TECHNICAL REPORT

Evaluation of RISE II Integrated Social and Behavior Change Activities in Niger

Baseline Report

AUGUST 2022

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TECHNICAL REPORT AUGUST 2022

Evaluation of RISE II Integrated Social and Behavior Change Activities in Niger

Baseline Report

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List of Acronyms

ANC	Antenatal care
CESAF	Conception-Etudes-Suivi-Evaluation-Formation
EA	Enumeration area
FP	Family planning
IPC	Interpersonal communication
MNCH	Maternal, newborn, and child health
RFSA	Resilience Food Security Activity
RISE	Resilience in the Sahel Enhanced
SBC	Social and behavior change
SD	Standard deviation
SMS	Short message service
ToC	Theory of change
USAID	U.S. Agency for International Development
WASH	Water, sanitation, and hygiene
WRA	Women of reproductive age

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Introduction

The United States Agency for International Development's (USAID's) Resilience in the Sahel Enhanced (RISE) II project targets chronically vulnerable populations through integrated programming to improve priority behaviors and health outcomes in family planning (FP); maternal, newborn, and child health (MNCH); nutrition; and water, sanitation, and hygiene (WASH). The program is implemented at the community and facility levels through the Resilience Food Security Activity (RFSA) partners and health service delivery mechanisms in select zones in Burkina Faso (near Kaya) and Niger (Maradi and Zinder regions). Breakthrough ACTION is a project funded by USAID that provides technical assistance to ministries of health and development partners to improve the coordination and effectiveness of social and behavior change (SBC) interventions. Given the complexity of and interactions between the underlying determinants and norms of the RISE II priority health outcomes, Breakthrough ACTION is supporting the RISE II RFSAs in Niger and Burkina Faso to develop integrated SBC strategies based on the segmentation of audiences, prioritization of desired behaviors, analysis of social and behavior barriers, and effective SBC approaches, among other considerations.

Integrated SBC approaches allow individuals to receive health promotion information on many related health issues (from FP to WASH) at the limited points of entry for individuals to interact with their health system (in the community and/or at a facility). Integrated approaches are particularly useful in rural resource-constrained settings with limited accessibility to the health system and with populations that are mobile (e.g., pastoralists). In addition, many of the behaviors have health benefits across multiple health outcomes; for example, improved hygiene and access to potable water can lead to improved nutritional outcomes and reduce the risk of diarrheal diseases. While there is some evidence that integrated SBC programming/approaches in the Sahel are effective at changing behaviors, there is generally a lack of rigorous evidence resulting from very few evaluations or large-scale surveys. Programs that are integrated do not always separate out each component of the program, making it challenging to understand what is influencing the outcome. Measuring specific behavior change messages or combinations is critical to building successful programs and learning lessons for scale.

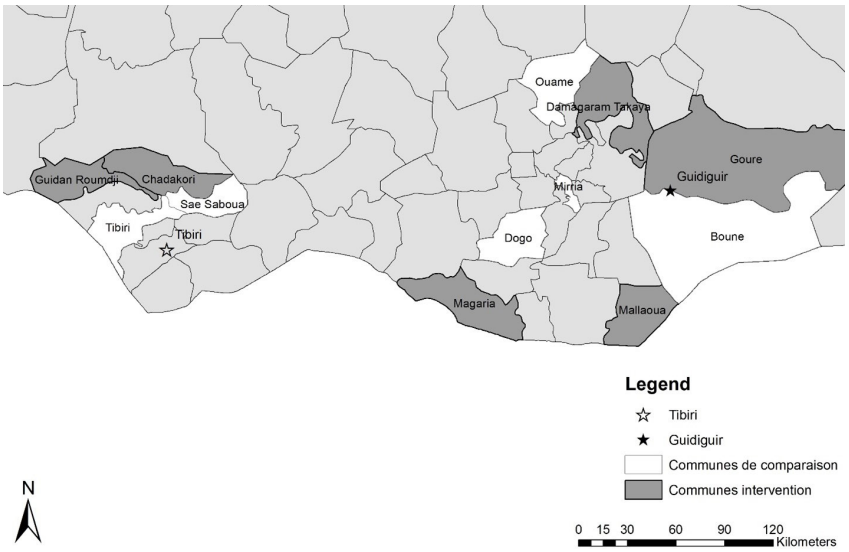
Breakthrough RESEARCH is conducting a mixed-methods study that includes quantitative methods to assess differential changes over time in key health outcomes associated with the integrated SBC strategy and qualitative methods to explain how and why gender-related changes occurred or were associated with these changes. The goals of this study are to provide information to inform project implementation and to build the global evidence base related to multisectoral integrated SBC programming. Given the ongoing political instability in Burkina Faso coupled with the larger programmatic scope in Niger (e.g., in terms of geographic and population), the study is focused on the Maradi and Zinder regions of Niger. The purpose of this technical report is to present descriptive baseline findings for the quantitative portion of the evaluation. This information will support RISE II RFSAs to understand how to tailor planned SBC approaches to address barriers to adopting targeted health behaviors.

Methods

Study site

The USAID Bureau for Humanitarian Assistance-supported RFSA partners in Niger include Hamzari (led by Care), Girma (led by Catholic Relief Services), and Wadata (led by Save the Children). Hamzari is in the Maradi region of Niger and is working exclusively in three communes in the administrative department of Guidan Roumdji (**Figure 1**). Wadata is in the Zinder region and is working in three communes in the administrative department of Damagaram and one commune in the administrative department of Goure. Girma is also in the Zinder region and is working in all four communes in the Dungass administrative department and all seven administrative departments in the Magaria department. We randomly selected two communes from each RFSA intervention zone and two neighboring communes as comparison zones with similar sociodemographic characteristics (e.g., level of urbanization); health care accessibility (e.g., distance to health facility); and population density.

FIGURE 1 MAP OF NIGER AND RISE II PROGRAMMATIC AREAS



Intervention description

RFSA partners are implementing integrated SBC approaches to improve health outcomes at the household and community levels. RFSAs use a variety of SBC approaches, including community engagement and interpersonal communication (IPC) through peer group activities and radio. RFSAs have traditionally used group IPC activities called care groups to focus on influencing nutrition for pregnant and lactating women, infant/young child nutrition practices, and WASH-related behaviors.[1] However, under RISE II, the care groups will expand to cover other influential demographic subgroups and serve as a "hub" for interrelated community-wide activities, including male engagement and couple's communication, savings and loan groups, youth theatre, and grandparent clubs. All partners use the basic structure of care groups, which relies on cascade training from paid promoters to volunteer leaders to neighborhood mothers to enable broad geographic coverage. **Table 1** (page 3) provides a description of various SBC activities that are implemented under RISE II by each RFSA partner.

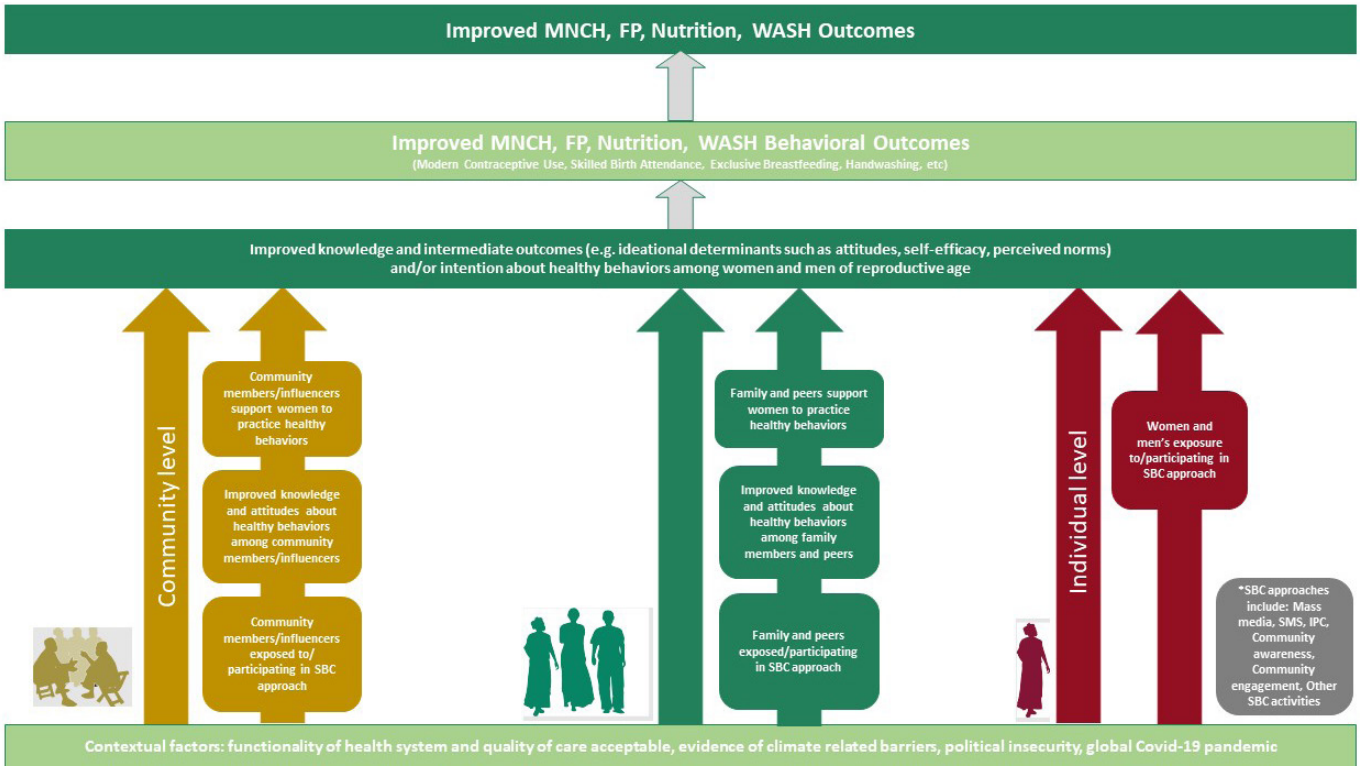
Theory of change

Figure 2 (page 3) presents a theory of change (ToC) that describes how the RFSA SBC strategies are expected to influence health behaviors. The ToC is a synthesized and simplified version of the theories of change reflected in the Wadata and Girma SBC strategies. Hamzari has not developed its SBC ToC. The ToC as described in the Wadata TC is guided by the socioecological model, which recognizes the influence of factors operating at four levels: 1) individual, 2) interpersonal, 3) community, and 4) health service delivery and policy.[2] The RFSA SBC strategies address factors operating at these various levels and leverage the interactions that occur across levels. The SBC approaches target not only individual women and men but also family and peers, community members, and influencers because social relationships within a community have a strong influence on health behaviors.[3] The SBC activities aim to improve knowledge; intermediate outcomes (e.g., ideational determinants such as attitudes, self-efficacy, and norms); and intention to adopt healthy behaviors by taking advantage of the social structural factors that influence behavioral choices, including relationships and equitable availability of social and material resources. By shifting attitudes and behaviors of key members of the community around health behaviors, RISE II partners anticipate improved health behaviors and outcomes.

TABLE 1 SBC APPROACHES BY RFSA PARTNERS

SBC INTERVENTION	GIRMA CATHOLIC RELIEF SERVICES	HAMZARI CARE	WADATA SAVE THE CHILDREN
Mass media	Radio	Radio	Radio
SMS	SMS messaging using VIAMO	None	None
IPC	Group IPC interventions focused on mothers, grandmothers, and couples (i.e., Maison Familiale Harmonieuse)	Household visits on child wellness, peer educator groups, group IPC (for pregnant women, mother care groups, husband schools)	Group IPC interventions focused on youth (i.e., Matasa Masu Fusaha), mothers (i.e., triad groups—community health nutrition liaisons, Islamic Cooperation Youth Forum groups and Maman Lumière groups); women's gender empowerment; and husband schools
Community awareness activities	Video viewings and other community events	Awareness raising talks, cultural troops, cooking demonstrations, video screenings	Messaging through religious leaders' sermons
Community engagement	Engagement with traditional chiefs and religious leaders, community dialogues	Community stakeholder engagement, religious leaders	Peer-led community forums—village development committees/community action cycle, engagement with community influencers
Other SBC activities	Several activities related to literacy, agriculture, financial literacy, sanitation, leadership and governance, emergency planning	Several activities related to agriculture, gender	Several activities related to food security, agriculture, economic development, Mata Masu Dubara, emergency planning and community infrastructure that have implications for health

FIGURE 2 RISE II INTEGRATED SBC THEORY OF CHANGE



Study objectives

The specific research objectives include:

Objective #1: Assess the effectiveness of integrated multisectoral SBC programming compared to no intervention on ideations, perceived social and gender norms, and health intentions and behavior for women and men of reproductive age.

Objective #2: Document through mixed-methods approaches how gender and social norms and household decisionmaking in relation to targeted health behaviors are influenced by SBC programming.

Objective #3: Measure exposure to SBC programming as implemented by the RISE II partners among married men and women of reproductive age (WRA).

Study design and sample

The overall evaluation design collects data through a repeated cross-sectional survey at three time points (baseline, midline, and endline) in the Maradi and Zinder regions of Niger to quantitatively assess changes in ideational factors (including social and gender norms), attitudes, health intentions, decision making, and behaviors. Data are collected from married women 15 to 49 years of age and married men between 15 and 49 years of age in 40 enumeration areas (EAs) in six communes implementing a multisectoral integrated SBC approach and 40 EAs in six comparison communes with no multisectoral integrated SBC approach. The sample for each cross-sectional survey will comprise married women and men of reproductive age (15–49 years), with 2,400 women and 1,200 men per round of data collection. While some respondents from the same household may be married to each other, the sample was not intentionally matched based on marital status due to the frequent migratory status of males in the region during the data collection period, which occurred during the dry season. Household characteristics were collected during the women's interview because the male sample is a subsample and linked to the female respondents. The study team administered a baseline quantitative survey in both sets of communities in 2021, with a midline survey planned for March 2022 and an endline survey planned for March 2023.

Baseline data collection

Baseline data collection took place in April and May 2021. Male interviewers interviewed men, and female interviewers interviewed women due to Islamic cultural practices that generally adhere to limited interaction between sexes for unrelated individuals. Conception-Etudes-Suivi-Evaluation-Formation (CESAF), a Niger-based research firm, was responsible for the baseline data collection. CESAF recruited interviewers locally with previous experience with household surveys and trained them on the objectives of the research, obtained written informed consent (or verbal consent if the participant was unable to write), and then administered the survey in Hausa to the study participants using mobile phones. Study participants were not compensated for their participation. Interviews took place in person at the participant's home in an outdoor and private location, and participants were provided with a mask and asked to maintain 1-meter distance throughout the interview to mitigate potential transmission of COVID-19. Interviews lasted approximately 30 to 40 minutes. A total of 2,709 women and 1,300 men were interviewed. **Table 2** provides a summary of the sample size by study group.

The study was approved by the Ministry of Public Health National Ethics Committee for Health Research in Niger (No. 017/2020/CNERS) and the Population Council Institutional Review Board in the United States (protocol number 934).

Variable measurement

A list of priority behaviors measured through the evaluation are defined in the list that follows.

- Median age at first marriage, women 25 to 49.
- Percentage of married WRA 15 to 49 using a contraceptive (modern) method.

TABLE 2 SAMPLE SIZE BY STUDY GROUP

	HAMZARI		WADATA		GIRMA	
	INTERVENTION	COMPARISON	INTERVENTION	COMPARISON	INTERVENTION	COMPARISON
Women	476	477	403	402	475	476
Men	237	227	186	202	220	228

- Percentage of WRA who have given birth in the five years preceding the survey who received four or more antenatal care (ANC) visits for their last birth.
- Percentage of WRA who have given birth in the five years preceding the survey who delivered in a facility for their last birth.
- Percentage of married WRA who exclusively gave their child between the ages of zero and five months only breast milk in the 24 hours preceding the survey.
- Dietary diversity score among pregnant women: Dietary diversity scores are calculated by summing the number of food groups consumed in the household or by the individual respondent over the 24-hour recall period. Minimum dietary diversity among children: Proportion of children 6 to 23 months of age who receive foods from four or more food groups (disaggregated by breastfeeding status).
- Proportion of children six to nine months who received complementary feeding (in addition to breast milk) in the 24 hours preceding the survey.
- Minimum meal frequency: Proportion of breastfed and non-breastfed children 6 to 23 months of age who receive solid, semisolid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more. Note: For breastfed children, the minimum number of times varies with age (2 times if 6 to 8 months and 3 times if 9 to 23 months). For non-breastfed children the minimum number of times does not vary by age (four times for all children 6 to 23 months).
- Minimum acceptable diet among children 6 to 23 months.
- Percentage of married WRA who know three critical moments for handwashing.
- Percentage of married WRA who have a handwashing station.

Recognizing that some RISE II activities have started and that we are working in a dynamic environment where there may be similar activities implemented by the government and other nongovernmental organizations, the results of this data collection therefore may not have a "true baseline." As a result, we have included a battery of questions to assess exposure using a 3-month recall period for any SBC programming across channels and health areas, and we will use analytic methods at midline and endline to account for any differences between intervention and control groups as needed and appropriate. We anticipate that beneficiaries will receive varying levels of exposure to SBC activities. We will use a combination of exposure questions in the midline and endline surveys as well as routine data collected by the RFSA partners to understand the extent to which beneficiaries are exposed to integrated SBC activities. Aligning with midline data collection, we will also conduct qualitative interviews with key stakeholders (such as religious and community leaders) to assess the extent to which contextual factors, including activities implemented by partner organizations, may be influencing project outcomes. We will assess both participation in RFSA-sponsored multisectoral group activities (i.e., care groups, husband schools, farmer groups, etc.) as well as exposure to SBC messages by health area. The exposure to SBC messages is assessed through a cascade series of questions asking first if they have heard any messages by health area, followed by asking where they heard these messages (prompted by channel with the option to select multiple channel responses) and finally how often (across all channels). **Figure 3** (page 6) summarizes the cascade series of exposure questions. In the results, we present exposure to SBC messages by health areas. While measures related to where the respondent heard the message are asked only of those who have heard a message in the three months, we present the percentage that have heard from (for example, radio) out of the total sample because this is how we will construct the exposure variables in the final evaluation regression models to ensure the full sample is included in the evaluation.

Analysis

To describe the intervention and control groups across study groups at baseline, we computed counts with percentages for categorical variables and medians with standard deviations (SDs) for continuous variables. Chi-square statistics for categorical variables and two-sample rank sum (Mann-Whitney) for continuous variables were used to compare medians in intervention and comparison groups adjusted by enumeration areas and commune. Data management and statistical analyses were performed using Stata/SE 16 (StataCorp LP, College Station, TX).

