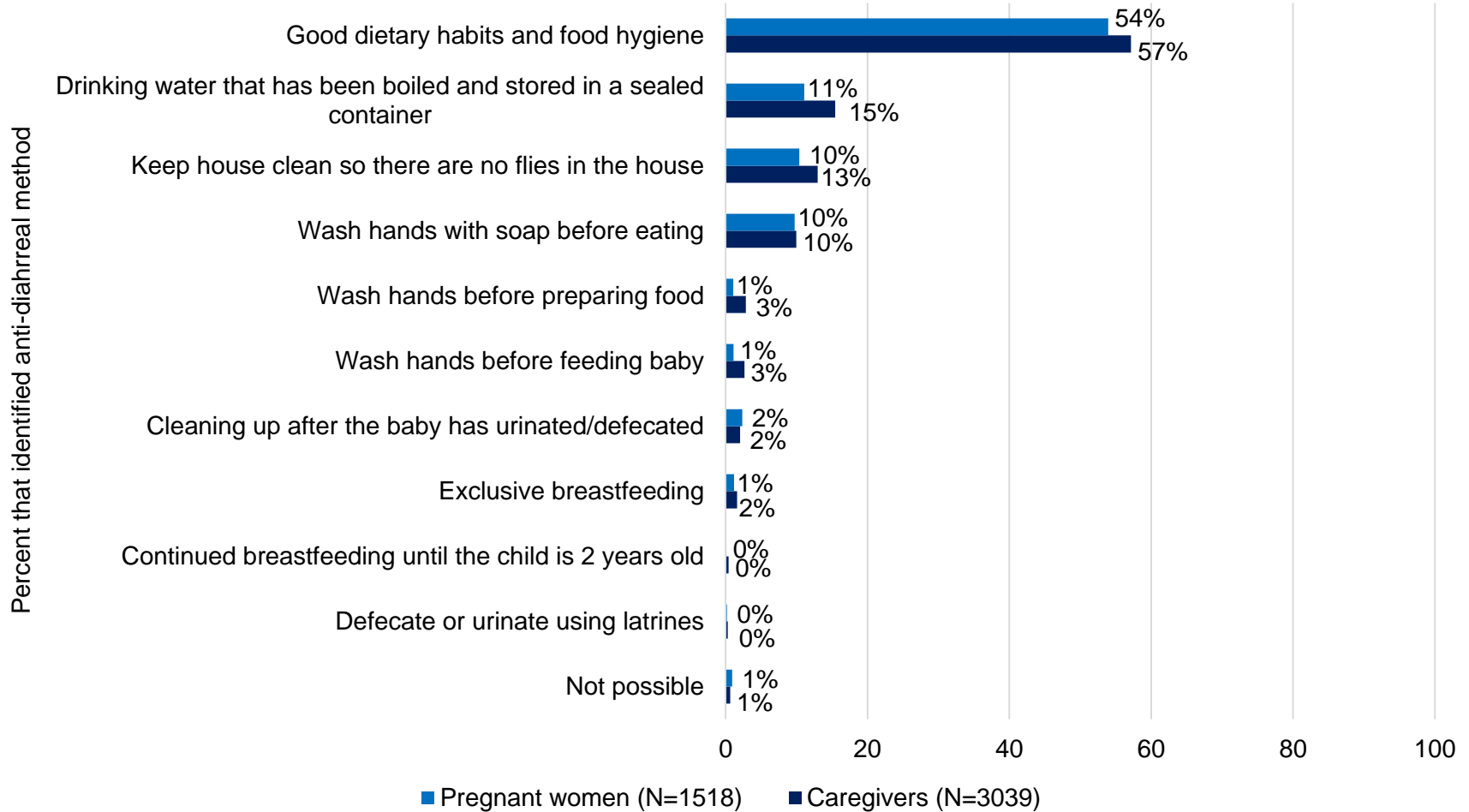
# Diarrhea was common for children under three



Source: Caregiver baseline survey, 2015.

Note: Diarrhea is defined in the survey as loose or watery stools at least three times in a 24 hour period, or had any loose stool with blood

# Knowledge of diarrhea prevention methods among caregivers and pregnant women was limited



Source: Caregiver and pregnant woman baseline surveys, 2015.

