



Using School-Based Programs to Improve Adolescent Girls' Nutrition

RESULTS FROM IMPLEMENTATION RESEARCH IN ETHIOPIA

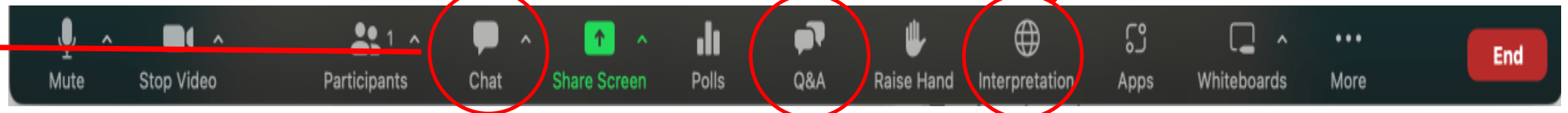
April 11, 2023 – 9-10:30 a.m. EDT / 4-5:30 p.m. EAT



Notes for Attendees

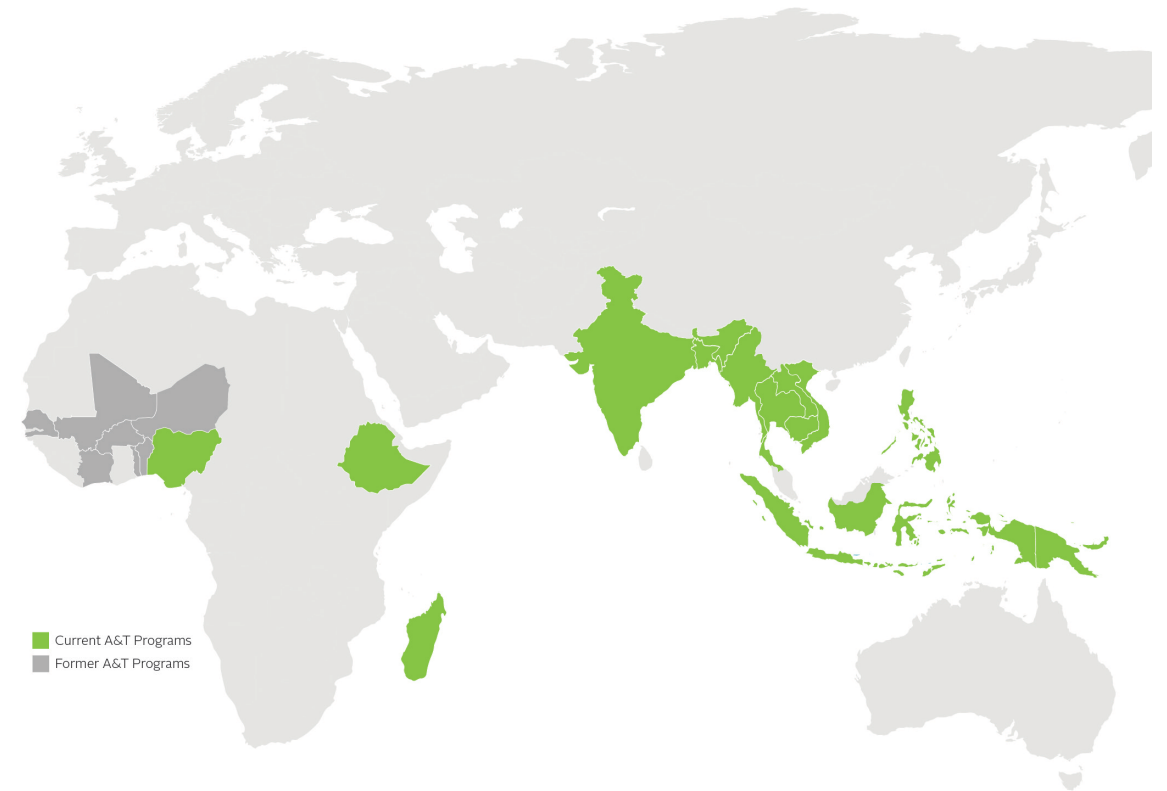
- The webinar is being recorded and the recording will be made available afterward.
- The slide-deck will also be shared after the webinar.
- Please introduce yourself in the “Chat” box. Make sure you choose “everyone” so all can see!

- Please pose questions using the Q&A window. We will answer them during Q&A at the end.
- Simultaneous interpretation to French is available – to access it, click on “Interpretation.”



Alive & Thrive

Alive & Thrive is a leading global initiative for maternal, infant, young child, and adolescent nutrition (MIYCAN).



Introduction

Presentation Overview

- Introduction
- The Ethiopian Policy Context
- Importance of AN
- Intervention Overview
- Results and Key Conclusions
- Adaptation and Scale
- Q&A

Presenters



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Director, Alive & Thrive



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Ethiopian Context: Significant Progress



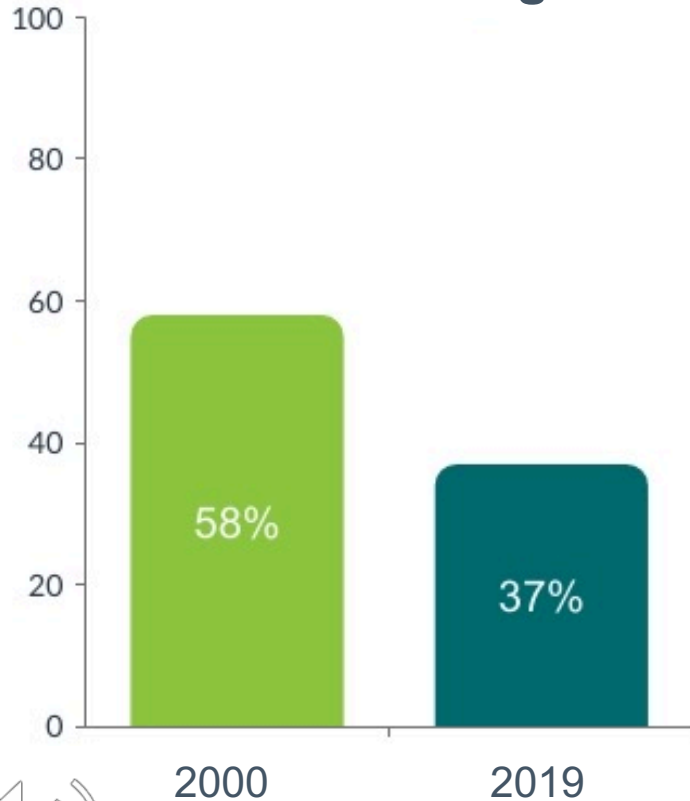
Hiwot Darsene

Lead Executive Officer for the National Nutrition Coordination Office, Ministry of Health of Ethiopia