FIGURE 3 EXPOSURE TO SBC SURVEY QUESTIONS

In the past 3 months, have you heard or seen…	…and where did you hear these messages…	…and how many times did you hear these messages?
Any messages encouraging girls to wait until they are 18 or older to get married?	Radio	Once
Any messages about family planning?	TV	2–4 times
Any messages related to seeking care at a facility during pregnancy or childbirth?	Community event	5–10 times
Any messages related to breastfeeding and nutrition?	Health care worker	More than 10 times
Any messages related to immunization?	Community volunteer	
Any messages related to handwashing?	Community leader	
	Neighbor/friend/ family member	
	Poster	
	Mobile phone	

Results

Description of household assets

Housing characteristics and household assets can be used as a measure of the socioeconomic status of household members. **Table 3** (page 8) presents information on the household characteristics of the women interviewed, including type of flooring, walls, and roof material; number of rooms for sleeping; type of fuel used for cooking; and source of water and type of toilet. The type of household assets such as electricity, radio, cell phones, and motorcycles available in the household are also included.

Charcoal, wood, and gas were the dominant source of cooking fuel for all study groups (over 98% in each study group). Among flooring materials, natural materials were the most common across all study groups (more than 85%). However, in the Girma study groups, modern floor materials also made up 7.6%. Among roof materials, modern materials were the most common across all groups. Other roof materials, such as natural materials, were common in the Hamzari and Girma study groups (34% and 13% respectively). Concerning wall materials, the most common wall materials were natural materials (more than 88%) across all study groups. The median number of rooms ranged between two and three.

Among sources of household water, the most common source was a public fountain, but other sources such as pump wells/boreholes and dug wells were also used among study groups, with natural spring being the least common. In fact, nearly 50% of household water came from a dug well in the Wadata study group. For the type of toilet used, most study groups did not have one (approximately two-thirds in the intervention and comparison groups). However, in some study groups, flush toilets, and pit latrines were used. For the Hamzari study group, 53% of people used a pit latrine, compared to 7% for Wadata and 16% for Girma.

Very few households had access to electricity. In the Hamzari study group, only 4% in the intervention group had access to electricity, compared to nearly 15% in the comparison group. Similarly, in the Girma study group, 7.4% had access to electricity, compared to 14.5% in the comparison group. In the context of the RISE II health promotion activities, radio, television, and mobile messaging through cell phones are frequently used mass media communication channels. However, in the RISE II program group, household possession of these assets were fewer than one in three. We prepared a household wealth index using methods described by the Equity Tool method.[a] For rural areas, we constructed household wealth indices based on household characteristics and assets that are presented in Table 4.

Description of study participants

We describe the sociodemographic characteristics of the study participants by sex and study groups as shown in **Table 4** (page 9) and **Table 5** (page 10) and include tests for statistical significance between the intervention and comparison study group characteristics.

The sociodemographic characteristics of the study participants are presented in Table 4, including wealth status, age group, educational attainment, marital status, ownership of a mobile phone, and whether they watch or listen to television or radio. Among study groups, Hamzari represented the wealthiest population (45.4% in the highest tertile), and Wadata represented the poorest population (55.6% in the lowest tertile). We did not observe a statistically significant difference in wealth tertiles when comparing intervention and comparison study groups overall.

On average, most female study participants fell in the 25- to 34-years age range. A higher percentage of participants (19%) in the Wadata study group were in the 15- to 24-years age group, as compared to Hamzari and Girma (12% and 10% respectively). We did observe a statistically significant difference in age groups between the intervention and comparison groups. The intervention group was slightly younger than the comparison group.

[a]The wealth index gives each person in the population a score that represents how wealthy they are based on their household characteristics. The score is generated through a method known as principal components analysis. After ordering respondents based on their score, they can be divided into groups. Traditionally, they are divided into quintiles, or five groups of 20% each. However, given this analysis is focused on a rural sample, we have opted to divide into three groups.

TABLE 3 HOUSEHOLD ASSETS BY STUDY GROUP

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=476 (%)	COMP N=477 (%)	INTER N=403 (%)	COMP N=402 (%)	INTER N=475 (%)	COMP N=476 (%)	INTER N=1,355 (%)	COMP N=1,354 (%)	
Main type of cooking fuel									0.25
Natural gas/kerosene	0.2	1.1	0.0	0.3	0.8	1.7	0.4	1.0	
Charcoal/wood/grass	99.8	99	100	99.8	99.2	98.3	99.6	99.0	
Main floor material									0.35
Natural material	96.4	89.1	98.3	100	89.7	85.7	94.6	91.1	
Rudimentary material	2.5	2.7	1	0	0.2	0.4	1.3	1.1	
Modern material	1.1	7.6	0.7	0	7.6	10.9	3.3	6.5	
Other	0	0.6	0	0	2.5	2.9	0.9	1.3	
Main roof material									0.30
Natural material	34.7	35.4	1	0	13.1	3.4	17.1	13.7	
Rudimentary material	0.4	4	2	1.7	15.8	16.4	6.3	7.7	
Modern material	64.9	59.8	97.0	98.3	70.1	79.4	76.3	78.1	
Other	0	0.8	0	0	1.1	0.8	0.4	0.6	
Main wall material									0.50
Natural material	96.6	88.7	97.3	99.3	93.7	97.1	95.8	94.8	
Rudimentary material	1.5	1.5	0	0.3	0.2	0.2	0.6	0.7	
Modern material	1.9	9.9	1.5	0.3	5.7	2.7	3.1	4.5	
Other	0	0	1.2	0.3	0.4	0	0.5	0.1	
Median number of rooms (SD)	3(1.8)	2(1.7)	2 (1.0)	2 (1.0)	2 (1.1)	2 (0.9)	2 (1.5)	2 (1.3)	
Main source of household water									0.87
Public fountain	51.5	64.6	27.5	35.3	47.4	31.7	42.9	44.4	
Pump well/borehole	2.9	4.6	22.8	38.3	48.8	39.3	25.0	26.8	
Dug well	44.5	31	49.6	26.1	3.8	28.4	31.8	28.5	
Natural spring	1.1	0.2	0.0	0.3	0.0	0.6	0.4	0.4	
Type of toilet									0.46
Flush toilet	1.3	5.2	0.3	0.8	10.1	7.8	4.1	4.8	
Pit latrine	52.5	39	7.2	9	16.6	20	26.4	23.4	
No toilet	46.0	55.8	92.6	90.3	68.8	62.61	67.9	68.4	
Other	0.2	0	0	0	4.4	9.7	1.6	3.4	
Household assets									
Electricity	4	14.7	3.2	3.2	7.4	14.5	5.0	11.2	0.12
Radio	30.7	33.5	11.7	15.9	23	35.7	22.3	29.1	0.01
Television	3.2	10.1	3.7	0.8	5.9	9.0	4.3	6.9	0.29
DVD/VCD player	1.3	4.4	3.2	0.8	2.7	2.9	2.4	2.8	0.76
Cell phone	26.1	38.2	26.1	16.4	28.4	27.9	26.9	28.1	0.71
Cart/plow	5.5	4.6	10.2	14.7	20.0	10.7	12.0	9.7	0.15
Solar panel	18.5	15.5	10.9	14.4	6.3	10.1	12.0	13.3	0.38
Watch	5.0	4.6	14.9	13.7	19.4	22.1	13.0	13.4	0.78
Bicycle	6.9	7.3	3.7	2	6.5	4.2	5.8	4.7	0.32
Motorcycle	9.5	21.8	9.4	8.7	17.3	14.5	12.2	15.4	0.18

Note: Inter = Intervention group; Comp = Comparison group

TABLE 4 DESCRIPTION OF FEMALE PARTICIPANTS BY RFSA PARTNER AND STUDY GROUPS

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=476 (%)	COMP N=477 (%)	INTER N=403 (%)	COMP N=402 (%)	INTER N=475 (%)	COMP N=476 (%)	INTER N=1,355 (%)	COMP N=1,354 (%)	
Wealth status									0.66
Poorest	25.8	19.5	55.6	49.5	23.4	34.5	33.8	33.7	
Middle	28.8	26.0	33.3	37.8	41.7	31.1	34.6	31.3	
Wealthiest	45.4	54.5	11.2	12.7	35.0	34.5	31.5	35.1	
Age group in years									0.03
15–24	12.4	19.5	18.9	20.9	10.3	17.0	19.0	13.6	
25–34	53.2	50.5	46.4	39.8	53.1	50.6	47.4	51.1	
35–49	34.5	28.5	31.8	36.3	35.4	32.1	32.1	34.0	
Missing	0.0	1.5	3.0	3.0	1.3	0.2	1.5	1.3	
Educational attainment									0.24
No education	86.1	80.1	88.1	87.3	86.3	85.3	86.8	84.1	
Some formal schooling	13.9	19.9	11.9	12.7	13.7	14.7	13.2	15.9	
Marital status									0.31
Married monogamous	44.1	45.1	80.4	79.1	63.4	68.3	61.7	63.3	
Married polygamous	54.8	52	19.1	19.9	35.2	30.7	37.3	35.0	
Not married/widow/ divorced	1.1	2.9	0.5	1.0	1.5	1.1	1.0	1.7	
Own a mobile phone	5.3	14.5	25.6	15.4	8.7	10.9	12.5	13.5	0.71
Watch television									0.91
At least once a week or less than once a week	10.5	11.3	3	0.8	8.0	9.9	7.4	7.7	
Not at all	89.5	88.7	97.0	99.3	92.0	90.1	92.6	92.3	
Listen to radio									0.34
At least once a week or less than once a week	49.6	55.6	7.2	9.2	39.8	39.5	33.5	36.2	
Not at all	50.4	44.4	92.8	90.8	60.2	60.5	66.5	63.8	

Educational attainment was somewhat uniform across all study groups, with most participants reporting no formal education. The percentage of participants that had some formal schooling ranged from 11.9% in the Wadata intervention group to 19.9% in the Hamzari comparison group. We did observe a statistically significant difference in educational status between the intervention and comparison groups. Fewer women in the intervention group had attended any school.

Concerning marital status, monogamy was higher in Wadata (80%) and Girma (63%) whereas polygamy was higher in Hamzari (54.8%).

Owning a mobile phone was not very common among the women in the study. Women in Hamzari reported the lowest percentage of mobile phone ownership (5.3%), followed by women in Girma (8.7%) and finally women in Wadata (25.6%).

The percentage of participants who watch television was very low across all study groups (between less than 11.3%). Listening to the radio was more common than watching television in the Hamzari and Girma regions (50% and 40%, respectively) but not in the Wadata region (7%). We did not observe a statistically significant difference in marital status, mobile phone ownership, or use of radio or television when comparing intervention and comparison study groups.

The sociodemographic characteristics of male study participants are presented in Table 5, including wealth status, age group, educational attainment, marital status, ownership of a mobile phone, and whether they watch television or listen to radio or not. We did not observe a statistically significant difference across demographic characteristics among men when comparing intervention and comparison study groups. On average, most male study participants fell in the 35- to 49-years age range.

TABLE 5 DESCRIPTION OF MALE PARTICIPANTS BY RFSA PARTNER AND STUDY GROUPS

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=237 (%)	COMP N=227 (%)	INTER N=186 (%)	COMP N=202 (%)	INTER N=220 (%)	COMP N=228 (%)	INTER N=643 (%)	COMP N=657 (%)	
Wealth status									0.84
Poorest	22.8	18.5	55.4	52.5	23.6	32.0	32.5	33.6	
Middle	28.3	26.9	34.4	36.1	39.6	31.1	33.9	31.2	
Wealthiest	49.0	54.6	10.2	11.4	36.8	36.8	33.6	35.2	
Age group in years									0.73
15–24	2.5	0.0	2.7	5.0	1.4	2.6	2.2	2.4	
25–34	20.3	18.9	22.0	22.8	22.7	18.9	21.6	20.1	
35–49	71.7	78.0	67.2	64.4	68.2	72.8	69.2	72.0	
Missing	5.5	3.1	8.1	7.9	7.7	5.7	7.0	5.5	
Educational attainment									0.62
No education	86.6	91.9	87.7	87.7	78.5	79.0	83.8	85.8	
Some formal schooling	13.5	8.1	12.3	13.3	21.5	21.0	16.2	14.2	
Marital status									0.24
Married monogamous	97.1	90.2	91.8	91.1	64.6	66.0	84.8	82.0	
Married polygamous	2.9	8.6	8.2	8.9	35.4	34.0	15.2	17.5	
Not married/widow/ divorced	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.5	
Own a mobile phone	61.6	58.2	71.5	68.3	42.3	61.0	57.9	62.3	0.31
Watch television									0.09
At least once a week or less than once a week	58.2	60.4	10.2	6.4	15.0	6.6	29.6	25.1	
Not at all	41.8	39.7	89.8	93.6	85.0	93.4	70.5	74.9	
Listen to radio									0.17
At least once a week or less than once a week	97.9	98.2	59.7	70.8	69.6	72.8	77.1	81.0	
Not at all	2.1	1.8	40.3	29.2	30.5	27.2	22.9	19.0	

Also, around 20% of participants in all study groups fell in the 25- to 34-years age range.

Educational attainment was generally uniform across all study groups, with most participants being uneducated. The percentage of participants that had some formal schooling ranged from 8% to 21%. Most men reported being in a monogamous relationship.

Owning a mobile phone was quite common among men in the study. Men in Girma reported the lowest percentage of mobile phone ownership (42%), followed by men in Hamzari (62%) and finally men in Wadata (72%). The percentage of participants who watch television was relatively low across male study participants in Wadata and Girma (less than 15%); the Hamzari study group had a higher percentage of participants who watch television (58%). However, listening to the radio was more common than watching television across all study groups (more than 60%).

Early marriage

Table 6 (page 11) represents women's attitudes, norms, and behaviors related to early marriage.

On average, the median age a woman thinks it is appropriate for a girl to marry someone ranged from 15 to 17 years.

There was considerable variation by study group regarding who makes the decision for the female to

TABLE 6 WOMEN'S ATTITUDES, NORMS, AND BEHAVIORS RELATED TO EARLY MARRIAGE

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=476 (%)	COMP N=477 (%)	INTER N=403 (%)	COMP N=402 (%)	INTER N=475 (%)	COMP N=476 (%)	INTER N=1,355 (%)	COMP N=1,354 (%)	
Age respondent thinks is appropriate to get married (median (SD))	17 (2.0)	17 (2.1)	15 (1.7)	15 (1.6)	16 (1.9)	17 (2.0)	15 (1.9)	16 (2.0)	
Behavior									
Age at marriage (median (SD))	15 (2.1)	16 (1.9)	15 (2.0)	15 (1.9)	15 (1.7)	15 (1.9)	15 (1.9)	15 (1.9)	
Person who made the decision for you to marry									
Respondent	58.0	51.2	39.0	46.3	19.0	7.6	38.6	34.4	0.04
Family	53.8	58.7	50.4	42.0	88.6	98.1	65.0	67.6	0.07
Other	0.0	0.0	15.6	17.4	0.8	0.0	5.0	5.2	0.59
Attitudes—Agree with statement									
Marrying before the age of 18 protects a female from being harassed	48.1	57.2	53.9	63.7	69.1	55.3	57.2	58.5	0.56
Marrying before the age of 18 protects a female from poverty	33.4	33.3	25.8	31.1	28.4	25.2	29.4	29.8	0.80
A female should be married as soon as she reaches puberty	43.1	53.0	70.2	75.4	56.6	44.1	55.9	56.5	0.81
Parents marry off their daughter early because they are afraid that if she does not get married early, she might have love affairs and ruin her chance of a decent marriage	42.7	56.2	77.4	76.9	68.0	53.2	61.9	61.3	0.80
Norms—Agree with statement									
All my neighbors marry their daughters as soon as they reach puberty	41.2	52.0	69.2	76.6	43.8	45.4	50.4	57.0	0.01
My neighbors think that one's daughters should not engage in sexual activity before marriage	35.1	39.8	82.9	91.8	55.4	69.1	56.4	65.5	0.00
My neighbors think that one should marry one's daughter as soon as she reaches puberty	41.0	53.7	70.5	78.4	43.2	45.6	50.5	58.2	0.00

marry. In the Hamzari study group, 58% of women stated they themselves made the decision to marry; this percentage was slightly lower in the Wadata study group. In the Girma study group, the percentage of women who stated that the family makes the decision for them to marry is considerably different, 89% of women stating that their family made the decision for them to marry.

Knowledge, attitudes, self-efficacy, and social and gender norms are often strong predictors of health behaviors. We explore these behavioral determinants to understand how SBC activities can be better tailored to address factors influencing health behaviors. A large percentage of women thought that marrying before the age of 18 protects a female from being harassed. In addition, most women thought that a female should be married as soon as she reaches puberty and that marrying their daughters early protects them from engaging in nonmarital sexual activities, which is culturally not permissible. However, a lower percentage of women thought that marrying before the age of 18 protects a female from poverty.

About half of the women in the intervention groups reported social norms associated with the acceptability of early marriage, while a statistically significant higher percentages of women in the control groups did so. Changes in behavioral determinants such as reduced community acceptance of early marriage may indicate behavioral changes will follow and may be a function of RFSA activities changing social norms in intervention zones.

Table 7 represents men's attitudes, norms, and behaviors related to early marriage.

On average, the median age men thought it is appropriate for a man to get married is 20 years, while the median age that men were married ranged from 20 to 21 years. Families most often made the decision in terms of who men will marry in all three study groups, with the highest percentages in Wadata and Girma (82% and 83% respectively) and Hamzari at 60%.

TABLE 7 MEN'S ATTITUDES, NORMS AND BEHAVIORS RELATED TO EARLY MARRIAGE

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=237 (%)	COMP N=227 (%)	INTER N=186 (%)	COMP N=202 (%)	INTER N=220 (%)	COMP N=228 (%)	INTER N=643 (%)	COMP N=657 (%)	
Age respondent thinks is appropriate to get married (median (SD))	20 (2.5)	20 (2.6)	20 (2.7)	20 (2.5)	20 (3.2)	20 (3.1)	20 (2.8)	20 (2.9)	
Behavior									
Age at marriage (median (SD))	21 (2.7)	21 (3.4)	20 (4.9)	20 (3.8)	20 (4.6)	21 (4.5)	20 (4.1)	21 (3.9)	
Person who made the decision for you to marry									
Respondent	52.7	55.5	21.5	10.4	27.3	30.7	35.0	33.0	0.49
Family	60.3	56.8	82.3	91.6	83.2	77.2	74.5	74.6	0.97
Other	0.0	0.0	0.0	1.5	0.5	0.0	0.2	0.5	0..0
Attitudes—Agree with statement									
Marrying before the age of 18 protects a female from being harassed	57.4	64.8	81.2	67.3	43.6	43.4	59.6	58.1	0.59
Marrying before the age of 18 protects a female from poverty	51.9	54.2	45.7	38.1	28.6	38.2	42.2	43.7	0.45
A female should be married as soon as she reaches puberty	56.1	60.4	85.0	78.7	77.3	52.6	71.7	63.3	0.01
Parents marry off their daughter early because they are afraid that if she does not get married early, she might have love affairs and ruin her chance of a decent marriage	54.9	59.6	85.5	77.7	92.3	92.5	76.5	76.3	0.91
Norms—Agree with statement									
All my neighbors marry their daughters as soon as they reach puberty	51.5	55.1	86.6	78.2	81.4	63.2	71.9	65.0	0.01
My neighbors think that one's daughters should not engage in sexual activity before marriage	51.1	55.5	87.6	82.7	94.1	96.5	76.4	78.1	0.40
My neighbors think that one should marry one's daughter as soon as she reaches puberty	51.5	54.6	86.6	78.7	84.1	64.9	72.8	65.6	0.01

A large percentage of men in the Wadata study group area (over 80% among men in the intervention group) thought that marrying before the age of 18 protects a female from being harassed and that a female should be married before she reaches puberty. However, these attitudes were less prevalent among men in the Hamzari and Girma study group. In addition, most men thought that a female should be married as soon as she reaches puberty and that marrying their daughters early protects them from engaging in nonmarital sexual activities. Strong social norms in support of early marriage were observed throughout the study zones. A majority of men agreed with the descriptive norm that all their neighbors marry their daughters as soon as they reach puberty, ranging from approximately 50% in the Hamzari study area to approximately 80% in the Wadata study area and over 90% in the Girma study area. Injunctive norms related to child marriage were consistent and found that the majority of men believed that community members think one should marry their daughters early.

