Agonyora – Breaking the Shackling Power of Harmful Norms Evaluation

Interim Report

January 2024

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Agonyora – Breaking the Shackling Power of Harmful Norms Evaluation: Interim Report

January 2024

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LIST OF ABBREVIATIONS

CIFF	Children's Investment Fund Foundation
CYP	Couple years of protection
IUCD	Intrauterine Contraceptive Device
KES	Kenyan Shillings
KHIS	Kenya Health Information System
MOH	Ministry of Health
PI	Prediction Intervals
SRH	Sexual and Reproductive Health
USD	US Dollar
YPP	Youth Peer Provider

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EXECUTIVE SUMMARY

This report describes an evaluation of the Agonyora program, a family planning uptake and social norms intervention that is occuring in Migori county. This intervention is being implemented by Lwala Community Alliance and the evaluation is being conducted by Laterite Kenya Limited with the support of Children's Investment Fund Foundation (CIFF). Lwala Community Alliance is a community-led organization dedicated to promoting high-quality healthcare for all. Lwala aims to improve access to and uptake of family planning services among young people in Migori county through the implementation of the Agonyora Progam.

Laterite's evaluation of the Agonyora program focuses on three research questions:

1. Is the Agonyora program associated with increased utilization of family planning visits and increased couple years of protection, especially among young people aged 15 to 24?
2. Is the Agonyora program associated with changes in the total cost of family planning provision at health centers or cost per additional couple years of protection provided incurred by health care providers?
3. Is the Agonyora program associated with changes in norms among male and female community role models in Rongo subcounty?

This baseline report for the Agonyora program evaluation provides evidence for several key findings.

Since the start of the Agonyora intervention in 2023, we observed a significant increase in family planning visits among young people under 25 as well as in couple years of protection (CYP) provided. Our models suggest that in 2023, young people aged 15 to 24 received 37,478 additional family planning visits, reflecting a 57% increase over expectations (95% PI: 16%, 126%). The increase in family planning visits is largest among the 15 to 19 age group, where we estimate that an additional 21,058 family planning visits occurred. Additionally, residents of Migori county received 96,310 additional CYPs, reflecting a 55% increase over expectations (95% PI: 15%, 120%). Increases in CYP are driven largely by increased uptake of implants, which accounted for 76% of CYP.

These changes were large in magnitude, closely coincide with the start of the Agonyora program and were particularly large among people aged 15-19, consistent with the Agonyora program's focus on adolescents. These findings suggest a substantial positive impact of the Agonyora program. However, our estimates do not reflect a causal impact attributable to the Agonyora program. The extent to which these changes can fully be attributed to the Agonyora program is complicated by the fact that there are other organizations who are also implementing family planning interventions in Migori over time, and these other organizations may have also contributed to some of the observed increase.

Prior to the Agonyora intervention, we estimate that the cost for family planning services incurred by 248 facilities in Migori county in 2022 was 1,007,040 US Dollars (USD), and the average cost per CYP was USD 3.91. Our analysis suggests that there are

some opportunities to gain economies of scale through increased demand resulting from the Agonyora program. We estimate that 8% of staff time is currently used for waiting for patients, and this time could be reallocated to family planning service provisions without increasing total labor or overhead costs. There are also opportunities to increase cost-effectiveness through increased uptake of more efficient methods of contraception. For example, we estimate the cost per CYP for IUCDs, which currently account for only 3% of all family planning methods, is only USD 0.76 while the cost per CYP for male condoms, which account for 8% of all family planning methods, is USD 21.61. At the same time, we observe that the amount of time currently being used to provide a contraceptive method was extremely short (10.3 minutes). It is possible that increasing the amount of time per patient could correspond to a desirable increase in the quality of care provided to patients, even if it also results in a reduction in cost-effectiveness.

To assess changes in social norms over time, our team used respondent-driven sampling to establish a prospective cohort of 305 community role models from Migori county. This our cohort includes a treatment group of male and female role models from Rongo sub-county who will be directly exposed to Lwala's norm change interventions as well as a concurrent comparison group consisting of male and female role models from other sub-counties in Migori county. Overall, community role models in both groups already express progressive attitudes on the acceptability of youth access to contraceptives, acceptability of intergenerational communication on sex and puberty, and attitudes towards teenage pregnancy and early marriage.

Because our study was specifically designed to assess the attitudes of community leaders and role models, their attitudes may not be representative of the attitudes in the general population in Migori. Generally, our two groups are similar in demographics and attitudes at baseline. However, respondents in Rongo did report more progressive attitudes towards contraception use compared to respondents in the comparison sub-counties. To better account for any imbalances between the groups at baseline, our analyses at midline and endline will focus on within-person changes in attitudes over time.

Introduction

Contraception use in Kenya has increased over the years, but challenges still exist for many, especially women and youth.[1] A major stride made in Kenya has been through the National Adolescent Reproductive Health and Development Policy, the aim of which is to enhance the Sexual Reproductive Health (SRH) status of adolescents in the country**.** Several factors have been associated with the unmet need for family planning, including health system issues, lack of knowledge about SRH, socio-cultural beliefs and religious practices, and unavailability or unaffordability of commodities. These challenges present several unintended consequences such as unplanned pregnancies, prevalence of sexually transmitted diseases and child and maternal morbidity and mortality. Provision of family planning services to the youth should be conducted in youth-friendly facilities, to increase the utilization of contraception.[2] This includes friendly health service providers and ensuring privacy.

Changing harmful norms around gender and sexuality is associated with improved sexual reproductive health among youth.[3]. Gender norm transformative programs have been undertaken to focus on areas of gender-based violence, prevention of sexually transmitted diseases, nourishment of healthy relationships, improvement of parent-child communication on sexuality and promoting the utilization of family planning services by women among others. Meaningful gender norms change requires the involvement of entire communities, and not just the targeted individuals.

Overall, Migori county performs slightly lower than the national level for sexual and reproductive health indicators. In Migori county, teenage pregnancy and experiences of sexual violence is higher than the national average, while use of contraception among married women is lower than the national average.[4] In Migori county, myths and misconceptions are commonly cited as barriers to using contraception by young people.[5].

In response to Migori counties' higher unmet need for family planning and worse outcomes among adolescents and young women, the Lwala Community Alliance and CIFF have implemented the Agonyora program, a family planning uptake and social norms intervention that is occuring in Migori county. The Lwala Community Alliance is a community-led organization dedicated to promoting high-quality health care for all. Lwala's professionalization of community health workers (CHWs), identification of Youth Peer Providers (YPP), and investment in health system strengthening has already led to substantial

[1] Godia, P. M., Olenja, J. M., Lavussa, J. A., Quinney, D., Hofman, J. J., & Van Den Broek, N. (2013). Sexual reproductive health service provision to young people in Kenya; health service providers' experiences. BMC Health Services Research, 13(1), 476. https://doi.org/10.1186/1472-6963-13-476
[2] Peter McIntyre. (2022). Adolescent Friendly Health Services—An Agenda for Change (WHO/FCH/CAH/02.14; pp. 1–48). World Health Organization.
[3] Sedlander, E., & Rimal, R. N. (2019). Beyond Individual-Level Theorizing in Social Norms Research: How Collective Norms and Media Access Affect Adolescents' Use of Contraception. Journal of Adolescent Health, 64(4), S31–S36. https://doi.org/10.1016/j.jadohealth.2018.12.020
[4] KNBS & ICF. (2023). Kenya Demographic and Health Survey 2022. Key Indicators Report. KNBS and ICF.
[5] African Institute for Development Policy. (2021). Understanding Factors Influencing Access and Choice of Contraceptives among Young People in Migori. African Institute for Development Policy.

increases in family planning uptake within Rongo Sub-County, Migori. Between December 2022 and December 2026, Lwala's Agonyora program will expand its geographic coverage throughout Migori County and intensify family planning provision among adolescents and youth. The family planning component of the program program will be scaled up from Rongo subcounty to the rest of the sub-counties in Migori county by the end of 2024.

The Agonyora Program additionally includes a norms change intervention, which is localized in only Rongo, one of Migori's sub-counties. The priority areas for the norms change intervention include: a) acceptability for youth access to contraceptives, b) acceptability of intergenerational communication about sex and puberty, and c) attitudes towards early marriage and teen pregnancy. To achieve these objectives, the program focuses on a combination of activities which include out-of-school and in-school engagement, community engagement and gender and equity.

To assess the impact of the Agonyora program, our evaluation focuses on addressing three main questions:

1. Is the Agonyora program associated with increased utilization of family planning visits and increased couple-years of protection, especially among young people 15 to 24?
2. Is the Agonyora program associated with changes in the total cost of family planning provision at health centers or cost per additional couple years of protection provided incurred by health care providers?
3. Is the Agonyora program associated with changes in norms among male and female community role models in Rongo subcounty?