# Sanitation: Conclusions

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- **Sanitation conditions were poor at baseline**
  - Almost a third of households reported defecating directly into the environment, using either a hanging toilet (over water) or no toilet at all
  - More than half of caregivers reported that children's stool was disposed of in the open
- **Diarrhea rates were high and prevention method knowledge was low**
  - A quarter of children had diarrhea in the last four weeks. Of which only approximately 40% had received some treatment
  - Very few respondents associated other times to wash hands, latrine use or breastfeeding with diarrhea prevention

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# **5. Outcomes**

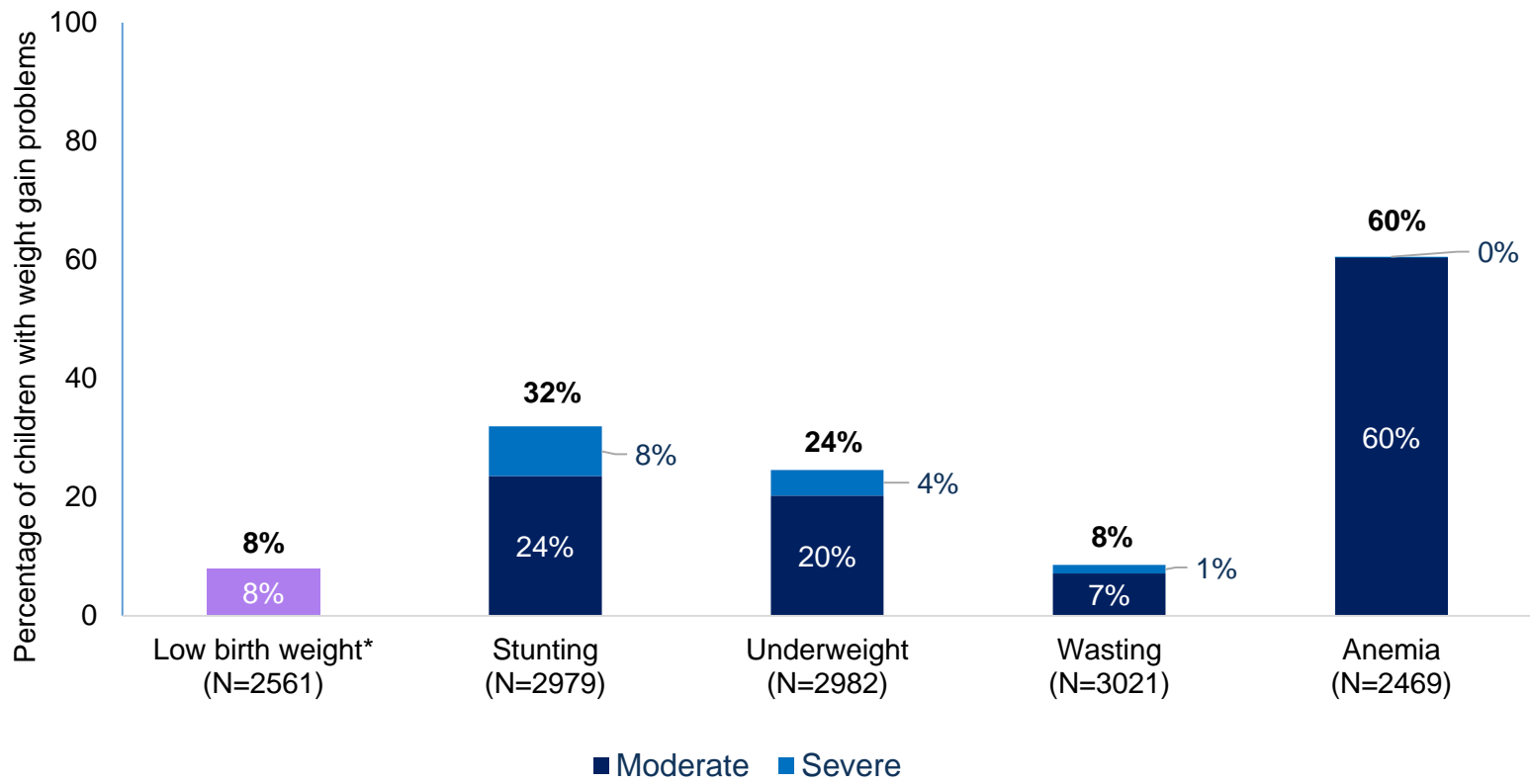
## **E. Anthropometry and anemia**

# Definitions of nutritional status indicators

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- Low birth weight – less than 2.5 kg
  - Stunting – low length or height for age
  - Underweight – low weight for age
  - Wasting – low weight for height
  - Anemia – low hemoglobin concentrations (less than 11 g/dL)
    - Note: not all anemia is caused by iron deficiency
  - “Severe” is defined as z-score less than -3 or hemoglobin <7 g/dL for pregnant women and children
- } > 2 standard deviations below reference population

# Many children were not growing to their potential and anemia was high



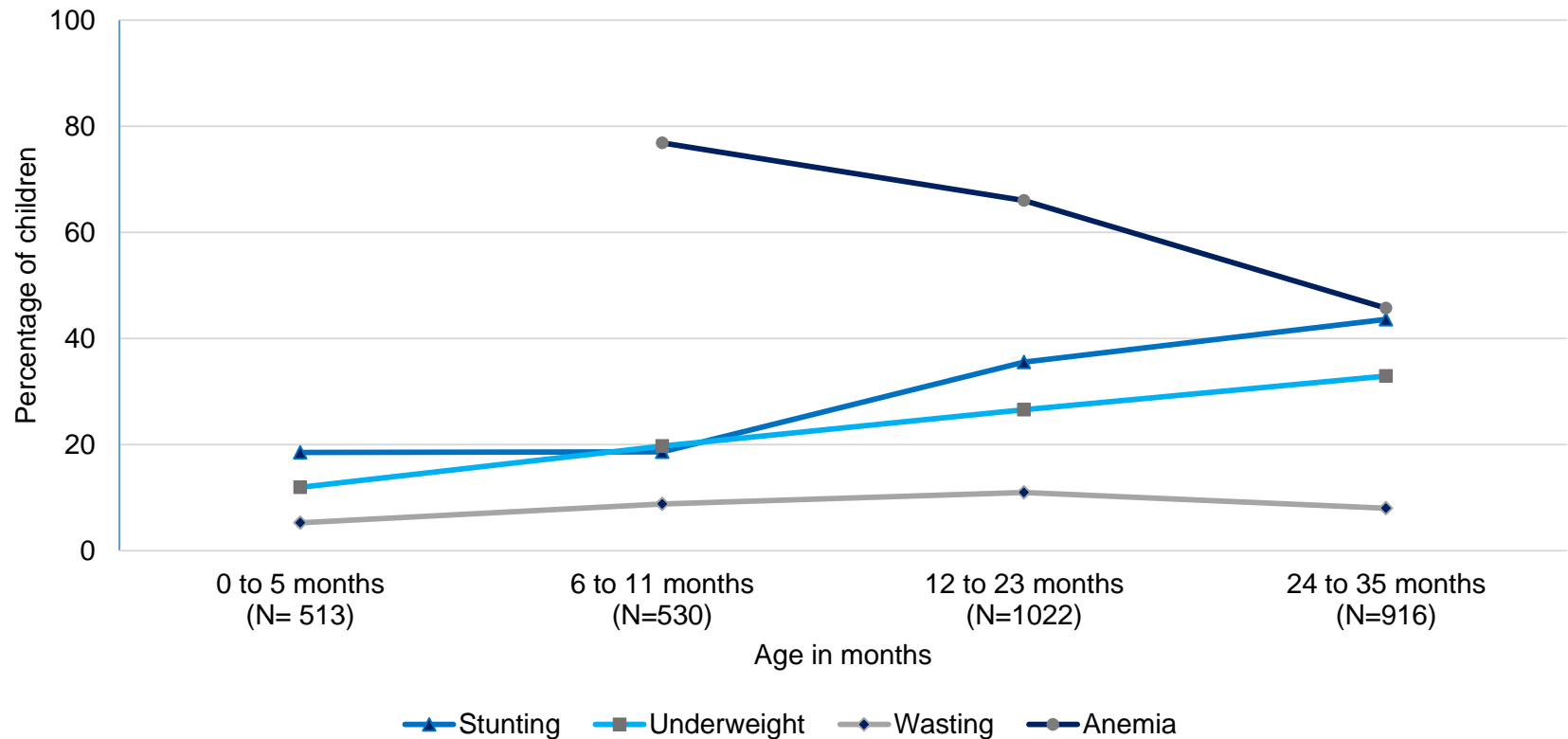
Source: Caregiver baseline survey, 2015.

