alive&thrive
nourish. nurture. grow.

Nutrition Interventions

in Antenatal Care and Immediate Postnatal Care

FINDINGS FROM A BASELINE SURVEY IN ETHIOPIA

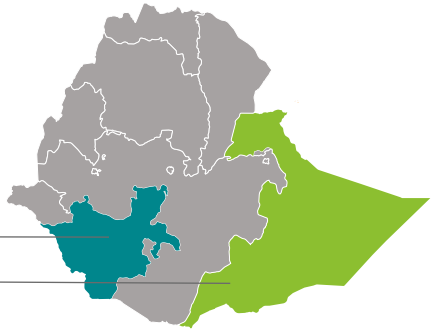
Ethiopia has one of the highest maternal mortality ratios globally, with 401 deaths per 10,000 live births. The neonatal mortality rate of 28 deaths per 1,000 live birth is high and represents 56% of all under-five deaths. Anemia, a contributor to maternal mortality, is a significant public health problem, affecting 24% of women of reproductive age, with rates much higher in rural areas and specific regions of the country. Among newborns, infants, and young children, breastfeeding practices are suboptimal: Though 73% of children are breastfed within the first hour after birth, only 59% of mothers practice exclusive breastfeeding in the first six months (Countdown to 2030, 2020).

The Government of Ethiopia is committed to improving nutrition. It has developed its second phase of the National Nutrition Program (NNP II 2016-2020), which focuses on the critical 1,000-day window – from pregnancy through the first two years of life – to address malnutrition. Program objectives include improving pregnant and lactating women's nutrition through comprehensive and routine nutritional assessments and counseling services. Also, promoting and supporting optimal breastfeeding practices for infants at both the facility and community levels is highlighted as the program's objective. Alive & Thrive is working in partnership with the Ministry of Health to strengthen the package of maternal nutrition interventions into existing antenatal care (ANC) and immediate postnatal care (PNC) services.

The International Food Policy Research Institute (IFPRI) is conducting implementation research to test the feasibility and effectiveness of maternal nutrition interventions to assess nutrition practices during pregnancy and breastfeeding practices after birth. The interventions include interpersonal counseling on a healthy diet during pregnancy, counseling on iron-folic acid (IFA) supplementation, adequate weight-gain monitoring, and systems strengthening through training and supportive supervision.

The study is designed as a two-arm cluster-randomized trial, consisting of cross-sectional surveys at baseline and endline in seven woredas (districts) across the Southern Nations Nationalities and People (SNNP) and Somali regions. This infographic presents highlights from the baseline survey conducted in 2019 from 119 primary health care facilities across the two regions.

FOCAL REGIONS IN ETHIOPIA



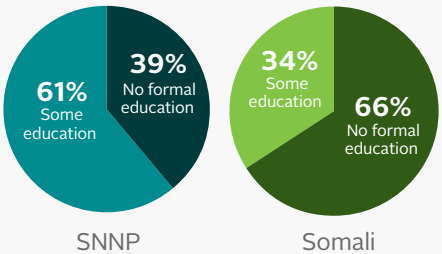
About the Survey and Sample

The survey consisted of self-reported information from questionnaires conducted with pregnant women (PW), recently delivered women (RDW) who have children under six months of age, nurse-midwives, health extension workers (HEWs) as well as health facility assessments. The sample included:

- **175** Pregnant women (120 SNNP; 55 Somali)
- **344** Recently delivered women (237 SNNP; 107 Somali)
- **30** Nurse-midwives (20 SNNP; 10 Somali)
- **90** HEWs (60 SNNP; 30 Somali)
- **30** Health centers
- **89** Health posts

Characteristics of women and families

- Pregnant and RDW were on average 28 years old, married, housewives, and had their first child at age 20. All women were Muslim in Somali, while the majority (53%) were Orthodox Christian in the SNNP region. About 59% of PW and 55% of RDW households experienced mild to severe food insecurity.
- Among RDWs:



Baseline Findings

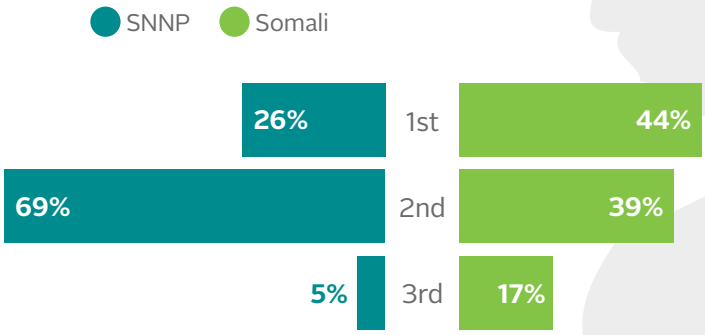
1. ANTENATAL CARE

Use of ANC

- Almost all recently delivered women went to the health center or the health post for some ANC. Women in SNNP were three times more likely to attend four or more ANC visits than in the Somali region.
- Most RDW in the SNNP region did not start ANC until the second trimester. In Somali, a greater percentage of women started going to ANC in the first trimester than in the SNNP region.
- Most health centers had supplies and materials for providing ANC services. Availability of functioning ANC equipment and materials varied across health posts.