This evaluation relies on primary and secondary sources of quantitative data. Primary data collection activities include a prospective cohort that uses telephone-based data collection to assess attitudes among community role models and a time-motion study of five clinics to assess the cost of provision of family planning services. Secondary data from the Kenya Health Information System (KHIS) will be combined with data from the literature to understand changes to utilization of family planning visits, couple years of protection and cost of family planning provision at health centers. The evaluation will occur over a three-year time period with data collection at three time points: i) baseline (2023), ii) midline (2024), and iii) endline (2025). The current report provides data collected over the baseline period.

Family planning visits

Introduction

In this section, we use routinely collected KHIS data from clinics in Migori county to conduct a time series analysis assessing the temporal changes across three sets of outcomes:

1. The total number of monthly family planning (FP) visits among youth aged 15 to 24
2. The total couple years of protection (CYP) delivered per month
3. The total monthly provision of contraception, disaggregated by method

We use a time series analysis to compare outcomes observed during the pre-Agonyora period (prior to January 2023) to the post-Agonyora period (from January 2023 onward). The pre-Agonyora data allows us to predict a counterfactual scenario reflecting what we would have expected to observe in Migori county if the Agonyora program had not been implemented.

Methodology

Data Sources

Our analysis is based on routinely collected KHIS data collected between January 2019 and September 2023. This data is extracted from the KHIS database MOH 711 summary tool and includes information on monthly counts of clients receiving FP services, disaggregated by age group (15-19 years and 20-24 years) as well as the number of clients receiving each type of family planning method. The data is available for 273 health facilities in Migori county that provide at least one family planning method during the period of January 2019 to September 2023.

We used this data to calculate the CYP provided following the USAID guidelines on computation of Couple Years of Protection by multiplying the number of clients using each family planning method by a standard conversion factor that reflects how many units of a specific method are needed to provide a full year of protection for a couple.[6] The digitized MOH 711 does not disaggregate provision of contraception methods by age category. We therefore do not present any age-disaggregated results on contraception methods (or CYP).

Data Quality and Data Processing

Because routinely collected data sources can be vulnerable to data quality issues, including changes in data structure over time, missing data, and incorrectly entered values, we conducted routine checks to assess the quality of the data prior to analysis.

[6] Stover, J., Bertrand, J. T., & Shelton, J. D. (2000). Empirically Based Conversion Factors for Calculating Couple-Years of Protection. Evaluation Review, 24(1), 3–46. https://doi.org/10.1177/0193841X0002400101

Changes in the data structure over time

We observed substantial differences in the way that key variables were reported before and after September 2020. To create a more consistent definition of these variables over time, we took steps to harmonize the pre- and post-September 2020, as described in **Table 1**:

Table 1: Data harmonization approaches

Variable	Status prior to September 2020	Status after September 2020	Harmonization approach
Implants	Reported as a single category	Disaggregated into "1-rod" and "2-rod"	We summed the number of 1-rod and 2-rod implants to calculate the total number of implants
Injections	Reported as a single category	Disaggregated into "intramuscular" and "subcutaneous"	We summed the number of intramuscular and subcutaneous injections to calculate the total number of injections
IUCDs	Reported as a single category	Disaggregated into "hormonal" and "non-hormonal"	We summed the number of hormonal and non-hormonal IUCDs to calculate the total number of IUCDS
Natural family planning	Very few facilities reported providing any natural family planning, suggesting that this data was not being systematically captured	There was a sudden and dramatic jump in the number of facilities providing natural family planning, suggesting a change in data reporting practices	We excluded data prior to September 2020 from our pre-intervention modeling period due to insufficient data

Missing Data

Of the 334 clinics included in the provided data, 62 (19%) reported zero family planning visits over the entire time period of interest. Of the 272 remaining clinics, 42 (15%) reported zero family planning visits for at least 36 out of 48 months. For some of these facilities (e.g. nursing homes or dispensaries) it is likely that these zeros reflect the fact that family planning is not provided at these facilities. For other facilities (e.g. hospital or medical centers) it is likely that these zeros reflect under-reporting and missing data. Ultimately, because our analysis is based on the aggregate number of observed visits across all clinics in Migori county, we did not remove any clinics from our analysis as dropping these observations would have no influence on the results. However, due to this under-reporting, we believe our total numbers of visits reflect an underestimate of the true number of family planning visits in Migori county.

In addition to observed missing data at the clinic level, there were some forms of family planning for which insufficient data was available to conduct an analysis. For example, over the 48-month period of interest, only 52 cases of male voluntary surgical contraception

(vasectomy) were reported in our data. Due to insufficient data, we did not include this contraceptive method in our analysis.

Outliers

In our dataset, outliers could reflect incorrectly entered values (e.g. entering 100 rather than 10) and result in influential data points that impact our models. Because the facilities in our dataset are of varying sizes, we defined an "outlier" as a value that is two times the interquartile range for a specific facility during the pre-intervention period. According to this definition, we observed that 6,670 out of 39,312 (17%) data points for family planning visits and 10,254 out of 131,040 (8%) of data points for contraception methods were outliers in the pre-intervention period. To respect the integrity of the data, we have not removed these outlier observations during our primary analysis. Future analyses can explore whether our findings are sensitive to excluding or truncating outlier observations. However, including these potential outliers in our analysis is likely to result in a conservative estimate of the Agonyora program's effect because they reflected larger-than-usual service delivery in the pre-intervention period.

Aggregation

Prior to fitting our time series models, we aggregated outcome by month to create a data set that reported a single 'total' reported across all clinics for that particular month. We did this in order to observe overall trends in the data at the county level.

Time series analysis

After cleaning and processing the raw data, we estimated the likely impact of the Agonyora program for each outcome using a three-step process[7]:

1. We used data from the pre-intervention period (January 2019-December 2022) to fit a model that *describes the pre-existing trends* in family planning update. When fitting this model, we explored a wide range of model specifications, which are described in detail in Annex 1: Model specifications for the time series analysis.
2. We used the parameters from that model to *predict what we would have expected to see in 2023 based on pre-existing trends*. These predictions provide a counterfactual scenario of what we would have expected to observe if the Agonyora program had not occurred and are represented in our graphs as a red line.
3. Finally, we calculate the *difference between the data that was actually observed in 2023 to what was predicted in our models.* The deviation between observed and predicted values reflect our estimates for the impact of the Agonyora program. By aggregating these monthly differences over the intervention period, we can estimate the cumulative number of additional family planning visits that are attributable to the Agonyora program.

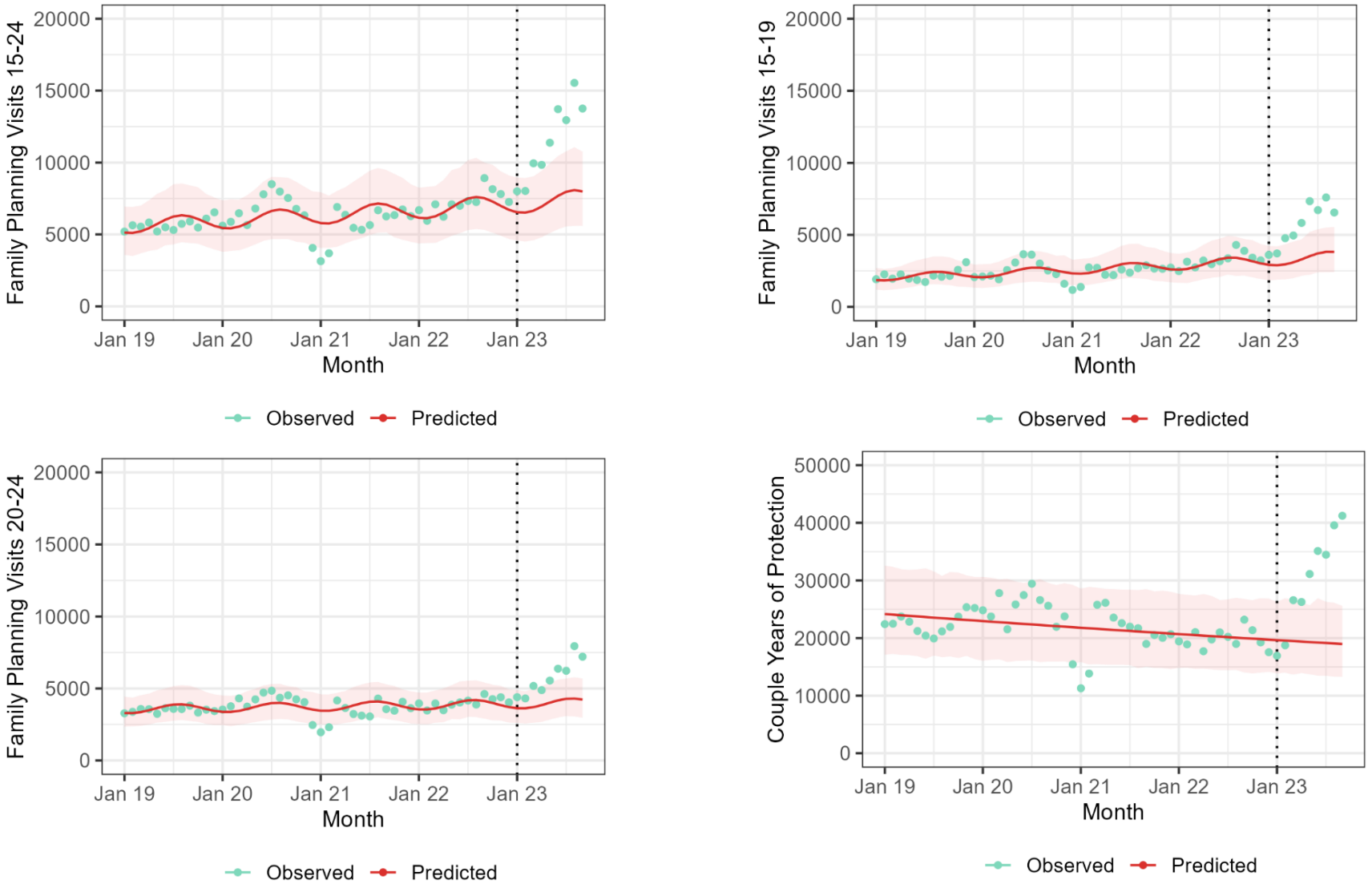
[7] Fulcher, I. R., Boley, E. J., Gopaluni, A., Varney, P. F., Barnhart, D. A., Kulikowski, N., Mugunga, J.-C., Murray, M., Law, M. R., Hedt-Gauthier, B., & the Cross-site COVID-19 Syndromic Surveillance Working Group. (2021). Syndromic surveillance using monthly aggregate health systems information data: Methods with application to COVID-19 in Liberia. International Journal of Epidemiology, 50(4), 1091–1102. https://doi.org/10.1093/ije/dyab094