Table 8 presents information on women's exposure to messages encouraging girls to wait until they are 18 or older to get married. In the Girma and Hamzari regions, 40% and 60% of participants, respectively heard messages about this issue in the past three months, compared to only 13% of participants in the Wadata region. Messaging related to encouraging girls to wait until they are 18 or older to get married were prevalent in both intervention and comparison groups. Radio, a community event, or a health care worker were the most frequently cited sources of information. Overall, the majority of women in both the intervention and control groups did not hear any messages encouraging girls to wait until they are 18 or older to get married, but if they did, hearing the messages two to four times was most common. Reports from Wadata indicate the low levels of exposure to age-of-marriage messages among women is likely a result of limited interventions in the vast study area coupled with few channels (e.g., mobile phones and radio stations) for sharing information. Wadata aims to address these constraints by focusing on audience segmentation to reach the highest-priority audiences

TABLE 8 WOMEN'S EXPOSURES TO MESSAGES ENCOURAGING GIRLS TO WAIT UNTIL THEY ARE 18 OR OLDER TO GET MARRIED IN THE PAST 3 MONTHS

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=476 (%)	COMP N=477 (%)	INTER N=403 (%)	COMP N=402 (%)	INTER N=475 (%)	COMP N=476 (%)	INTER N=1,355 (%)	COMP N=1,354 (%)	
Heard messages in last 3 months	59.5	48.6	13.4	13.7	40.2	52.7	39.0	39.7	0.80
Where did you hear these messages (select all)									
Radio	26.1	30.4	4.0	7.2	25.1	21.4	19.1	20.4	0.57
TV	1.3	2.1	0.3	0.0	0.8	1.1	0.8	1.1	0.59
Community event	17.9	6.3	1.7	0.3	13.9	30.7	11.7	13.1	0.35
Health care worker	41.0	26.0	4.5	3.5	7.0	26.3	18.2	19.4	0.45
Community volunteer	10.5	2.1	3.7	3.0	1.5	1.7	5.3	2.2	0.00
Community leader	12.6	2.5	2.5	0.8	1.7	2.7	5.8	2.1	0.00
Neighbor	7.6	5.5	1.7	2.2	3.0	8.6	4.2	5.6	0.13
Poster	0.0	0.4	0.0	0.0	0.0	0.2	0.0	0.2	0.09
Mobile message	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.32
Newspaper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Promotional materials	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Social media	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.34
How many times									0.29
Did not hear	40.6	51.6	86.6	86.3	59.8	47.3	61.0	60.4	
Once	7.1	9.0	3.0	4.0	3.4	4.2	4.6	5.8	
2–4 times	31.5	25.0	6.0	8.7	28.2	36.8	22.8	24.3	
5–10 times	17.4	11.7	2.7	1.0	5.1	10.1	8.7	8.0	
More than 10 times	3.4	2.7	1.7	0.0	3.6	1.7	3.0	1.6	

through their community-based interventions. Reports from Girma indicate that men and local authorities have traditionally been the main target audience for efforts to increase the age at marriage by organizations such as UNICEF and the United Nations Population Fund. However, despite the efforts to reach men, Girma noted it is the women who may be less receptive to messages since girls are more subject to social pressure and their mothers are traditionally the ones who bear the blame when a girl gives birth out of wedlock. Girma suggests the need to consider approaches that reach multiple audiences as well as to address the underlying causes and social pressures that drive early marriage.

Table 9 presents information on men's exposures to messages encouraging girls to wait until they are 18 or older to get married. Across all study groups, 34% of participants in Hamzari, 46% in Wadata and 65% in Girma heard messages about this in the past three months. Participants were exposed to this information primarily through the radio, with some reports of hearing messages through community events and/or health care workers as well. Overall, men in both the intervention and control groups reported not hearing any messages encouraging girls to wait until they are 18 or older to get married (52% and 54%, respectively), but if they had heard these messages, hearing them two to four times was most common, while some men in both groups reported hearing the five or more times.

Family planning

Table 10 (page 15) presents women's knowledge, attitudes, norms, self-efficacy, and behaviors related to FP. At least 58% of surveyed women know three or more modern FP methods.

Roughly half of women in all three study regions thought it is acceptable for a woman to have a baby before the age of 18 years and that it is acceptable for a couple to try to limit the number of children they have. Most women in Wadata thought it is acceptable for a couple to have a child less than two years after the birth of their last child (63%), while only 17% of women in Hamzari and Girma agreed with this statement. The majority of women in intervention groups agreed it is acceptable for

TABLE 9 MEN'S EXPOSURES TO MESSAGES ENCOURAGING GIRLS TO WAIT UNTIL THEY ARE 18 OR OLDER TO GET MARRIED IN THE PAST 3 MONTHS

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=237 (%)	COMP N=227 (%)	INTER N=186 (%)	COMP N=202 (%)	INTER N=220 (%)	COMP N=228 (%)	INTER N=643 (%)	COMP N=657 (%)	
Heard messages in last 3 months	33.8	13.2	46.2	47.0	65.0	79.0	46.4	48.1	0.55
Where did you hear these messages (select all)									
Radio	32.9	12.8	43.0	45.1	56.8	60.1	44.0	39.1	0.09
TV	0.8	1.3	3.8	0.5	1.8	2.6	2.0	1.5	0.62
Community event	18.1	5.7	0.5	1.0	15.5	26.8	12.1	11.6	0.80
Health care worker	6.8	0.4	1.1	2.0	15.9	23.7	8.2	9.0	0.69
Community volunteer	6.3	2.2	5.9	0.5	5.0	7.0	3.4	5.8	0.07
Community leader	4.2	0.0	0.0	0.0	1.8	12.3	2.2	4.3	0.04
Neighbor	0.0	0.4	3.8	1.0	5.9	9.7	3.1	3.8	0.55
Poster	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	na
Mobile message	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	na
Newspaper	0.0	0.0	0.5	0.0	0.5	0.0	0.3	0.0	0.15
Promotional materials	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	na
Social media	0.0	0.0	0.5	0.5	0.0	0.4	0.2	0.3	0.58
How many times									0.30
Did not hear	66.2	86.8	53.8	53.0	35.0	21.1	51.9	53.6	
Once	1.3	1.8	0.5	0.5	6.4	10.1	2.8	4.3	
2–4 times	23.2	8.8	26.3	26.2	45.0	43.9	31.6	26.3	
5–10 times	7.2	1.8	19.4	19.8	6.8	13.6	10.6	11.4	
More than 10 times	2.1	0.9	0.0	0.5	6.8	11.4	3.1	4.4	

a couple to use methods such as condoms, the pill, or injectables to delay or avoid pregnancy.

Social norms varied across study areas. In the Hamzari study area, over 70% of study participants agreed that the community would agree if a woman used contraception, and a similar percentage agreed that religious leaders would agree with a woman's decision to use contraception. In the Wadata and Girma study areas, fewer study participants agreed with these statements. In the Girma study area, approximately 48% of study participants agreed that the community would agree if a woman used contraception, and 35% agreed that religious leaders would agree with a woman's decision to use contraception

Overall, most women in both the intervention and control groups reported knowing where to go to obtain

TABLE 10 WOMEN'S KNOWLEDGE, ATTITUDES, NORMS, SELF-EFFICACY, AND BEHAVIORS RELATED TO FAMILY PLANNING

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=476 (%)	COMP N=477 (%)	INTER N=403 (%)	COMP N=402 (%)	INTER N=475 (%)	COMP N=476 (%)	INTER N=1,355 (%)	COMP N=1,354 (%)	
Knowledge									
Know at least three or more modern FP methods	90.8	91	66.3	57.7	74.1	86.1	77.6	79.4	0.47
Attitudes—Agree with statement									
It is acceptable for a woman to have a child before the age of 18	45.0	55.1	48.4	53.7	55.8	50.4	49.8	53.1	0.31
It is acceptable for a couple to have a child less than 2 years after the birth of their last child	17.0	23.9	62.8	72.1	17.1	15.1	30.7	35.1	0.01
It is acceptable for a couple to try to limit the number of children they have	46.4	46.8	53.1	51.0	46.1	50.2	48.3	49.2	0.28
It is acceptable for a couple to use methods such as condoms, the pill, or injectables to delay or avoid pregnancy	84.5	69.4	62.3	54.7	76.00	89.9	74.9	72.3	0.14
Norms—Agree with statement									
Members of this community would agree if a woman uses contraception	73.3	61.8	55.3	38.3	47.8	76.9	59.0	60.2	0.02
Religious leaders would agree with a woman's decision to use contraception	72.5	59.1	44.2	32.3	35.2	60.3	51.0	51.6	0.00
Self-efficacy—Agree with statement									
I know where to go to obtain contraception	90.1	88.5	67.7	60.2	75.2	90.6	78.2	80.8	0.52
I could use FP even if my partner objected	43.3	29.6	9.4	6.0	14.1	33.6	23.0	24.0	0.00
I feel comfortable discussing FP with my partner	77.3	70.7	51.6	45.3	55.6	79.8	62.0	66.4	0.34
Would you say that the use of contraception is mainly:									0.63
Your decision	3.8	2.1	0.7	1.00	4.2	4.2	3.0	2.5	
Your partner's decision	24.0	23.1	64.5	62.9	23.0	22.7	35.7	34.8	
Joint decision	61.8	56.2	13.2	11.9	49.7	55.3	43.1	42.7	
Other	1.3	4.2	2.5	0.8	20.0	17.4	8.2	7.8	
Refused	9.2	14.5	19.1	23.4	3.2	0.4	10.0	12.2	
Behavior									
Currently using standard days method (Girma indicator)	1.9	3.6	0.5	0	1.5	2.1	1.3	2.0	
Currently using a modern method of contraception	33.8	22.4	15.1	10.7	25.3	28.4	25.3	21.0	0.10

contraception and that they feel comfortable discussing FP with their partner, but the majority of women also reported that they could not use FP if their partner objected. This is further reflected in women's reports of decisionmaking around the use of contraception: Very few women reported that the decision is theirs alone (4% of women or less), while joint decisionmaking was considerably higher in the Hamzari study area (62%) and in the Girma study area (50%), compared to Wadata, where two-thirds of male partners made decisions related to contraception alone. However, there is a plan to increase joint decisionmaking in the Wadata intervention through the husband school approach's aims for 40% of their 5,000 members' wives attesting that FP decisionmaking was joint. At the time of the survey, 15% of Wadata intervention participants and 34% of Hamzari participants reported currently using a modern method of contraception.

Table 11 presents men's knowledge, attitudes, norms, and self-efficacy related to FP. At least 40% of men across the three study groups knew three or more modern FP methods.

We assessed attitudes related to FP among men. Approximately 50% of men in the intervention groups thought it is acceptable for a woman to have a baby before the age of 18 years, while 32% of Girma

TABLE 11 MEN'S KNOWLEDGE, ATTITUDES, NORMS, SELF-EFFICACY, AND BEHAVIORS RELATED TO FP

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=237 (%)	COMP N=227 (%)	INTER N=186 (%)	COMP N=202 (%)	INTER N=220 (%)	COMP N=228 (%)	INTER N=643 (%)	COMP N=657 (%)	
Knowledge									
Know at least three or more modern FP methods	49.8	40.1	66.1	62.4	73.2	72.4	62.5	58.1	0.19
Attitudes—Agree with statement									
It is acceptable for a woman to have a child before the age of 18	57.0	58.6	50.0	40.1	53.2	33.8	53.7	44.3	0.02
It is acceptable for a couple to have a child less than 2 years after the birth of their last child	58.7	58.6	33.9	34.7	37.7	25.4	44.3	39.7	0.05
It is acceptable for a couple to try to limit the number of children they have	63.3	55.5	33.3	34.2	32.7	48.3	44.2	46.4	0.17
It is acceptable for a couple to use methods such as condoms, the pill, or injectables to delay or avoid pregnancy	62.9	59.0	48.9	48.5	91.8	92.1	68.7	67.3	0.74
Norms—Agree with statement									
Members of this community would agree if a woman uses contraception	60.3	58.6	38.7	32.7	75.0	87.3	60.6	59.1	0.26
Religious leaders would agree with a woman's decision to use contraception	57.8	56.8	34.4	23.3	62.7	86.4	52.7	56.8	0.00
Self-efficacy—Agree with statement									
I know where to go to obtain contraception	74.3	63.9	64.0	64.4	82.3	93.0	74.0	74.1	0.36
I could use FP even if my partner objected	69.6	56.8	9.7	5.5	44.1	37.7	43.6	34.4	0.00
I feel comfortable discussing FP with my partner	77.2	66.1	64.0	60.4	92.3	92.5	78.5	73.5	0.07
Would you say that the use of contraception is mainly:									0.51
Your decision	80.2	90.3	62.9	71.3	27.7	27.2	57.2	62.6	
Your partner's decision	0.4	4.4	0.0	0.0	2.3	0.0	0.9	1.5	
Joint decision	19.4	5.3	31.7	27.2	63.2	66.7	38.0	33.3	
Other	0.0	0.0	3.2	1.5	0.0	0.0	0.9	0.5	
Refused	0.0	0.0	2.2	0.0	6.8	6.1	3.0	2.1	

intervention area participants and 63% of Hamzari intervention area participants thought it is acceptable for a couple to try to limit the number of children they have. In addition, 34% of Wadata intervention area participants and 59% of Hamzari intervention area participants thought it is acceptable for a couple to have a child less than two years after the birth of their last child. When asked if it is acceptable for a couple to use methods such as condoms, the pill, or injectables to delay or avoid pregnancy, 48% of men in Wadata intervention areas, compared to 92% in Hamzari intervention groups, agreed with this statement.

Hamzari and Girma study participants thought that members of the community would agree if a woman used contraception (60% and 75%, respectively) and that religious leaders would agree with a woman's decision to use contraception (58% and 63%, respectively), whereas Wadata study participants were less likely to agree with either of the two statements.

Overall, most men reported knowing where to go to obtain contraception and felt comfortable discussing FP with their partners. The majority of men in all study groups except Girma reported that the decision to use contraception is theirs only; among men in Girma, joint decisionmaking is more common, which may be the result of the "*maison famille harmonieuse*" approach, which aims to improve communication and joint decisionmaking between spouses on a wide range of topics, including FP. Like the women in this study, very few men reported that women make the decision alone.

Table 12 presents women's exposures to messages about FP in the past three months.

The percentage of women across all three study groups who heard a message related to FP in the past three months varied by implementation area. In the Hamzari intervention area, 82% of women had heard a message, compared to only 43% in the Wadata intervention area. Women were mainly exposed to those messages through a health care worker in the Hamzari and Wadata study groups and through community events in Girma. Women in Girma in the intervention group also reported hearing messages on the radio, though this was not true for women in the control group, who reported hearing messages from health care workers. Overall, among the

TABLE 12 WOMEN'S EXPOSURES TO MESSAGES ABOUT FAMILY PLANNING IN THE PAST 3 MONTHS

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=476 (%)	COMP N=477 (%)	INTER N=403 (%)	COMP N=402 (%)	INTER N=475 (%)	COMP N=476 (%)	INTER N=1,355 (%)	COMP N=1,354 (%)	
Heard messages in last 3 months	81.5	79.9	42.7	27.9	55.4	61.3	60.8	57.9	0.35
Where did you hear these messages (select all)									
Radio	15.6	17.2	2.2	4.7	23.2	8.6	14.3	10.5	0.05
TV	1.1	1.7	0.0	0.0	1.1	0.4	0.7	0.7	0.99
Community event	18.3	5.7	2.7	0.5	20.2	25.6	14.3	11.1	0.07
Health care worker	79.0	74.0	22.6	19.9	14.3	41.2	39.5	46.6	0.01
Community volunteer	13.7	3.8	9.4	5.2	4.0	0.8	9.0	3.2	0.00
Community leader	10.1	1.1	10.2	3.5	6.3	3.6	8.8	2.7	0.00
Neighbor	7.8	1.9	10.4	4.2	9.1	12.0	9.0	6.1	0.02
Poster	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.32
Mobile message	0.0	0.0	0.3	0.3	0.0	0.0	0.1	0.1	0.99
Newspaper	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.32
Promotional materials	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Social media	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
How many times									0.01
Did not hear	18.7	20.1	57.3	72.1	44.6	38.7	39.3	42.1	
Once	0.8	4.2	9.2	8.7	4.8	3.2	4.7	5.2	
2–4 times	49.6	60.6	24.6	17.2	40.6	46.9	39.0	42.9	
5–10 times	24.8	12.0	5.5	1.7	5.3	11.1	12.2	8.6	
More than 10 times	6.1	3.1	3.5	0.3	4.6	0.2	4.8	1.3	

majority of women reporting hearing messages about FP, most women heard the message at least two to four times in the past three months.

Table 13 presents men's exposures to messages about FP in the past three months.

The percentage of men who heard a message in the past three months ranged from 23% to 75% in the intervention groups. They were mainly exposed to those messages through the radio and/or a health care worker. In the Hamzari and Wadata regions, 77% and 48% of intervention study participants, respectively, did not hear any messages about FP, whereas in the Girma region, 43% of intervention study participants heard a message about FP two to four times in the past three months. Exposure to FP messages through Girma's "*maison famille harmonieuse*" may explain the higher levels of exposure, which also benefit from the involvement of influential religious leaders and community volunteers.

Maternal health

Table 14 (page 19 & 20) presents women's knowledge, attitudes, norms, self-efficacy, and behaviors related to maternal health.

Most women thought that they should get four or more ANC checkups and that they should give birth at a health facility or hospital, and the majority of women, believed that they should discuss their pregnancy with their husbands. A relatively low percentage of women thought that pregnant women only need ANC if they are sick (less than 34%) and that it is better to use traditional health care during pregnancy rather than going to a health facility for ANC (less than 30%).