4+ ANC VISITS AMONG RDW

TRIMESTER OF FIRST ANC VISIT AMONG RDW



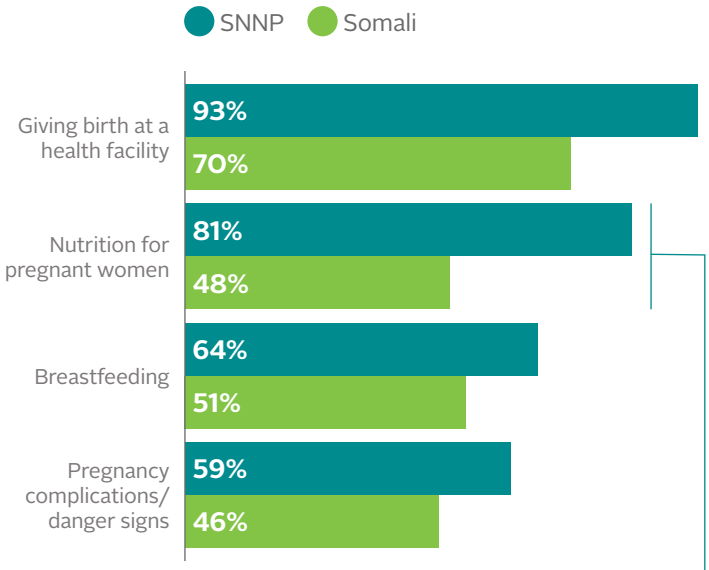
Nutrition counseling during ANC visits

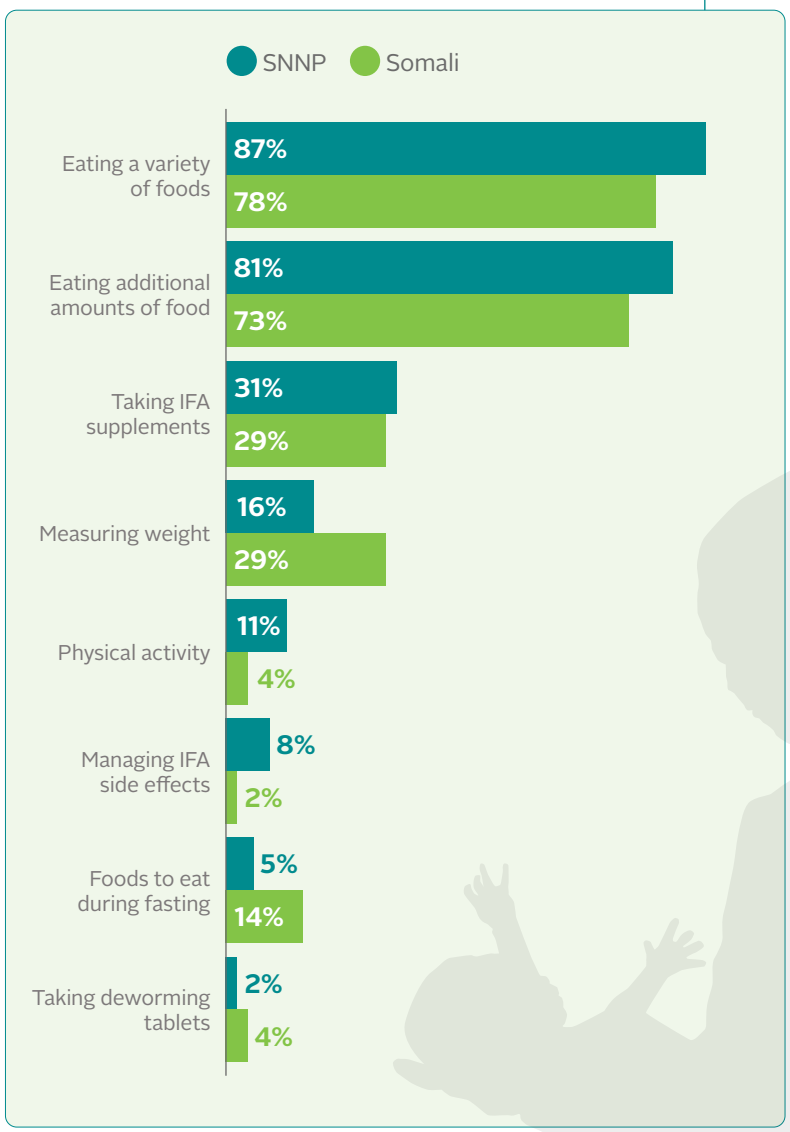
- Only half of RDW in the Somali region received counseling on maternal nutrition and breastfeeding while pregnant. In the SNNP region a higher percentage of RDW were counseled on these topics as well as giving birth in a health facility and on pregnancy danger signs.

- In both regions, nutrition counseling mainly focused on eating a variety of foods and eating additional amounts of food.

COUNSELING TOPICS

Percentage of RDW who received counseling on...



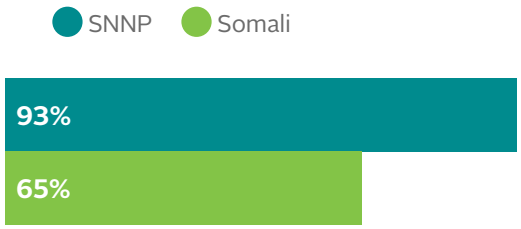


2. IRON-FOLIC ACID

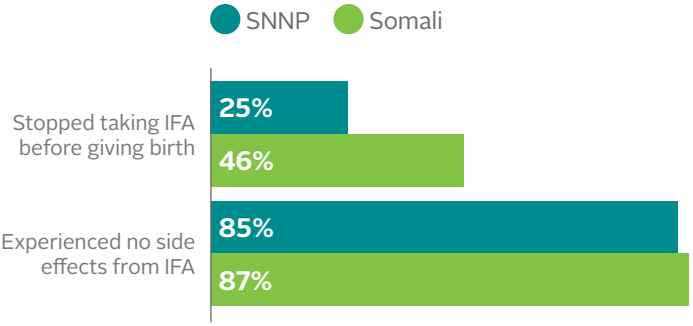
Consumption of IFA supplements

- Almost all recently delivered women in the SNNP region consumed IFA tablets during their last pregnancy. Two-thirds did in the Somali region. Among those who never took IFA, reasons included that they never heard of IFA, never received the tablets, or did not know what they were for.
- RDW in both regions took their IFA supplements later than recommended. Almost half of the women in the Somali region stopped taking IFA before giving birth.
- Side effects from taking IFA were not a major issue in both regions.