Note: Sample size range is a result of stunting and underweight survey measures requiring birthdate information which is unavailable for some children, and some children or caregivers refused the physical measurements or blood drawn.

\*No data for severity of low birth weight.



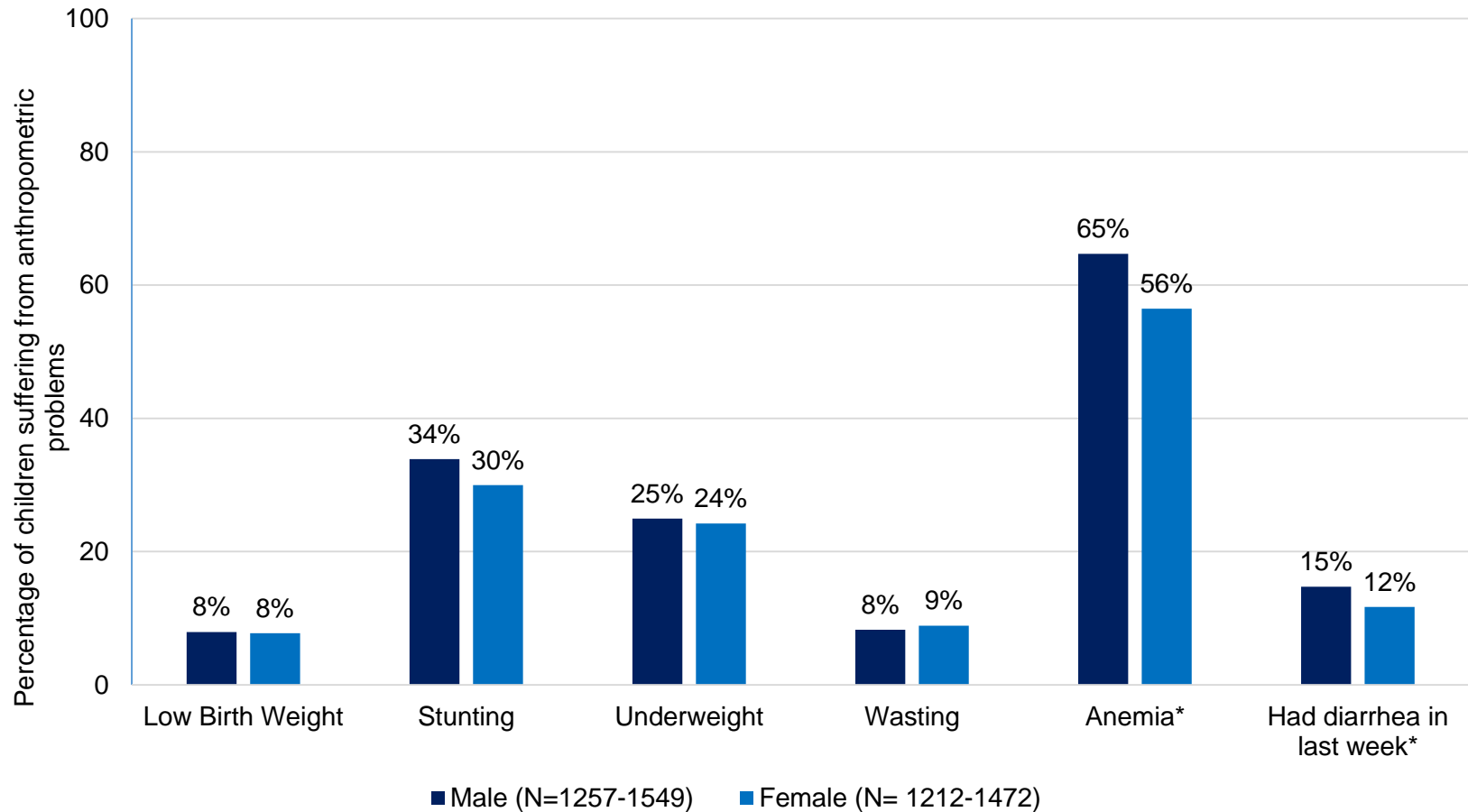
# Anthropometry measures and anemia varied by age, except for wasting



Source: Caregiver baseline survey, 2015.