Most women in the Hamzari intervention group (71%) thought that women in their community get four or more ANC visits, compared to 52% in the Wadata intervention area and 56% in the Girma intervention area. Most women in the Hamzari intervention area (80%) thought that women in their community give birth in a health facility or hospital. However, fewer women in Wadata (45%) and Girma (59%) agreed with this statement.

TABLE 13 MEN'S EXPOSURES TO MESSAGES ABOUT FAMILY PLANNING IN THE PAST 3 MONTHS

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=237 (%)	COMP N=227 (%)	INTER N=186 (%)	COMP N=202 (%)	INTER N=220 (%)	COMP N=228 (%)	INTER N=643 (%)	COMP N=657 (%)	
Heard messages in last 3 months	23.2	11.5	51.6	50.0	75.0	82.5	49.1	48.0	0.64
Where did you hear these messages (select all)									
Radio	21.1	9.7	42.5	46.0	55.9	46.1	39.2	33.5	0.05
TV	0.4	0.0	3.8	0.5	3.2	2.6	2.3	1.1	0.23
Community event	15.6	6.2	0.5	0.0	20.0	46.9	12.8	18.4	0.02
Health care worker	13.1	6.6	11.8	6.4	48.6	55.7	24.9	23.6	0.60
Community volunteer	1.7	0.9	5.9	0.5	4.1	9.2	3.7	3.7	0.95
Community leader	0.4	0.9	0.5	0.0	1.4	3.5	0.8	1.5	0.23
Neighbor	0.4	0.0	1.6	2.0	6.8	14.0	5.5	3.0	0.05
Poster	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Mobile message	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Newspaper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Promotional materials	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Social media	0.0	0.0	0.0	0.0	0.9	0.0	0.3	0.0	0.12
How many times									0.61
Did not hear	76.8	88.6	48.4	50.0	25.0	17.5	50.9	52.1	
Once	0.4	0.4	4.3	1.5	9.6	8.8	4.7	3.7	
2–4 times	13.5	6.6	31.2	30.7	42.7	46.9	28.6	28.0	
5–10 times	9.3	3.1	15.5	15.8	15.5	17.1	12.9	11.9	
More than 10 times	0.0	1.3	1.6	2.0	7.3	9.7	3.0	4.4	

As for self-efficacy, female study participants in the Hamzari and Girma regions did not report difficulties in starting a conversation with their partners about attending ANC at a health facility. Likewise, they did not find it difficult to start a conversation with their partners about giving birth at a health facility. However, in the Wadata region, these percentages were lower than in the other study groups.

Approximately 45% (Wadata) and 64% (Hamzari) of female participants in intervention groups had four or more prenatal consultations during their last pregnancy. For women who delivered in the last five years, 72% of Hamzari intervention area women, 51% of Girma intervention area women, and 41% of Wadata intervention area women gave birth at a health facility.

In the Wadata study area, we see a higher percentage of women (approximately 53%) reporting they would have difficulty getting to a health facility for delivery, which may be due to the vast geographic area and greater difficulties in reaching health facilities. This may explain the lower levels of women delivering in a health facility. For women in the Girma areas this is less of an issue, but women still have trouble reaching the facility to give birth compared to Hamzari intervention areas. We do note that in the Girma areas women stated that people in the community do not deliver in the facility, suggesting another factor may be driving the lower use of health facilities for deliveries in these communities, and more evidence is needed to understand the situation.

TABLE 14 WOMEN'S KNOWLEDGE, ATTITUDES, NORMS, SELF-EFFICACY, AND BEHAVIORS RELATED TO MATERNAL HEALTH

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=476 (%)	COMP N=477 (%)	INTER N=403 (%)	COMP N=402 (%)	INTER N=475 (%)	COMP N=476 (%)	INTER N=1,355 (%)	COMP N=1,354 (%)	
Knowledge									
How many ANC checkups should a woman get for her health/baby									0.97
None	0.2	0.00	3.7	4.2	0.4	0.0	1.3	1.3	
1–3	4.4	5.7	40.2	41.9	19.6	16.4	20.2	20.4	
4 or more	94.3	93.3	55.3	53.2	79.0	82.6	77.4	77.3	
Other/don't know/refuse	1.1	1.1	0.7	1.5	1.1	1.1	1.2	1.0	
Where should a woman give birth									0.79
At home	1.3	1.5	43.2	42.8	10.5	9.5	17.0	16.5	
Health facility/hospital	98.7	98.1	56.8	57.2	89.3	90.3	82.9	83.3	
Other/don't know							0.0	0.1	
Refuse	0.0	0.2	0.0	0.0	0.2	0.2	0.1	0.2	
Attitudes—Agree with statement									
It is important for a woman to discuss her pregnancy with her husband	92.4	91.2	83.4	88.1	92.4	94.8	89.7	91.5	0.12
Pregnant women only need ANC if they are sick	34.7	19.9	29.0	29.1	14.1	5.5	25.8	17.6	0.00
It is better to use traditional health care during pregnancy rather than go to a health facility for ANC	30.0	12.6	22.3	24.1	12.6	4.0	21.6	13.0	0.00
The health facility is the best place to deliver a baby	97.3	95.6	87.1	93.8	90.5	93.5	91.9	94.3	0.31
Norms									
How many ANC visits do most women in this community get for their health and their baby									0.00
None	0.0	0.0	1.5	0.5	1.3	0.2	0.9	0.2	
1–3	4.6	5.5	43.7	42.5	21.3	20.2	22.1	21.6	
4 or more	70.8	82.4	52.4	47.1	56.0	72.9	60.1	68.6	
Don't know	24.6	12.2	2.5	10.0	21.5	6.7	16.9	9.6	
Where do women in this community usually give birth?									0.00
At home	0.2	0.4	54.8	59.2	32.4	21.9	27.8	25.4	
Health facility/hospital	80.3	93.1	44.9	40.6	59.0	77.5	62.3	72.0	
Other	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	
Don't know	18.7	5.0	0.3	0.3	8.6	0.6	9.7	2.1	
Refuse	0.6	1.3	0.0	0.0	0.0	0.0	0.2	0.4	

TABLE 14 WOMEN'S KNOWLEDGE, ATTITUDES, NORMS, SELF-EFFICACY, AND BEHAVIORS RELATED TO MATERNAL HEALTH (CONTINUED)

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=476 (%)	COMP N=477 (%)	INTER N=403 (%)	COMP N=402 (%)	INTER N=475 (%)	COMP N=476 (%)	INTER N=1,355 (%)	COMP N=1,354 (%)	
Self-efficacy—Respond not difficult									
Start a conversation with your husband/partner about attending ANC at a health facility									0.14
Very difficult	0.6	1.3	2.7	2.5	2.7	1.5	2.0	1.7	
A bit difficult	6.1	4.4	24.3	13.9	5.1	5.9	11.2	7.8	
Not difficult at all	93.3	94.1	72.7	83.1	92.0	92.4	86.7	90.3	
Refuse	0.0	0.2	0.3	0.5	0.2	0.2	0.2	0.3	
Attend ANC at a health facility/Get your wife to a facility									0.71
Very difficult	0.4	0.8	2.2	4	2.3	1.3	1.6	1.9	
A bit difficult	5.5	4.2	23.1	19.4	4.4	5.3	10.3	9.1	
Not difficult at all	94.1	94.6	74.4	76.4	93.1	93.3	87.9	88.7	
Refuse	0.0	0.4	0.3	0.3	0.2	0.2	0.2	0.3	
Start a conversation with your husband/partner about giving birth at a health facility									0.98
Very difficult	0.6	1.3	3.7	8.0	5.7	2.1	3.3	3.5	
A bit difficult	6.1	4.0	26.1	27.1	7.2	8.8	12.4	12.6	
Not difficult at all	93.1	94.6	69.7	64.7	86.5	88.5	83.8	83.5	
Refuse	0.2	0.2	0.5	0.3	0.6	0.6	0.4	0.4	
Get to a health facility to give birth/Get your wife to a facility									0.32
Very difficult	0.6	1.3	14.9	12.4	10.5	5.3	8.4	6.0	
A bit difficult	4.6	3.1	32.0	31.8	3.6	9.5	12.4	13.9	
Not difficult at all	94.5	95.2	53.1	55.7	85.9	84.9	79.2	80.0	
Refuse	0.2	0.4	0.0	0.0	0.0	0.4	0.1	0.3	
During your last pregnancy in the last 5 years, how many times did you have a prenatal consultation	**N=459**	**N=459**	**N=345**	**N=323**	**N=475**	**N=476**	**N=1,258**	**N=1,279**	0.04
None	16.1	22.0	8.4	9.3	7.1	6.7	10.7	13.0	
1–3	25.7	32.0	47.0	45.2	28.8	35.3	32.6	36.7	
4 or more	58.2	46.0	44.6	45.5	64.0	58.0	56.7	50.4	
Where did you give birth to your last child?	**N=459**	**N=459**	**N=345**	**N=323**	**N=475**	**N=476**	**N=1,258**	**N=1,279**	0.96
At home	27.9	36.8	58.8	63.2	49.1	37.6	44.1	43.9	
Health facility/hospital	72.1	63.2	41.2	36.8	51.0	62.4	55.9	56.1	

Table 15 (page 21) presents men's knowledge, attitudes, norms, and self-efficacy related to maternal health.

Most men thought that women should get four or more ANC checkups. Men from Hamzari and Girma reported that women should give birth at a health facility or hospital (more than 97%); however, only 47% of study participants in Wadata thought that women should give birth at a health facility.

More than 88% of men believed that their partners should discuss their pregnancy with them. In the Hamzari intervention group, a relatively high percentage of men thought that pregnant women only need ANC if they are sick and that it is better to use traditional health care during pregnancy rather than going to a health facility for ANC, while a much lower percentage of men thought this in the Girma and Wadata intervention groups.

Most men across all study groups thought that women in their community get four or more ANC visits when they are pregnant and that most women in their community deliver at a health facility or hospital, except for women in Girma, where the majority of men reported that women in their community give birth at home.

TABLE 15 MEN'S KNOWLEDGE, ATTITUDES, NORMS, SELF-EFFICACY, AND BEHAVIORS RELATED TO MATERNAL HEALTH

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=237 (%)	COMP N=227 (%)	INTER N=186 (%)	COMP N=202 (%)	INTER N=220 (%)	COMP N=228 (%)	INTER N=643 (%)	COMP N=657 (%)	
Knowledge									
How many ANC checkups should a woman get for her health/baby									0.00
None	1.3	0.0	0.0	0.0	0.0	0.0	0.5	0.0	
1–3	33.8	12.8	5.4	10.4	14.6	9.2	19.0	10.8	
4 or more	64.6	87.2	60.2	59.9	65.0	71.5	63.5	73.4	
Other/don't know/refuse	0.4	0.0	34.4	29.7	20.5	19.3	17.1	15.8	
Where should a woman give birth									0.55
At home	0.0	0.0	52.7	43.6	2.7	2.2	16.2	14.2	
Health facility/hospital	100.0	100.0	47.3	56.4	97.3	97.4	83.8	85.7	
Other/don't know	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.2	
Refuse									
Attitudes—Agree with statement									
It is important for a woman to discuss her pregnancy with her husband	91.6	92.1	87.6	95.5	99.1	97.8	93.0	95.1	0.28
Pregnant women only need ANC if they are sick	71.3	66.5	22.0	9.4	30.0	23.3	42.9	33.9	0.00
It is better to use traditional health care during pregnancy rather than go to a health facility for ANC	79.8	84.6	11.3	11.4	26.4	12.3	41.7	37.0	0.02
The health facility is the best place to deliver a baby	88.6	87.7	90.3	91.6	98.2	100.0	92.4	93.2	0.84
Norms									
How many ANC visits do most women in this community get for their health and their baby									0.00
None	0.4	0.0	0.0	0.0	0.0	0.0	0.2	0.0	
1–3	32.5	14.1	7.5	6.4	19.6	10.1	20.8	10.4	
4 or more	65.0	85.5	50.0	50.5	58.6	70.6	58.5	69.6	
Other/don't know/refuse	2.1	0.4	42.5	43.1	21.8	19.3	20.5	20.1	
Where do women in this community usually give birth?									0.32
At home	0.4	0.9	69.4	52.5	20.9	15.8	27.4	21.9	
Health facility/hospital	99.2	98.7	28.5	45.5	78.2	84.2	71.5	77.3	
Other	0.0	0.0	0.0	0.0	0.5	0.0	0.2	0.0	
Don't know	0.4	0.4	2.2	2.0	0.5	0.0	0.9	0.8	
Refuse									
Self-efficacy—Respond not difficult									
Start a conversation with your husband/partner about attending ANC at a health facility									0.27
Very difficult	2.1	2.6	3.2	4.0	1.4	0.0	2.2	2.1	
A bit difficult	40.9	29.5	10.8	8.4	11.8	15.4	22.2	18.1	
Not difficult at all	57.0	67.8	86.0	87.6	86.8	84.7	75.6	79.8	
Attend ANC at a health facility/Get your wife to a facility									0.06
Very difficult	0.8	3.5	2.7	4.5	1.4	0.4	1.6	2.7	
A bit difficult	44.7	27.8	14.0	9.9	17.3	22.4	26.4	20.4	
Not difficult at all	54.4	68.7	82.8	85.2	81.4	77.2	71.9	76.7	
Refuse	0.0	0.0	0.5	0.5	0.0	0.0	0.1	0.2	
Start a conversation with your wife/partner about giving birth at a health facility									0.03
Very difficult	2.1	2.6	12.9	15.4	1.8	0.0	5.1	5.6	
A bit difficult	44.3	22.0	30.1	23.3	13.2	14.0	29.6	19.6	
Not difficult at all	53.2	74.5	56.5	60.9	85.0	85.5	65.0	74.1	
Refuse	0.4	0.9	0.5	0.5	0.0	0.4	0.3	0.6	
Get to a health facility to give birth/Get your wife to a facility									0.37
Very difficult	6.3	3.1	14.5	16.8	2.3	0.9	7.3	6.5	
A bit difficult	45.2	35.2	33.3	22.8	13.2	18.9	30.8	25.7	
Not difficult at all	47.7	61.2	52.2	60.4	84.6	80.3	61.6	6.6	
Refuse	0.8	0.4	0.0	0.0	0.0	0.0	0.3	0.2	

As for self-efficacy, male study participants in the three study groups did not face any difficulties in starting a conversation with their partners about attending ANC at a health facility (57%–87%) and did not find it difficult to start a conversation with their partners about giving birth at a health facility (53%–85%).

Table 16 presents information on women's exposure to messages about women seeking care at a facility during pregnancy or childbirth in the past three months.

In the Hamzari region, 86% of participants heard messages about seeking care during pregnancy and childbirth in the past three months, whereas in the Wadata and Girma regions, only between 47% and 55% of participants respectively, had heard these messages. Messaging related to women seeking care at a health facility during pregnancy or childbirth were prevalent in both intervention and comparison groups across all study groups, although the percentages were higher for women in Hamzari. Women in all three study regions were exposed to this information through the radio, a community event, and/or a health care worker.

Among the overall majority of women who heard messages about women seeking care at a facility, women reported hearing the messages at least twice, with some women reporting hearing the messages five times or more in the past three months (including nearly a third of women in the intervention group in Hamzari).

Table 17 (page 23) presents information on men's exposure to messages about women seeking care at a facility during pregnancy or childbirth in the past three months.

More than half of men in Wadata and Girma reported hearing messages about seeking care during pregnancy and childbirth in the past three months, but the percentage of men in Hamzari who heard these messages was strikingly lower (8%). Radio and community health care workers were the most common channels, and in Girma men reported hearing these messages from neighbors. When men did hear messages about women seeking care at a facility during pregnancy or childbirth, they heard these messages more than once in the past three months.

TABLE 16 WOMEN'S EXPOSURES TO MESSAGES ABOUT WOMEN SEEKING CARE AT A FACILITY DURING PREGNANCY OR CHILDBIRTH IN THE PAST 3 MONTHS

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=476 (%)	COMP N=477 (%)	INTER N=403 (%)	COMP N=402 (%)	INTER N=475 (%)	COMP N=476 (%)	INTER N=1,355 (%)	COMP N=1,354 (%)	
Heard messages in last 3 months	85.7	85.5	47.4	44.0	54.95	61.1	63.5	64.7	0.61
Where did you hear these messages (select all)									
Radio	14.9	25.0	5.0	8.2	24.0	9.2	15.1	14.5	0.74
TV	1.1	2.5	0.7	0.0	1.1	0.6	1.0	1.1	0.14
Community event	18.1	4.8	4.2	0.0	22.3	27.1	15.4	11.2	0.00
Health care worker	80.9	79.0	34.5	36.3	16.0	35.1	44.3	50.9	0.01
Community volunteer	15.1	3.6	7.4	4.7	3.6	0.8	8.8	3.0	0.00
Community leader	10.1	1.1	4.2	0.8	7.0	4.0	7.2	2.0	0.00
Neighbor	7.8	2.9	4.5	1.2	7.6	13.7	6.7	6.2	0.59
Poster	0.2	0.0	0.0	0.0	0.2	0.2	0.2	0.1	0.57
Mobile message	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.32
Newspaper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Promotional materials	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.32
Social media	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.32
How many times									0.01
Did not hear	14.3	14.5	52.6	56.0	45.3	38.9	36.6	35.4	
Once	2.7	4.2	9.9	7.0	4.2	2.7	5.4	4.5	
2–4 times	47.1	59.8	27.5	28.6	36.0	43.9	37.4	44.9	
5–10 times	30.0	17.4	7.0	7.5	9.7	14.1	16.0	13.3	
More than 10 times	5.9	4.2	3.0	1.0	4.8	0.4	4.7	1.8	

TABLE 17 MEN'S EXPOSURES TO MESSAGES ABOUT WOMEN SEEKING CARE AT A FACILITY DURING PREGNANCY OR CHILDBIRTH

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=237 (%)	COMP N=227 (%)	INTER N=186 (%)	COMP N=202 (%)	INTER N=220 (%)	COMP N=228 (%)	INTER N=643 (%)	COMP N=657 (%)	
Heard messages in last 3 months	8.0	6.2	55.4	58.9	80.0	83.3	46.4	49.2	0.34
Where did you hear these messages (select all)									
Radio	7.2	5.7	46.2	46.5	57.3	47.4	35.6	32.7	0.35
TV	0.0	0.9	3.8	0.5	3.6	0.9	2.3	0.8	0.11
Community event	0.4	0.0	0.5	0.0	27.3	47.8	9.6	16.6	0.00
Health care worker	1.3	1.8	13.4	21.8	50.0	58.8	21.5	27.7	0.01
Community volunteer	0.8	1.3	3.2	0.5	10.0	18.9	4.7	7.2	0.09
Community leader	0.4	0.0	0.0	0.0	3.2	3.1	1.2	1.1	0.78
Neighbor	0.0	0.0	0.5	0.0	11.8	23.7	4.2	8.2	0.02
Poster	0.4	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.32
Mobile message	0.8	0.0	0.0	0.0	0.0	0.4	0.3	0.2	0.54
Newspaper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Promotional materials	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Social media	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
How many times									0.79
Did not hear	92.0	93.8	44.6	41.1	20.0	16.7	53.7	50.8	
Once	0.0	0.9	5.4	4.0	3.6	4.0	2.8	2.9	
2–4 times	5.5	5.3	20.4	33.2	45.5	38.6	23.5	25.4	
5–10 times	1.7	0.0	22.6	16.3	21.4	31.6	14.5	16.0	
More than 10 times	0.8	0.0	7.0	5.5	9.6	9.2	5.6	4.9	

Child immunization

Table 18 (page 24) presents information on women's knowledge, attitudes, norms, and self-efficacy related to child immunization.