RDW CONSUMPTION OF IFA TABLETS AT SOME POINT DURING THEIR PREGNANCY

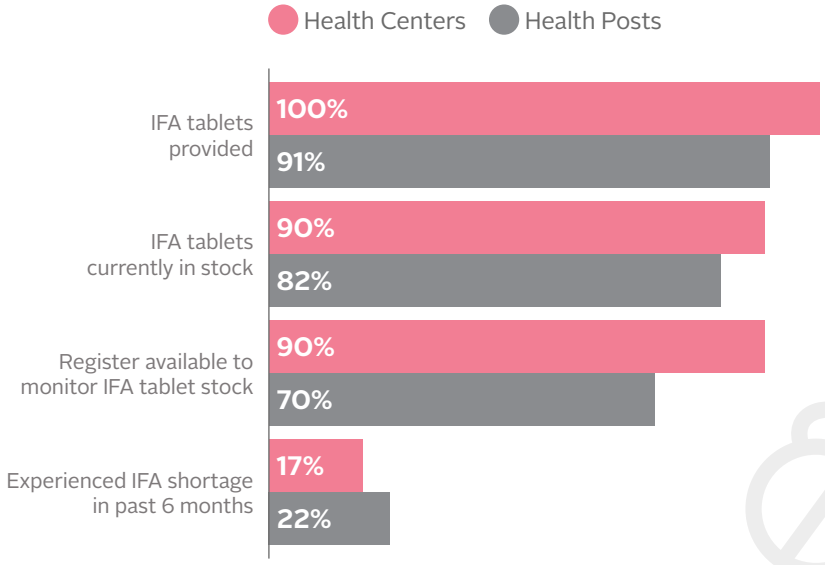


RDW were **5.2** months pregnant when they first started taking IFA.



- IFA was generally available at health facilities in both regions. Most health centers and health posts had IFA tablets in stock and registers to monitor IFA tablet stock. Some health centers and health posts experienced IFA shortages.
- Most women received IFA tablets for free from the health center or the health post.

AVAILABILITY OF IFA SUPPLEMENTS

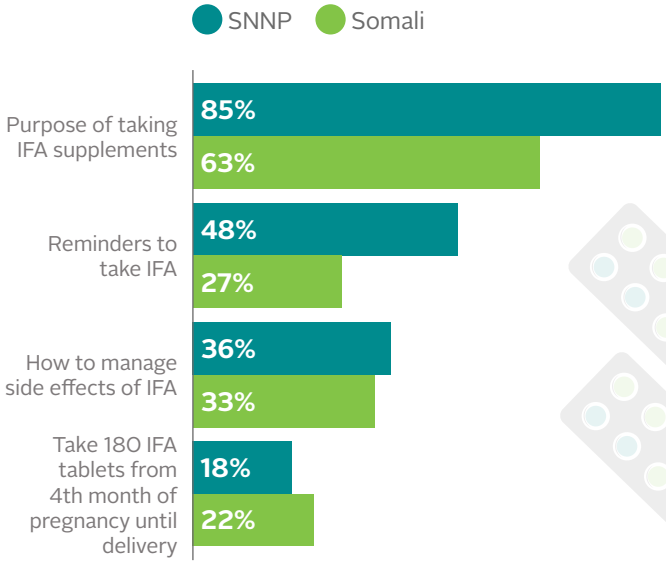


2. IRON-FOLIC ACID (CONTINUED)

Knowledge about IFA supplements

- Most recently delivered women reported receiving information on the purpose of taking IFA tablets during ANC, especially in the SNNP region. In both regions, fewer women received reminders to take IFA, how to manage side effects, and how many tablets to start taking at which point during the pregnancy.
- Nurse-midwives and HEWs in general were knowledgeable about anemia – how to recognize it, its causes, how to prevent it. Regarding IFA supplementation, almost all nurse-midwives and HEWs knew that pregnant women need to take 30 IFA tablets per month. Fewer knew that they should take them for six months, especially in Somali.
- Although most recently delivered women had heard of anemia, fewer knew the number of IFA tablets to take per month and hardly any knew how many to take for six months. Knowledge about anemia and IFA among RDW was much lower in Somali compared with SNNP region.

IFA INFORMATION RECEIVED BY RDW DURING ANC



KNOWLEDGE RELATED TO IFA CONSUMPTION

IFA knowledge among nurse-midwives and HEWs

SNNP Somali

	Nurse-midwives	HEWs
Pregnant women should take 30 IFA tablets per month	100% 70%	98% 80%
Pregnant women should take IFA tablets for 6 months	30% 0%	60% 13%

ANEMIA AND IFA KNOWLEDGE AMONG RDW

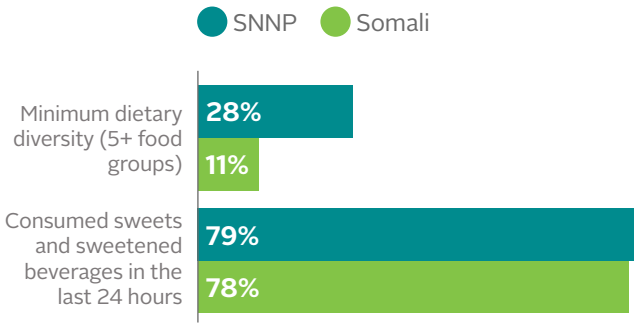
	SNNP	Somali
Ever heard of anemia	91%	69%
Pregnant women should take 30 IFA tablets per month/one daily	75%	38%
Pregnant women should take IFA tablets for 6 months	8%	7%

3. MATERNAL DIET

Diet diversity

- Dietary diversity was very low among both pregnant and recently delivered women in both regions, but especially in Somali. Minimum dietary diversity requires women to eat from five or more of the ten food groups. On average, neither group achieved this target.
- Consumption of sweets and sweetened beverages was high across both regions, possibly displacing the consumption of higher quality foods.