To account for statistical uncertainty in our models, we used 95% prediction intervals rather than 95% confidence intervals. Prediction intervals can be used to assess whether an individual observation falls outside a model's predictions. Because the structure of our final analytic data set included only one observation per month, prediction intervals allowed us to more accurately assess whether the data observed in a given month was higher or lower than what we would have expected based on our models after accounting for statistical uncertainty. The 95% prediction interval (PI) for our models, which is indicated by the red band on our graph, gives the range for which we predict 95% of all observed data should fall if the trends from the pre-intervention period were maintained throughout the entire post-intervention period. By comparing the observed data against the upper and lower bounds of this prediction interval, we can obtain a range of plausible estimates of the changes observed in family planning provision since the start of the intervention.

Findings

Since the start of the Agonyora intervention in 2023, we observe a significant increase in family planning visits among young people aged 15-25 as well as in CYP provided. As shown in Figure 1, our time series models fit the data well during the pre-intervention period. This is evidenced by the large number of observed data (blue dots) that fall within the 95% prediction interval (red band) during the pre-intervention period. The only exception occurs during the period from December 2020 to February 2021, which coincided with a large health care worker strike that appeared to result in reduced family planning provision. During the post-intervention period, we observe that the number of observed family planning visits and CYP far exceed what we would have expected to observe if the trends from the pre-intervention period had continued into 2023. This increase is evidenced by the large number of observed data (blue dots) that fall above the 95% prediction interval (red band) during the post-intervention period. The fact that the observed data exceeds the upper bound of the 95% prediction interval indicates that these increases are greater that what we can explain based on statistical variation alone.

Figure 1:Time-series models of family planning visits during the pre-Agonyora and Agonyora periods



Since the start of the Agonyora intervention in 2023, we observe a significant increase in family planning visits among young people under 25 as well as in CYP provided. Our models suggest that in 2023, young people aged 15 to 24 received 37,478 additional family planning visits, reflecting a 57% increase over expectations (95% PI: 16%, 126%). The increase in family planning visits is largest among the 15 to 19 age group, where we estimate that an additional 21,058 family planning visits occurred, reflecting a 70% increase over expectations (95% PI: 17%, 165%). Additionally, residents of Migori county received 96,310 additional CYPs, reflecting a 55% increase over expectations (95% PI: 15%, 120%).

Table 2: Increased access to family planning during 2023[8]

	Observed outcomes	Predicted outcomes	Additional visits/CYPs	Estimated % deviation (95% PI)
Family planning visits among young people aged **15 to 24**	103,151	73,237	37,478	57% (16%, 126%)
Family planning visits among young people aged **15 to 19**	51,080	30,022	21,058	70% (17%, 165%)
Family planning visits among young people aged **20 to 24**	52,071	35,808	16,263	45% (9%, 105%)
Cumulative Couple years of protection delivered	270,114	173,805	96,310	55% (15%, 120%)

Increases in CYP are driven largely by increased uptake of implants, which accounted for 76% of CYP. We observed large, significant increases in implants (an additional 26,743 units provided, reflected a 70% increase over expectations) and emergency pills (an additional 2,227 units provided, reflecting a 321% increase over expectations). We did not observe significant changes for other contraception methods. Graphs illustrating our time series models and observed data for each of the individual contraception methods are available in Annex 2.

Table 3: Contraception provision during 2023, ranked by contribution to CYP

Outcome	Observed count	Expected count	Additional units	Estimated % deviation (95% PI)	Contribu-tion to CYP (%)
Implants (1- and 2-rod)	65,054	38,311	26,743	70% (22%, 149%)	76%
Injections (DMPA IM and SC)	86,297	119,855	-33,558	-28% (-64%, 65%)	8%
Natural Family Planning	12,699	12,712	-13	0% (-37%, 76%)	7%
IUCD (hormonal and non-hormonal)	3,990	2,626	1,364	52% (-4%, 169%)	7%

[8] The best fit for all family planning outcomes was a linear model adjusted for seasonality.

Bilateral Tubal Litigation	248	335	-87	-26% (-77%, 819%)	1%
Male Condoms (10 per visit)	19,332	14,657	4,675	32% (-38%, 249%)	1%
Progestin only Pills (3 packs per visit)	2,802	1,691	1,111	66% (-16%, 311%)	<1%
Combined Oral Contraceptives (3 packs per visit)	3,060	3,490	-430	-12% (-48%, 68%)	<1%
Emergency Pill	2,922	695	2,227	321% (124%, 925%)	<1%
Female Condoms	1,434	513	921	179% (-4%, 1949%)	<1%

Implication of findings

Our time-series analysis indicates that in 2023, Migori county experienced a sudden, large increase in family planning provision. These changes closely coincide with the start of the Agonyora program and were particularly large among people aged 15-19, which is consistent with the Agonyora program's focus on adolescents. These findings suggest a substantial positive impact of the Agonyora program. However, these estimates do not reflect a causal impact attributable to the Agonyora program. Our results indicate how family planning provision has changed since the start of the Agonyora program, and our estimates are vulnerable to bias if other changes, such as changes in government policy, the implementation of other family planning focused interventions, or major economic or social changes that coincide with the implementation of the Agonyora program. In particular, because other organizations are also implementing family planning interventions in Migori county, some of the observed changes may be attributable to these other programs, rather than the Agonyora program specifically.

Costing study

Introduction

Our costing assessment evaluates whether the Agonyora program is associated with changes in the total cost of family planning provision or changes in the cost per couple years of protection (CYP) provided from the perspective of the healthcare system in Migori county. CYP is a commonly used metric of contraceptive effectiveness such that cost per CYP can be interpreted as the cost-effectiveness of family planning services. At baseline, we assessed the cost of family planning provision and cost per CYP in 248 health facilities in Migori county who reported providing family planning services in 2022. At endline, we will additionally evaluate how the cost of family planning provision and cost per CYP changed in Migori county after the implementation of the Agonyora program.

Methodology

We conducted the costing study using a hybrid model that combines data extracted from existing scientific literature, primary data collected through a time motion study, and a record review of five health facilities in Migori county. The scientific literature was used to estimate costs related to supplies, equipment, and capital, which we assume are not directly impacted by the intervention and will remain relatively consistent over time. Primary data collection and record review were used to estimate the costs of labor and overhead, which could be impacted by the intervention if increased demand leads to efficiency gains through a) reduction of "down time" among health care professionals or b) distribution of overhead costs across a larger number of visits.

1.1.1 Costs of supplies, equipment, and capital

We estimated the costs associated with supplies, equipment and capital costs of the various family planning methods. Relevant literature was identified based on a) disaggregation of costs by contraceptive method; b) disaggregation of costs by cost category; and c) contextual relevance. We preferentially extracted data from a costing study conducted in Kenya in 2022.[9] However, this data was supplemented with other sources from Sub-Saharan Africa,

[9] Ngacha, J. K., & Ayah, R. (2022). Assessing the cost-effectiveness of contraceptive methods from a health provider perspective: Case study of Kiambu County Hospital, Kenya. Reproductive Health, 19(1), 11. https://doi.org/10.1186/s12978-021-01308-3

specifically Kenya and Uganda.[10,11,12,13] The sources for cost estimates taken from the literature are indicated using footnotes in Table 6.