Note: Anemia 0 to 5 months not collected because blood drawing is not recommended for children under 6 months.

# Anthropometry outcomes were very similar for boys and girls but more boys were anemic

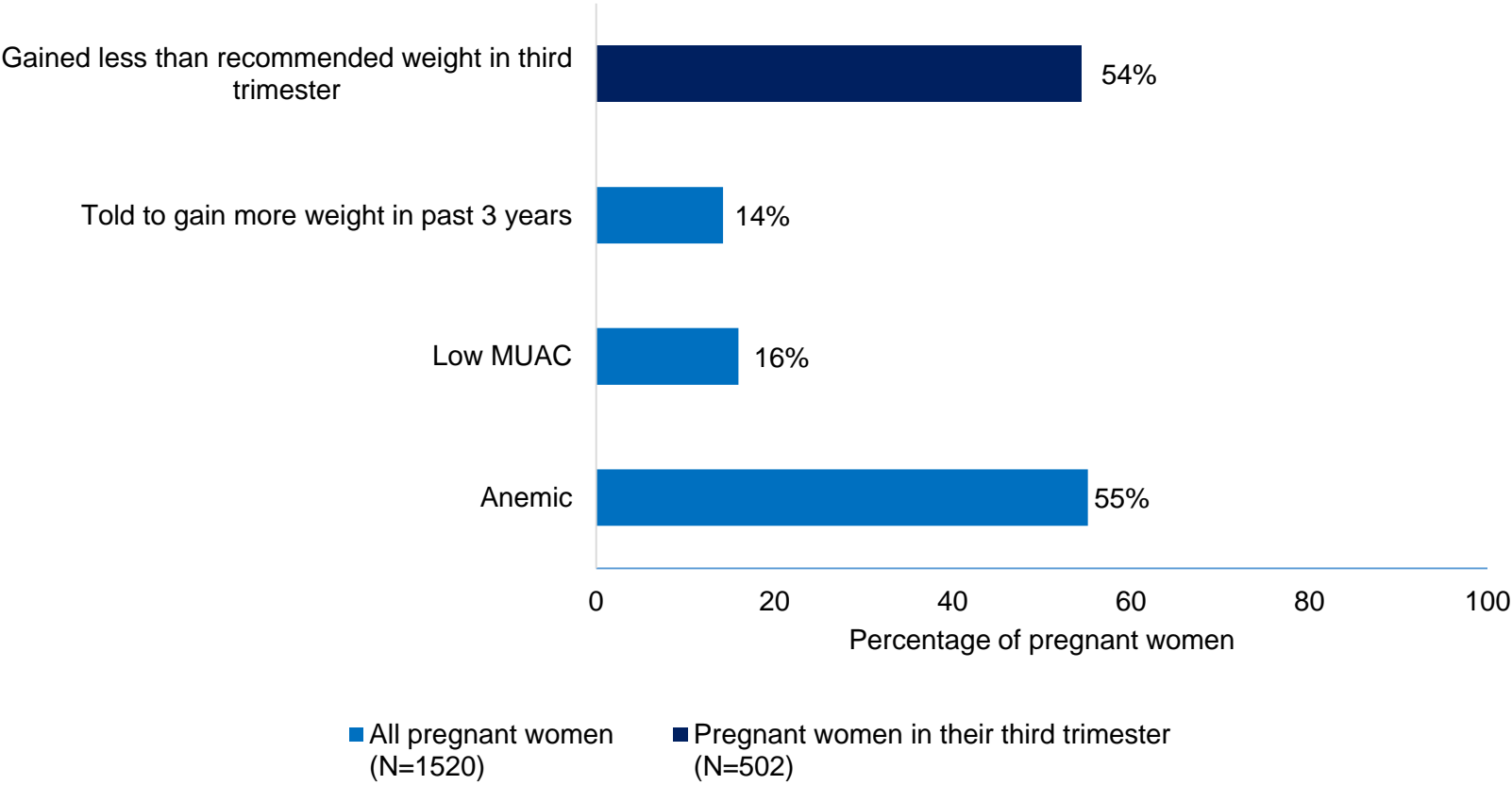


Source: Caregiver baseline survey, 2015.