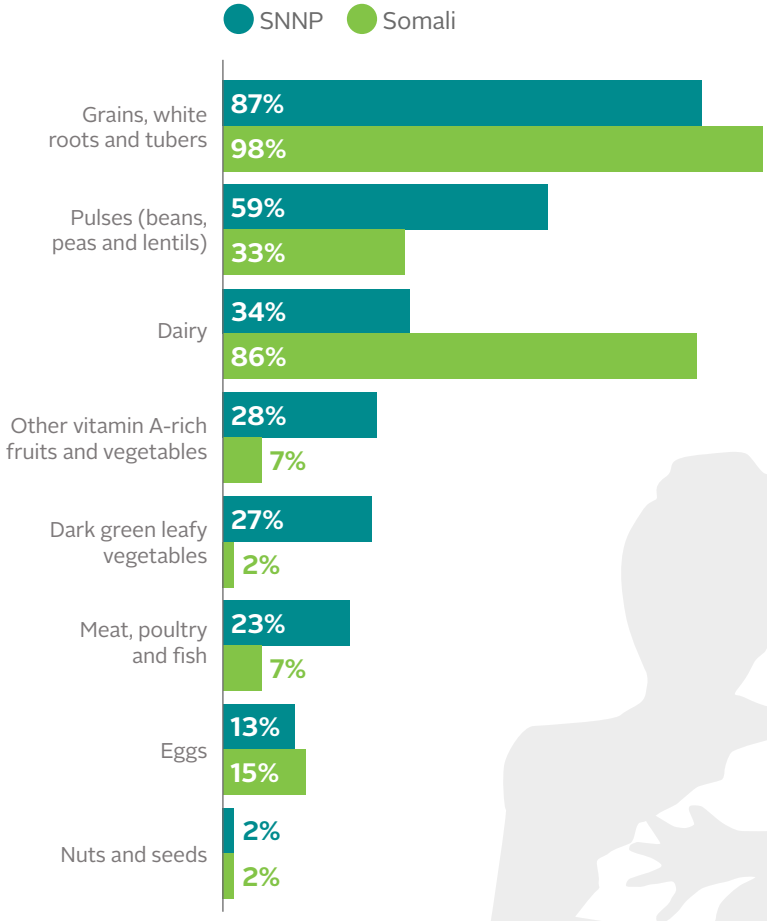
Pregnant women ate from **3.5 of 10** food groups (3.7 SNNP; 3.1 Somali)



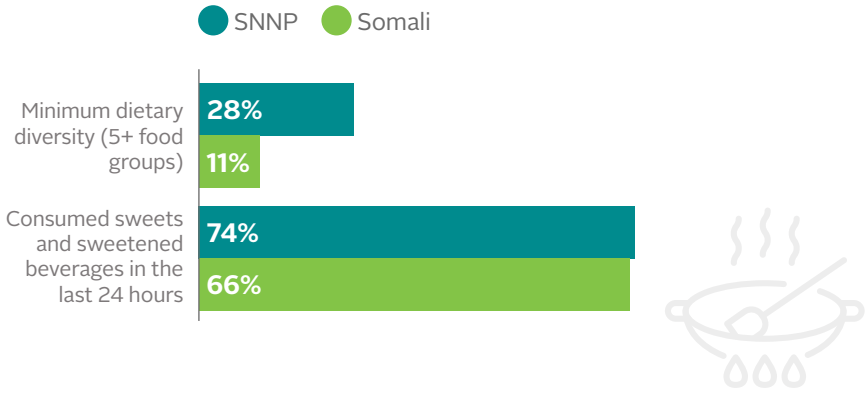
Types of foods consumed

- Almost all pregnant and recently delivered women consumed grains, white roots and tubers.
- Dietary patterns between regions differed. More women in the SNNP region consumed beans, peas and lentils; meat, poultry and fish; and vegetables and fruits than those in Somali. In Somali, a greater percentage consumed milk and dairy than in the SNNP region, as expected from the pastoralist region.

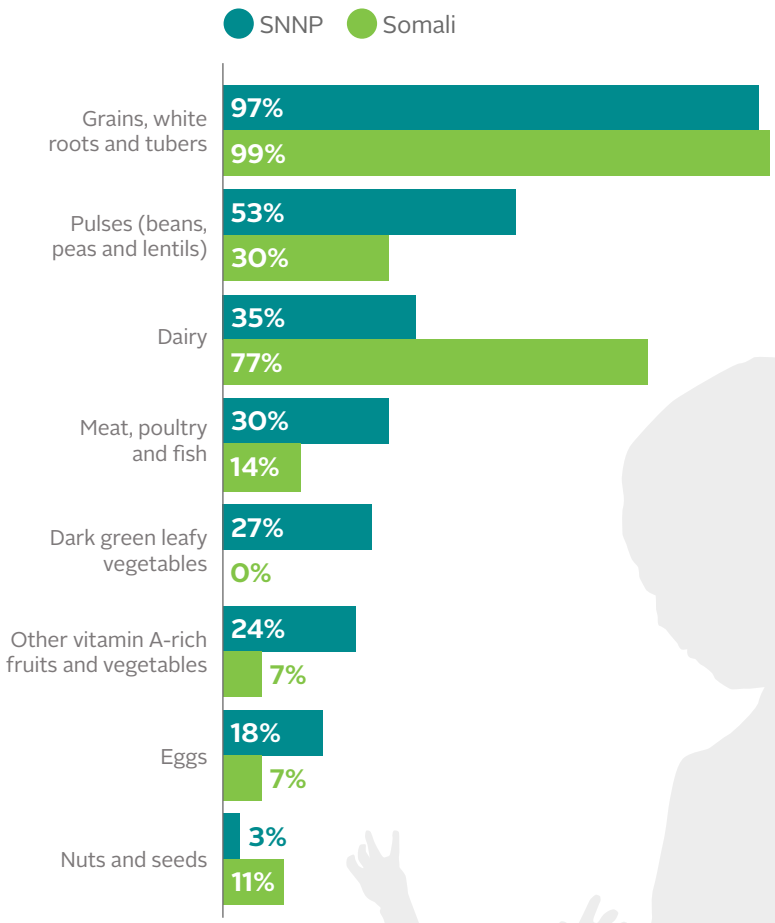
FOODS CONSUMED BY PREGNANT WOMEN



RDW ate from **3.6 of 10** food groups (3.8 SNNP; 3.2 Somali)



FOODS CONSUMED BY RECENTLY DELIVERED WOMEN



Knowledge and perceptions of maternal dietary recommendations

- Most new mothers in both regions knew that eating a variety of food and increasing the quantity consumed during pregnancy is important.
- Fewer knew about types of iron-rich or vitamin-A rich foods.
- Knowledge about diet needs during pregnancy was generally higher in SNNP than in the Somali region.
- Most RDW thought it was too costly to buy the types of amounts of foods needed during pregnancy.