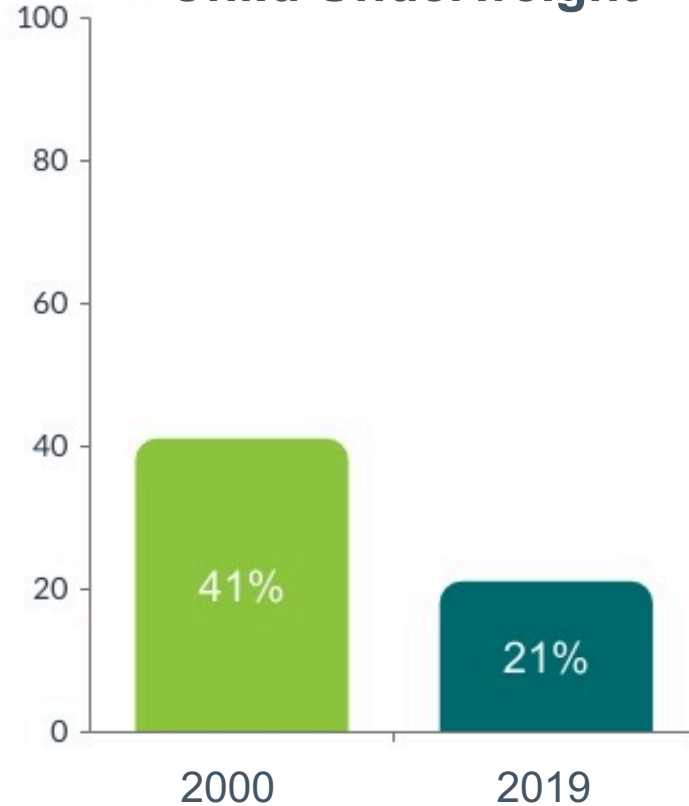


Ethiopian Context: Significant Progress

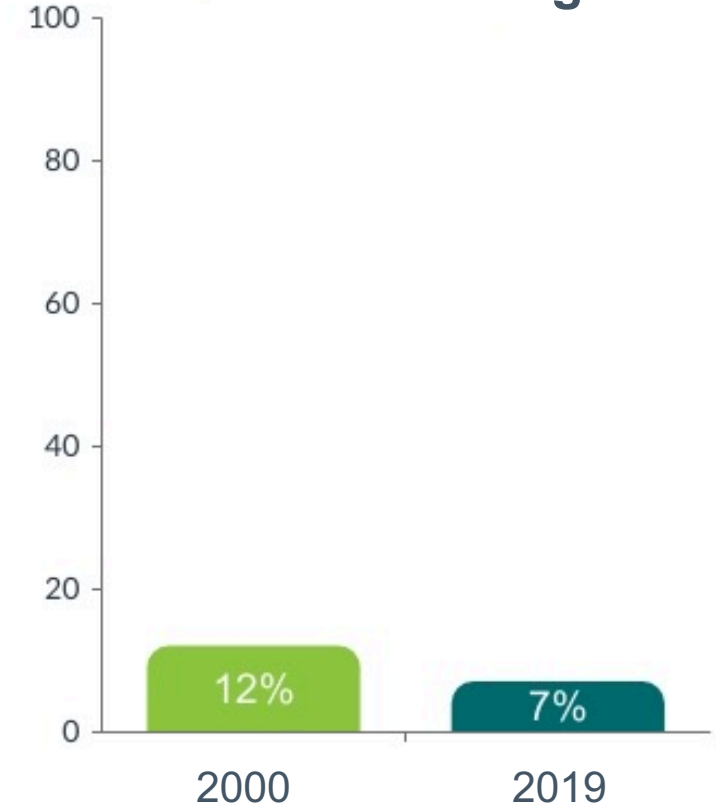
Child Stunting



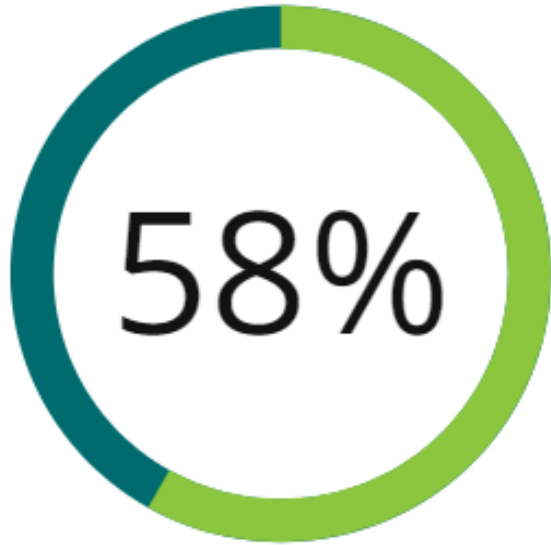
Child Underweight



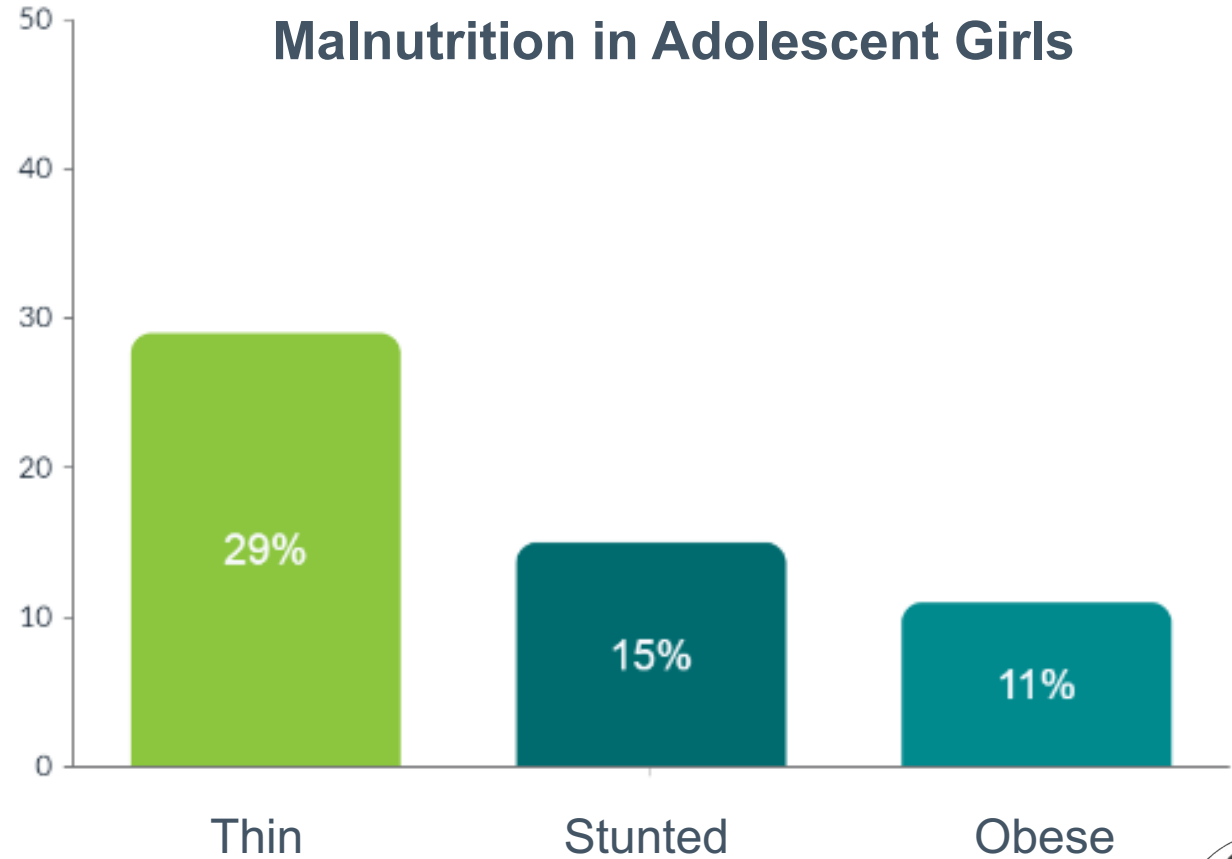
Child Wasting



Ethiopian Context: Demographics



% of girls who get married before they turn 18 years old





Reaching adolescents and young women with effective interventions for nutrition: Insights on platforms and data gaps

Building on the Lancet Series on Adolescent Nutrition, 2021

In partnership



With thanks

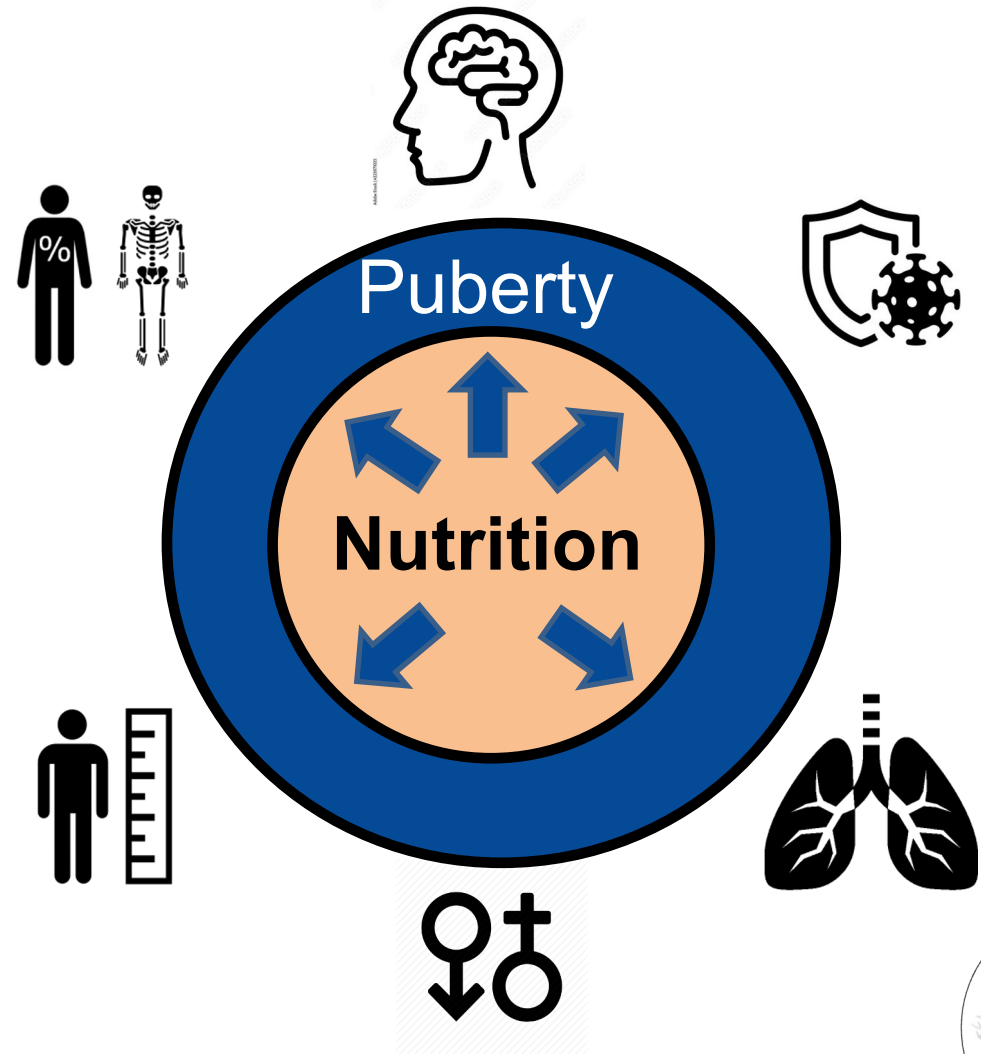
#NourishOurFuture



THE LANCET

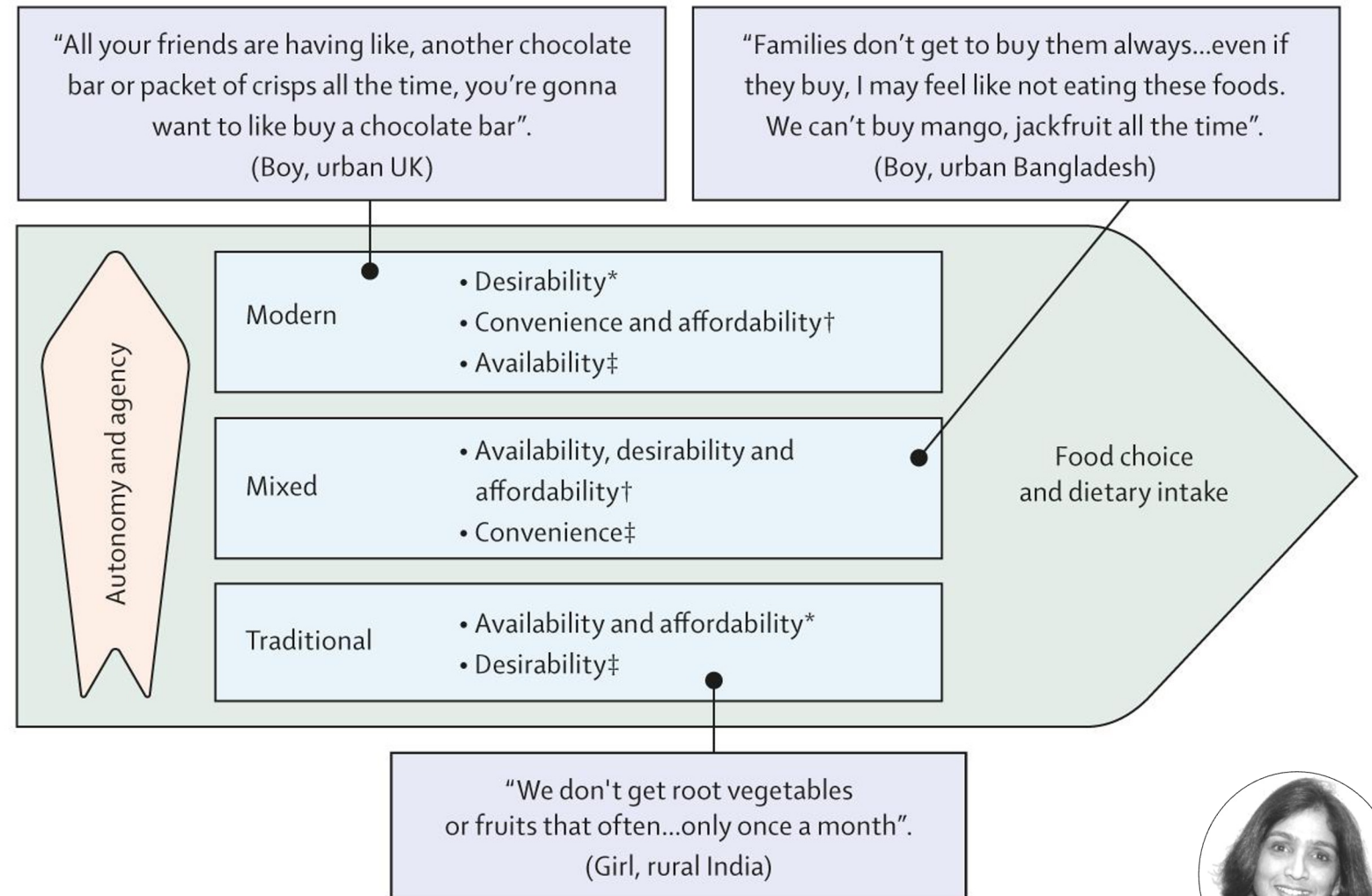
Every system changes in adolescence

Nutrition supports the rapid growth, development, and maturation of every physiological system providing a foundation for adult life



Adolescent diets and food choices are shaped by multiple forces

- Nutritious foods are insufficiently accessible
- Many unhealthy foods are inexpensive and appealing
- But how these impact adolescent food choice is highly variable by context



Where must actions be directed?



Focus on all forms of malnutrition



Improve the food and nutrition environment



Increase individual nutrition agency



Improving adolescent nutrition is an opportunity

“At a time when a rapid nutrition transition is shifting diets for most young people globally, improving adolescent nutrition provides an opportunity to shape the health and wellbeing of this generation and the next.”



Context and engagement are key



Food and nutrition are set in a broader ecological & social context



Youth engagement is central to success





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Nourishing our future: the *Lancet* series on adolescent nutrition



Scan to read
the Series

www.thelancet.com/series/adolescent-nutrition

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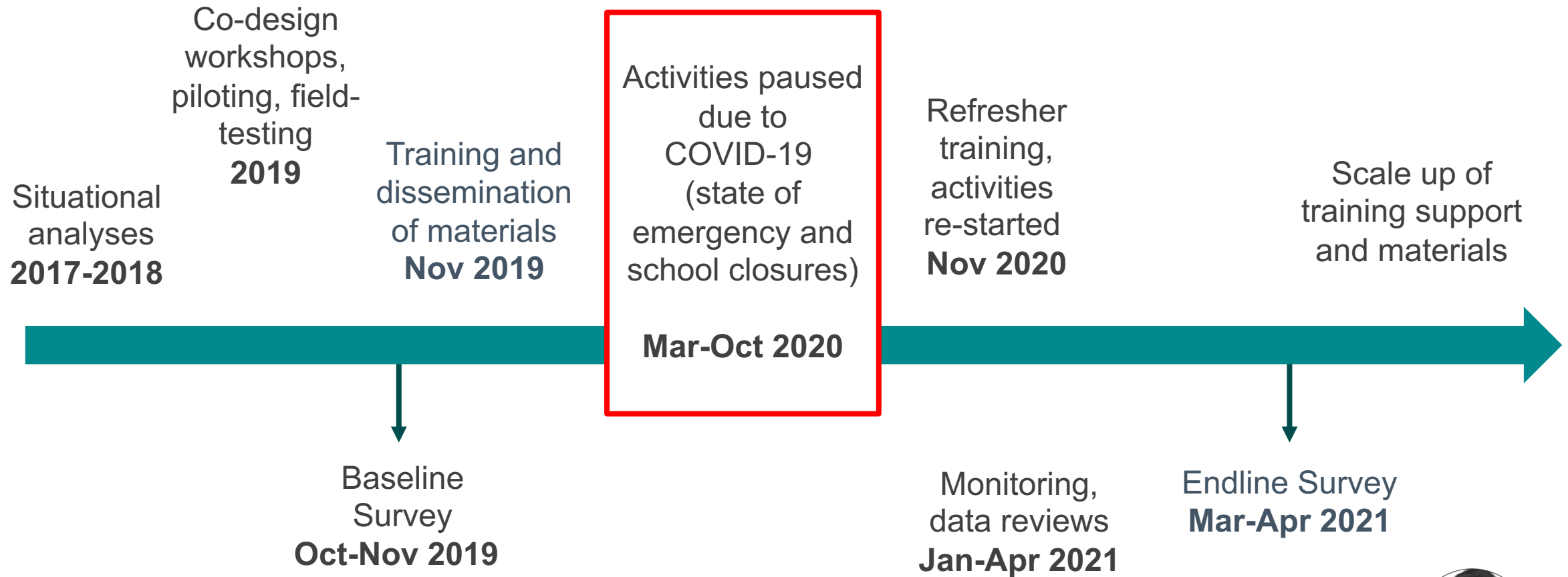
With thanks