Few women knew that children should receive their first vaccination immediately (i.e., within the first week) following birth (e.g., 9% in the Wadata intervention group and 24% in the Hamzari intervention group). While most women in Hamzari and Girma reported correct knowledge that children should be vaccinated five or more times in the first year, only about a third of women in the Wadata study groups understood children should receive five or more vaccinations, which also reflected in women in Wadata reporting that women in their community take their children for vaccination only one to four times.

The vast majority of women in all three study groups agreed with the statements that children should get vaccinations to protect against illness and that health care workers can safely provide immunization services to children.

More than 90% of women in Hamzari reported no difficulty in being able to take a child to a health facility to receive vaccinations within the first week of birth; in Girma intervention areas 74% reported no difficulty in doing so, but more than a third of women (34%) in Wadata reported that it would be very difficult.

Table 19 (page 25) shows men's knowledge, attitudes, norms, and self-efficacy related to child immunization.

Knowledge of when to take a child for their first vaccination was mixed across men in the three study groups, with the highest percentages of men with correct knowledge in Hamzari and the lowest in Wadata. Men in all study groups were less familiar with the number of times a child should be vaccinated than women in the study. Similar to female participants, the majority of men surveyed agreed that children should get vaccinations to protect against illness and that health care workers can safely provide immunization services to children.

The majority of male study participants reported they could take a child to the health facility for vaccinations

TABLE 18 WOMEN'S KNOWLEDGE, ATTITUDES, NORMS, AND SELF-EFFICACY RELATED TO CHILD IMMUNIZATION

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=476 (%)	COMP N=477 (%)	INTER N=403 (%)	COMP N=402 (%)	INTER N=475 (%)	COMP N=476 (%)	INTER N=1,355 (%)	COMP N=1,354 (%)	
Knowledge									
When should you take a child for his/her first vaccination									0.08
Immediately after birth-week 1	24.4	34.4	8.7	6.0	13.8	11.8	16.0	18.0	
Between 1 and 3 weeks after birth	39.7	44.0	31.8	38.6	67.0	68.3	46.9	50.9	
Between 1 and 3 months	35.1	20.6	56.1	47.3	17.1	18.7	35.0	27.8	
Between 4 and 6 months	0.0	0.2	0.3	1.5	0.6	0.2	0.3	0.6	
Don't know/refuse	0.8	0.8	3.2	6.7	1.5	1.1	1.8	2.7	
Number of times a child should be vaccinated in first year									0.01
None	0.0	0.0	5.2	1.2	0.4	0.0	1.7	0.4	
1–4 times	11.1	6.1	57.6	60.5	22.3	20.8	28.9	27.4	
5 or more times	86.8	91.2	36.2	32.6	75.6	77.7	67.8	69.1	
Don't know/refuse	2.1	2.7	1	5.7	1.7	1.5	1.6	3.2	
Attitudes—Agree with statement									
Children should get vaccinations to protect against illness	95.8	95.6	97.0	97.8	97.7	99.0	96.8	97.4	0.69
Health care workers can safely provide immunization services to children	96.9	96.2	97.3	98.3	97.7	98.7	97.3	97.7	0.27
Self-efficacy—Not difficult at all									
I could take a child to the health facility for vaccinations within the first week of his/her life									0.01
Very difficult	0.0	0.0	36.7	37.6	13.3	14.5	15.6	16.2	
A bit difficult	8.8	7.6	29.0	35.1	13.1	30.0	16.3	23.6	
Not difficult at all	90.8	91.8	34.0	27.4	73.7	55.5	67.9	59.9	
Refuse	0.4	0.6	0.3	0.0	0.0	0.0	0.2	0.2	
I could take a child to the health facility to receive all recommended vaccinations									0.45
Very difficult	0.0	0.2	18.1	17.2	2.5	2.1	6.3	5.9	
A bit difficult	7.6	6.9	22.3	17.4	15.0	28.4	14.6	17.6	
Not difficult at all	92.2	92.7	59.6	65.4	82.5	69.5	79.1	76.5	
Refuse	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	
Norms									
In this community when do most families take their child for his/her first vaccination									0.00
Immediately after birth-week 1	17.9	21.2	4.7	3	9.1	8.2	10.9	11.2	
Between 1 and 3 weeks after birth	32.1	42.8	33.5	37.8	57.5	70.2	41.4	50.9	
Between 1 and 3 months	30.7	16.6	56.1	47.0	11.6	16.8	31.5	25.7	
Between 4 and 6 months	0.0	0.8	0.0	1.00	1.1	0.6	0.4	0.8	
Don't know/refuse	19.3	18.7	5.7	11.2	20.8	4.2	15.8	11.4	
In this community how many times do most families take their child for vaccination									0.01
None	0.0	0.0	2.0	0.0	0.2	0.0	0.7	0.0	
1–4 times	8.4	6.1	65.3	58.7	21.3	20.0	29.8	26.6	
5 or more times	59.2	68.3	28.5	24.1	55.4	67.7	48.7	55.0	
Don't know/refuse	32.4	25.6	4.2	17.2	23.2	12.4	20.8	18.5	

within the first week of their life (between 58% and 73%). Most men in Wadata (nearly three-quarters) and in Girma (68% in the intervention group and 50% in the comparison group) reported it would not be difficult at all to take a child to the health facility to receive all recommended vaccinations, while half or more of men in Hamzari reported it would be at least a bit difficult.

Most participants in Hamzari (45% in the intervention group and 58% in the comparison group) noted that most families in their community take their child for vaccination five or more times, while the majority of Wadata and Girma participants did not know or refused to answer.

TABLE 19 MEN'S KNOWLEDGE, ATTITUDES, NORMS, AND SELF-EFFICACY RELATED TO CHILD IMMUNIZATION

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=237 (%)	COMP N=227 (%)	INTER N=186 (%)	COMP N=202 (%)	INTER N=220 (%)	COMP N=228 (%)	INTER N=643 (%)	COMP N=657 (%)	
Connaissances									
When should you take a child for his/her first vaccination									0.56
Immediately after birth-week 1	74.3	57.3	9.1	7.4	23.6	41.7	38.1	36.5	
Between 1 and 3 weeks after birth	23.6	37.9	34.4	38.1	41.4	32.9	32.8	36.2	
Between 1 and 3 months	1.3	4.0	28.0	26.7	19.6	7.9	15.2	12.3	
Between 4 and 6 months	0.8	0.9	0.0	1.5	0.9	0.4	0.6	0.9	
Don't know/refuse	0.0	0.0	28.5	26.2	14.6	17.1	13.2	14.0	
Number of times a child should be vaccinated in first year									0.01
1–4 times	57.8	46.7	33.3	40.1	44.1	34.2	46.0	40.0	
5 or more times	42.2	53.3	18.3	14.4	26.4	42.1	29.9	37.4	
Don't know/refuse	0.0	0.0	48.4	45.5	29.6	23.7	24.1	22.2	
Attitudes—Agree with statement									
Children should get vaccinations to protect against illness	95.8	97.4	83.9	89.6	99.1	99.6	93.5	95.7	0.40
Health care workers can safely provide immunization services to children	93.7	96.0	85.0	91.1	98.2	99.6	92.7	95.7	0.19
Self-efficacy—Not difficult at all									
I could take a child to the health facility for vaccinations within the first week of his/her life									0.63
Very difficult	0.4	1.3	7.0	6.9	14.6	12.3	7.2	6.9	
A bit difficult	41.4	28.6	21.0	19.8	23.2	34.2	29.2	27.9	
Not difficult at all	58.2	69.6	72.0	73.3	62.3	53.1	63.6	65.0	
Refuse	0.0	0.4	0.0	0.0	0.0	0.4	0.0	0.3	
I could take a child to the health facility to receive all recommended vaccinations									0.72
Very difficult	5.1	4.9	6.5	6.9	7.3	6.1	6.2	5.9	
A bit difficult	52.7	43.6	19.4	16.3	24.6	44.3	33.4	35.5	
Not difficult at all	41.8	51.5	74.2	76.7	68.2	49.6	60.2	58.6	
Refuse	0.4	0.0	0.0	0.0	0.0	0.0	0.2	0.0	
Norms									
In this community when do most families take their child for his/her first vaccination									0.02
Immediately after birth-week 1	69.6	57.3	3.8	4.5	19.6	24.1	33.4	29.5	
Between 1 and 3 weeks after birth	27.9	38.3	26.9	30.7	40.0	50.0	31.7	40.0	
Between 1 and 3 months	2.1	4.0	21.5	22.3	24.6	8.3	15.4	11.1	
Between 4 and 6 months	0.4	0.4	2.2	0.5	1.4	0.0	1.2	0.3	
Don't know/refuse	0.0	0.0	45.7	42.1	14.6	17.5	18.2	19.0	
In this community how many times do most families take their child for vaccination									0.00
1–4 times	55.3	41.9	21.5	30.2	47.7	37.7	42.9	36.8	
5 or more times	44.7	58.2	14.5	10.4	22.3	38.6	28.3	36.7	
Don't know/refuse	0.0	0.0	64.0	59.4	30.0	23.7	28.8	26.5	

Table 20 (page 26) shows women's exposures to messages about the importance of vaccinations in the past three months.

The majority of female participants in all three study groups had heard messaging about the importance of vaccinations in the past three months, ranging from approximately 50% to 90%. Health care workers were the most frequent source of these messages in the Hamzari intervention group (85%) and Wadata intervention group (42%) followed by radio. In Girma, 26% of intervention group participants heard these messages at community events, followed by radio and health care workers.

The majority of Hamzari study participants heard these messages between two and four times, while Wadata

TABLE 20 WOMEN'S EXPOSURES TO MESSAGES ABOUT THE IMPORTANCE OF VACCINATIONS IN THE PAST 3 MONTHS

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=476 (%)	COMP N=477 (%)	INTER N=403 (%)	COMP N=402 (%)	INTER N=475 (%)	COMP N=476 (%)	INTER N=1,355 (%)	COMP N=1,354 (%)	
Heard messages in last 3 months	89.5	83.4	51.4	49.0	58.5	65.8	67.3	67.0	0.90
Where did you hear these messages (select all)									
Radio	17.7	29.1	3.0	7.2	25.5	11.3	16.0	16.4	0.88
TV	1.5	1.3	0.7	0.0	1.3	1.3	1.2	0.9	0.64
Community event	16.0	3.8	4.7	1.2	26.1	25.6	16.2	10.7	0.00
Health care worker	84.7	78.8	41.7	45.3	15.8	40.6	47.7	55.4	0.00
Community volunteer	13.9	4.2	9.7	4.5	4.0	2.5	9.2	3.7	0.00
Community leader	11.1	1.1	4.0	0.0	7.0	4.4	7.5	1.9	0.00
Neighbor	8.4	1.7	2.5	1.5	6.1	13.2	5.8	5.7	0.87
Poster	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	na
Mobile message	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.32
Newspaper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Promotional materials	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Social media	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	na
How many times									0.04
Did not hear	10.5	16.6	48.6	51.0	41.5	34.2	32.7	33.0	
Once	1.9	2.3	12.2	9.2	8.0	5.3	7.1	5.4	
2–4 times	47.9	46.8	26.8	34.1	36.6	43.9	37.7	42.0	
5–10 times	34.5	30.2	8.2	5.5	9.9	16.2	18.0	17.9	
More than 10 times	5.3	4.2	4.2	0.3	4.0	0.4	4.5	1.7	

(49%) and Girma (42%) intervention group participants did not hear them at all. Wadata shared that the challenges in vaccinating children in their area have been noted by the health authorities, who have asked that vaccinators accompany food distribution efforts because of these challenges.

Table 21 (page 27) shows men's exposures to messages about the importance of vaccinations in the past three months.

A majority of male participants from Wadata (nearly 60%) and Girma (approximately 82%) had heard these messages about the importance of vaccinations in the last three months. In Wadata and Girma these messages were most often heard on the radio (46% and approximately 60% respectively), followed by health care workers (18% and 56% to 59% respectively).

The majority of Hamzari participants (over 90%) and approximately 40% of Wadata participants did not hear these messages at all, while approximately 17% of Girma residents had not heard these messages. A husband school intervention has been rolled out in the Hamzari intervention area, and since its introduction in March 2020 we anticipate seeing an increase in exposure to health messages among men. For Wadata, the low levels of exposure may be because the husband school focuses more on FP and nutrition and less on vaccinations, while it is expected that health providers will communicate this information on the importance of vaccinations.

Breastfeeding and complementary feeding

Table 22 (page 28) shows women's attitudes, norms, and self-efficacy related to breastfeeding and complementary feeding.

The majority of women in all three study groups reported that it was healthy for a woman to give only breast milk to a child for six months or fewer and that foods and liquids should be introduced at six months or later. Notably, however, nearly half of women in Wadata reported that it is healthy for a woman to give

TABLE 21 MEN'S EXPOSURES TO MESSAGES ABOUT THE IMPORTANCE OF VACCINATIONS IN THE PAST 3 MONTHS

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=237 (%)	COMP N=227 (%)	INTER N=186 (%)	COMP N=202 (%)	INTER N=220 (%)	COMP N=228 (%)	INTER N=643 (%)	COMP N=657 (%)	
Heard messages in last 3 months	3.4	4.9	58.1	59.4	82.3	82.9	46.2	48.7	0.35
Where did you hear these messages (select all)									
Radio	3.0	4.9	45.7	46.0	60.9	57.5	35.2	35.8	0.83
TV	0.4	0.4	3.8	0.5	3.2	2.6	2.3	1.2	0.27
Community event	0.4	0.0	0.5	0.0	30.9	54.0	10.9	18.7	0.00
Health care worker	1.3	1.3	18.3	18.8	56.4	59.2	25.0	26.8	0.51
Community volunteer	0.4	0.0	3.2	0.0	17.7	26.3	7.2	9.1	0.19
Community leader	0.0	0.0	0.0	0.0	20.0	18.9	6.8	6.5	0.81
Neighbor	0.0	0.0	0.5	0.5	22.3	28.5	7.8	10.1	0.14
Poster	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Mobile message	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Newspaper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Promotional materials	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Social media	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
How many times									0.01
Did not hear	96.6	95.2	41.9	40.6	17.7	17.1	53.8	51.3	
Once	0.0	0.44	9.7	5.0	4.1	4.0	4.2	3.0	
2–4 times	1.7	3.5	26.9	25.7	38.6	29.0	21.6	19.2	
5–10 times	1.3	0.0	9.1	19.3	25.5	39.0	11.8	19.5	
More than 10 times	0.4	0.9	12.4	9.4	14.1	11.0	8.6	7.0	

only breast milk to a child for less than six months and a third of women reported that foods and liquids should be introduced before the child is six months old. The majority of participants reported that babies are less likely to get sick if exclusively breastfed for six months (ranging from 83% to 94%).

The majority of participants agreed that it would not be difficult at all to give their baby food or drink at six months. Similarly, women across all three study groups also reported it would not be difficult to give only breast milk to a baby for the first six months, ranging from 49% to 91%. Overall, women reported that the norm in the community is to breastfeed for six months or less, while the norm around introducing foods and liquids into a baby's diet varies, with 46% of women in Hamzari intervention areas suggesting 7 to 23 months compared to 17% of women in Wadata intervention areas and 28% in Girma intervention areas.

Table 23 (page 29) shows men's attitudes, norms, and self-efficacy related to breastfeeding and complementary feeding behaviors.

Approximately 62% of men in Hamzari intervention areas, 33% of men in Wadata intervention areas, and 45% of men in Girma intervention areas reported that it is healthy for a woman to give only breast milk for six months. This is in line with community norms around this behavior. Knowledge of when to introduce foods and liquids into a baby's diet was quite mixed among men in all study groups, and this is similarly reflected in the community norms around this behavior. Notably, a number of men from Wadata said that they did not know or refused to respond regarding the age parents should introduce foods and liquids besides breast milk. This aligns with Wadata's formative research, which found that men do not partake in complementary feeding of their children as this is seen more as the role of mothers and other women, such as grandmothers. The majority of all participants in the intervention areas reported supportive attitudes and agreed that babies are less likely to get sick if exclusively breastfed for six months.