KNOWLEDGE OF DIET NEEDS DURING PREGNANCY AMONG RDW

	SNNP	Somali
Knew the importance of increasing food quantity	87%	70%
Knew the importance of eating a variety of foods	87%	70%
Knew the importance of eating fruits and vegetables	83%	59%
Could name an example of vitamin A-rich foods	67%	36%
Could name an example of iron-rich foods	53%	44%

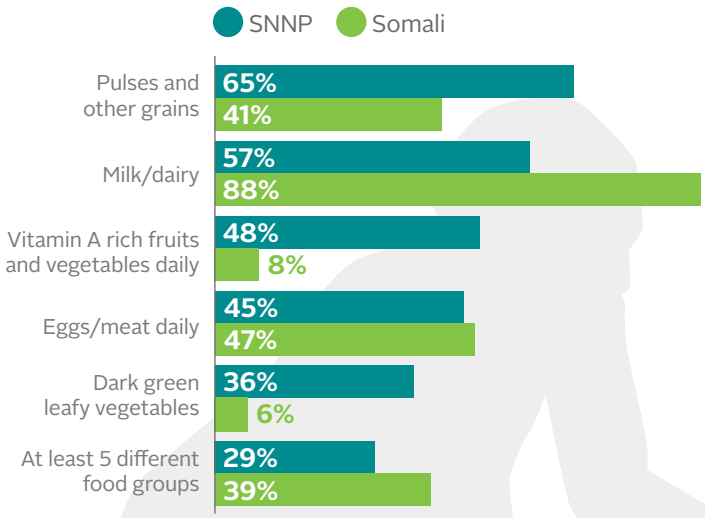
83% thought it was too costly to obtain the recommended types and amounts of foods to eat during pregnancy.

Diet counseling received during ANC

- Despite the gaps in women's dietary diversity, messages about food variety focused mainly on consuming milk or dairy daily, consuming pulses, and less on consuming meat or eggs, dark green leafy vegetables, Vitamin A rich foods, or consuming at least five different food groups daily.
- Messages about the quantity of food centered more on needing to eat more energy and nutrients during pregnancy and lactation, but not on the exact number of meals and snacks to eat per trimester.

PROMOTION OF MATERNAL DIET BY NURSE-MIDWIVES DURING ANC

Percentage of RDW who were advised to eat the following daily while pregnant



4. DELIVERY, MATERNAL WEIGHT GAIN, AND NUTRITION STATUS OF INFANTS

Place of delivery

- The place where women delivered their babies differed by region. In the SNNP region, most women delivered in a hospital, private clinic, health center, or maternity center. In Somali, the majority delivered at home.
- Few babies were delivered by C-section. C-section delivery was more common in SNNP than in the Somali region.

PLACE OF DELIVERY

	SNNP	Somali
Hospital/private clinic/health center	89%	22%
Maternity center	5%	1%
Health post	2%	15%
Own home	4%	62%

10% of women in SNNPR delivered by C-section and **1%** in Somali.

Body mass index (BMI) after pregnancy

- In the SNNP region, most women had a normal BMI within six months of delivery.
- A greater percentage of RDW in Somali were underweight and overweight than in the SNNP region.

BMI OF RECENTLY DELIVERED WOMEN WITHIN SIX MONTHS OF DELIVERY

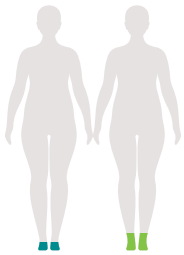
Underweight
(BMI < 18.5)

SNNP 10% Somali 27%

Normal
(BMI 18.5-24.9)

SNNP 82% Somali 60%

Overweight
(BMI ≥ 25)

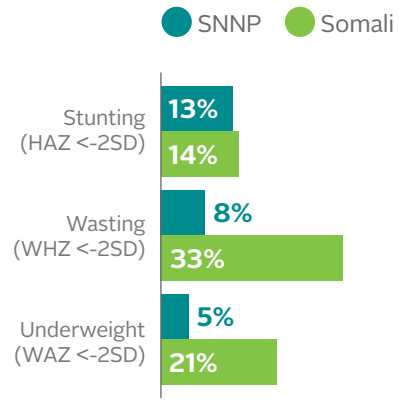


SNNP 9% Somali 13%

Nutrition status of infants

- RDW's infants under six months had poor nutritional status. In the Somali region, one-third of the infants were wasted (too thin for height) and one-fifth were underweight.

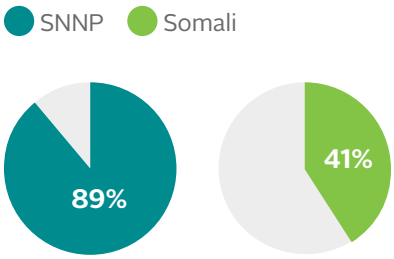
NUTRITIONAL STATUS OF CHILDREN UNDER 6 MONTHS OF AGE



Weighing during ANC

- Most RDW in the SNNP region were weighed during ANC, whereas less than half were in the Somali region.
- Weighing, on average, did not start until the fifth month of pregnancy.

RDW WEIGHED DURING ANC



On average, women during pregnancy...

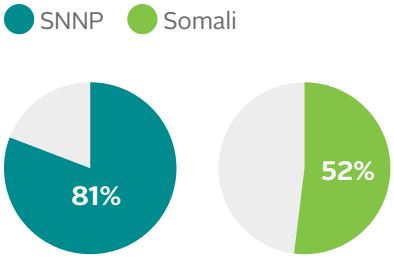
Were first weighed at **5.1** months into the pregnancy (SD ±1.9)

Were weighed **3.7** times during pregnancy (SD ±4.3)

Records of weight gain

- Three-fourths of the RDW had their weight recorded when they were pregnant. In Somali, only half of the women's weights were recorded.
- Weights were mainly recorded in health facility records or registers in both regions.