Intervention and Delivery Overview

Program Timeline



A&T Approach to AN Research

- Goals:
 - Identify and address implementation knowledge gaps in adolescent nutrition
 - Develop and test the feasibility of interventions in school, health, and community platforms.
- Focus on younger age group (10-14y)



Gaps and Opportunities

Baseline Findings



DIETARY DIVERSITY

- 27% achieved minimum dietary diversity*
- 3.6 food groups (out of 10) were available at home*



MEAL FREQUENCY

- On school days, adolescent girls only consumed 2.3 meals or snacks, on average*



HEALTHY FOOD CHOICES

- 61% reported consuming unhealthy foods in the previous 24 hours*

Opportunities

- Adolescent girls' diets did not meet dietary recommendations
- There was evidence of nutrition and health benefits if their diets improved, and risks if not improved
- Their practices were modifiable in the existing context



Rationale for Contents of Interventions

Addressing facilitators and barriers

Multivariable analysis

- Variety of foods available at home
- HH food security
- Nutrition knowledge

Desk review – multiple socio-ecological influences

Applying drivers of behavior change

- **Knowledge:** Clarity on what and why
- **Beliefs:** Benefits are relevant and convincing
- **Social norms:** Messages from multiple credible sources; group activities with peers
- **Self-efficacy:** Confidence in ability to access diverse foods and extra meals; hands-on activities



Identifying Influencers



Teachers & Principals

Knowledge, beliefs,
social norms, school
environment



Parents

Home food
environment, self-
efficacy and food
access, social norms



Health Workers

Knowledge,
belief in benefits



Peers

Social norms,
knowledge
reminders

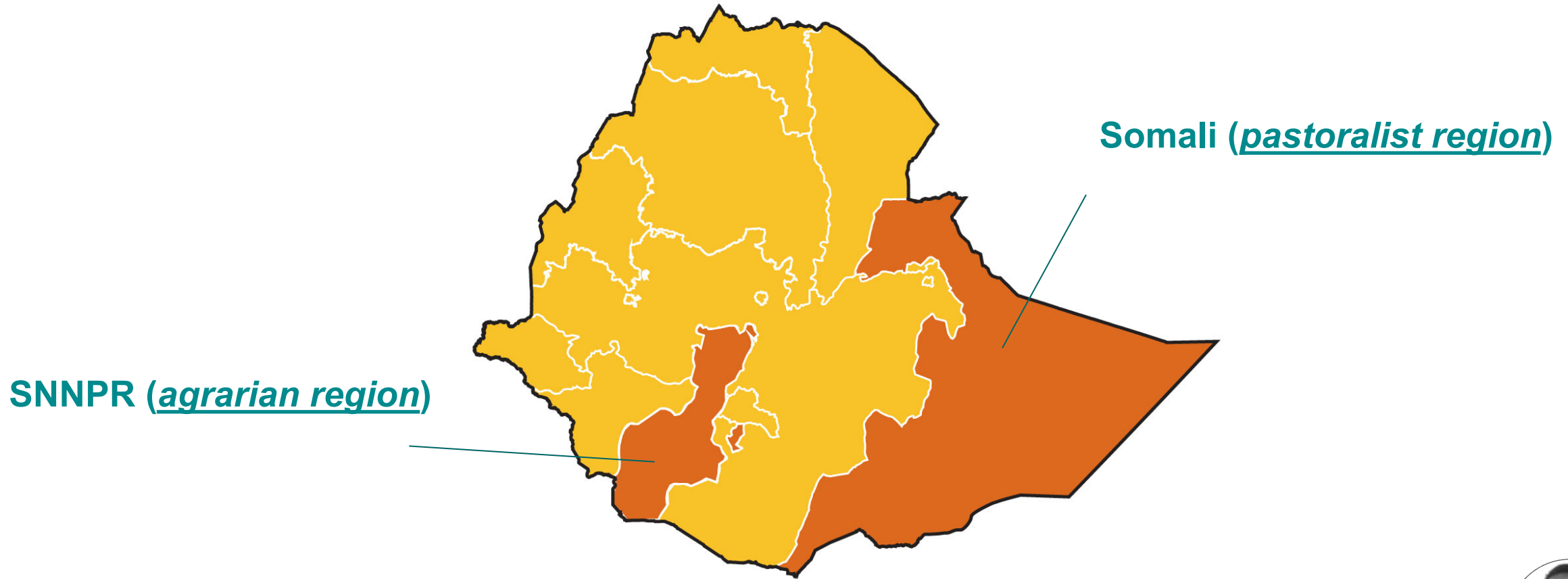


Community Leaders

Social norms, reinforce
and motivate parents
and teachers



Location of the Program

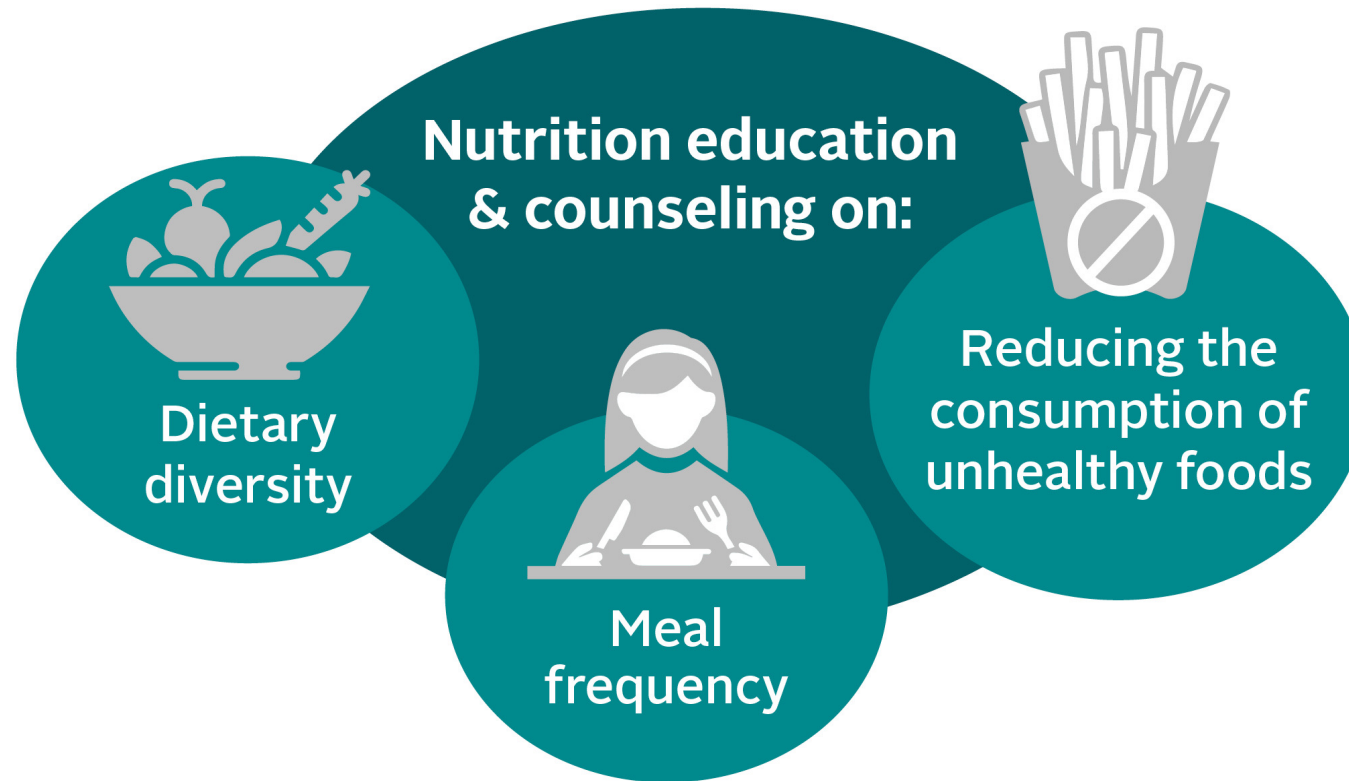


SNNPR = Southern Nations, Nationalities, and Peoples' Region



Three Critical Behaviors

THE ADOLESCENT NUTRITION PACKAGE



Program Messages



DIETARY DIVERSITY

Consume food from five food groups (fish/meat/eggs, milk, legumes, dark green vegetables, fruits) each day.



HEALTHY FOOD CHOICES

Avoid junk foods such as sweets/candy, fried and salty foods and sugary drinks.



MEAL FREQUENCY

Eat three meals and snacks a day, including breakfast.

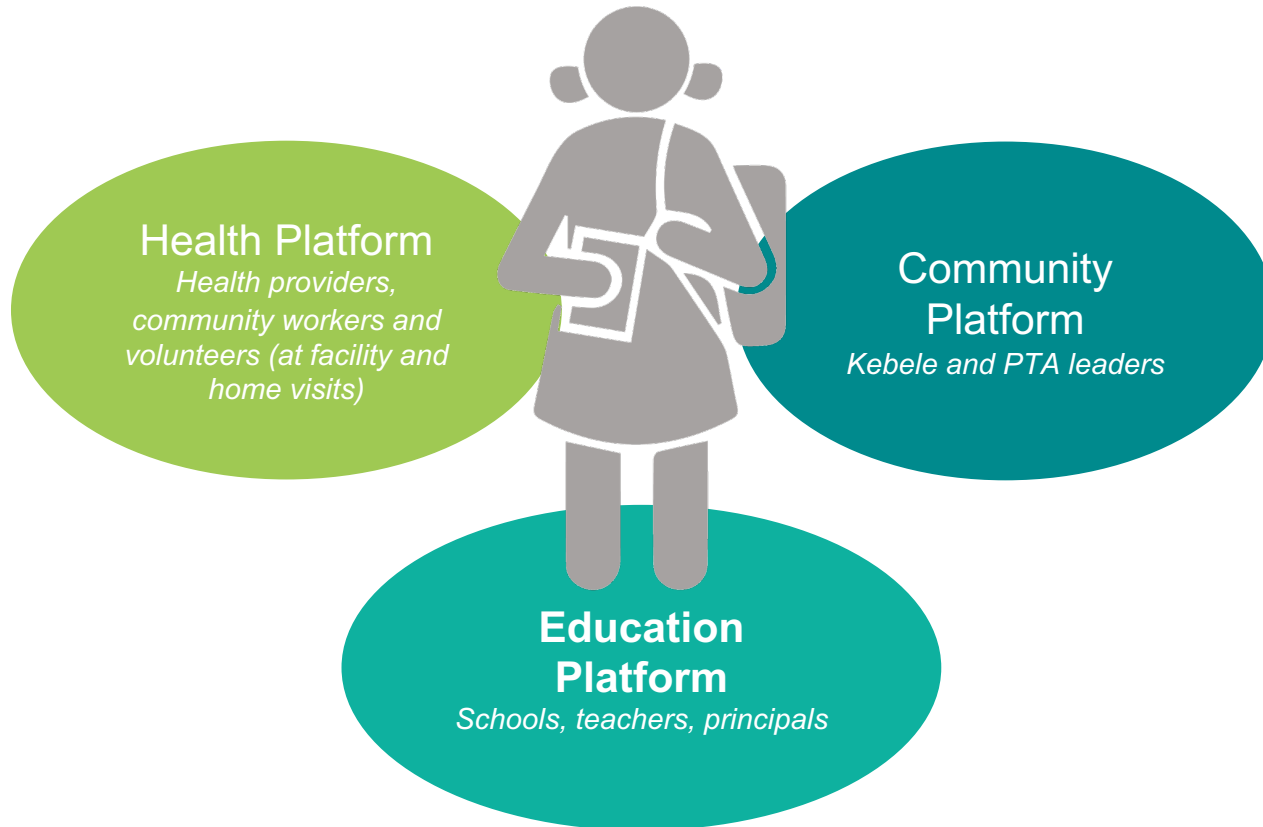


BODY WEIGHT

Maintain a healthy body weight for your height and age (body mass index).