The majority of participants agreed that introducing foods and liquids to a baby at the age of six months is not difficult at all (ranging from 59% to 88%). However, more

TABLE 22 WOMEN'S ATTITUDES, NORMS, AND SELF-EFFICACY RELATED TO BREASTFEEDING AND COMPLEMENTARY FEEDING

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=476 (%)	COMP N=477 (%)	INTER N=403 (%)	COMP N=402 (%)	INTER N=475 (%)	COMP N=476 (%)	INTER N=1,355 (%)	COMP N=1,354 (%)	
Knowledge									
How many months is it healthy for a woman to give only breast milk									0.02
Less than 6 months	2.9	4.2	43.7	47.0	11.8	16.0	18.2	21.0	
6 months	75.8	77.8	53.1	51.2	74.5	68.7	68.6	66.7	
7–23 months	19.3	10.5	2.7	1.5	13.1	15.1	12.2	9.5	
Don't know/refuse	1.9	7.6	0.5	0.3	0.6	0.2	1.0	2.8	
At what age should a parent introduce foods and liquids to a baby									0.38
Less than 6 months	1.7	2.1	34.2	33.1	15.4	10.9	16.2	14.4	
6 months	21.6	14.9	50.1	51.0	39.8	45.4	36.5	36.3	
7–23 months	73.7	75.7	15.1	15.7	43.6	43.5	45.7	46.6	
Don't know/refuse	2.9	7.3	0.5	0.3	1.3	0.2	1.6	2.7	
Attitudes—Agree with statement									
If baby is exclusively breastfed for 6 months he/she is less likely to be sick	83.4	83.7	90.1	93.5	91.2	91.0	88.1	89.2	0.09
Fathers can help introduce foods and liquid into a baby's diet	88.2	84.7	95.0	97.0	81.9	78.8	86.3	88.0	0.27
Self-efficacy—Not difficult at all									
Giving a baby food and liquids when he/she is 6 months of age									0.44
Very difficult	0.2	1.3	14.1	9.2	10.7	9.5	8.1	6.5	
A bit difficult	15.3	11.7	29.8	31.3	10.3	11.1	17.9	17.3	
Not difficult at all	84.2	86.2	55.8	59.5	79.0	79.2	73.9	75.8	
Refuse	0.2	0.8	0.3	0.0	0.0	0.2	0.2	0.4	
Give only breast milk to the baby for the first 6 months									0.07
Very difficult	0.8	8.0	30.8	34.8	33.9	36.6	21.3	26.0	
A bit difficult	7.1	11.3	20.4	11.7	15.2	13.2	13.9	12.1	
Not difficult at all	91.4	78.8	48.9	53.5	51.0	50.0	64.6	61.2	
Refuse	0.6	1.9	0.0	0.0	0.0	0.2	0.2	0.7	
Norms									
How many months do people in this community think is it healthy for a woman to give her baby only breast milk									0.00
Less than 6 months	6.3	7.3	51.1	53.0	10.7	29.8	21.2	28.8	
6 months	45.2	50.5	41.4	37.3	49.5	59.5	45.6	49.7	
7–23 months	6.5	7.6	3.2	0.1	14.3	4.2	8.3	4.4	
Don't know/refuse	42.0	34.6	4.2	8.7	25.5	6.5	25.0	17.1	
At what age do people in this community think that a parent should introduce foods and liquids besides breast milk into a baby's diet									0.01
Less than 6 months	2.1	2.1	37.7	39.1	17.3	24.6	18.0	21.0	
6 months	9.7	8.2	40.5	39.3	29.5	45.0	25.8	30.3	
7–23 months	46.2	57.2	17.4	12.4	28.0	19.5	31.2	30.7	
24+ months	42.0	32.5	4.5	9.2	25.3	10.9	25.0	18.0	

TABLE 23 MEN'S ATTITUDES, NORMS, AND SELF-EFFICACY RELATED TO BREASTFEEDING AND COMPLEMENTARY FEEDING

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=237 (%)	COMP N=227 (%)	INTER N=186 (%)	COMP N=202 (%)	INTER N=220 (%)	COMP N=228 (%)	INTER N=643 (%)	COMP N=657 (%)	
Knowledge									
How many months is it healthy for a woman to give only breast milk									0.00
Less than 6 months	37.1	30.4	51.6	57.4	22.7	28.1	36.4	37.9	
6 months	62.5	66.5	33.3	31.2	45.0	58.8	48.1	53.0	
7–23 months	0.4	3.1	3.8	0.5	20.5	1.3	8.2	1.7	
Don't know/refuse	0.0	0.0	11.3	10.9	11.8	11.8	7.3	7.5	
At what age should a parent introduce foods and liquids to a baby									0.45
Less than 6 months	30.4	31.7	27.4	28.7	34.1	30.3	30.8	30.3	
6 months	15.2	14.1	34.4	40.6	37.7	42.1	28.5	32.0	
7–23 months	54.4	54.2	26.9	20.3	15.9	12.7	33.3	29.4	
Don't know/refuse	0.0	0.0	11.3	10.4	12.3	14.9	7.5	8.4	
Attitudes—Agree with statement									
If baby is exclusively breastfed for 6 months he/she is less likely to sick	94.5	96.0	85.0	78.7	96.8	98.7	92.5	91.6	0.38
Introducing foods and liquids to a baby at the age of 6 months									0.44
Very difficult	0.8	0.9	3.2	0.5	7.3	8.8	3.7	3.5	
A bit difficult	40.1	28.2	28.0	32.2	5.0	4.4	24.6	21.2	
Not difficult at all	59.1	70.9	68.3	67.3	87.7	86.8	71.5	75.4	
Refuse	0.0	0.0	0.5	0.0	0.0	0.0	0.2	0.0	
Self-efficacy—Not difficult at all									
Helping your partner breastfeed her baby									0.04
Very difficult	3.8	1.3	22.0	9.4	12.3	9.2	12.0	6.5	
A bit difficult	50.6	41.0	25.3	35.6	26.4	34.7	35.0	37.1	
Not difficult at all	45.6	57.7	52.7	55.0	61.4	56.1	53.0	56.3	
Fathers can help introduce foods and liquid into a baby's diet	92.4	92.5	75.8	76.2	96.8	99.6	89.1	90.0	0.19
Norms									
How many months do people in this community think is it healthy for a woman to give her baby only breast milk									0.00
Less than 6 months	31.7	30.0	48.9	51.0	30.0	47.4	36.1	42.5	
6 months	59.9	67.8	16.7	9.9	35.5	37.3	39.0	39.4	
7–23 months	8.4	2.2	2.7	1.0	17.3	0.9	9.8	1.4	
Don't know/refuse	0.0	0.0	31.7	38.1	17.3	14.5	15.1	16.7	
At what age do people in this community think that a parent should introduce foods and liquids besides breast milk into a baby's diet									0.09
Less than 6 months	27.4	28.6	28.0	24.8	40.9	50.4	32.2	35.0	
6 months	14.4	17.6	25.8	32.7	27.3	21.5	22.1	23.6	
7–23 months	58.2	52.9	14.0	4.0	13.2	11.1	30.0	23.4	
24+ months	0.0	0.9	32.3	38.6	18.6	16.7	15.7	18.0	

men reported at least some difficulty in helping their partner breastfeed the baby, including 22% of men in the intervention group in Wadata who reported that it would be very difficult to do so.

Table 24 displays women's exposures to messages about the importance of breastfeeding and complementary feeding in the past three months.

A majority of Hamzari participants had heard messages about the importance of breastfeeding and complementary feeding in the past three months (85%), while fewer Wadata participants (49%) and Girma (51%) participants had heard them. Most women from Hamzari (78%) and approximately a third (37%) from Wadata had heard these messages from a health care worker, while 20% of Girma participants had heard them through radio and 19% through a community event.

Interestingly, about half of the participants from Wadata and Girma did not hear the messages at all. However, half of Hamzari participants, 26% of Wadata participants, and 35% of Girma participants heard the messages two to four times.

Table 25 (page 31) displays men's exposures to messages about the importance of breastfeeding and complementary feeding in the past three months.

Only 3% of Hamzari participants had heard messages about the importance of breastfeeding and complementary feeding in the past three months, while 58% of Wadata and 73% of Girma participants had heard them. Approximately 46% from Wadata and half from Girma (51%) had heard these messages through radio, while 13% of Wadata and 47% of Girma participants heard them through a health care worker.

While the majority of Hamzari (97%) and nearly half (43%) of Wadata participants did not hear these messages, about 38% of Girma participants heard the messages two to four times.

TABLE 24 WOMEN'S EXPOSURES TO MESSAGES ABOUT THE IMPORTANCE OF BREASTFEEDING AND COMPLEMENTARY FEEDING IN THE PAST 3 MONTHS

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=476 (%)	COMP N=477 (%)	INTER N=403 (%)	COMP N=402 (%)	INTER N=475 (%)	COMP N=476 (%)	INTER N=1,355 (%)	COMP N=1,354 (%)	
Heard messages in last 3 months	85.1	78.6	49.4	45.8	51.0	55.7	62.5	60.8	0.49
Where did you hear these messages (select all)									
Radio	15.8	18.9	3.5	6.2	20.2	7.1	13.7	11.0	0.08
TV	1.7	0.8	0.3	0.0	1.1	0.4	1.0	0.4	0.16
Community event	17.0	4.0	2.2	0.5	19.0	26.7	13.3	10.9	0.11
Health care worker	78.8	73.8	36.7	37.8	12.6	33.4	43.1	48.9	0.01
Community volunteer	15.8	3.8	10.2	4.0	4.0	1.3	10.0	3.0	0.00
Community leader	10.5	1.3	4.5	1.7	7.4	3.8	7.6	2.3	0.00
Neighbor	8.2	1.5	4.7	3.5	5.3	11.8	6.1	5.7	0.61
Poster	0.0	0.0	0.0	0.0	0.4	0.0	0.2	0.0	0.16
Mobile message	0.0	0.0	0.3	0.3	0.2	0.0	0.2	0.1	0.57
Newspaper	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.32
Promotional materials	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Social media	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.32
How many times									0.00
Did not hear	14.9	21.8	50.6	54.2	49.1	44.3	37.5	39.3	
Once	2.3	3.6	11.4	11.9	3.4	3.8	5.4	6.1	
2–4 times	49.2	55.9	26.3	26.6	34.5	38.0	37.2	41.0	
5–10 times	27.7	15.1	7.4	6.5	8.8	13.5	15.1	12.0	
More than 10 times	5.9	3.6	4.2	0.8	4.2	0.4	4.8	1.6	

TABLE 25 MEN'S EXPOSURES TO MESSAGES ABOUT THE IMPORTANCE OF BREASTFEEDING AND COMPLEMENTARY FEEDING IN THE PAST 3 MONTHS

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=237 (%)	COMP N=227 (%)	INTER N=186 (%)	COMP N=202 (%)	INTER N=220 (%)	COMP N=228 (%)	INTER N=643 (%)	COMP N=657 (%)	
Heard messages in last 3 months	3.4	4.9	57.5	57.4	72.7	78.5	42.6	46.6	0.13
Where did you hear these messages (select all)									
Radio	3.0	4.9	46.2	45.5	51.4	45.2	32.0	31.4	0.80
TV	0.0	0.9	3.8	0.5	2.7	1.8	2.0	1.1	0.30
Community event	0.0	0.0	1.1	0.0	19.6	45.2	7.0	15.7	0.00
Health care worker	0.8	0.4	13.4	17.3	47.3	57.5	20.4	25.4	0.04
Community volunteer	0.0	0.0	5.4	0.0	6.8	15.4	3.9	5.3	0.21
Community leader	0.0	0.0	0.0	0.0	1.4	4.0	0.5	1.4	0.14
Neighbor	0.0	0.0	0.5	0.0	12.7	22.8	4.5	7.9	0.02
Poster	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Mobile message	0.4	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.31
Newspaper	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.2	0.33
Promotional materials	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Social media	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
How many times									0.11
Did not hear	96.6	95.2	42.5	42.6	27.7	21.5	57.4	53.4	
Once	0.0	0.4	4.8	5.5	4.6	2.2	3.0	2.6	
2–4 times	1.7	4.0	35.5	29.2	37.7	32.0	23.8	21.5	
5–10 times	1.3	0.4	12.9	17.8	18.6	29.8	10.6	16.0	
More than 10 times	0.4	0.0	4.3	5.0	11.4	14.5	5.3	6.5	

Child nutrition

Table 26 (page 32) displays women's attitudes, norms, and self-efficacy related to children's nutrition.

A majority of participants from all three study areas (52%–89%) stated that a child 6 to 23 months of age should eat four or more meals each day, while knowledge of the number of different foods that a child should eat was much more mixed, though the majority of women reported that it should be more than two. The majority of women across all three regions agreed that children who eat a variety of foods are less likely to get sick (79%–99%) and that providing children four meals a day ensures they have strength (76%–99%).

The majority of participants also reported that giving a child a meal four times a day is not difficult at all (54%–91%). However, women in Wadata and Girma noted that it is very difficult to give a child a minimum of five different types of food a day. More women reported that the norm in their community is for children to receive at least three meals a day, while the norm for the number of different types of food is more mixed, though the nonresponse (didn't know or refused to answer) on these questions is notable. This reflects qualitative findings that suggest issues around child nutrition and malnutrition may be stigmatized due to shame parents feel related to poverty and malnutrition. Girma suggests leveraging communities' sentiment related to cultural pride and honor to address this stigma by generating innovative messages related to cultural pride and honor associated with a nutritionally healthy child and disseminating through SBC platforms (village assemblies, folk shows, community videos, community radio, etc.) to improve related indicators. Wadata also acknowledged the importance of addressing cultural pride and honor through their triad work.

Table 27 (page 33) displays men's attitudes, norms, and self-efficacy related to children's nutrition.

A majority of participants from all three study groups stated that a child 6 to 23 months of age should eat four or more meals each day, with similar community norms around this behavior, while knowledge of the number

TABLE 26 WOMEN'S ATTITUDES, NORMS, AND SELF-EFFICACY RELATED TO NUTRITION

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=476 (%)	COMP N=477 (%)	INTER N=403 (%)	COMP N=402 (%)	INTER N=475 (%)	COMP N=476 (%)	INTER N=1,355 (%)	COMP N=1,354 (%)	
Knowledge									
Number of meals a child 6–23 months should eat each day									0.00
One	0.4	0.8	0.7	0.3	0.2	0.0	0.4	0.4	
Two	1.9	2.1	1.2	1.2	12.4	0.0	5.4	1.1	
Three	33.6	30.4	8.4	9.2	35.0	16.2	25.6	19.1	
Four or more	63.0	65.6	89.3	89.3	51.8	83.6	66.9	79.0	
Don't know/refuse	1.1	1.1	0.3	0.0	0.6	0.2	0.7	0.4	
Number of different types of food a child 6–23 months should eat a day									0.17
One	8.2	9.2	13.7	15.9	3.2	3.8	8.1	9.3	
Two	24.6	17.4	57.3	65.4	37.7	47.3	38.9	42.1	
Three	36.3	36.7	20.8	16.2	28.0	20.6	28.8	24.9	
Four or more	28.4	31.2	7.9	2.5	30.5	28.4	23.0	21.7	
Don't know/refuse	2.5	5.5	0.3	0.0	0.6	0.0	1.2	1.9	
Attitudes—Agree with statement									
Children who eat a variety of foods are less likely to get sick	78.6	85.5	92.3	99.8	92.6	95.8	87.6	93.4	0.00
Providing children four meals a day ensures they have strength	87.6	85.5	98.8	100.0	76.4	77.7	87.0	87.1	0.15
Self-efficacy—Not difficult at all									
Give child a meal four times a day									0.01
Very difficult	1.5	2.5	1.2	0.3	4.2	0.6	2.4	1.2	
A bit difficult	14.9	27.9	14.9	9.0	26.5	45.2	19.0	28.3	
Not difficult at all	83.4	69.4	83.6	90.6	68.8	54.2	78.4	70.3	
Refuse	0.2	0.2	0.3	0.3	0.4	0.0	0.3	0.2	
Give child a minimum of five different types of food a day									0.35
Very difficult	19.1	21.6	48.1	53.0	45.1	49.2	36.9	40.6	
A bit difficult	33.4	35.4	23.8	13.2	16.00	21.9	24.5	24.1	
Not difficult at all	47.5	42.4	27.5	33.8	38.5	29.0	38.4	35.1	
Refuse	0.0	0.6	0.5	0.0	0.4	0.0	0.3	0.2	
Norms									
Number of meals people in community think a child 6–23 months should eat each day									0.00
One	0.0	0.2	0.7	0.0	0.0	0.0	0.2	0.1	
Two	1.5	0.4	1.5	0.8	4.2	0.2	2.4	0.4	
Three	15.8	13.4	16.9	16.4	24.6	15.3	19.2	15.0	
Four or more	33.4	40.9	73.7	76.9	43.4	79.4	49.0	65.1	
Don't know/refuse	49.4	45.1	7.2	6.0	27.8	5.0	29.2	19.4	
Number of different types of food people in the community think a child 6–23 months should eat a day									0.00
One	0.2	1.1	12.4	13.4	2.3	5.3	4.6	6.2	
Two	13.2	14.5	55.6	59.7	21.9	46.9	28.9	39.3	
Three	27.3	26.8	17.4	15.2	24.0	13.0	23.2	18.5	
Four or more	8.4	10.5	6.2	3.7	23.0	28.8	12.9	14.9	
Don't know/refuse	50.8	47.2	8.4	8.0	28.8	6.1	30.5	21.1	

TABLE 27 MEN'S ATTITUDES, NORMS, SELF-EFFICACY, AND BEHAVIORS RELATED TO NUTRITION

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=237 (%)	COMP N=227 (%)	INTER N=186 (%)	COMP N=202 (%)	INTER N=220 (%)	COMP N=228 (%)	INTER N=643 (%)	COMP N=657 (%)	
Knowledge									
Number of meals a child 6–23 months should eat each day									0.00
One	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.2	
Two	12.7	0.4	0.0	0.0	0.0	0.0	4.7	0.2	
Three	36.3	19.4	11.3	7.4	16.8	8.3	22.4	11.9	
Four or more	50.6	79.7	86.0	84.7	76.8	87.3	69.8	83.9	
Don't know/refuse	0.4	0.0	2.7	7.9	6.4	4.4	3.1	4.0	
Number of different types of food a child 6–23 months should eat a day									0.00
One	0.0	0.0	8.6	2.5	2.3	3.5	3.3	2.0	
Two	3.8	1.3	28.0	30.2	16.4	45.2	15.1	25.4	
Three	27.4	12.8	45.2	52.5	27.7	11.8	32.7	24.7	
Four or more	68.4	85.5	15.1	8.4	42.7	33.8	44.2	43.8	
Don't know/refuse	0.4	0.4	3.2	6.4	10.9	5.7	4.8	4.1	
Attitudes—Agree with statement									
Children who eat a variety of foods are less likely to get sick	74.7	74.5	93.6	94.1	97.7	99.6	88.0	88.2	0.87
Providing children four meals a day ensures they have strength	84.8	89.9	95.2	95.1	97.7	99.6	92.2	94.8	0.33
Self-efficacy—Not difficult at all									
Give child a meal four times a day									0.22
Very difficult	0.8	1.8	1.1	1.0	3.6	3.1	1.9	2.0	
A bit difficult	48.5	26.9	24.2	15.4	32.7	47.4	36.1	30.4	
Not difficult at all	50.6	71.4	74.7	83.7	63.6	49.1	62.1	67.4	
Refuse	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.2	
Give child a minimum of five different types of food a day									0.15
Very difficult	7.2	4.4	34.4	26.7	25.9	35.5	21.5	22.1	
A bit difficult	56.1	44.5	21.5	21.8	30.0	26.8	37.1	31.4	
Not difficult at all	36.7	51.1	44.1	51.5	44.1	37.7	41.4	46.6	
Norms									
Number of meals people in community think a child 6–23 months should eat each day									0.00
One	0.4	0.0	0.5	0.0	0.0	0.0	0.3	0.0	
Two	3.8	1.8	0.0	0.0	0.9	0.0	1.7	0.6	
Three	38.0	21.6	10.2	5.5	22.3	15.4	24.6	14.5	
Four or more	57.8	76.2	64.5	63.9	68.2	80.7	63.3	74.0	
Don't know/refuse	0.0	0.4	24.7	30.7	8.6	4.0	10.1	11.0	
Number of different types of food people in the community think a child 6–23 months should eat a day									0.00
One	0.4	0.0	2.2	0.0	2.7	3.5	1.7	1.2	
Two	0.8	1.8	11.8	16.3	16.4	46.5	9.3	21.8	
Three	25.7	15.0	25.8	30.2	33.2	16.2	28.3	20.1	
Four or more	73.0	81.9	11.3	5.9	35.5	29.8	42.3	40.5	
Don't know/refuse	0.0	1.3	48.9	47.5	12.3	4.0	18.4	16.4	

of different types of food a child 6 to 23 months of age should eat was much more mixed, including a majority of men in Wadata reporting three or fewer.

The majority of men across all three regions agreed that children who eat a variety of foods are less likely to get sick and that providing children four meals a day ensures they have strength.

The majority of participants also reported that giving a child a meal four times a day is not difficult at all (51%–84%), though greater difficulty was reported in giving a child a minimum of five different types of food a day.