1.1.2 Cost of labor

We used a time motion study to estimate the labor costs associated with the provision of family planning services in Migori county. In consultation with Lwala, we purposively sampled five level 2 health facilities in Migori county that will benefit from the Agonyora program. In each selected clinic, a trained enumerator directly observed all activities conducted by health care providers at the clinic from the start of the workday until the end of the workday. Activities were classified into the following categories: a) Family planning consultation; b) Other consultation; c) Other work-related tasks (e.g. administrative work, providing pharmacy services, attending meetings, work-related phone use and interaction); d) Time spent waiting for patients; e) Down time spent not working (e.g lunch, taking a break, personal phone use and non-work-related interactions); and f) Left for another ward.

This data was used to calculate the labor costs associated with providing family planning services. In calculating these labor costs, we assumed the median monthly salary of registered nurses and clinical officers across the five health facilities to be KES 75,273: This figure was calculated based on documentation from Salaries and Remuneration Commission and includes a median basic salary of KES 39,740,[14] housing allowance of KES 5,850,[15] an extraneous allowance of KES 25,000, a uniform allowance of KES 833 and a health risk allowance of KES 3,850.[16] We assumed the average working days per month was 18.75 (excluding national holidays and annual leave), and the average working day was 8 hours per day. These assumptions implied an average hourly wage of 502 Kenyan Shillings (KES).

1.1.3 Overhead costs

We collected overhead costs (including rent, utilities and administrative costs) for the five observed facilities from programmatic records. Overhead costs were allocated on a per-visit

[10] International Rescue Committee. (2016). Cost Efficiency Analysis: Distributing Family Planning Materials. International Rescue Committee.
[11] Rademacher, K. H., Solomon, M., Brett, T., Bratt, J. H., Pascual, C., Njunguru, J., & Steiner, M. J. (2016). Expanding Access to a New, More Affordable Levonorgestrel Intrauterine System in Kenya: Service Delivery Costs Compared With Other Contraceptive Methods and Perspectives of Key Opinion Leaders. Global Health: Science and Practice, 4(Supplement 2), S83–S93. https://doi.org/10.9745/GHSP-D-15-00327
[12] Nuwamanya, E., Babigumira, J. B., & Svensson, M. (2023). Cost-effectiveness of increased contraceptive coverage using family planning benefits cards compared with the standard of care for young women in Uganda. Contraception and Reproductive Medicine, 8(1), 21. https://doi.org/10.1186/s40834-022-00206-8
[13] Reproductive Health Supplies Coalition. (2024). Value of Shipments of Emergency Oral Contraceptives to Sub-Saharan African in 2022 [dataset]. https://www.rhsupplies.org/activities-resources/tools/rh-viz/tool/#c11037
[14] Salaries and Remuneration Commission. (2020). Phase IV Salary Review for County Government Employees at the Executive.
[15] Salaries and Remuneration Commission. (2015). Implementation of the revised House Allowance in the Public Service.
[16] Salaries and Remuneration Commission. (2015). Health Workers Allowances.

basis by dividing total costs of overhead by the number of clinic visits at the facility. Overhead costs were converted from KES to USD assuming a conversion of 123 KES to 1 USD.

1.1.4 Calculation of total costs and cost per CYP

For each contraceptive method, we added the cost of supplies, equipment, capital, overhead and labor costs to estimate a per visit cost. This cost was then multiplied by the total number of visits associated with that method in 2022 to generate the total cost per method. The total costs in 2022 were calculated by adding up the cost per method for all methods.

To calculate the cost per CYP, we calculated the total CYP per method provided by each method by multiplying the total number of visits in 2022 by a standard conversion factor that reflects how many units of a specific method are needed to provide a full year of protection for a couple associated with each method (USAID guidelines on CYP calculation). The total cost per method was divided by the total CYP per method, to give the total cost per CYP per method in 2022. Similarly, the total cost for all methods was divided by the total CYP for all methods by dividing total cost by total CYP.

Findings

During our time motion study, we observed a total of 56.6 hours of staff time among eight service providers (6 registered nurses and 2 clinical officers) across five health facilities. The majority of staff time (74%) was spent actively providing care or conducting work-related activities, while downtime accounted for 26% of the time. Only 7% of staff time was spent providing family planning consultation. The full breakdown of time observed per activity are shown in **Table 4:**

Table 4: Breakdown of Observation Time by Activity

Activity Category	Total time observed per category (hours)	Average time observed per service provider (hours)	Percentage of time allocated towards activity
Family planning consultation	4.1	0.5	7%
Other consultation	18.13	2.3	32%
Other work-related tasks[1]	18.07	2.3	32%
Time spent waiting for patients	4.67	0.6	8%
Down time spent not working[2]	9.99	1.2	18%
Left for another ward	1.68	0.84	3%
Total time observed	**56.64**	**7.08**	**100%**

[1]This includes doing administrative work, providing pharmacy services, attending meetings, work-related phone use and interaction.
[2]This includes time taken for lunch, taking a break, personal phone use and non-work-related interaction.

We directly observed the administration of four family planning methods, including Progestin-only pills, DMPA-IM, and one- and two-rod implants. Table 5 shows the breakdown of the methods administered in the health facilities, and the average time it took to administer each method.

Table 5: Breakdown of time taken to provide FP services

Family Planning Method	Number of patients	Average time (minutes)
Progestin-only pill	1	7
DMPA-IM	10	10.3
Implant – 1 rod	2	6
Implant – 2 rods	11	11.3
Total	**24**	**10.3**

Because our sample of visits for each individual family planning method was too small to obtain valid estimates of staff time on a method-by-method basis, we calculated a single average time to administer family planning methods. The average time taken to administer a method at health facilities was 10.3 minutes. To calculate the cost associated with this labor, we divided the estimated hourly wage (KES 502) by the proportion of time spent actively working during the workday (74%) and multiplied this by the amount of time needed to provide a family planning method (10.3/60 minutes). This amount equated to KES 116 per method administered, or USD 0.94 assuming a conversion of KES 123 to USD 1.

Table 6 shows the results of the cost calculations for 248 facilities in Migori county prior to the start of the Agonyora program (2022). These 248 facilities reflect all of the health facilities included in the data set that provided at least one of the family planning methods in the year 2022. Based on our assumptions, we estimate that the total cost for family planning services in 2022 from these 248 health care providers in Migori county was USD 1,007,040, and the average cost per CYP was at USD 3.91.

Table 6: Total Cost (USD) of Family Planning provision and Cost per CYP in Migori County in 2022

	Progestin-only pill 3 blister pack/visit[1]	DMPA-IM[1]	Implant - 1 rod[1]	Implant - 2 rods[1]	IUCD[1]	Combined Oral Contraceptives (COC) 3 packs per visit[1]	Male Condoms (10 per visit)[2]	Female Condoms (10 per visit)[2]	Emergency contraception pills[3]	BTL[2]	Vasectomy[2]	Natural Planning[3]	All Methods
Cost per visit	1.91	3.06	12.39	12.24	3.49	1.91	1.80	6.00	1.89	8.29	6.20	1.50	
Supplies	0.24	1.12	10.03	9.88	1.17	0.24	0.3	4.5	0.39	6.64	4.67	--	
Equipment	0.03	0.17	0.58	0.58	0.52	0.03	--	--	--	0.15	0.03	--	
Capital	0.14	0.27	0.28	0.28	0.30	0.14	--	--	--	--	--	--	
Overhead	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	
Labor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
CYP per visit[4]	0.25	0.25	2.50	3.80	4.60	0.20	0.0833	0.0833	0.05	10.00	10.00	1.50	
Total visits	2,407	92,448	10,295	41,088	5,117	7,116	14,756	716	850	271	14	15221	
Total cost per method	4,597	282,891	127,555	502,917	17,858	13,592	26,561	4,296	1,607	2,247	87	22,832	**$1,007,040**
Total CYP per method	602	23,112	25,738	156,134	23,538	1423	1229	60	43	2710	140	22,832	**257,560**
Total cost per CYP	7.64	12.24	4.96	3.22	0.76	9.55	21.61	71.60	37.37	0.83	0.62	1.00	**$3.91**

[1]Components of per visit cost data except overhead and labor were obtained from: Ngacha, J. K., & Ayah, R. (2022). Assessing the cost-effectiveness of contraceptive methods from a health provider perspective: Case study of Kiambu County Hospital, Kenya. *Reproductive Health*, *19*(1), 11. https://doi.org/10.1186/s12978-021-01308-3

[2]Components of per visit cost data excluding overhead and labor were obtained from: Rademacher, K. H., Solomon, M., Brett, T., Bratt, J. H., Pascual, C., Njunguru, J., & Steiner, M. J. (2016). Expanding Access to a New, More Affordable Levonorgestrel Intrauterine System in Kenya: Service Delivery Costs Compared With Other Contraceptive Methods and Perspectives of Key Opinion Leaders. Global Health: Science and Practice, 4(Supplement 2), S83–S93. https://doi.org/10.9745/GHSP-D-15-00327

[3]Supplies cost for emergency contraception pulls were calculated from Reproductive Health Suplies Coalition. (n.d.). Value of Shipments of Emergency Oral Contraceptives to Sub-Saharan African in 2022 [dataset]. https://www.rhsupplies.org/activities-resources/tools/rh-viz/tool/#c11037

[4]The CYP conversion factors used to calculate the total CYP were retrieved from the Latest USAID Guidelines as of January 2022, available here: USAID guidelines on computation of Couple Years of Protection

[5]This is the total number of units provided in 248 health facilities in Migori county in 2022.