Program Design



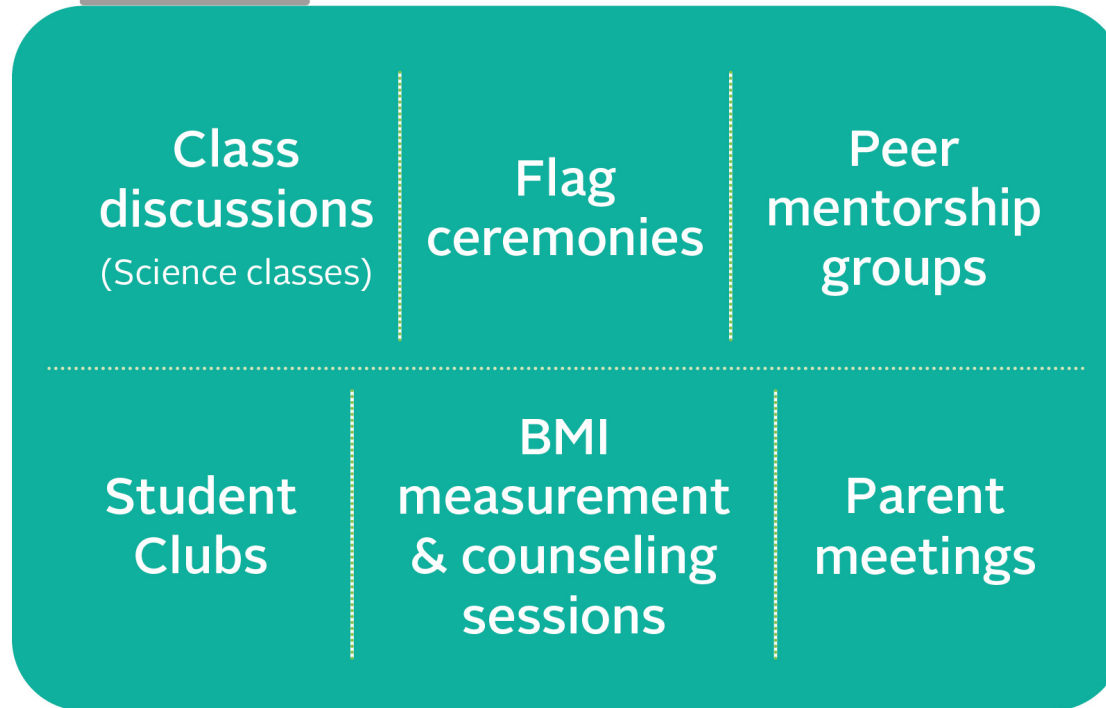
- Operational details were developed through a participatory co-design process involving school, health officials, key community actors, parents, and adolescent girls
- The aim of the program design was to achieve repeated exposures to key messages for all school-going adolescents



Program Delivery



DELIVERY OF THE INTERVENTION Six core school-based contacts



REINFORCING CONTACTS



Parent follow-up

Take-home materials/
messages delivered to
parents by adolescents



Health extension contacts

Integrated service delivery
during facility and home visits



Community-based contacts

Community meetings used to
motivate parents and teachers
and reinforce key messages



Other school-based contacts

Posters displayed at schools
to reinforce key messages



Communication Materials



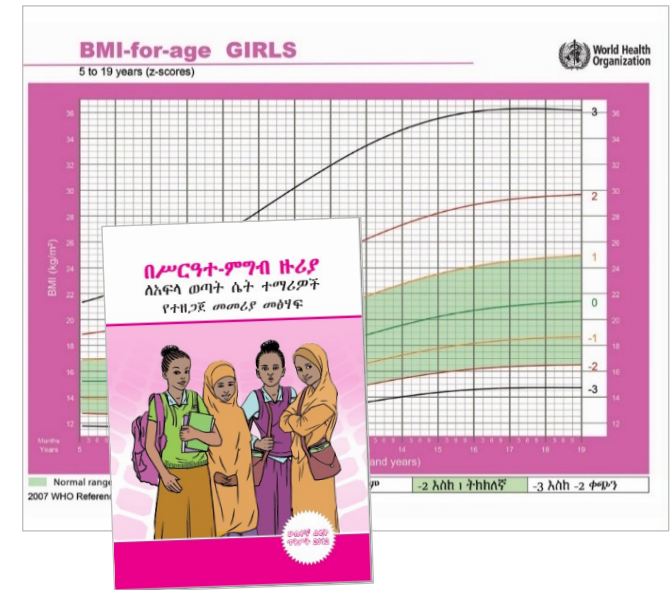
Poster for parents and community members



'Passport' and poster for adolescent girls



Manual for teachers and principals

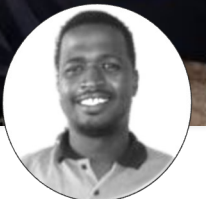


School health club activity guide and BMI chart



System Strengthening

- AN protocols for each key actor
- Ongoing trainings
- On-the-job coaching for frontline workers
- Strengthening data use capacity:
 - Supportive supervision
 - Routine monitoring of interventions
 - Midterm assessment



System Strengthening



- Ongoing monitoring and adaptation:
- Identified and addressed recurring gaps and modified programming in response to changing environments in schools
 - Identified appropriate adjustments in response to COVID-related disruptions to schools



Programmatic Lessons Learned

- Schools will require ongoing capacity strengthening
- SBC materials should be brief and specific
- Teachers are effective implementers and welcomed the new material
- Programming will require ongoing modifications and adaptation





Feasibility and impacts of school-based education interventions on adolescent girls' diets in Ethiopia: results of a cluster-randomized evaluation

Sunny S. Kim

Nutrition, Diet, and Health Unit

International Food Policy Research Institute

A&T webinar | Washington, D.C. | April 11, 2023

Research questions:

Is it feasible to **integrate** adolescent nutrition (AN) interventions into school-based platforms?

What are the **impacts** of the interventions on the diets of adolescent girls?



Photo credit: A&T

Were the AN interventions **effectively integrated** into school-based platforms?

- **Integration:**

1. Training and materials
2. Supervision
3. School staff's nutrition knowledge
4. Exposure to interventions

- **Effectiveness:**

- ✓ Impacts on dietary diversity, meal frequency, and consumption of unhealthy foods



A&T AN interventions

- **School-based platforms:** Nutrition messages during flag ceremonies, classroom lessons on nutrition, student clubs on nutrition for girls, peer mentoring on nutrition, body mass index (BMI) measurement with counseling, and parents' meetings



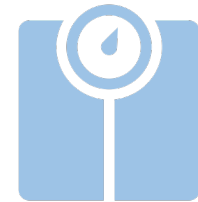
Dietary diversity:
Consume food from five food groups (fish/meat/eggs, milk, legumes, dark green vegetables, fruits) every day.



Meal frequency:
Eat three meals and snacks a day, including breakfast.

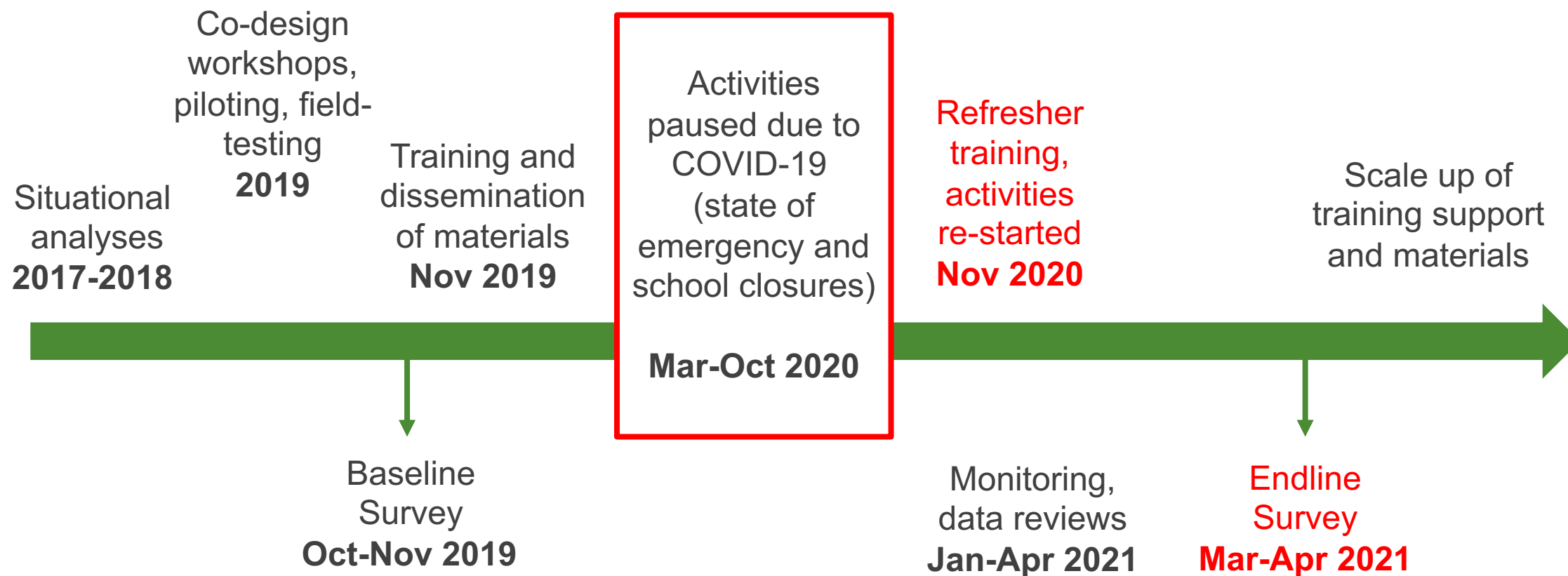


Healthy food choices:
Avoid junk foods such as fried and salty foods and sugary drinks.

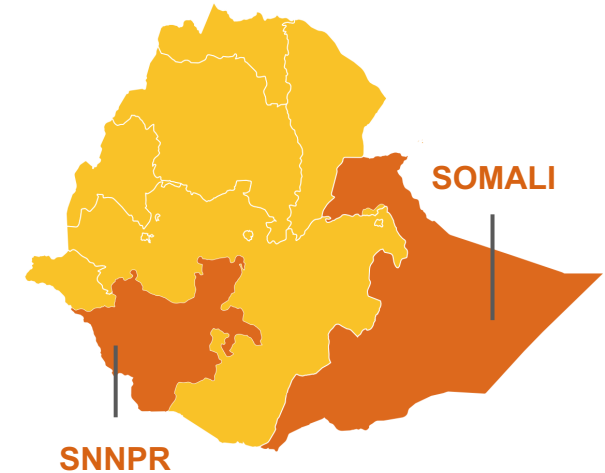
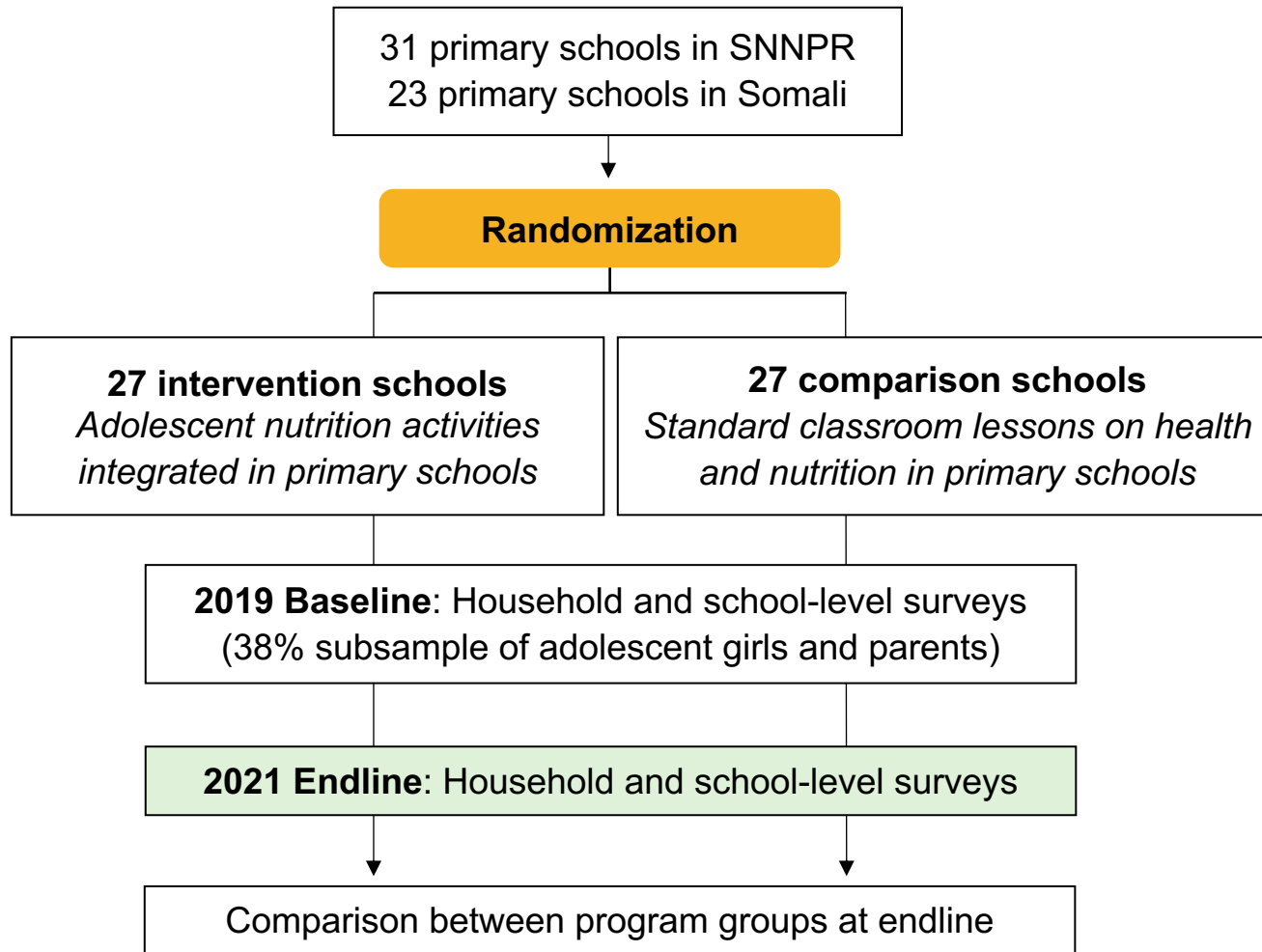