76% of RDW had their weight recorded during ANC



Knowledge of recommended weight gain

- It is recommended that pregnant women gain 10-12 kg during their pregnancy. Knowledge about recommended weight gain varied widely among pregnant and recently delivered women, as well as nurse-midwives and HEWs. Overall, women in Somali were less knowledgeable about recommended weight gain than those in the SNNP region.

KNOWLEDGE OF WEIGHT GAIN RECOMMENDATIONS

Among pregnant and recently delivered women

	PW		RDW	
	SNNP	Somali	SNNP	Somali
Said pregnant women should gain this much during pregnancy:	7.4kg (SD±9.7)	3.8kg (SD±2.2)	7.0kg (SD±3.6)	5.9kg (SD±7.5)

Among nurse-midwives and HEWs

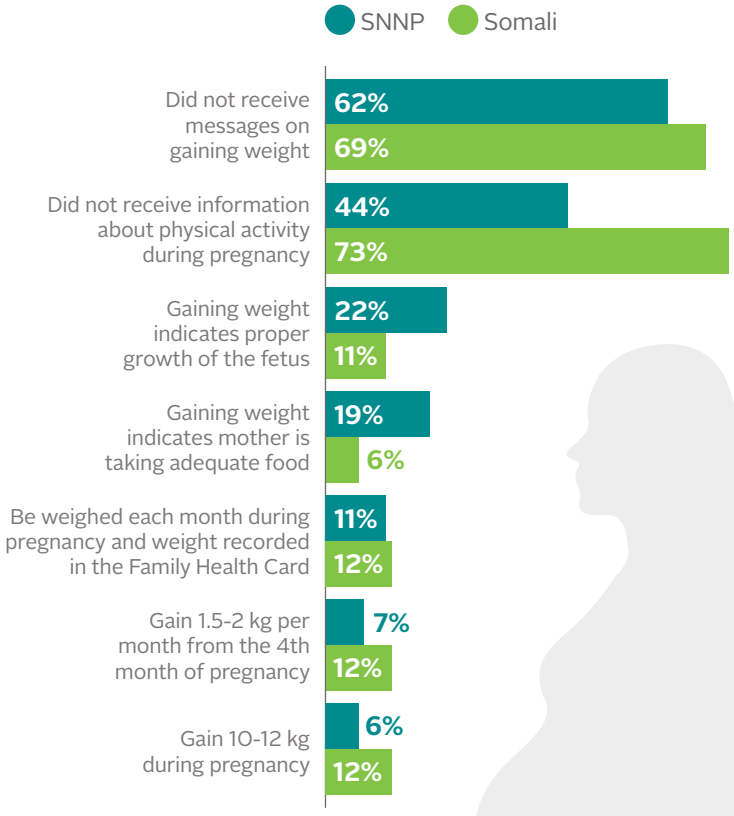
	Nurse-midwives		HEWs	
	SNNP	Somali	SNNP	Somali
Said pregnant women should gain this much during pregnancy:	7.7kg (SD±4.6)	15.9kg (SD±18.3)	7.8kg (SD±3.6)	10.1kg (SD±10.4)

Counseling on weight gain and physical activity

- Two-thirds of recently delivered women did not receive messages on weight gain during ANC. Very few were provided information on how much weight to gain during pregnancy, that weight gain indicates proper growth of the fetus and that the mother is eating enough.
- Half of the women did not receive messages about physical activity during pregnancy, with a greater percentage in the Somali region.

COUNSELING ON WEIGHT GAIN AND PHYSICAL ACTIVITY AMONG RDW

Messages received on gaining weight during pregnancy

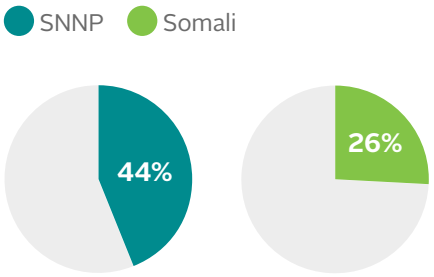


5. BREASTFEEDING AT BIRTH AND IN THE NEWBORN PERIOD

Early initiation of breastfeeding (EIBF)

- Few women initiated breastfeeding within one hour of birth, especially in the Somali region where only one fourth did.

EARLY INITIATION OF BREASTFEEDING AMONG RDW



Prelacteal and other feeding other than breastmilk

- One-third of women in the Somali region put something in their baby's mouth after birth (pre-lacteal) and within the first three days.