Implication of findings

Prior to the Agonyora intervention, we estimate that the cost for family planning services incurred by 248 facilities in Migori county in 2022 was USD 1,007,040, and the average cost per CYP was USD 3.91. Our initial costing analysis suggests some opportunities to gain economies of scale through increased demand. In particular, the 8% of staff time currently used waiting for patients could be reallocated to the provision of health care services, including family planning services—without increasing total labor, overhead costs or placing undue burden on healthcare providers.

At the same time, we observed that the average amount of time used to provide a contraceptive method was extremely short (10.3 minutes). It is possible that increasing the amount of time per patient would correspond to a desirable increase in the quality of care provided to patients, even if it also results in a reduction in cost-effectiveness.

There are also opportunities to increase cost-effectiveness through the increased uptake of more efficient methods of contraception. Since the different methods provide protection for varied periods, require different resources to administer, and vary in terms of units provided, the results show varied cost efficiency. For example, we estimate the cost per CYP for IUCDs, which currently account for only 3% of all family planning methods, is only USD 0.76 while the cost per CYP for male condoms, which account for 8% of all family planning methods, is USD 21.61.

At endline, we will assess the changes in the total cost of family planning provision in Migori county from the perspective of the health care provider and total cost per CYP after program implementation. We hypothesize that the total cost will increase due to increased uptake of contraceptive methods overall while cost per CYP could increase or decrease depending on patient volume, allocation of health care provider's time, and uptake of specific methods of contraception.

Agonyora's impact on social norms: A prospective cohort

Introduction

This prospective cohort evaluates the impact of the Agonyora program on social norms among male and female community role models in Rongo subcounty. Our cohort includes a treatment group of male and female role models from Rongo sub-county who will be directly exposed to Lwala's norm change interventions as well as a concurrent comparison group consisting of male and female role models from other sub-counties in Migori county. At baseline, the study aims to assess the existing perceptions on social norms on the acceptability of youth access to contraceptives, acceptability of intergenerational communication on sex and puberty, and attitudes towards teenage pregnancy and early marriage prior to the scaling of program interventions across Rongo sub-county and the comparison sub-counties. At midline and endline, we will examine changes from the baseline to assess whether the program is associated with greater changes in social norms among Rongo county residents.

Methodology

1.1.1 Sampling strategy

Our cohort uses telephone-based data collection and a respondent-driven sampling strategy. We recruited 16 initial index subjects identified by Lwala Community Alliance from four sub-counties in Migori county: Rongo, Nyatike, Uriri and Suna East. Eight index subjects were from Rongo sub-county, which serves as the treatment sub-county, while an additional eight index subjects came from one of the other comparison sub-counties. Respondents who consented to take part in the study were asked to recommend two individuals (one male and one female) who they considered to be role models in their community to also take part in the study.

Over the course of data collection (from 12th June – 6th July 2023), we were able to identify phone numbers for 398 unique respondents. Of these, 21 were reached but did not consent to the study and 72 were not reached after multiple attempts. Our final sample included a total of 305 respondents, reflecting an overall response rate of 77%. By design, respondents were balanced by treatment status (Rongo sub-county vs. comparison sub-counties) and gender (male and female). The distribution of respondents by sub-county is shown in **Table 7**. While these 305 respondents are not representative of the Migori county population, the sampling technique allowed us to purposefully identify community role models who are most capable of influencing social norms.

Table 7: Distribution of respondents by sub-county

Sub County	Male respondents	Female respondents	Total
Rongo	76	78	**154**
Awendo	9	8	**17**
Nyatike	19	17	**36**
Suna East	10	12	**22**
Suna West	1	3	**4**
Uriri	36	36	**72**
Total	**151**	**154**	**305**

1.1.2 Social Norms

We assessed social norms using four scales related to sexual and reproductive health norms:

1. Contraception use stigma scale[17] (7 items)
2. Parent-child communication scale (8 items)
3. Equity for Girls scale[18] (4 items)
4. Girls' empowerment scale (12 items), which had three sub-scales:
    a. Societal norms surrounding Teenage Pregnancy (TP) and Early Marriage (EM)
    b. Girls' autonomy for marriage decisions
    c. Perceptions against older marriage

Two scales, the Contraception use stigma scale and Equity for Girls scale, had been previously validated in the literature. The remaining two scales consisted of items that were generated for this project based on the literature. For each scale, we randomized the order of the statements and asked participants to state their agreement to a series of items on a 5-point likert scale (1. Strongly disagree, 2. Disagree, 3. Unsure, 4. Agree and 5. Strongly agree). Each of our scales were scored such that the theoretical range went from 1 (reflecting the most progressive, least stigmatizing norms) to 5 (reflecting the highest degree of stigma).

The breakdown of items included in each of the scales as well as the scale development and validation process are discussed in detail in Annex 4: SRH Norms Analysis.

[17] Developed and validated in Kenya by: Makenzius, M., McKinney, G., Oguttu, M., & Romild, U. (2019). Stigma related to contraceptive use and abortion in Kenya: Scale development and validation. Reproductive Health, 16(1), 136. https://doi.org/10.1186/s12978-019-0799-1
[18] Nanda, Geeta. (2011). Compendium of Gender Scales. FHI 360/C-Change.

Findings

1.1.3 Characteristics of study participants

We interviewed 305 respondents. The average age of respondents was 39 years, with few respondents (10%) being young adults aged between 18 and 24 years. Most respondents have achieved higher levels of education (64% with secondary and above). Over half of respondents were religious leaders while over a third were health care workers. The relatively older age, higher education level, and high prevalence of religious leaders and health care workers within this population likely reflects the fact that our sampling strategy is designed to capture role models within the community rather than a representative sample of the overall population.

In general, the demographic characteristics between respondents in Rongo and comparison sub-counties were relatively balanced. We observed statistically significant differences in respondents' age, marital status, and role in the community. Respondents in Rongo were slightly older (average age of 40 years) than respondents in comparison sub-counties (average age of 37 years). They were more likely to be members of the Luo tribe (99% vs. 89%); more likely to be currently married (91% vs. 80%). Rongo respondents were more likely to be health workers (40 vs. 29%), or hold another leadership role such as a peer group advisor, counselor, child protection officer or youth peer provider (YPP) (5% vs 1%). Respondents from comparison counties were more likely to hold non-leadership roles, such as being a farmer, casual worker, or businessperson (18% vs. 10%).

Table 8: Study participants' characteristics by region (N=305)

	Rongo Subcounty (n=154)		Comparison Sub counties (n=151)		
	N	%	N	%	*p*-value
Sex					0.96
Female	78	(51%)	76	(50%)	
Male	76	(49%)	75	(50%)	
Age					0.033
18-24	12	(8%)	17	(11%)	
25-34	39	(25%)	58	(38%)	
35-45	58	(38%)	41	(27%)	
>45	45	(29%)	35	(23%)	
Education					0.36
Not completed primary – not literate	0	(0%)	1	(1%)	
Not completed primary – literate	6	(4%)	5	(3%)	
Completed primary school	48	(31%)	51	(34%)	
Completed secondary	25	(16%)	36	(24%)	
Currently in university	6	(4%)	6	(4%)	
Completed tertiary/TVET and above	69	(45%)	52	(34%)	
Marital status					0.013
Currently married	140	(91%)	121	(80%)	

Previously married	1	(1%)	7	(5%)	
Never been married	13	(8%)	23	(15%)	
Religion					0.074
Christian – Catholic	20	(13%)	16	(11%)	
Christian – SDA	89	(58%)	72	(48%)	
Christian – Protestant	45	(29%)	63	(42%)	
Tribe					<0.001
Luo	152	(99%)	134	(89%)	
Luhya	0	(0%)	14	(9%)	
Other tribes[1]	2	(1%)	3	(2%)	
Parental Status					0.60
Not a parent	13	(8%)	17	(11%)	
Parent to sons only	19	(12%)	21	(14%)	
Parent to daughters only	19	(12%)	23	(15%)	
Parent to both daughters and sons	103	(67%)	90	(60%)	
Community role[2]					
Teacher	26	(17%)	21	(14%)	0.47
Religious leader	80	(52%)	81	(54%)	0.77
Health worker	62	(40%)	44	(29%)	0.041
Community leader	60	(39%)	59	(39%)	0.98
Student	3	(2%)	5	(3%)	0.46
Other community leadership roles[3]	8	(5%)	1	(1%)	0.019
Other community roles[4]	15	(10%)	27	(18%)	0.039

[1.]Other tribes include Abasuba, Kalenjin and Kuria. [2.]Respondents could select multiple roles. [3]Other leadership roles include peer group advisor, counselor, child protection officer and youth peer providers among others. [4.]Other community roles include being a farmer, casual worker, businessperson, or not holding any significant role apart from being a community member.