Table 28 displays women's exposures to messages about the importance of diversity and a minimum acceptable diet in the past three months.

The majority of women in Hamzari (76%) had heard messages about the importance of diversity and a minimum acceptable diet in the past three months; however, most women in Wadata and Girma had not.

Among the participants who had heard the messages, the majority of Hamzari participants (71%) and 18% of Wadata participants heard them through a health care worker, while 18% of Girma participants heard them through radio. The majority of Hamzari participants heard these messages between two and four times.

Table 29 (page 35) displays men's exposures to messages about the importance of diversity and a minimum acceptable diet in the past three months.

The majority of men in Girma (70%) had heard messages about the importance of diversity and a minimum acceptable diet in the past three months; however, only about half of the men in Wadata (53%) had heard them, while most men in Hamzari (3%) had not.

TABLE 28 WOMEN'S EXPOSURES TO MESSAGES ABOUT THE IMPORTANCE OF DIVERSITY AND A MINIMUM ACCEPTABLE DIET IN THE PAST 3 MONTHS

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=476 (%)	COMP N=477 (%)	INTER N=403 (%)	COMP N=402 (%)	INTER N=475 (%)	COMP N=476 (%)	INTER N=1,355 (%)	COMP N=1,354 (%)	
Heard messages in last 3 months	75.8	60.2	27.3	18.9	40.8	47.1	49.1	43.3	0.02
Where did you hear these messages (select all)									
Radio	11.6	7.1	3.5	3.2	18.5	7.8	11.6	6.2	0.00
TV	1.1	0.6	0.7	0.0	0.0	0.6	0.6	0.4	0.57
Community event	18.9	4.4	1.2	0.0	15.2	25.2	12.3	10.4	0.20
Health care worker	71.0	56.0	17.6	13.7	10.3	22.3	33.8	31.6	0.21
Community volunteer	14.5	5.0	8.2	2.0	3.6	0.8	8.8	2.7	0.00
Community leader	10.5	0.8	4.0	1.0	6.1	4.2	7.0	2.1	0.00
Neighbor	8.4	1.1	2.5	2.0	5.7	13.7	5.7	5.8	0.93
Poster	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.2	0.16
Mobile message	0.0	0.0	0.3	0.5	0.4	0.0	0.2	0.2	0.64
Newspaper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	na
Promotional materials	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	na
Social media	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	na
How many times									0.00
Did not hear	24.2	39.8	72.7	81.1	59.4	52.9	51.0	56.7	
Once	3.2	2.1	6.5	7.5	3.8	4.0	4.4	4.4	
2–4 times	44.3	47.8	14.1	9.7	29.1	31.9	30.0	30.9	
5–10 times	25.0	8.4	4.5	1.7	6.1	10.3	12.3	7.1	
More than 10 times	3.4	1.9	2.2	0.0	1.7	0.8	2.4	0.96	

Among the participants who had heard the messages, a plurality of Wadata (43%) heard them through radio, while 39% of participants in Girma heard them through a health care worker and 20% through radio.

While the majority of Hamzari participants (97%) had not heard these messages, 31% of Wadata and 45% of Girma participants heard them between two and four times.

Water, sanitation, and hygiene

Table 30 (page 36) shows women's attitudes, norms, self-efficacy, and behaviors related to WASH by study group.

Overall, there was low agreement among women across all study groups with attitudes that would prevent handwashing behavior and high agreement with community norms that support handwashing behavior.

Women also agreed that washing hands with soap after defecating is not difficult at all (71%–91%), that washing hands with soap before preparing food is not difficult at all (67%–87%), and that washing hands with soap before eating is also not difficult at all (71%–91%). Most participants reported using both water and soap when handwashing (73%–90%) and that it is critical to wash hands before eating (72%–82%). Many women in Hamzari and Girma reported that it is also critical to wash hands before preparing a meal and after using the latrine/defecation, though women in Wadata did not report these times as critical for handwashing, and overall low percentages of women reported the need to wash hands before serving food. The majority of women in all three study areas reported that nothing is done to make water safe to drink (83%–97%). In Wadata, most of the handwashing stations observed were fixed, while half of the stations in Hamzari were mobile, and two-thirds

TABLE 29 MEN'S EXPOSURES TO MESSAGES ABOUT THE IMPORTANCE OF DIVERSITY AND A MINIMUM ACCEPTABLE DIET IN THE PAST 3 MONTHS

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=237 (%)	COMP N=227 (%)	INTER N=186 (%)	COMP N=202 (%)	INTER N=220 (%)	COMP N=228 (%)	INTER N=643 (%)	COMP N=657 (%)	
Heard messages in last 3 months	3.0	3.5	53.2	58.4	69.6	76.8	40.3	45.8	0.03
Where did you hear these messages*									
Radio	2.5	2.2	42.5	47.5	20.0	21.5	20.1	22.8	
TV	0.0	0.0	1.1	0.0	0.9	0.9	0.6	0.3	
Community event	0.0	0.0	0.0	0.0	5.0	12.7	1.7	4.4	
Health care worker	0.0	0.9	3.2	10.4	39.1	38.2	14.3	16.7	
Community volunteer	0.4	0.4	5.4	0.5	0.9	0.0	2.0	0.3	
Community leader	0.0	0.0	0.0	0.0	0.9	0.9	0.3	0.3	
Neighbor	0.0	0.0	1.1	0.0	2.7	2.6	1.2	0.9	
Poster	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05	
Mobile message	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Newspaper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Promotional materials	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Social media	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
How many times									0.18
Did not hear	97.1	96.5	46.8	41.6	30.5	23.3	59.7	54.2	
Once	0.0	0.4	7.0	5.0	6.4	17.5	4.2	7.8	
2–4 times	2.1	2.2	31.2	42.6	45.1	34.7	25.2	25.9	
5–10 times	0.8	0.9	14.5	9.4	13.2	17.5	9.0	9.3	
More than 10 times	0.0	0.0	0.5	1.5	5.0	7.0	1.9	2.9	

*Question was captured as single closed item response for only this question. Multiple responses were not allowed.

TABLE 30 WOMEN'S ATTITUDES, NORMS, SELF-EFFICACY, AND BEHAVIORS RELATED TO WATER, SANITATION, AND HYGIENE BY STUDY GROUP

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=476 (%)	COMP N=477 (%)	INTER N=403 (%)	COMP N=402 (%)	INTER N=475 (%)	COMP N=476 (%)	INTER N=1,355 (%)	COMP N=1,354 (%)	
Attitudes—Agree with statement									
I do not wash my hands with soap because religion only requires the use of water, not soap	22.7	27.0	20.6	9.7	1.7	2.1	14.7	13.1	0.03
I cannot wash my hands with soap because bar soap is too expensive	23.7	23.3	22.3	13.7	5.3	5.5	16.8	14.2	0.30
Washing hands with soap before eating will ruin the taste of the food	23.7	13.2	18.9	10.2	1.1	2.7	14.3	8.6	0.01
Norms—Agree with statement									
People in this community wash their hands after defecating	72.3	74.2	78.2	81.8	61.3	94.5	70.2	83.6	0.00
People in this community wash their hands before preparing food	72.3	75.3	84.9	82.3	63.2	95.8	72.8	84.6	0.00
People in this community wash their hands before eating	72.3	75.3	82.9	82.6	61.7	93.1	71.7	83.7	0.00
Self-efficacy—Not difficult at all									
Wash your hands with soap after defecating									0..56
Very difficult	0.4	0.4	1.5	2.0	3.6	1.3	1.9	1.2	
A bit difficult	8.8	5.0	26.8	21.4	15.6	27.1	16.5	17.6	
Not difficult at all	90.6	93.7	71.1	76.4	80.0	70.8	81.2	80.5	
Refuse	0.2	0.8	0.0	0.3	0.8	0.8	0.4	0.7	
Wash your hands with soap before preparing food									0.06
Very difficult	1.7	1.7	0.0	0.0	4.2	7.1	3.5	2.4	
A bit difficult	30.3	19.7	12.8	1.0	24.5	39.5	16.3	21.3	
Not difficult at all	67.2	78.6	87.2	98.5	71.3	53.4	80.0	75.9	
Refuse	0.8	0.0	0.0	0.5	0.0	0.0	0.3	0.4	
Wash your hands with soap before eating									0.04
Very difficult	0.8	0.8	2.5	2.5	5.1	4.2	2.8	2.5	
A bit difficult	7.6	5.5	26.3	25.4	15.2	33.4	15.8	21.2	
Not difficult at all	91.4	92.9	71.2	72.1	79.6	62.4	81.4	76.0	
Refuse	0.2	0.8	0.0	0.0	0.2	0.0	0.2	0.3	
Behavior									
What do you use when handwashing									048
Water only/ash/sand	10.1	14.3	26.8	32.1	21.7	18.1	19.1	20.9	
Water and soap	89.9	85.7	73.2	67.9	78.3	81.9	80.9	79.1	
When are critical times to wash hands									
Before preparing a meal	55.5	58.3	40.9	33.6	63.4	61.8	53.9	52.2	0.45
Before serving food	39.5	47.4	40.2	38.8	19.0	12.2	32.5	32.5	0.99
Before eating	82.1	82.6	71.7	67.2	75.0	72.1	76.5	74.3	0.15
After using the latrine/defecation	82.8	65.2	35.5	36.3	47.0	52.5	56.1	52.2	0.09
Handling feces	24.6	32.7	21.6	21.9	12.0	1.3	19.3	18.5	0.54
How is water made safe to drink									
Boil	0.2	0.2	0.0	0.0	0.2	0.0	0.2	0.1	0.56
Add bleach/chlorine	10.3	1.5	0.0	0.0	0.0	0.2	3.6	0.6	0.00
Strain through a cloth	4.2	2.5	3.0	7.0	7.0	16.0	4.8	8.6	0.00
Water filter	5.0	2.7	0.3	0.0	0.6	1.3	2.1	1.4	0.19
Solar disinfection	0.2	0.0	0.0	0.0	0.0	0.2	0.1	0.1	1.00
Nothing	82.6	93.5	97.3	93.3	93.5	83.6	90.8	90.0	0.48
Handwashing station observed in household									0.399
Fixed	21.0	21.4	83.1	83.8	27.6	31.1	41.8	43.3	
Mobile	52.1	50.5	16.4	17.2	9.1	4.4	26.4	24.1	
None	26.9	28.1	0.5	0.0	63.3	64.5	31.8	32.6	
Handwashing station observed	N=348	N=343	N401	N402	N=175	N=169	N=914	N=924	
Water at handwashing station observed	12.6	16.0	68.3	66.9	50.3	29.0	56.0	59.2	0.24
Soap or ash/sand observed	4.6	3.5	24.4	20.2	17.7	2.0	15.7	10.6	0.00

of households in Girma had no observed handwashing stations. The Wadata handwashing stations were part of a focused effort on preventive activities against COVID-19 since 2020 and were made with local equipment (Tippy-Taps) in households and public places. In GIRMA's zone, people preferred using the classic "*bouilloire*" either for the ablution before praying or when going to latrines or for any other circumstances requiring handwashing. They were not highly interested in Tippy-Taps.

Table 31 shows men's attitudes, norms, self-efficacy, and behaviors related to WASH by study group.

Overall, there was low agreement among men across all study groups with attitudes that do not support

TABLE 31 MEN'S ATTITUDES, NORMS, SELF-EFFICACY, AND BEHAVIORS RELATED TO WATER, SANITATION, AND HYGIENE BY STUDY GROUP

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=237 (%)	COMP N=227 (%)	INTER N=186 (%)	COMP N=202 (%)	INTER N=220 (%)	COMP N=228 (%)	INTER N=643 (%)	COMP N=657 (%)	
Attitudes—Agree with statement									
I do not wash my hands with soap because religion only requires the use of water, not soap	62.0	54.6	9.1	3.0	4.6	7.0	22.2	27.1	0.08
I cannot wash my hands with soap because bar soap is too expensive	59.9	55.5	4.8	1.0	8.2	7.0	26.3	21.9	0.00
Washing hands with soap before eating will ruin the taste of the food	59.1	55.1	17.7	9.9	3.6	5.7	28.2	24.1	0.04
Norms—Agree with statement									
People in this community wash their hands after defecating	80.6	87.7	85.0	85.6	84.6	93.9	83.2	89.2	0.00
People in this community wash their hands before preparing food	75.5	85.5	65.6	74.3	76.8	80.3	73.1	80.2	0.00
People in this community wash their hands before eating	78.5	87.7	92.5	93.1	85.5	78.7	84.9	89.4	0.03
Self-efficacy—Not difficult at all									
Wash your hands with soap after defecating									0.31
Very difficult	0.8	0.9	0.0	0.0	2.3	1.8	1.1	0.9	
A bit difficult	30.4	17.6	6.5	1.5	18.6	33.3	19.4	18.1	
Not difficult at all	68.8	80.2	93.6	98.5	79.1	64.5	79.5	80.4	
Refuse	0.0	1.3	0.0	0.0	0.0	0.4	0.0	0.6	
Wash your hands with soap before preparing food									0.52
Very difficult	1.7	1.3	0.0	0.0	4.1	7.5	2.0	3.0	
A bit difficult	31.7	20.3	11.3	1.0	24.6	39.9	23.3	21.2	
Not difficult at all	65.8	78.4	88.7	98.5	71.4	52.6	74.3	75.7	
Refuse	0.8	0.0	0.0	0.5	0.0	0.0	0.3	0.2	
Wash your hands with soap before eating									0.55
Very difficult	6.8	3.5	0.0	0.0	3.2	4.4	3.6	2.7	
A bit difficult	36.7	32.2	4.3	0.5	24.1	41.2	23.0	25.6	
Not difficult at all	55.7	64.3	95.7	99.5	72.7	54.0	73.1	71.5	
Refuse	0.8	0.0	0.0	0.0	0.0	0.4	0.3	0.2	
Behavior									
What do you use when handwashing									0.81
Water only/ash/sand	7.2	4.0	57.0	60.9	24.6	23.7	27.5	28.3	
Water and soap	92.8	96.0	43.0	39.1	75.5	76.3	72.5	71.7	
When are critical times to wash hands									
Before preparing a meal	68.8	68.7	54.3	58.9	69.1	60.5	64.7	62.9	0.53
Before serving food	51.1	52.4	39.3	44.1	35.0	25.4	42.2	40.5	0.49
Before eating	52.7	62.1	98.9	99.0	97.3	95.6	81.3	85.1	0.03
After using the latrine/defecation	91.1	94.7	42.5	25.7	46.8	71.1	72.2	65.3	0.04
Handling feces	60.8	61.7	28.5	27.2	47.7	51.3	47.0	47.5	0.85

handwashing behaviors, with the exception of men in Hamzari, and high agreement with community norms that support handwashing behaviors.

Men also agreed that washing hands with soap after defecating is not difficult at all (69%–94%), that washing hands with soap before preparing food is not difficult at all (66%–89%), and that washing hands with soap before eating is also not difficult at all (56%–96%).

The majority of men in Hamzari and Girma reported using both water and soap when handwashing most of the time, while in Wadata it was much more common for participants to report using water only with ash or sand.

Participants agreed that it is critical to wash hands before preparing a meal (54%–69%) and also before eating (53%–99%), with more mixed responses on other critical handwashing times, such as before serving food and after using the latrine/defecation.

Table 32 shows women's exposures to messages about handwashing in the past three months.

The majority of women in the intervention groups had heard messages about handwashing in the past three months (52%–87%), and most heard these messages through a health care worker (Hamzari, 76%; Wadata, 36%) and/or radio and community events in the Girma intervention areas.

While 44% and 48%, respectively, of Wadata and Girma participants did not hear these messages, 46% of Hamzari participants, 38% of Wadata, and 31% of Girma participants heard them two to four times.

Table 33 (page 39) shows men's exposures to messages about handwashing in the past three months

The majority of men in Wadata (66%) and Girma (84%) regions had heard messages about handwashing in the past three months, while only 13% of men from

TABLE 32 WOMEN'S EXPOSURES TO MESSAGES ABOUT HANDWASHING IN THE PAST 3 MONTHS

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=476 (%)	COMP N=477 (%)	INTER N=403 (%)	COMP N=402 (%)	INTER N=475 (%)	COMP N=476 (%)	INTER N=1,355 (%)	COMP N=1,354 (%)	
Heard messages in last 3 months	87.0	87.8	55.6	38.3	52.0	56.9	65.4	62.3	0.24
Where did you hear these messages (select all)									
Radio	22.1	40.0	6.0	8.5	23.6	10.7	17.8	20.4	0.25
TV	1.5	2.9	0.5	0.0	1.3	0.4	1.1	1.2	0.92
Community event	20.0	11.3	5.0	1.0	22.1	31.1	16.3	15.2	0.59
Health care worker	75.8	72.3	36.2	29.1	13.9	30.5	42.3	44.8	0.29
Community volunteer	16.0	9.9	13.4	7.5	4.0	2.1	11.0	6.4	0.00
Community leader	13.7	2.1	12.2	3.2	6.5	4.8	10.7	3.4	0.00
Neighbor	7.4	2.5	4.0	1.2	5.5	11.8	5.7	5.4	0.77
Poster	0.0	0.0	0.0	0.0	2.7	5.5	0.96	1.9	0.05
Mobile message	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.2	0.25
Newspaper	0.0	0.0	0.0	0.0	0.6	0.0	0.2	0.0	0.07
Promotional materials	0.0	0.0	0.0	0.0	0.4	0.0	0.2	0.0	0.16
Social media	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.32
How many times									0.18
Did not hear	13.0	12.4	44.4	61.7	48.0	43.1	34.6	37.8	
Once	5.7	8.0	5.0	6.2	5.5	4.8	5.4	6.4	
2–4 times	45.6	50.9	38.2	26.9	31.4	37.6	38.4	39.1	
5–10 times	30.0	23.3	8.2	5.0	10.1	12.6	16.5	14.1	
More than 10 times	5.7	5.5	4.2	0.3	5.1	1.9	5.0	2.7	

TABLE 33 MEN'S EXPOSURES TO MESSAGES ABOUT HANDWASHING IN THE PAST 3 MONTHS

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=237 (%)	COMP N=227 (%)	INTER N=186 (%)	COMP N=202 (%)	INTER N=220 (%)	COMP N=228 (%)	INTER N=643 (%)	COMP N=657 (%)	
Heard messages in last 3 months	13.1	7.5	65.6	72.3	83.6	86.0	52.4	54.6	0.47
Where did you hear these messages (select all)									
Radio	13.1	7.5	45.7	49.5	66.8	66.2	40.9	40.8	0.97
TV	0.8	0.9	3.8	0.0	5.5	4.0	3.3	1.7	0.27
Community event	0.8	1.3	0.5	0.5	42.7	64.0	15.1	22.8	0.00
Health care worker	3.0	1.3	19.9	27.2	57.7	63.2	26.6	30.8	0.12
Community volunteer	0.0	0.9	10.2	1.0	35.9	37.3	15.4	13.6	0.35
Community leader	0.4	0.0	0.0	0.0	20.0	31.6	7.0	11.0	0.02
Neighbor	0.0	0.0	1.1	2.5	27.3	33.3	9.6	12.3	0.05
Poster	0.0	0.0	0.0	0.0	20.0	18.9	6.8	6.5	0.76
Mobile message	4.6	0.4	0.0	0.5	5.0	8.8	3.4	3.4	0.96
Newspaper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Promotional materials	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Na
Social media	0.4	0.0	0.0	0.0	0.0	0.9	0.2	0.3	0.63
How many times									0.01
Did not hear	86.9	92.5	34.4	27.7	16.4	14.0	47.6	45.4	
Once	0.0	0.0	8.1	7.9	0.9	1.3	2.6	2.9	
2–4 times	7.2	5.3	17.7	18.3	19.6	8.8	14.5	10.5	
5–10 times	5.1	1.8	11.8	20.3	27.3	49.6	14.6	24.1	
More than 10 times	0.8	0.4	28.0	25.7	35.9	26.3	20.7	17.2	

Hamzari had heard these messages. Most participants heard these messages through radio (ranging from 13% to 67%), while 20% of Wadata participants and 58% of Girma participants also heard them through a health care worker.