Body weight:
Maintain a healthy body weight for your height and age.

Study timeline



Evaluation design and sample size



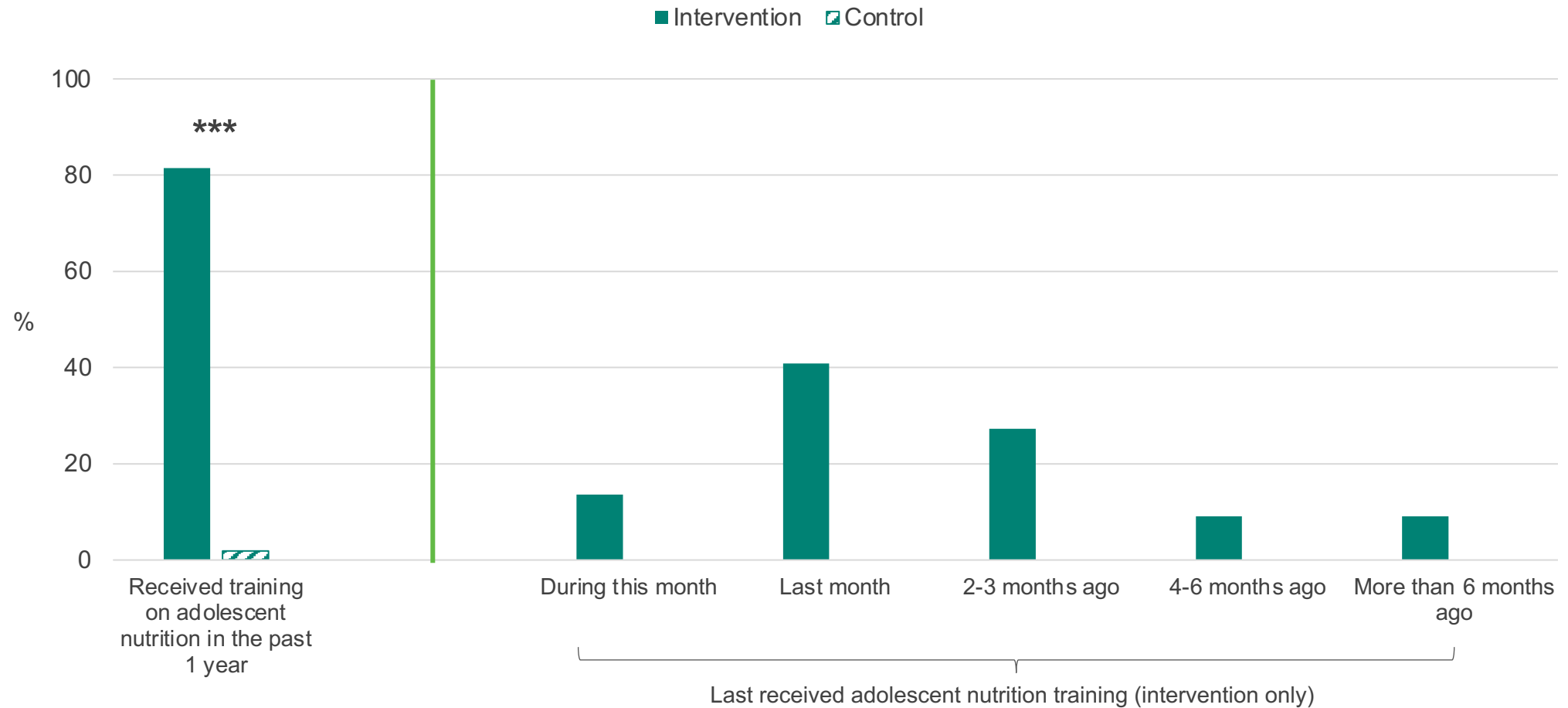
Respondent type	Endline 2021	
	Intervention	Control
Household survey:		
Adolescent girls aged 10-14y	270	266
Parents of adolescent girls	270	266
School/health system:		
School principals	27	27
Science teachers	27	26

Data analysis

- Intent-to-treat specification
- Impact estimates on adolescent girls' diets at endline using linear regression models controlling for school clustering and adjusted for age, household food insecurity, wealth, and region.
 - Robustness check using difference-in-difference method on outcome indicators available at both baseline and endline (i.e., dietary diversity)
- Plausibility analysis by examining outcomes among program impact pathways (service delivery to exposure and behavioral determinants)

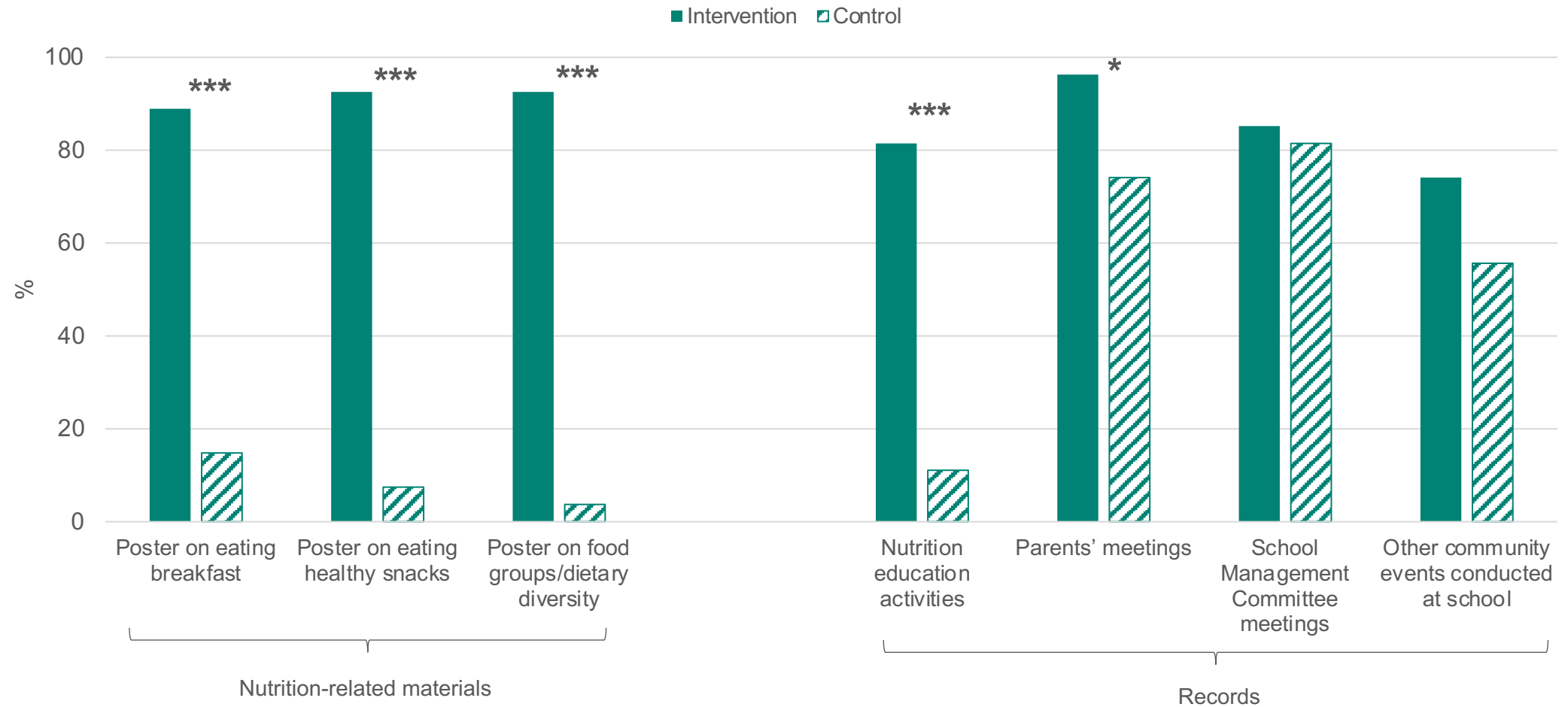
Q1. Is it feasible to integrate AN interventions into school-based platforms?

Most principals and teachers in intervention schools received AN training, mostly within the past 3 months of the survey



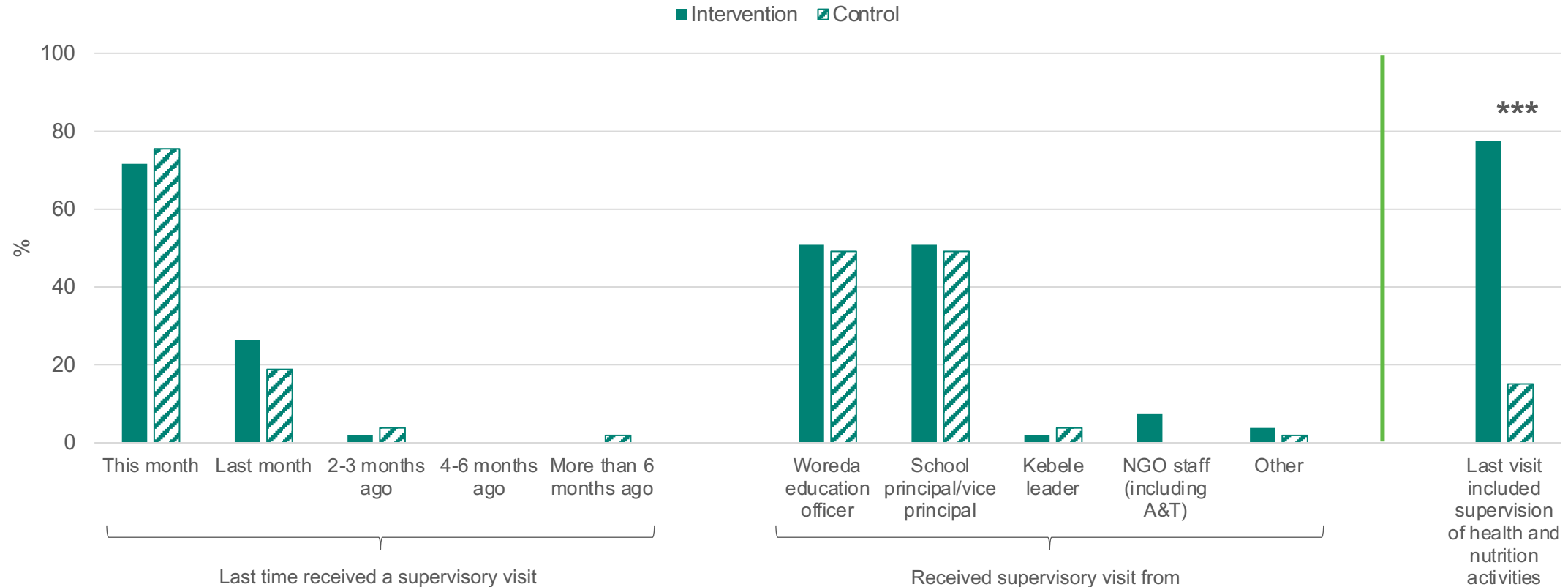
Differences between study arms, accounting for clustering: *p < 0.05, **p < 0.01, ***p < 0.001.