We did observe meaningful differences between the two groups in prior engagement with Lwala or other norms changes interventions. More respondents from Rongo reported having been involved in recent norm change activities aimed at exploring beliefs and attitudes around Sexual and Reproductive Health (SRH) than comparison (78% vs. 62%). While most respondents in Rongo (82%) have heard of and engaged with Lwala, most participants (58%) in the comparison sub-counties have heard of but not engaged with Lwala. Some of the other providers of the norms change interventions reported by the participants included World Vision and the Center for International Health, Education and Biosecurity (CIHEB).

Table 9. Prior engagement with Lwala or other norms-changes interventions (N=305)

	Rongo Subcounty (n=154)		Comparison Sub counties (n=151)		
	N	%	N	%	*p*-value
Recent involvement in norms change interventions					0.002
Recently involved	120	(78%)	93	(62%)	
Not involved	34	(22%)	58	(38%)	
Period of norms interventions involvement (n=209)[5]					0.180
Less than a year ago	90	(77%)	65	(71%)	
1-2 years ago.	19	(16%)	11	(12%)	
2-3 years ago.	3	(3%)	7	(8%)	
3-4 years ago.	1	(1%)	3	(3%)	
More than 4 years ago	4	(3%)	6	(6%)	
Awareness and engagement with Lwala					<0.001
Never heard of Lwala	2	(1%)	30	(20%)	
Heard of Lwala but not engaged	26	(17%)	87	(58%)	
Heard of and engaged with Lwala	126	(82%)	34	(23%)	
Capacity of engagement with Lwala[6]					
Is a CHW for Lwala	41	(33%)	7	(21%)	0.18
Is a YPP for Lwala	9	(7%)	0	(0%)	0.11
Received training from Lwala	84	(67%)	25	(74%)	0.45
On Lwala's advisory boards	16	(13%)	3	(9%)	0.54
Received services from Lwala's CHWs	40	(32%)	8	(24%)	0.35
Received services from Lwala's YPPs	7	(6%)	4	(12%)	0.20
Other engagement capacity[7]	14	(11%)	5	(15%)	0.57

[5]This is for a sub-group of respondents (n=213) who engaged in norms change interventions. Responses missing for 4 participants. [6]This is a sub-group of respondents who have heard of and engaged with Lwala (n=160). Respondents could select multiple engagement methods. [7]Other engagement capacity includes being a mobilizer/advocate for Lwala and receiving medical services from health facilities supported by Lwala.

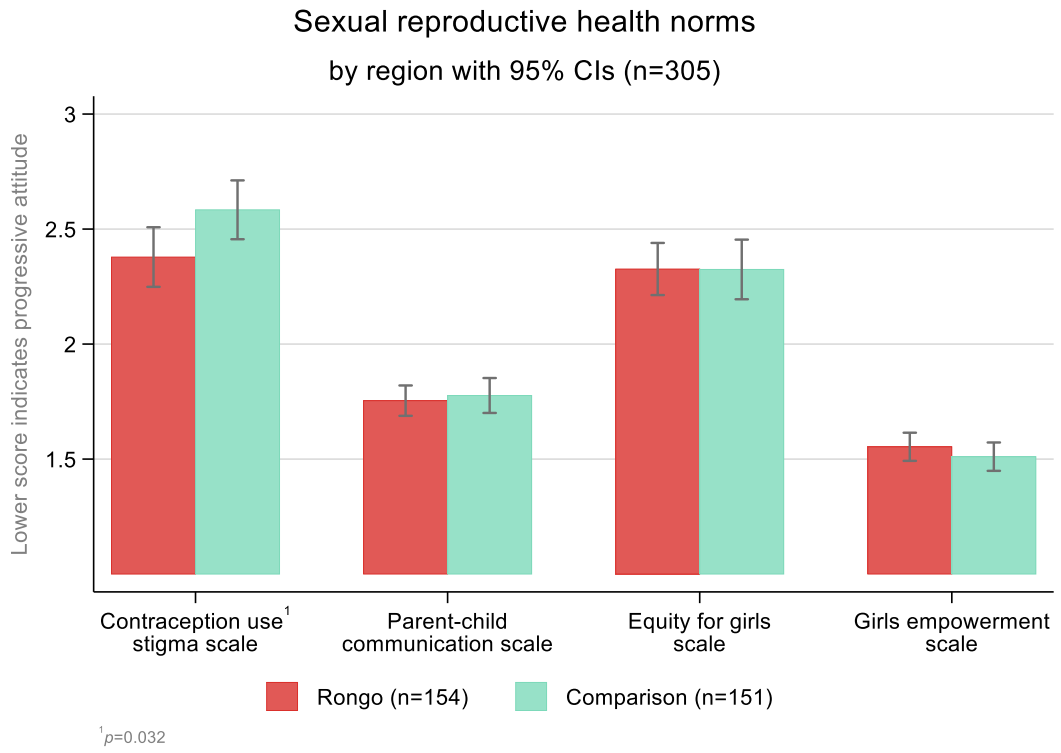
1.1.4 Sexual and reproductive health norms in Migori County

For each of our scales, the theoretical range of scores goes from 1 (reflecting the most progressive, least stigmatizing) to 5 (reflecting a high degree of stigma). We assessed for differences in social norms by a) sub-county of residence, which is a marker for exposure to the norms change interventions in Rongo sub-county; b) gender of the respondent; c) the interaction between gender and sub-county; d) involvement in previous norms change interventions; and e) the interaction between involvement in previous norms change interventions and sub-county. These analyses are designed to help us understand the extent to which the treatment and comparison groups are comparable at baseline overall as well as within sub-groups defined by gender and previous norms involvement. When comparing any two groups, our p-values were calculated using a linear regression model that adjusted for the demographic characteristics that differed substantially between the two groups including

respondent age, marital status and religious denomination. We did not adjust for respondents' tribe because 99% of all respondents from Rongo were Luo, and this lack of variation led to positivity violations in our models.

The attitudes and beliefs of study participants shown in Figure 2 are progressive in general, with the means of scales ranging from 1.5 to 2.5 (numeric results are also available in **Table 12** of Annex 4: SRH Norms Analysis). When comparing the social norms among respondents from Rongo to respondents from comparison sub-counties in **Figure 2**, we observe that respondents in Rongo show more progressive attitudes towards contraception use compared to respondents in the comparison sub counties (2.38 vs. 2.58, p=0.032). Respondents' scores for the other three scales are similar in the two regions.

Figure 2: Comparison of SRH norms across sub-counties

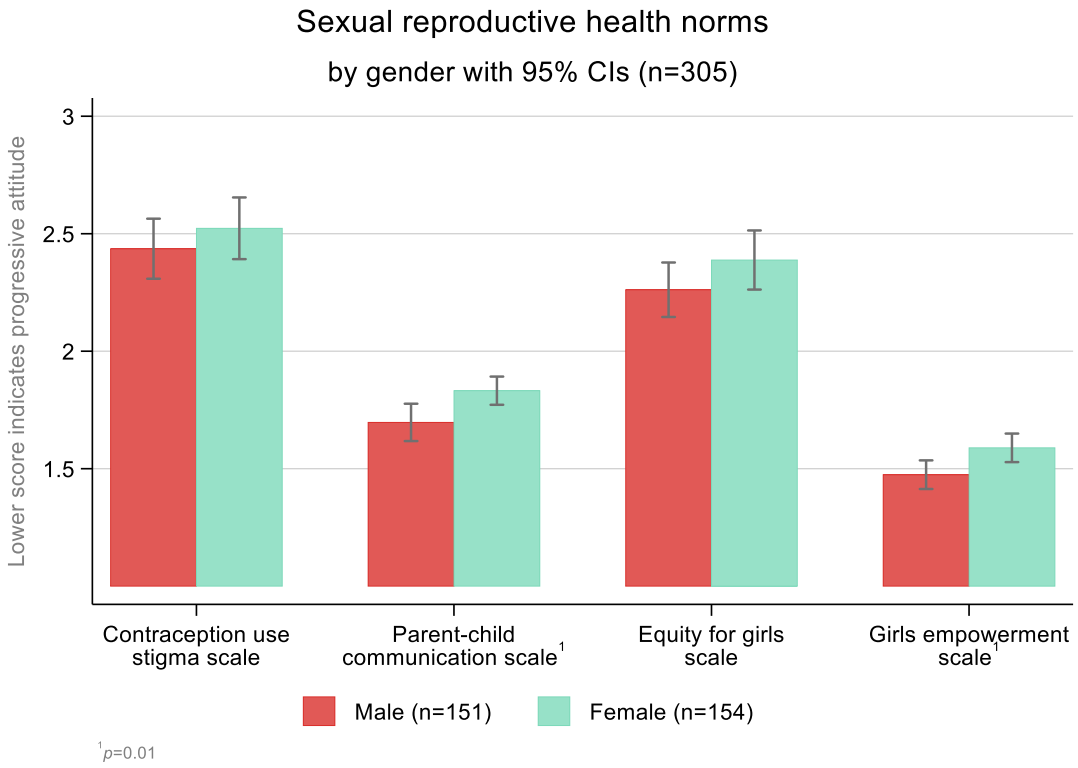


The Girls empowerment scale is comprised of three sub scales measuring: 1) Societal norms around teenage pregnancy and early marriage, 2) Girls' autonomy for marriage decisions scale and 3) Perceptions around older marriage. Similar to the overall scale, there are no significant differences observed in the sub-scales between regions.