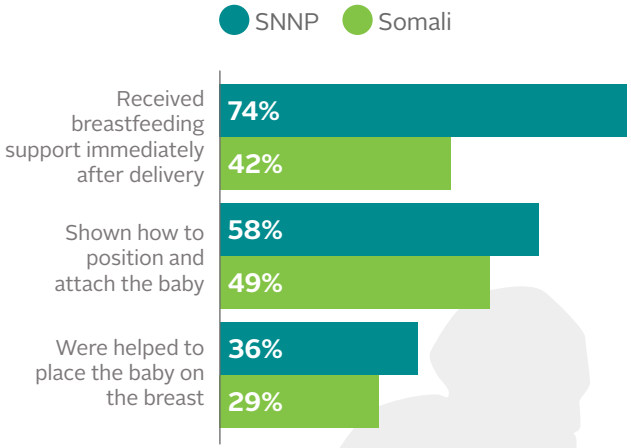
PRELACTEAL FEEDING AMONG RDW

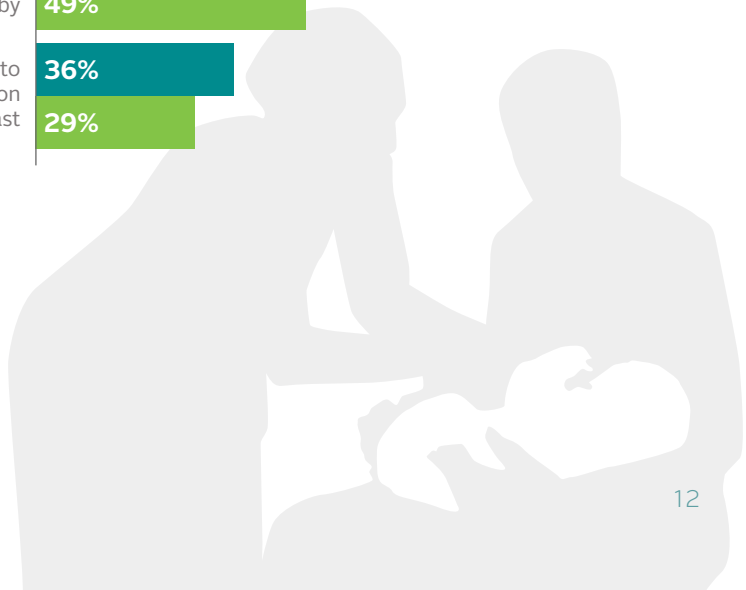
	SNNP	Somali
Prelacteal feeding, immediately after birth	1%	32%
Prelacteal feeding, up to 3 days after birth	1%	33%

Breastfeeding support

- In the SNNP region most women received breastfeeding support immediately after delivery. In Somali, less than half did.
- In the SNNP region, support was mainly provided by a nurse-midwife, whereas in Somali it was mostly by a mother or mother-in-law.
- Breastfeeding support centered mainly around being told to breastfeed the baby and less about positioning and attachment or helping to place the baby on the breast.

BREASTFEEDING SUPPORT AMONG RDW





Knowledge of EIBF

- Recently delivered women had fairly high knowledge of infant feeding practices. About three-fourths knew about the importance of breastfeeding a baby within one hour after birth. Most knew that a baby should be fed colostrum after birth.
- Virtually all nurse-midwives knew the importance of EIBF and to feed colostrum.
- There were no large regional differences in knowledge of EIBF among nurse-midwives, HEWs, or RDW.

KNOWLEDGE OF EIBF AMONG NURSE-MIDWIVES, HEWS, AND RDW

	Nurse-midwives	HEW	RDW
Aware of importance of breastfeeding within one hour after birth	100%	97%	77%
Aware to feed colostrum	90%	97%	90%

Exclusive breastfeeding practices

- Virtually all recently delivered women practiced breastfeeding, although in the Somali region only half were exclusively breastfeeding.
- Over one-third of RDW in the Somali region fed their babies liquids or foods in addition to breastmilk in the first 6 months.

Virtually **ALL** RDW breastfed their babies

PRACTICED EXCLUSIVE BREASTFEEDING

84% SNNP
51% Somali

PARTIALLY BREASTFED

6% SNNP
39% Somali

5. BREASTFEEDING AT BIRTH AND IN THE NEWBORN PERIOD (CONT)

Knowledge of breastfeeding for children under 6 months

- Most RDW knew that a baby less than six months old should be fed only breastmilk.
- There were important knowledge gaps about what to do if a baby less than 6 months old is not getting enough breastmilk, if the weather is hot, if a woman gets pregnant, or ill.
- Nurse-midwives and HEWs had better knowledge than the women, but still had knowledge gaps.
- Breastfeeding knowledge among nurse-midwives, HEWs, and RDW, in general, was only slightly higher in the SNNP region compared to Somali.

KNOWLEDGE OF BREASTFEEDING AMONG NURSE-MIDWIVES, HEWS, AND WOMEN

	Nurse-midwives	HEW	RDW
Knew a baby <6 months should be fed breast milk only	100%	100%	87%
Knew that breastmilk contains everything a baby needs for the first 6 months	77%	64%	28%
Knew to breastfeed whenever baby wants	93%	86%	78%
Knew to breastfeed more frequently if a baby <6 months is not getting enough breastmilk	70%	58%	50%
Knew babies <6 months should not be given water if the weather is very hot	87%	91%	69%
Knew to not stop breastfeeding when pregnant	60%	54%	48%
Knew to not stop breastfeeding when ill	63%	78%	70%

6. COMMUNITY SERVICES FOR MATERNAL NUTRITION

Home visits

- HEWs play an essential role in providing ANC services and nutrition counseling at health posts, making home visits, and implementing community outreach activities. Most HEWs reported making home visits, conducting pregnant women conferences, and attending community meetings.
- However, less than a third of RDW reported ever receiving a home visit, attending a pregnant woman's conference, or attending a community meeting where nutrition for pregnant women was discussed. Exposure was higher in the SNNP region than in the Somali region.

HOME VISITS FROM HEALTH CARE PROVIDERS AMONG RECENTLY DELIVERED WOMEN

Ever received home visit

SNNP **34%** Somali **24%**

Ever attended pregnant women conference

SNNP **46%** Somali **8%**

Ever attended community meetings where nutrition for pregnant women was discussed

SNNP **13%**

Somali **6%**

Conclusion

OPPORTUNITIES FOR ACTION

1. Since almost all women went to the health center or the health post for some ANC, the opportunity is ripe to encourage pregnant women to seek regular ANC and to strengthen maternal nutrition interventions during ANC.

ANC TAKEAWAYS

- The baseline survey found that pregnant women generally start ANC visits later than advised. Less than half of RDW attended ANC for the first time in the first trimester. Surprisingly, higher proportions of RDW in Somali attended their first ANC visit in the first trimester than women in the SNNP region. However, only 22% of RDW in Somali achieved four or more ANC visits compared to 75% in the SNNP region. Promotion of early and regular ANC care needs to be strengthened as well as nutrition and breastfeeding counseling during ANC.
- HEWs play an essential role in providing ANC services and nutrition counseling at health posts, making home visits, and implementing community outreach activities. However, many pregnant women in both regions reported not receiving home visits by HEWs or attending community meetings, especially in the Somali region. The finding suggests that using HEW's for community outreach to seek timely and regular ANC services is a gap that needs strengthening.