High availability of materials and records related to nutrition observed in intervention schools



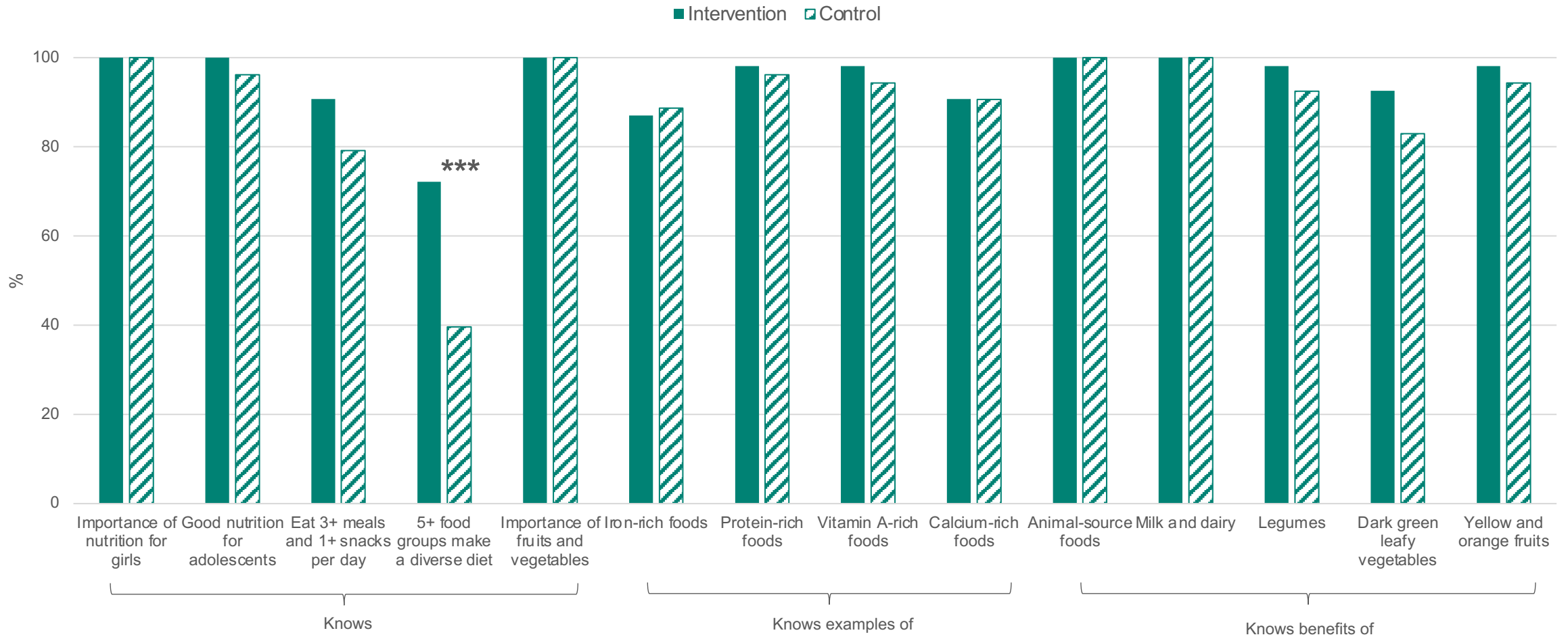
Differences between study arms, accounting for clustering: *p < 0.05, **p < 0.01, ***p < 0.001.

No difference in supervision frequency, but more school staff in intervention schools were supervised on nutrition activities



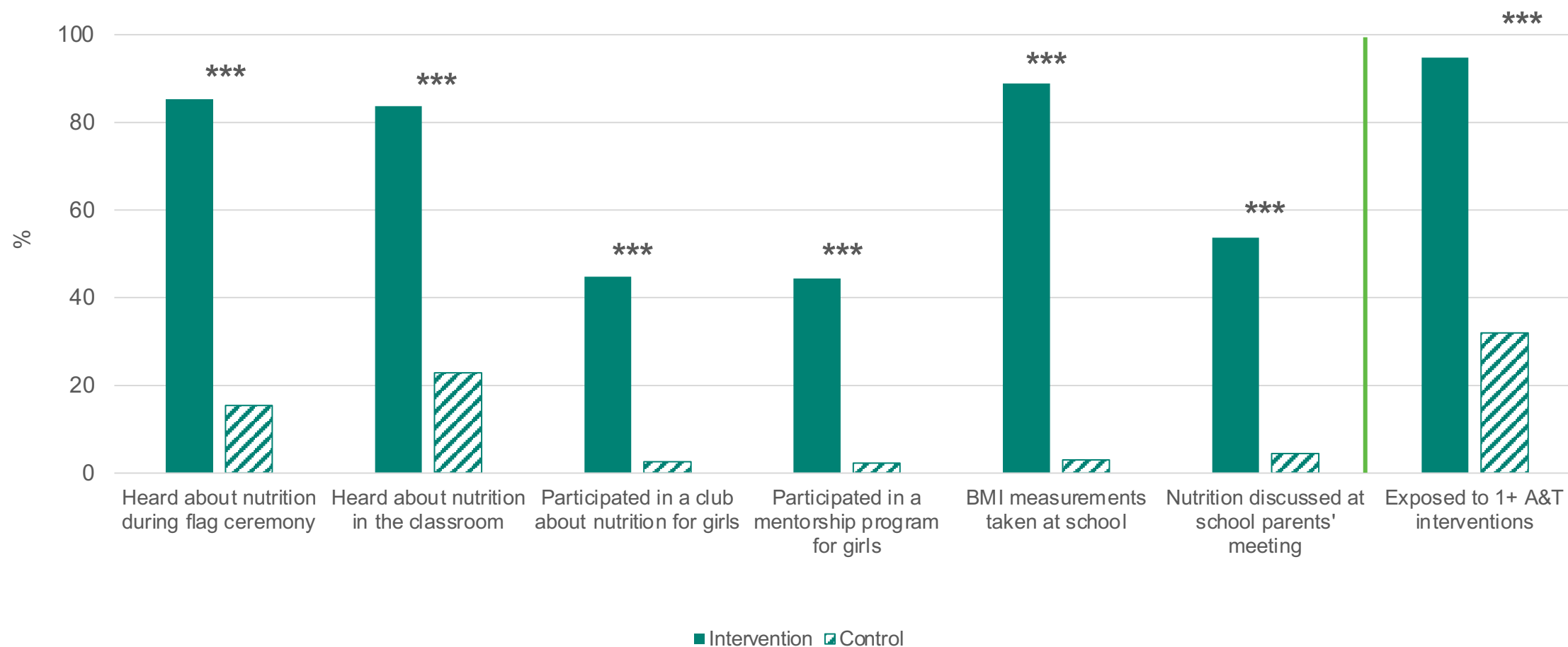
Differences between study arms, accounting for clustering: *p < 0.05, **p < 0.01, ***p < 0.001.

Overall higher nutrition knowledge among staff at intervention schools at endline, particularly about dietary diversity



Differences between study arms, accounting for clustering: *p < 0.05, **p < 0.01, ***p < 0.001.

High exposure to interventions reported by adolescent girls/parents in the past 3 months



Differences between study arms, accounting for clustering: *p < 0.05, **p < 0.01, ***p < 0.001.

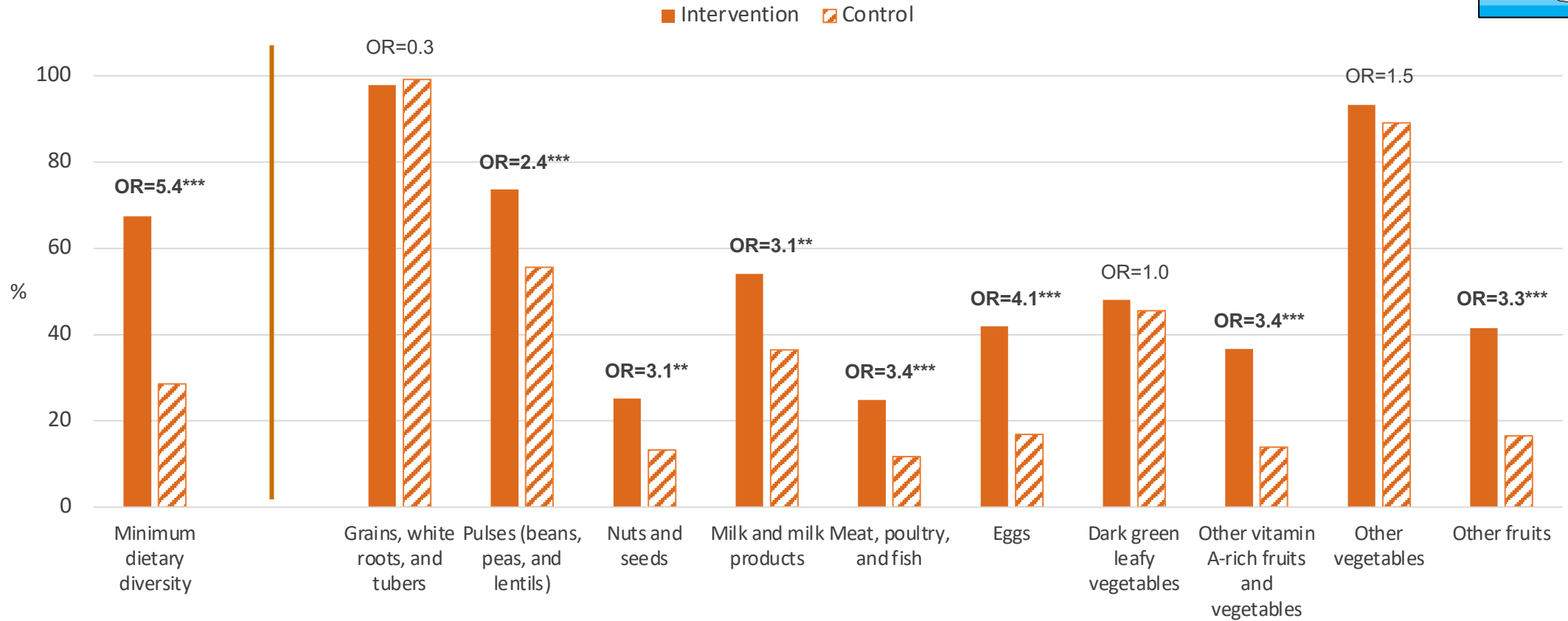
Q2. What are the impacts of the interventions on the diets of adolescent girls?

Results: Sample characteristics

Indicator	2019 Baseline		2021 Endline	
	Intervention N=81	Control N=81	Intervention N=270	Control N=266
Adolescent dietary diversity				
Dietary diversity score (0-10 food groups)	3.8 ± 1.6	3.6 ± 1.5		
Minimum dietary diversity (5+ food groups), %	29.6	23.5	[Next slides]	
Meal frequency	-	-		
Junk food consumption	61.7	59.3		
Adolescent age, y				
Attended same school previously	12.7±1.1	12.8±1.2	12.9±1.2	13.0±1.2
Grade level, %				
4	9.9	14.8	19.6	21.4
5	18.5	24.7	20.4	19.9
6	23.5	22.2	20.7	20.7
7	22.2	27.2	19.6	19.2
8	25.9	11.1	19.6	18.8
Language(s) spoken, %				
Amharic	58.0	46.9	57.8	48.1
Gurage	30.9	27.2	30.0	28.6
Somali	39.5	44.4	40.4	43.6
Other	27.2	27.2	28.5	27.1
Residence of parents, %				
Father currently resides with adolescent	77.8	82.7	74.4*	82.0
Mother currently resides with adolescent	96.3	97.5	93.0	94.7
Household Food Insecurity Access Scale (HFIAS), %				
Food secure	43.2	44.4	58.9	49.6
Mildly insecure	8.6	9.9	8.5	5.6
Moderately insecure	33.3	35.8	22.2	26.7
Severely insecure	14.8	9.9	10.4*	18.0
Wealth tercile, %				
Low	35.8	30.9	31.5	35.4
Middle	30.9	35.8	28.9	38.0
High	33.3	33.3	39.6**	26.7