When comparing norms by gender of the respondent in **Figure 3**, we observe that men exhibit slightly more progressive attitudes across all the norms areas than women, with the difference being statistically significant for parent-child communication on sexuality and puberty (1.7 vs 1.8, p=0.01), and girls' empowerment scale (1.5 vs 1.6, p=0.01). The gendered differences in the girls' empowerment scale are driven by the societal norms around teenage pregnancy and early marriage sub-scale, which are significantly lower among men compared to women (1.4

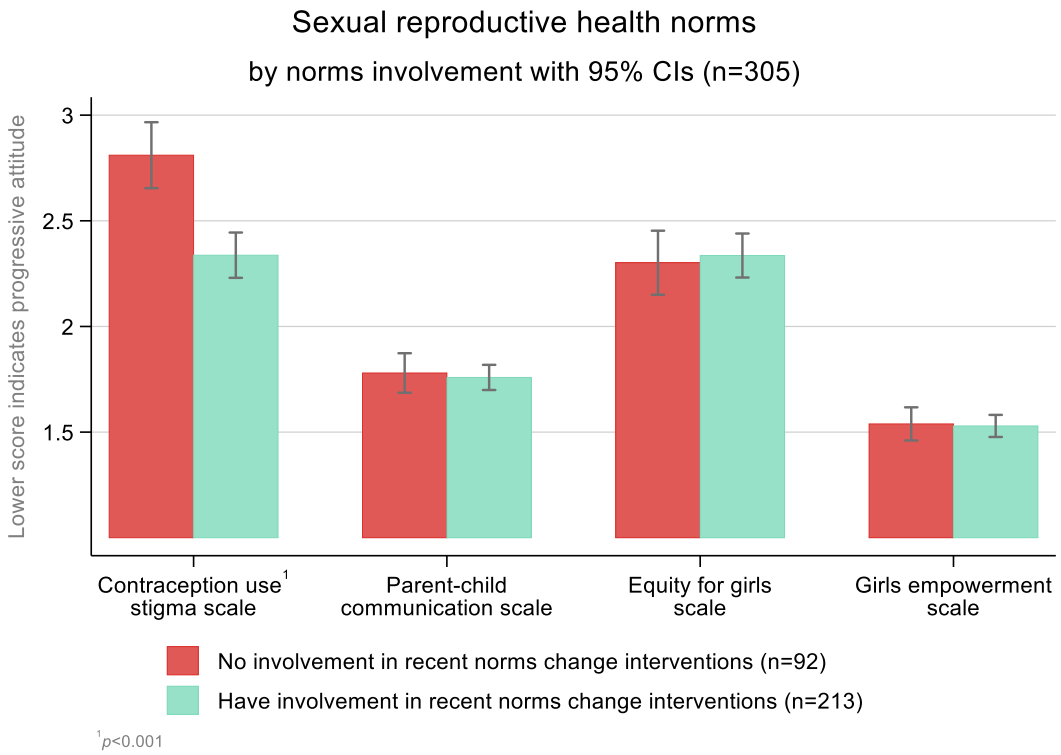
vs. 1.5, p=0.001) When we stratified by respondent gender, we did not observe any significant differences between respondents in Rongo and those in comparison sub counties (**Table 13**). However, men in Rongo sub-county have marginally more progressive attitudes towards acceptability of youth access to contraceptives compared to their counterparts in the comparison sub-counties (2.3 vs 2.5, p=0.058).

Figure 3: Differences in SRH norms across gender



When comparing norms by the respondent's recent involvement in norms change interventions in **Figure 4**, we observe that study participants who have recently engaged in any recent norms change activities show substantially less stigmatizing attitudes on the contraceptive use stigma scale (2.3 vs 2.8, p<0.001). When we stratified by respondent involvement in norms change activities, we did not observe any significant differences between respondents in Rongo and those in comparison sub-counties among respondents who had not engaged in any norm change activities (**Table 14**). However, among respondents who had engaged in norms change activities, respondents in Rongo sub-county have significantly more progressive attitudes towards acceptability of youth access to contraceptives compared to their counterparts in the comparison sub counties (2.2 vs 2.4, p=0.048).

Figure 4: Differences in SRH norms by recent interventions involvement



1.1.5 Predictors of sexual and reproductive health norms

To assess the characteristics that predict progressive attitudes at baseline, we conducted an exploratory analysis using stepwise regression. For each of the four scales, we constructed a model that included gender and geographical location and added additional variables using an entry criteria of p<0.03 and an exit criteria of p<=0.03. The results of the final specified model are presented in **Table 10** below.

From the analysis, we observe that recent participation in norms change activities, being a YPP for Lwala and being a health worker are all significant predictors of acceptability of youth access to contraception. When assessing parent-child communication on sexuality and puberty, we find that being married (currently or previously), having received training from Lwala, and being a community leader predict less stigmatizing attitudes while holding other community roles predict more stigmatizing attitudes. We also found other community roles and being a teacher to be significant predictors of more stigmatizing attitudes against girls' empowerment.

Table 10: Predictors of SRH norms in Migori county

	Sexual and Reproductive Health Norms Scales (n=305)			
Respondent Characteristics	**Contraception use stigma**	**Parent-child communication**	**Equity for girls**	**Girls' empowerment**
Gender				
Male (Ref.)				
Female	+	+	+	+
Geography				
Comparison sub counties (Ref.)				
Rongo sub county	+	+	-	+
Education				
Primary incomplete – not literate (Ref.)				
Primary incomplete – literate	+	+	-	+
Completed primary	+	+	-	+
Completed secondary	+	+	-	+
Currently in university	+	+	-	+
Completed tertiary/TVET	-	+	-	+
Parental status				
Not a parent (Ref.)				
Parent to sons only		+		
Parent to daughters only		+		
Parent to both sons and daughters		+		
Marital Status				
Never married (Ref.)				
Currently married		-	-	
Previously married		-	-	
Religion				
Christian – Catholic (Ref.)				
Christian – SDA	+			
Christian – Protestant	+			
Recent norms change involvement				
Not involved (Ref.)				
Were recently involved	-			
Knowledge of Lwala				
Have not heard of Lwala (Ref.)				
Heard of Lwala	-	+		
Engagement with Lwala				
CHW for Lwala	-		-	
YPP for Lwala	-			
Received training from Lwala		-		
Received services from Lwala's CHWs		+	+	
Received services from Lwala's YPPs	-	+		
On Lwala's advisory board			-	+
Community role				
Teacher			+	+
Religious leader			+	+
Health worker	-		+	
Community leader		-		-
Student			-	
Other community leadership roles		+	+	
Other community roles		+	+	+

The different color schemes represent magnitude of correlation as follows:

	Not included in our model	p>=0.3
	Included in model but not sig.	p<0.3
	Negative correlation	p<0.05
	Negative correlation	p<0.01
	Positive correlation	p<0.05

Implication of findings

Overall, we observed relatively progressive attitudes across male and female role models in both Rongo and comparison sub-counties. This finding could reflect our study's inclusion criteria, which required respondents to be perceived as a role model in their community and appears to have resulted in the sampling of a pool of respondents who have relatively high education attainment and who are often engaged in health care. Alternatively, these findings could reflect selection bias if individuals with high levels of stigma were also unlikely to consent to participating in the study or social desirability bias if individuals were unwilling to disclose stigmatizing attitudes over the phone. Due to the sampling strategy, our findings should not be interpreted as representative of the general population in Migori but instead reflect the attitudes of community leaders and role models.

Generally, our two groups have similar demographic characteristics and views towards social norms at baseline. However, we did observe statistically significant differences in respondents' age, marital status, tribe, and role in the community but these differences were relatively small in magnitude (an 11 percentage point difference or less). We also observed that respondents in Rongo reported more progressive attitudes towards contraception use compared to respondents in the comparison sub-counties. Even after restricting our analysis to only include respondents who had recently been involved in a norms change intervention, we still observed more progressive attitudes towards contraception use among those in Rongo compared to in other sub-counties. Our analyses at midline and endline will focus on within-person change to account for any differences in attitudes towards contraception use at baseline.