2. The findings showed that almost all women in the SNNP region took IFA tablets at some point during their pregnancy, compared to Somali where one-third of women took no IFA. There is room for improvement in both regions about when to start and stop IFA supplementation and how many tablets to take during pregnancy.

IFA TAKEAWAYS

- ANC providers and others should improve counseling of pregnant women on taking IFA from the first until the last trimester of pregnancy. In the SNNP region, all RDW took IFA tablets at some point during their pregnancy, whereas only two-thirds did in Somali. In both regions, women generally consumed IFA supplements later and took fewer tablets than per government recommendations. While most women were given information on the purpose of taking IFA supplements, counseling gaps included reminders to take IFA, how to manage IFA side effects, and how many tablets to take.
- Many nurse-midwives and health workers did not know that tablets need to be taken for six months. Increasing the capacity of nurse-midwives and health workers to counsel pregnant women on when to start IFA supplementation and how many tablets to take will be essential to facilitate adherence to IFA supplementation to reduce anemia and its associated morbidities.
- Most health centers and health posts had IFA tablets in stock and registers to monitor IFA tablet stock. Some health centers and health posts did experience IFA shortages. Since women receive IFA free through ANC, increasing ANC coverage during the first trimester of pregnancy is needed.

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3. The quality of pregnant women's diet was poor across both regions. However, most knew that eating a variety of food and increasing the quantity during pregnancy is important.

MATERNAL DIET TAKEAWAYS

- Dietary diversity was very low among pregnant and RDW in both regions, especially in Somali. In both regions, women mainly ate grains, white roots, and tubers. Consumption of animal source foods – eggs, meat, and poultry – was low; however, milk/dairy was commonly consumed in the Somali region. A significant proportion of women in the sample reported that they had consumed sweets and unsweetened beverages in the last 24 hours.
- Despite the women's consumption patterns, most women knew the importance of increasing food variety and quantity during pregnancy and eating fruits and vegetables. Fewer could identify examples of iron-rich foods, which play an essential role in healthy pregnancy outcomes.

4. The baseline survey found that a large proportion of women – especially in the SNNP region -- were counseled on nutrition during ANC. However, counseling and women's knowledge did not necessarily translate into behavior change. The dietary counseling should center on the missing elements of a women's diet to increase diversity, address, where needed, consuming additional food bearing in mind the local context.

DIETARY COUNSELING TAKEAWAYS

- While most women in the SNNP region were counseled on nutrition during pregnancy, less than half were in the Somali region. Despite the gaps in women's dietary diversity, only a small proportion of women across both regions were counseled on eating from at least five different food groups daily.
- Dietary messages and behavior change communication on diet quality and quantity needs to be improved and tailored to the context and taking into account regional differences. In particular, promotion of consuming at least five different food groups daily, increasing consumption and diversifying sources of animal source foods should considered depending on the context. Promotion of dark green leafy vegetables, vitamin A-rich foods is needed universally.
- Given that many households in the study were food insecure, and perceived that the recommended types and amounts of food were too costly, counseling on dietary diversity should include helping families identify specific, locally affordable seasonal foods.

5. The survey found that pregnant women were routinely weighed during ANC, but weighing on average did not start until the fifth month of pregnancy. Counseling on how much weight to gain and recording of weight gain was very weak and needs improvement.

PREGNANCY WEIGHT GAIN TAKEAWAYS

- Weight gain counseling needs to be based on the BMI of the woman at the beginning of pregnancy. Given that many pregnant women, especially in the SNNP region, did not start ANC in their first trimester and were first weighed five months into their pregnancy, this will be difficult to achieve unless they start seeking ANC earlier.
- In both regions, very few women were provided information on how much weight to gain during pregnancy, and that weight gain indicates proper growth of the fetus and that the mother is eating enough. In turn, there was general confusion among pregnant and recently delivered women about how much weight a pregnant woman should gain during her pregnancy. Even nurse-midwives and HEWs did not really know.
- In this small sample, 15% of RWDs six months postpartum were underweight, and 10% of their infants were underweight, 13% were stunted, and 16% were wasted. Rates for all of these measures were higher in Somali than in the SNNP region. Coupled with the uncertainty about women's BMI at the beginning of pregnancy, it is difficult to interpret this finding. However, to offer appropriate advice on weight gain, ANC visits would benefit from providers measuring BMI as soon as a woman comes in for ANC, calculating weight gain against the recommendation, and providing pregnant women counseling on how much weight to gain during pregnancy.

6. The survey found that few women practiced EIBF – initiating breastfeeding within one hour of birth – especially in the Somali region. Breastfeeding counseling was not routinely provided during ANC. While all nurse-midwives and HEWs were aware of the importance of EIBF, what appears to be lacking is support for EIBF, including support to position newborns with proper attachment. Most women knew about exclusive breastfeeding, but there were important knowledge gaps that need to be addressed.

BREASTFEEDING TAKEAWAYS

- Only 26% of RDW in the Somali region and 44% in SNNP practiced EIBF. About one-third of the new mothers in the Somali region put something into their newborn's mouth after birth (i.e., prelacteal feeds). Though RDW had a relatively high knowledge of infant feeding practices, and virtually all nurses-midwives and HEWs knew the importance of EIBF, most women – especially in the Somali region – were not given hands-on support to initiate breastfeeding at the critical time after delivery. Early newborn care practices, including EIBF, need strengthening in both regions, both among health care providers and grandmothers who fill this role among many women in Somali where home births are prevalent.
- Similarly, while most women knew about exclusive breastfeeding, and all nurse-midwives and HEWs did as well, there was still a gap between knowledge and practice, especially in the Somali region where only half of RDW practiced exclusive breastfeeding. Among all three groups, there were important knowledge gaps about what to do if a baby less than six months old does not get enough breastmilk, if the weather is hot, if a woman gets pregnant, or ill. Different strategies need to be developed to address breastfeeding knowledge gaps among health providers and women.

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