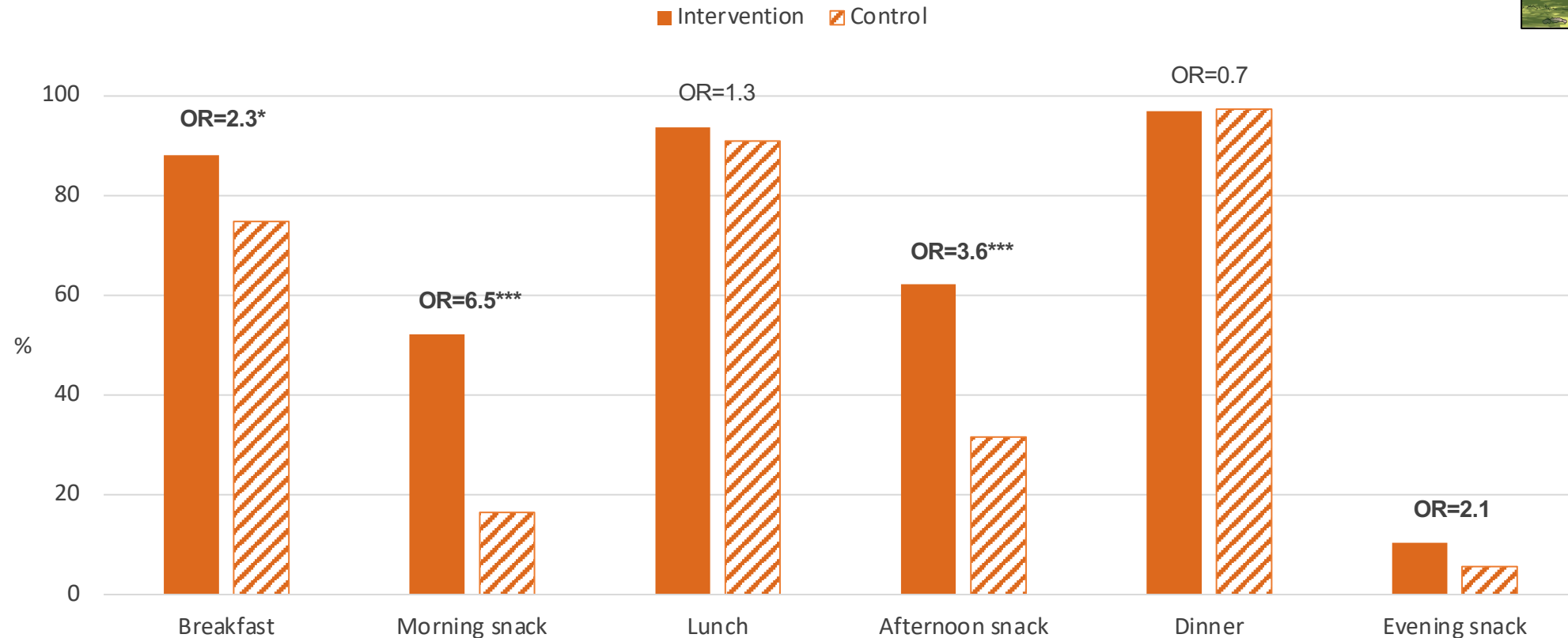
Values are mean ± SD or %. Differences between study arms, accounting for clustering: *p < 0.05, **p < 0.01, ***p < 0.001. For categorical variables, the asterisk is placed in the row of the last category.

Dietary diversity among adolescent girls increased by 1.3 food groups and 5.4 times higher odds of MDD



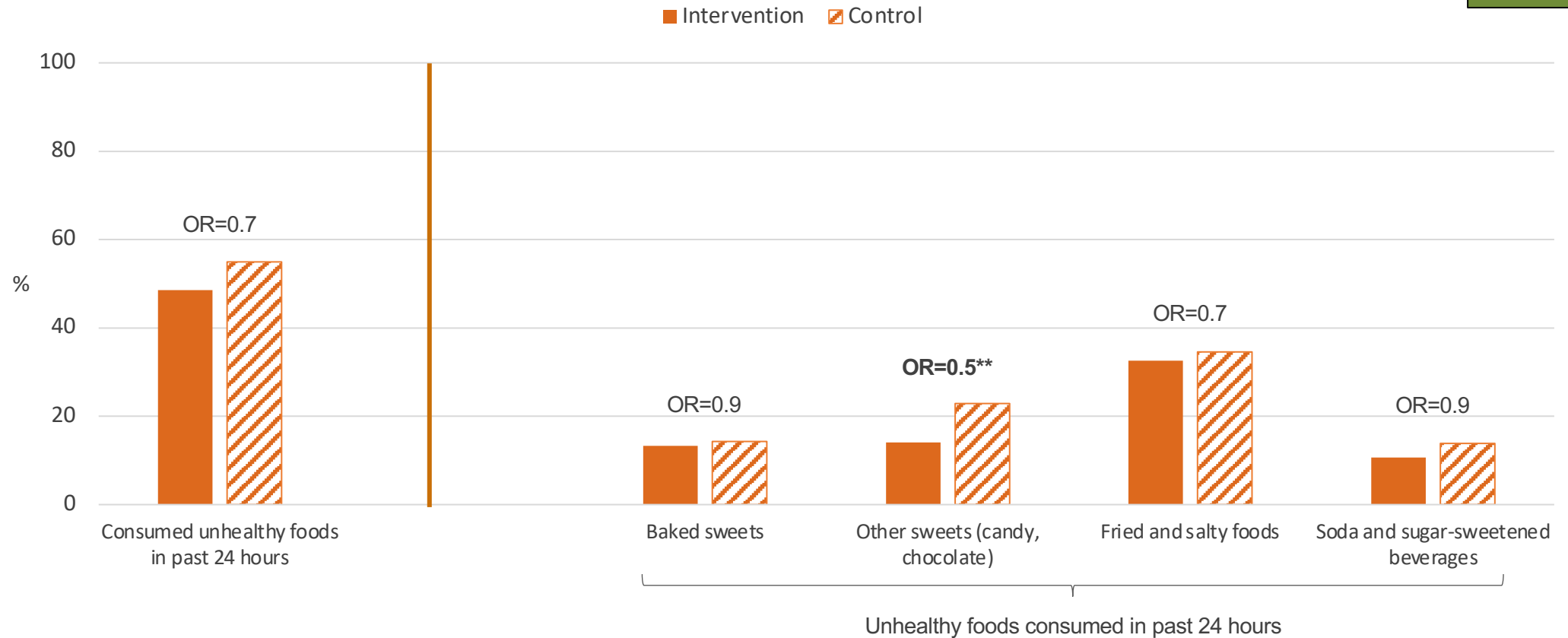
Data labels are odds ratios from logistic regressions, controlled for adolescent age, region, household food security and wealth, clustered by school
 * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Meal frequency increased by 0.8 meal/snack time (out of 6 times) among adolescent girls



Data labels are odds ratios from logistic regressions, controlled for adolescent age, region, household food security and wealth, clustered by school
 *p < 0.05, **p < 0.01, ***p < 0.001.

No impact on overall consumption of unhealthy foods among adolescent girls, but 0.5 times lower odds of consuming other sweets



Data labels are odds ratios from logistic regressions, controlled for adolescent age, region, household food security and wealth, clustered by school
 *p < 0.05, **p < 0.01, ***p < 0.001.

Conclusions

- Our study demonstrated the feasibility of implementing nutrition education interventions through school-based platforms
- Reinforcing messages about eating diverse foods and eating more often resulted in behavior changes related to dietary diversity and meal frequency.
- However, informing adolescents to avoid junk foods, without addressing their environments, was not effective in reducing consumption of unhealthy foods.
- **Next step:** Examine factors associated with adolescent girls' dietary behaviors
 - ✓ Influence of external food environments, parental control and interaction, and behavioral determinants

Acknowledgements

- Adolescent girls and their families, teachers, principals, health extension workers, woreda officials, and the study communities in SNNP and Somali regions
- **IFPRI:** Celeste Sununtnasuk, Purnima Menon, Simone Faas
- **Addis Continental Institute of Public Health (ACIPH):** Yemane Berhane, Hanna Berhane, Nebiyu Fasil, Henok Hailu, Bethel Getachew, Elsabet Wujira, Kalkidan Tadesse, Rediet Fasil, Sitota Tsegaye, Workagegnhu Tarekegn, survey team members
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- **A&T HQ:** Tina Sanghvi, Elana Landes Dhuse, Sujata Bose
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Adapting and Scaling the Interventions

Adapting and Scaling the Interventions

Phase I: 2019 - 2021

- Implementation research

Phase II: 2021 - 2022

- Initial adaptation & scaling

Phase III: 2022 - 2023

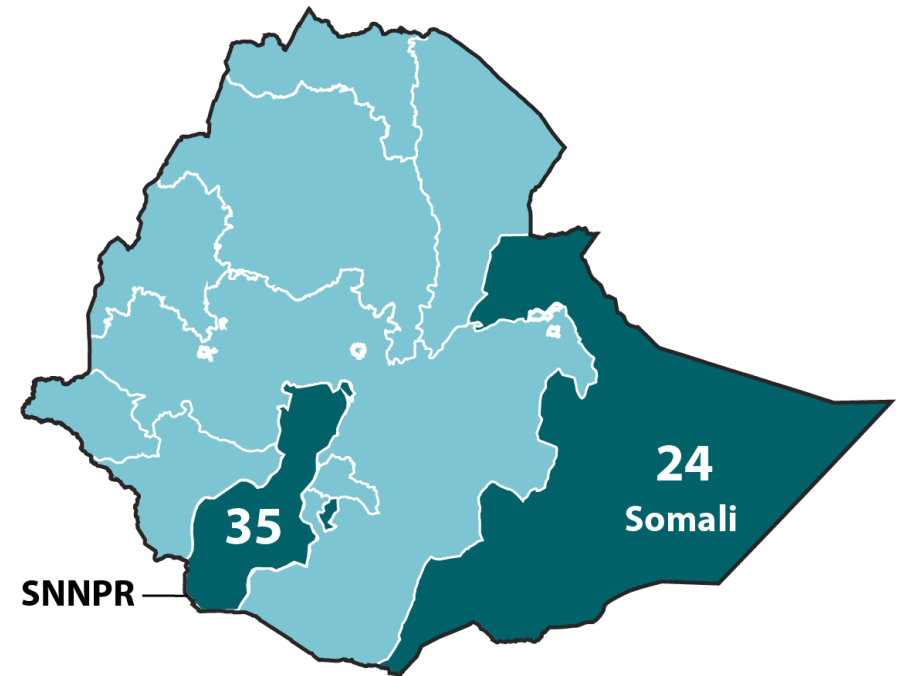
- Government-led expansion



Phase I: Implementation Research

- Implementation led by local partners with TA from A&T
- A&T activities:
 - Collected, monitored, analyzed data
 - Conducted baseline, mid-term, and endline evaluations
 - Disseminated results nationally and regionally
 - Developed materials on lessons learned

**Implementation Research: 59 schools
(2019-2021)**

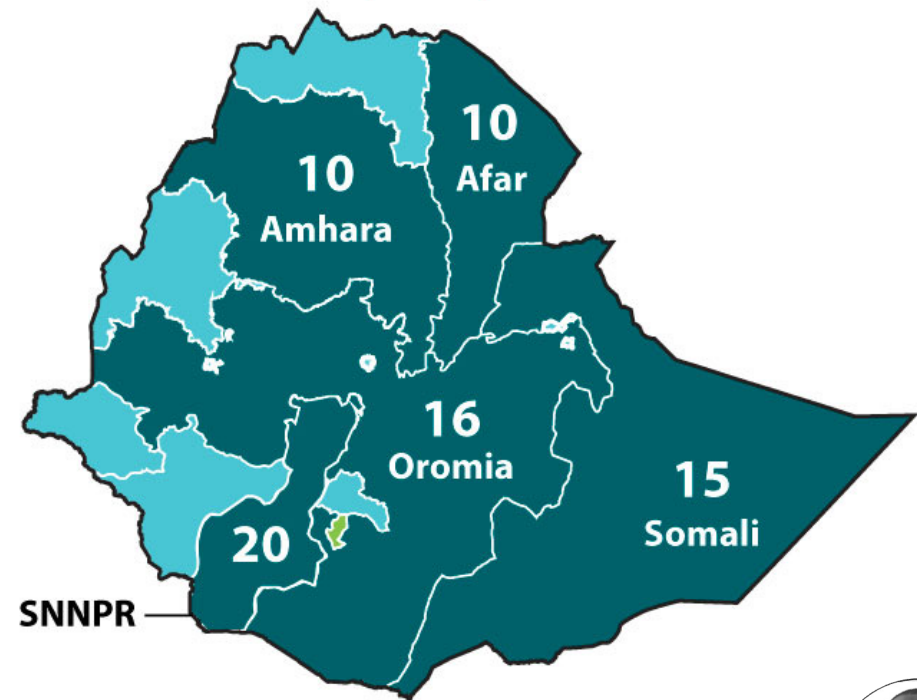


Phase II: Adapting & Scaling in Additional Regions

A&T-supported scale-up:

- Led strategy development and consensus-building workshops to encourage healthy food choices
- Streamlined and contextualized SBC materials
- Supported trainings and supportive supervision structures
- Advocacy

**Initial Scale Up: 71 new schools - 3 new regions
(2022)**



Phase II: Adapting & Scaling in Additional Regions

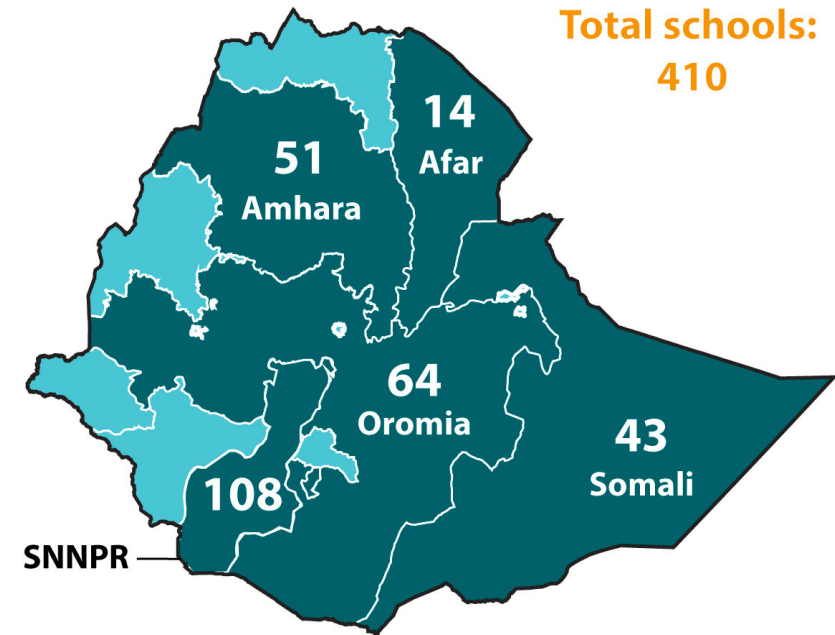
- Demand generation led by regional government officials
- Official communications/circulars from the regional bureaus of education to woredas
- Intervention scaled in three new regions and the control woredas (districts) of existing regions



Phase III: Government-led Expansion

- Ongoing expansion led by regional administration
- A&T focused on ensuring intervention sustainability:
 - Working with the government to simplify data monitoring & reporting tools and SBC approaches
 - Government cost-sharing
 - Learning incorporated into national AN resources

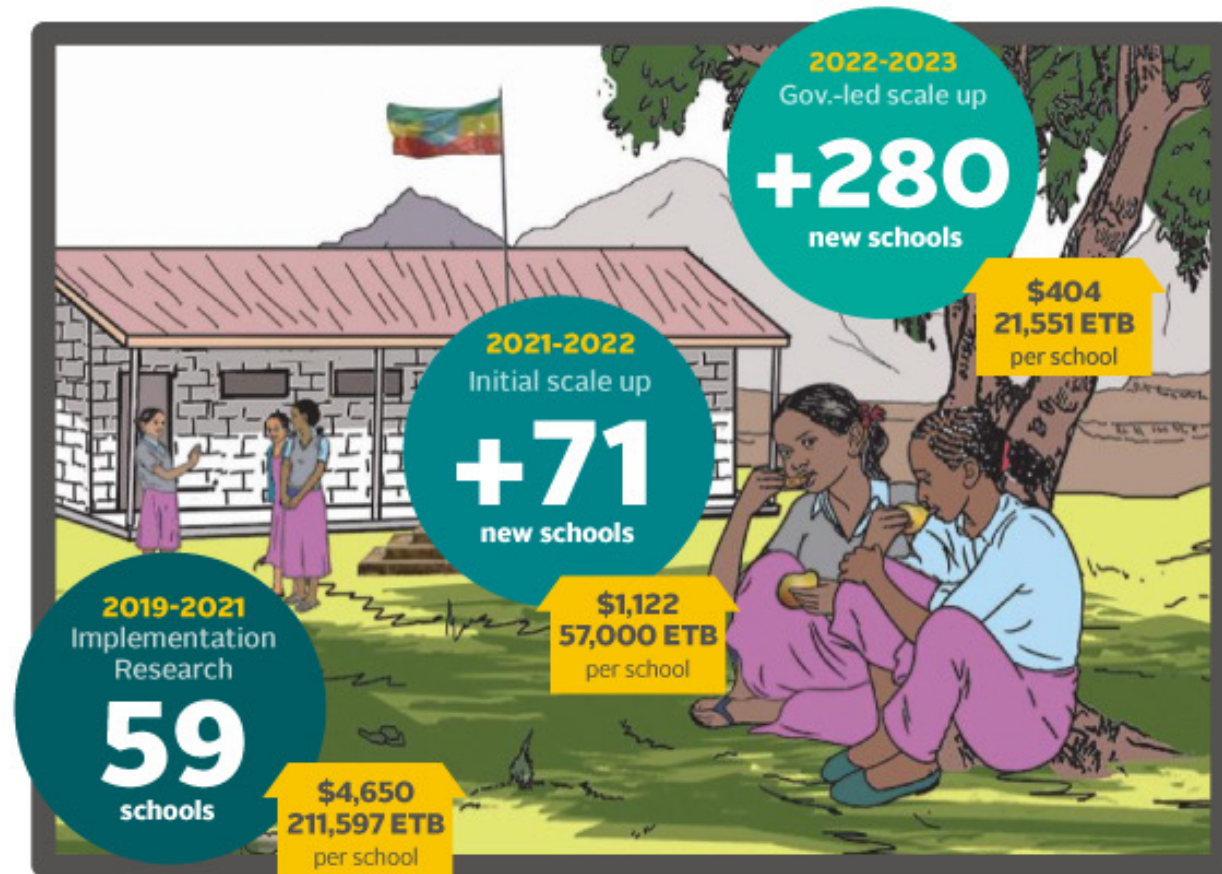
Government-led Scale Up: 280 new schools
(2023)



Scaling-Related Cost Savings

Major Program Costs:

- Budget for Local Implementing Partners
- Developing SBC materials
- Conducting trainings
- Implementing supportive supervision
- Holding review meetings



A&T Next Steps & Way Forward

- Conduct a situational assessment to:
 - Synthesize evidence on improving AN across different contexts
 - Assess factors influencing success of AN interventions
- Support including AN in the high school curriculum





Q&A

Q&A

Presenters



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Director/Technical
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Sunny Kim
Research Fellow,
International Food Policy
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Abdulaziz Ali Oumer
Country Director, Ethiopia, Alive
& Thrive

Publications & Resources

Improving Dietary Practices of Adolescent Girls in Ethiopia

KEY FINDINGS FROM IMPLEMENTATION RESEARCH

Background
Adolescent health and nutrition interventions, particularly for girls, are key to achieving the 2030 Sustainable Development Goals. In Ethiopia, over one-fourth (29%) of 15-19-year-old girls are underweight, and one-fifth (20%) are anaemic (DHS, 2016). Among 15-19-year-olds, 13% have already had children (DHS, 2016). Malnutrition among young Ethiopian women of reproductive age affects not only their health and education but also the survival and health of future generations.

The policy and the programmatic landscapes are favourable for addressing adolescent nutrition in Ethiopia. National nutrition policy and strategy documents recognize the importance of adolescent nutrition interventions for improved health of adolescent girls, mothers and children. To identify and address implementation knowledge gaps, it is critical to develop and test the feasibility of adolescent nutrition interventions integrated in schools, health, and community platforms.

Alive & Thrive's (A&T) implementation research (2019-2021) applied the socio-ecological model of social and behavior change (SEBC), identified schoolteachers and principals, peers, and parents as most influential persons; and assigned specific roles to them for enabling improved dietary practices among adolescent girls. A&T's package of adolescent nutrition interventions addressed gaps in knowledge, beliefs, and social norms, and empowered adolescent girls to improve their nutrition practices. A&T co-designed the interventions with key stakeholders and implemented them in the identified contact points, primarily through school systems.

Evaluation Design
The study was designed and implemented by the International Food Policy and Research Institute (IFPRI) and used a two-arm cluster-randomized, non-masked trial, consisting of cross-sectional surveys at baseline and endline in the Somali and Southern Nations Nationalities and Peoples' (SNNP) regions. The baseline survey was used to check comparability between the intervention and comparison groups. The endline survey evaluated the impacts by comparing the two groups. The study was designed to answer the following research questions:

- What is the program's impact on the diets of adolescent girls (dietary diversity, meal frequency, and consumption of unhealthy foods)?
- What is the exposure to adolescent nutrition interventions delivered through school-based platforms?
- What factors influenced the integration of adolescent nutrition interventions into school-based platforms and their outcomes?

This brief summarizes some of the notable highlights from the adolescent nutrition implementation research endline findings.

STUDY LOCATION
Somali: Guram, Kabriyaya & Harrowa woredas

SNNP: Soddó, Mihur Akili, Dalocha & Doyogera woredas

54 schools were randomly assigned:
27 to the intervention group
27 to the comparison group

ABOUT THE SAMPLE
Data were collected at primary schools and households. The endline sample included:

- 536 Adolescents (270 intervention, 266 Comparison)
- 536 Parents (270 intervention, 266 Comparison)
- 54 Principals (27 Intervention, 27 Comparison)
- 53 Teachers (27 Intervention, 26 Comparison)
- 53 Health Extension Workers (27 Intervention, 26 Comparison)

Endline
Launching today

Tools for Delivering School-Based Adolescent Nutrition Interventions



Toolkit
Launching today

Adolescent Nutrition
Interventions Through School-Based and Community Platforms

FINDINGS FROM A BASELINE SURVEY IN ETHIOPIA

Adolescent health and nutrition interventions, particularly for girls, are key to achieving the 2030 Sustainable Development Goals. In Ethiopia, over one-fourth (29%) of 15-19-year-old girls are underweight, and one-fifth (20%) are anaemic. Among 15-19-year-olds, 13% have already had children (DHS, 2016). Malnutrition among young Ethiopian women of reproductive age affects not only their health and education but also the survival and health of the next generation.

The policy and the programmatic landscapes are favourable for addressing adolescent nutrition in Ethiopia. The federal government has recently developed adolescent nutrition strategies and programs such as the National Guideline on Adolescent, Maternal, Infant and Young Child Nutrition (2016), which recommends a mix of delivery platforms, including schools and communities, to address adolescent nutrition. The National Nutrition Program (2016-2020) addresses adolescents as a strategic objective and recognizes that nutrition is important to adolescent girls' health and maternal health.

The International Food Policy Research Institute (IFPRI) and Alive & Thrive are conducting implementation research in Ethiopia to test the feasibility of integrating adolescent nutrition interventions into school- and community-based platforms and their impact on the quality of adolescent diets. The interventions include: in-class education, extracurricular, and parent-teacher activities, community nutrition education by health extension workers (HEWs), workshops on adolescent nutrition for principals, teachers, HEWs, and their supervisors, and supportive supervision on adolescent nutrition.

The study uses a two-arm cluster-randomized, non-masked trial, consisting of cross-sectional surveys at baseline and endline in the Somali and Southern Nations Nationalities and Peoples' (SNNP) regions. This document presents highlights from the baseline survey conducted in late 2019 across the two regions.

About the Survey and Sample
The data consisted of self-reported information from questionnaires conducted with a small sample of adolescent girls, their parents, school teachers, principals, health extension workers (HEWs), and a school observation checklist.

- 162 Adolescent girls (63 SNNP, 99 Somali)
- 162 Parents (93 SNNP, 69 Somali)
- 54 Schools (31 SNNP, 23 Somali)
- 54 Principals (31 SNNP, 23 Somali)
- 54 Teachers (31 SNNP, 23 Somali)
- 90 HEWs (60 SNNP, 30 Somali)

Adolescents

- Adolescent girls were on average 12.8 years old, and in grades 4-8. Nearly all lived with their mothers and fathers.
- In the SNNP region, nearly all (90%) spoke Amharic. In the Somali region, 99% spoke Somali.
- Literacy was high.

Families

- 84% of the parents were mothers; 16% were fathers.
- 52% of mothers were housewives; 73% of fathers were farmers or daily laborers.
- 51% of mothers and 15% of fathers had no schooling or formal education.

FOCAL REGIONS IN ETHIOPIA
SNNP regions
Somali



Baseline (2021)

Thank You

Contact US

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