Note: Indicators by gender 0–35 months.

\*Significant difference

# Most pregnant women were anemic and had not met the recommendation for weight gain during pregnancy



Source: Pregnant woman baseline survey, 2015.

# Anthropometry: Conclusions

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- **We found high levels of stunting (consistent with Riskesdas) and underweight**
  - 32% of children were stunted and 24% were underweight
  - Increased with age
- **Anemia was very high (but not severe) for both children (60%) and pregnant women (55%)**

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## 6. Conclusions

# Treatment and control groups were balanced at baseline

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- **Generasi volunteers confirmed that the project had begun in most desa, but:**
  - There were no major differences in demographics or socioeconomic characteristics between treatment and control households
  - The only Generasi target indicators affected were weighing, possession of buku KIA/KMS, and training for bidan/posyandu.

# **There is room to improve progress on Generasi indicators**

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- **Very few caregivers had the recommended number of postnatal visits.**
- **Participation in kelas ibu hamil and kelas balita was very low**
- **The majority of children were not getting all vaccinations**
- **Posyandu performance could contribute to low levels of some  
Generasi indicators.**
  - The majority of posyandu have never held a kelas ibu hamil or kelas balita.

# **Conditions at health facilities are unlikely to be causing the high rates of undernutrition**

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- **Baseline levels of access to health service appear to be high**
  - Most pregnant women and caregivers did not have to travel more than 15 minutes or pay more than 4,000 rupiah to access key health services, such as the posyandu, bidan, or puskesmas
- **High proportions of health service providers had been trained and most scored high on IYCF knowledge tests**
  - 70% of kader posyandu and 90% of bidan had been trained on IYCF topics
  - Bidan demonstrated that knowledge on most IYCF topics was very high (knowledge by kader posyandu demonstrates the need for training)
- **The majority of puskesmas were well staffed with key personnel and were often stocked with height/length taking equipment and necessary supplements**



# **There are indeed challenges in the potential causes of undernutrition that the Project seeks to address**

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- **There is scope to improve infant and young child feeding practices**
  - The majority of women did not know they should practice or practice exclusive breastfeeding for the first 6 months
  - Rates of exclusive breastfeeding were only 23% at zero months and dropped to 13% at five months
  - Bidan could do more to promote exclusive breastfeeding
- **Poor sanitation could be one of the causes of undernutrition**
  - Nearly a third of households did not have access to an improved latrine and defecated directly into the environment
  - Nearly 60% of children's feces were left in the open and not disposed of properly
  - Fewer than 5% of households reported being aware of any meeting held on sanitation in the past year

# Undernutrition is a major problem

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- **32% of children under 3 are stunted**
- **24% of children under 3 are underweight**
- **The prevalence of wasting is not as high (9%), but is still a concern**
- **Anemia is also very high, at 55% among pregnant women and over 60% among children under 3 are anemic**

# Acknowledgements

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**This presentation would not have been possible without the valuable input and hard work from many others, including:**

- MCA-I and MCC Health & Nutrition and M&E teams
- Health & Nutrition project stakeholders
- SurveyMETER staff
- Mathematica consultants – Dr. Jere Behrman, Dr. Elizabeth Frankenberg, Dr. Anuraj Shankar, Dedy Junaedi, Sukhmani Sethi, and Upik Sabainingrum

## For more information

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Detailed baseline report findings can be found at

<https://data.mcc.gov/evaluations/index.php/catalog/109/download/855>

and

<https://www.mathematica-mpr.com/our-publications-and-findings/publications/mcc-indonesia-nutrition-project-impact-evaluation-baseline-report>

# For more information

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