While 87% of Hamzari participants, 34% of Wadata participants, and 16% of Girma participants did not hear these messages, 28% of Wadata and 36% of Girma participants heard them more than 10 times.

Barriers to seeking health care

Table 34 and **Table 35** (both page 40) summarize indicators related to household income and health care barriers.

Table 34 depicts barriers to seeking health care among married women of reproductive age.

Few female participants worked for money in the last 12 months (8%–21%). When asked about different reasons why women have difficulties obtaining medical advice or treatment, overall half of women report that going alone is not a barrier, while roughly two-thirds of women report that transportation and distance to the health centers are a problem. Permission to see a doctor is a barrier for three- quarters of women, while money is the most significant barrier to seeking health care.

Table 35 presents barriers to seeking health care among married men of reproductive age.

Most male participants worked for money in the last 12 months. When asked about different reasons why men have difficulties in obtaining medical advice or treatment, roughly two-thirds of men reported that transportation or distance to the health center is a barrier and, similar to women, money was the most significant barrier to seeking health care.

TABLE 34 BARRIERS TO SEEKING HEALTH CARE AMONG MARRIED WOMEN OF REPRODUCTIVE AGE

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=476 (%)	COMP N=477 (%)	INTER N=403 (%)	COMP N=402 (%)	INTER N=475 (%)	COMP N=476 (%)	INTER N=1,355 (%)	COMP N=1,354 (%)	
Worked in the last 12 months for money	7.6	11.1	9.4	8.7	17.1	21.2	11.5	14.0	0.08
For different reasons, women have difficulties in obtaining medical advice or treatment. When you are sick and want a medical opinion or a treatment, does each of the following constitute an important problem or not an important problem?									
Not important to obtain permission to see a doctor	15.1	18.2	20.4	32.3	35.8	25.4	23.9	25.0	0.50
Not important to obtain money for treatment	10.1	12.8	15.1	21.1	15	11.6	13.3	14.8	0.45
Not important distance to arrive at a health center	25.2	30.4	23.1	28.6	57.3	51.3	35.8	37.2	0.62
Not important—transportation	26.3	32.9	24.8	30.9	42.1	44.5	31.4	36.4	0.26
Not important—going alone	47.5	62.7	20.8	19.4	79.8	75.4	50.9	54.3	0.20

TABLE 35 BARRIERS TO SEEKING HEALTH CARE AMONG MARRIED MEN OF REPRODUCTIVE AGE

	HAMZARI		WADATA		GIRMA		TOTAL		P-VALUE
	INTER N=237 (%)	COMP N=227 (%)	INTER N=186 (%)	COMP N=202 (%)	INTER N=220 (%)	COMP N=228 (%)	INTER N=643 (%)	COMP N=657 (%)	
Worked in the last 12 months for money	62.9	44.5	58.6	60.9	96.8	99.1	73.3	68.5	0.18
For different reasons, men have difficulties in obtaining medical advice or treatment. When you are sick and want a medical opinion or a treatment, does each of the following constitute an important problem or not an important problem?									
Not important to obtain money for treatment	16.9	30.8	1.6	8.9	25.9	23.7	15.6	21.6	0.03
Not important distance to arrive at a health center	16.5	16.7	14.5	17.8	72.7	61.0	35.2	32.4	0.68
Not important—transportation	18.6	18.9	13.4	17.8	65.9	62.7	33.3	33.8	0.47

Key Findings and Recommendations

This technical report presents complete results of the baseline survey undertaken in April and May 2021. Over the period from 2021 through 2022 and 2023, baseline, midline, and endline waves of the survey will be used to assess the effectiveness of the RISE II integrated SBC activities for child marriage, FP, maternal health, immunization, child nutrition, and WASH behaviors in the Maradi and Zinder regions of Niger. As part of this evaluation, the surveys will not only measure changes in behavioral outcomes across these health areas but also measure whether certain behavioral drivers, or ideations, have been modified by SBC activities over the life of the program. These surveys are unique in that they also measure intermediate determinants of behavioral outcomes. This baseline report provides important program-relevant evidence to inform SBC adaptation and scale-up during this early implementation period.

Key findings and recommendations for different health areas are outlined in the following sections. Going forward, in-depth analyses of the baseline data set summarized in manuscripts, programmatic research briefs, and presentations will provide further evidence about the relative importance of different ideations on behavioral outcomes across health areas. We will also examine in greater detail the role of partner communication and gender norms; the influence of the environment, including drought and climate change, on health behaviors; and how we can sequence or layer SBC behavior messages to leverage synergies between health outcomes.

1. Description of households and the study population

- Access to television is low. Fewer than 10% of households interviewed indicated that they owned a television. However, approximately a quarter of households indicated that they had a radio or mobile phone.
- Electricity is not widely available. Only 5% of intervention group households had access to electricity. However, availability of solar panels was more widespread, with 12% of households in intervention communes and 13% in comparison areas indicating that they owned a solar panel.
- The majority of women interviewed were between the ages of 25 and 34, while the majority of men interviewed were between the ages of 35 and 49. Women in the comparison group were slightly younger compared to the intervention group. However, the age groups of men interviewed had a similar distribution.
- Very few men and women interviewed had attended any formal schooling. Approximately 85% of men and women had never attended school.
- Approximately 90% of women had not watched television at all in the week preceding the survey compared to approximately 70% of men. Two-thirds of women had not listened to the radio compared to one-fifth of men. There were differences between study groups, with fewer than 10% of women in the Wadata study group indicating that they had listened to the radio in the week preceding the survey. Among men in the Hamzari study groups, 98% of men had listened to the radio in the week preceding the survey.
- Baseline findings found relatively balanced intervention and comparison samples despite not having a randomized design. The comparison sample was slightly more educated and younger compared to the intervention area, which may contribute to differences in select indicators.

Recommendations

- Given the study population's limited exposure to mass media and low levels of education, consider more SBC approaches that are community based and include IPC-related approaches. This may include sharing radio station programs through memory cards with listening groups, as proposed by Girma, as well as increased use of community health volunteers, as proposed by Wadata.
- We will apply entropy weighting to account for differences in the sample during the final evaluation analysis to establish a balanced sample between intervention and comparison groups.

2. Early marriage

- The median age at marriage for women and the age the respondent thinks is appropriate to get married are misaligned in the Hamzari and Girma study groups. In both groups, the median age of marriage among women is 15, while the age women think is appropriate is 16 to 17. However, a similar pattern in the Wadata study groups is not observed as the median age of marriage (15) is consistent with the age the respondent thinks a woman should get married.
- Among men, the median age of marriage is 20 and is consistent with the age the respondent thinks a man should be married.
- Most men and women note that their family made the decision that they would get married. This was particularly prevalent in the Girma study area, where nearly 90% of women in the intervention group noted that their family made the decision for them to marry.
- The prevailing attitudes related to the acceptability of early marriage are related more toward ensuring that a girl does not engage in premarital sex rather than as a direct result of marriage to avoid poverty.
- Social norms were strongest in the Wadata study groups, with over 70% of respondents noting that their neighbors thought girls should marry as soon as they reach puberty.
- We did not observe differences in exposure related to early marriage messages in the pooled intervention and comparison groups. However, we did note overall low levels of exposure to information in the Wadata study areas, while men report higher exposure to information on early marriage compared to women in the Girma study areas.
- Radio, community events, and health care workers (women only) were the most reported sources of information.

Recommendation

- Given the importance that family members (e,g., fathers) and religious leaders play in determining when both men and women are married, SBC approaches should ensure that activities are geared toward the broader community when discussing early marriage and communicate that a girl's body is still maturing years after the onset of puberty.

3. Family planning

- The majority of women interviewed knew at least three modern FP methods. However, the level of knowledge varied by study group. In the Girma study area, over 70% of men and women knew at least three methods. However, in the Hamzari study area over 90% of women were knowledgeable of three methods, while less than 50% of men knew three methods.
- Despite the high levels of FP knowledge, levels of contraceptive use are not high and vary by study area (34% in Hamzari intervention area, 15% in the Wadata intervention area, and 25% in the Girma intervention area).
- Attitudes toward FP suggest nearly half of the female respondents and less than half of the male respondents agree that it is acceptable for a woman to have a child before the age of 18 and that it is acceptable to limit the number of children they have, suggesting there is scope for SBC approaches to focus on improving attitudes related to the healthy timing and spacing of pregnancies.
- The role of religious leaders is particularly important in the Niger context. In the Hamzari intervention area, religious leaders are perceived to be relatively more supportive of FP compared to the Wadata and Girma intervention areas.
- Communication related to FP and decision making with partners is an important behavioral determinant related to contraceptive use. One-third of women said that use of an FP method was their partner's decision, and approximately 60% of men stated it was their decision.
- Health care workers are the dominant source of FP information for women in the Hamzari study area—over 70%—and for 20% in the Wadata intervention area and 14% in the Girma intervention area, followed by community events and radio.

Recommendations

- Promoting messages aimed at increasing awareness related to the importance of healthy timing and spacing of pregnancies and ways to achieve healthy timing and spacing through different contraceptive options, particularly among male audiences, may be an important approach given that men play an important role in decision making related to FP use.

- Given the role religious leaders play in influencing men in the communities, it may be useful to consider leveraging their influence to encourage partner communication and joint decision making related to FP use.

4. Maternal health

- Most respondents know that a woman should attend four or more ANC visits and deliver in a facility. However, a quarter of women in the pooled intervention group believe that a pregnant woman only needs ANC if she is sick, and approximately 40% of men believe it is better to use traditional health care during pregnancy than go to a health facility for ANC.
- The percentage of women who have attended four or more ANC visits and delivered in a health facility for the most recent birth was approximately 50% for both the pooled intervention and comparison areas. However, higher rates of facility delivery were observed among women in the Hamzari intervention area (72%) compared to the Wadata intervention area (41%).
- Health care workers are the dominant source of maternal health information for women in the Hamzari study area (over 80%), over 40% in the Wadata intervention area, and over 50% in the Girma intervention area, followed by community events and radio. Radio is the most referred source of information for men in the Girma study zone and contributes to a high percentage of men citing radio as a source of information for maternal health in thethree months preceding the survey.

Recommendations

- Promoting messages aimed at addressing behavioral determinants, including attitudes toward the use of ANC and health facilities for delivery, through radio programs aired in the evening may help, particularly among male audiences, to strengthen women's support for obtaining health care during pregnancy and delivery.
- Health care workers can be effective conduits of information related to maternal health care services; SBC programs should work collaboratively with the Kulawa activity to ensure approaches that engage community members and health providers are effectively shared.
- Given the vast geographic distances in the Wadata intervention area, it may be helpful to consider using SBC programs to promote the use of developing a birth preparedness plan that will facilitate transportation of women to health facilities for delivery.
- For the Girma intervention area, it may be necessary to further explore barriers to use of delivery services that may be cultural or related to the quality of services delivered.

5. Immunization

- Knowledge regarding the appropriate timing and number of visits a child should have for vaccinations was low among women and men. Fewer than 20% of women knew that a child should receive their first vaccination within the first week of birth, while two-thirds knew the child should receive five or more vaccines. Only one-third of men knew both that children should receive their first vaccination within the first week of birth and that they should receive five or more vaccines.
- Despite these low levels of knowledge, attitudes regarding vaccinations were largely positive, with over 90% of respondents indicating favorable attitudes toward vaccines.
- Health care workers are the dominant source of information for women on immunizations—over 80% in the Hamzari intervention area, 40% in the Wadata intervention area, and 26% in the Girma intervention area, followed by community events and radio. Few men recalled messages related to immunizations in the Hamzari study areas (more than 95% had not heard a message in the precedingthree months). In the Girma intervention area, 56% of men cited health workers as a source of information.

Recommendations

- Low levels of knowledge about the timing and number of vaccines relative to the overall positive respondent attitudes toward the importance of vaccinations suggest SBC programs should focus on increasing knowledge about when a child should receive his/her first vaccine and the number of vaccines the child should receive and should utilize commonly reported sources of information such as health care workers and community events.

- Efforts to incorporate religious leaders or traditional members of the community, such as traditional barbers who shave the child's head within the first week of life, can leverage this opportunity to talk with fathers and share information on the appropriate time for a child to receive his/her first vaccines.

6. Child nutrition including breastfeeding and complementary feeding

- Few women (approximately 18% in the pooled intervention area and 21% in the pooled comparison area) knew that women should give their child only breast milk for the first six months and over half of women thought that a parent should introduce food and liquids into a child's diet before the child turned six months of age. A third of women also noted that giving a child only breast milk the first six months of a child's life would be very difficult or a bit difficult.
- Overall, women had positive attitudes regarding breastfeeding and engaging fathers to support complementary feeding, but men reported difficulty in supporting women to breastfeed.
- Two-thirds of women in the pooled intervention area said that children 6 to 23 months of age should receive four or more meals, compared to 79% in the pooled comparison area. However, fewer than a quarter of respondents from both groups noted that children should eat four or more food groups a day.
- Most women and men (over 75%) had positive attitudes toward dietary diversity and providing a minimum acceptable diet. However, over a third of women and one in five men said it would be very difficult to provide a child five different types of food a day, which may be a result of the fact that the study took place during the dry season but also due to a lack of understanding about the potential of local food as a form of increasing dietary diversity and nutrition.
- The majority of women in both the pooled intervention and comparison areas (approximately 60%) had heard messages about the importance of breastfeeding and complementary feeding. The primary sources of information were radio, health care workers, and community events and volunteers. Interestingly, in the Girma study areas, a number of both male and female respondents recalled hearing messages related to breastfeeding and complementary feeding from their neighbors. Fewer women (approximately 49% in the pooled intervention area and 43% in the pooled comparison area) had heard messages related to the importance of dietary diversity and a minimum acceptable diet.

Recommendations

- SBC programs should consider better understanding why women feel it would be difficult or very difficult to exclusively breastfeed children under the age of six months as this may be related to the low levels of knowledge about how long women should exclusively breastfeed children.
- In addition, SBC programs can leverage key influencers like health care staff to support/encourage mothers to continue breastfeeding and dispel misconceptions about breast milk supply.
- Persistent poverty and limited agricultural resources influence parents' ability to provide dietary diversity for young children. SBC programs should consider how they can empower parents to provide diverse diets in a resource-constrained diet.

7. Water, sanitation, and hygiene

- During the dry season and periods of drought, access to potable drinking water may become more challenging when boreholes and wells are dry and water quality becomes more turbid. In the Hamzari study groups and Girma intervention group, the study population has greater access to public fountain (near or over 50%), indicating there may be less of a need to treat water because the quality of water is better. However, in the Wadata study groups there is comparatively low levels of public fountain water available and greater reliance on dug wells/pump/boreholes, indicating a greater need for behavioral interventions focused on treating drinking water to make it potable. There was no notable difference between the pooled intervention and comparison study groups.
- Over 90% of households in the Wadata study area did not have toilets, compared to approximately 60% in Girma and between 46% in Hamzari. Few had flush toilets across all study areas, likely due to the high cost of installation.

- Attitudes and social norms related to handwashing at appropriate moments were largely positive, and most respondents indicated that it would not be difficult at all to wash their hands at critical moments.
- Most respondents indicated that they washed their hands with soap and water although fewer than half of households surveyed had a fixed handwashing station and very few had soap observed at the station.
- There was high recall of handwashing messages among men and women in thethree months preceding the survey (over 50% in both the intervention and comparison areas), particularly from radio and health care workers and through community events, volunteers, and leaders.

Recommendations

- SBC approaches should seek to address the misalignment in the high levels of intermediate behavioral determinants and self-reported behaviors and the limited observed WASH behavioral practices, such as availability of a handwashing station with soap and water as well as presence of a latrine, particularly in the Wadata survey areas.
- Given the limited availability of water, particularly in this drought-prone setting, it may also be important to consider integrating SBC approaches with broader multisectoral activities that address access to water.

8. Barriers to seeking health care

- Fewer than 20% of women interviewed had not worked for money in the last 12 months, while the majority of men particularly in the Girma study area (over 90%) had worked for money.
- When asked about different reasons respondents have difficulty obtaining medical treatment, the most common barrier was money for both women and men.

Recommendations

- Availability of financial resources to obtain medical advice or care may influence health behaviors. SBC approaches that empower communities to leverage collective resources to address barriers to health care seeking rather than focus specifically on individual-level interventions should be considered as they may be more effective at improving health behaviors.
- Targeting men about the need to invest in or pay for health care given they most often control the financial resources may also help to strengthen women's access to health care.

Limitations

Data collection took place in April and May 2021. Due to COVID-19, the Washington, DC-based study team was unable to travel and participate with the Niger-based team in the training and study tool piloting. As a result, it was more challenging to provide close oversight and ensure that the paper-based study tool was accurately deployed on the mobile application. An inaccurately deployed skip pattern resulted in the failure to collect the months of age for some children, thereby compromising our ability to report child health and nutrition indicators in the baseline report. Fortunately, the behavioral data are available, and we plan to follow up with the baseline households in March 2022 to collect the missing age-related information for the reference children. At that time, we will retroactively apply this information to the indicators in question to ensure that all indicators are available for analysis at endline. We have proposed this idea to CESAF and do not anticipate an increase in costs. The decision to revisit the same households at midline will also afford us the opportunity to assess attrition levels from baseline and determine the feasibility of proceeding with a panel survey for the full evaluation. If attrition is not significant, we will modify the repeated cross-sectional study design to a panel design, which will allow us to track the same respondents over the course of program implementation, thereby providing additional strength to the evaluation design.

Conclusion

Results from the baseline study highlight the potential for an integrated SBC program coupled with community-led development to increase access and demand for health services and ultimately improve health-related outcomes. Results show that using multiple channels adapted to men and to women for disseminating messages, fostering partner communication, and addressing misalignment in attitudes and social norms is a promising approach to empower women, men, and communities to improve their health.

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