Some of our findings may suggest that Lwala's previous and ongoing work may have already had some impacts on attitudes towards adolescent contraceptive use in Rongo sub-county. As previously mentioned, we observed that respondents in Rongo reported more progressive attitudes towards contraception use than those in other sub-counties. Similarly, in our predictive models we observed that being a YPP was associated with more progressive attitudes towards contraception use and receiving training from Lwala was associated with more progressive views on parent-child communication.

In general, we also observed that male role models held more progressive views on social norms than women. This finding could indicate that targeting norms change interventions to women or women's groups could be an efficient way to impact social norms.

Conclusion

Laterite's evaluation assesses the Agonyora program's impacts on family planning utilization among young people in Migori county, cost of family planning provision in Migori county, and changes in social norms around adolescent reproductive health in Rongo subcounty. This baseline report conducted in 2023 provides an early indication that the Agonyora program has had a positive impact on access to family planning among youth in Migori county. Since the start of the Agonyora intervention in 2023, we estimate that young people aged 15 to 24 received 37,478 additional family planning visits and residents of Migori county received 96,310 additional CYPs. These changes were large in magnitude, closely coincide with the start of the Agonyora program and were particularly large among adolescents.

These findings suggest a substantial positive impact of the Agonyora program. However, the extent to which these changes can fully be attributed to the intervention is complicated by the fact that there are other organizations who are also implementing family planning interventions in Migori over time, which may have also contributed to some of the observed increase. As our evaluation progresses through the midline and endline data collection periods, we will build on our existing time series analysis to estimate the cumulative changes in family planning visits and CYP over the course of the Agonyora program.

Based on our assumptions, we estimate that the total cost for family planning services in 2022 from these 248 health care providers in Migori county was, and the average cost per CYP was at USD 3.91.

Our costing analysis suggests that the cost for family planning services incurred by 248 facilities in Migori county in 2022 was USD 1,007,040, and the average cost per CYP was USD 3.91. At endline, we will assess the changes in cost after program implementation. We hypothesize that the total cost will increase due to increased uptake of family planning while cost per CYP could increase or decrease depending on patient volume, allocation of health care provider's time, and uptake of specific methods of contraception. There are some opportunities to gain economies of scale through increased demand resulting from the Agonyora program. However, since the length of family planning visits are currently very short, it is also possible that increasing the amount of time per patient could correspond to a desirable increase in the quality of care provided to patients, even if it also results in reduced cost-effectiveness. There are additional opportunities to improve cost-effectiveness through increased uptake of more efficient methods of contraception, which could be achieved through better uptake of more efficient methods such as IUCDs or implants.

We have successfully established a prospective cohort of 305 community role models from Migori county and will use this cohort to monitor the changes in social norms during midline and endline. Overall, community role models already express progressive attitudes on the acceptability of youth access to contraceptives, acceptability of intergenerational communication on sex and puberty, and attitudes towards teenage pregnancy and early marriage. While both treatment and comparison groups are similar in terms of demographics, respondents in Rongo reported more progressive attitudes towards

contraception use compared to respondents in the comparison sub-counties. To better account for any imbalances between the groups at baseline, our analyses at midline and endline will focus on within-person changes in attitudes over time. We also observed that male role models held more progressive views on social norms than women, which could indicate interventions targeted for women could be an efficient way to impact social norms.

REFERENCES

Abdurahman, D., Assefa, N., & Berhane, Y. (2022). Parents' intention toward early marriage of their adolescent girls in eastern Ethiopia: A community-based cross-sectional study from a social norms perspective. Frontiers in Global Women's Health, 3, 911648. https://doi.org/10.3389/fgwh.2022.911648

African Institute for Development Policy. (2021). Understanding Factors Influencing Access and Choice of Contraceptives among Young People in Migori. African Institute for Development Policy.

Fulcher, I. R., Boley, E. J., Gopaluni, A., Varney, P. F., Barnhart, D. A., Kulikowski, N., Mugunga, J.-C., Murray, M., Law, M. R., Hedt-Gauthier, B., & the Cross-site COVID-19 Syndromic Surveillance Working Group. (2021). Syndromic surveillance using monthly aggregate health systems information data: Methods with application to COVID-19 in Liberia. International Journal of Epidemiology, 50(4), 1091–1102. https://doi.org/10.1093/ije/dyab094

Godia, P. M., Olenja, J. M., Lavussa, J. A., Quinney, D., Hofman, J. J., & Van Den Broek, N. (2013). Sexual reproductive health service provision to young people in Kenya; health service providers' experiences. BMC Health Services Research, 13(1), 476. https://doi.org/10.1186/1472-6963-13-476

Gulema, H., Hamdan, A., Gingles, J., Friedman, L. E., Gelaye, B., Worku, A., Worku, A., & Berhane, Y. (2019). Attitudes towards early marriage and related factors among adolescent girls in Ethiopia [Preprint]. In Review. https://doi.org/10.21203/rs.2.11060/v1

International Rescue Committee. (2016). Cost Efficiency Analysis: Distributing Family Planning Materials. International Rescue Committee.

KNBS & ICF. (2023). Kenya Demographic and Health Survey 2022. Key Indicators Report. KNBS and ICF.

Makenzius, M., McKinney, G., Oguttu, M., & Romild, U. (2019). Stigma related to contraceptive use and abortion in Kenya: Scale development and validation. Reproductive Health, 16(1), 136. https://doi.org/10.1186/s12978-019-0799-1

Mgbokwere, D. O., Esienumoh, E. E., & Uyana, D. A. (2015). Perception and attitudes of parents towards teenage pregnancy in a rural community of Cross river state, Nigeria. Global Journal of Pure and Applied Sciences, 21(2), 181. https://doi.org/10.4314/gjpas.v21i2.10

Nanda, G. (n.d.). Compendium of Gender Scales.

Ngacha, J. K., & Ayah, R. (2022). Assessing the cost-effectiveness of contraceptive methods from a health provider perspective: Case study of Kiambu County Hospital, Kenya. Reproductive Health, 19(1), 11. https://doi.org/10.1186/s12978-021-01308-3

Nuwamanya, E., Babigumira, J. B., & Svensson, M. (2023). Cost-effectiveness of increased contraceptive coverage using family planning benefits cards compared with the standard of care for young women in Uganda. Contraception and Reproductive Medicine, 8(1), 21. https://doi.org/10.1186/s40834-022-00206-8

Peter McIntyre. (2022). Adolescent Friendly Health Services—An Agenda for Change (WHO/FCH/CAH/02.14; pp. 1–48). World Health Organization.

Rademacher, K. H., Solomon, M., Brett, T., Bratt, J. H., Pascual, C., Njunguru, J., & Steiner, M. J. (2016). Expanding Access to a New, More Affordable Levonorgestrel Intrauterine System in Kenya: Service Delivery Costs Compared With Other Contraceptive Methods and Perspectives of Key Opinion Leaders. Global Health: Science and Practice, 4(Supplement 2), S83–S93. https://doi.org/10.9745/GHSP-D-15-00327

Reproductive Health Suplies Coalition. (2024). Value of Shipments of Emergency Oral Contraceptives to Sub-Saharan African in 2022 [dataset]. https://www.rhsupplies.org/activities-resources/tools/rh-viz/tool/#c11037

Salaries and Remuneration Commission. (2015a). Health Workers Allowances.

Salaries and Remuneration Commission. (2015b). Implementation of the revised House Allowance in the Public Service.

Salaries and Remuneration Commission. (2020). Phase IV Salary Review for County Government Employees at the Executive.

Sedlander, E., & Rimal, R. N. (2019). Beyond Individual-Level Theorizing in Social Norms Research: How Collective Norms and Media Access Affect Adolescents' Use of Contraception. Journal of Adolescent Health, 64(4), S31–S36. https://doi.org/10.1016/j.jadohealth.2018.12.020

Silva, M., Kassegne, S., Nagbe, R.-H. Y., Babogou, L., Ezouatchi, R., Ado, A. L., Moussa, F., & Dougherty, L. (2022). Changing the Script: Intergenerational Communication about Sexual and Reproductive Health in Niamey, Niger. Journal of Health Communication, 27(10), 755–763. https://doi.org/10.1080/10810730.2022.2160527

Stover, J., Bertrand, J. T., & Shelton, J. D. (2000). Empirically Based Conversion Factors for Calculating Couple-Years of Protection. Evaluation Review, 24(1), 3–46. https://doi.org/10.1177/0193841X0002400101

Toru, T., Sahlu, D., Worku, Y., & Beya, M. (2022). Parent-adolescents communication on sexual and reproductive health issues and associated factors among students in high school and preparatory in Arekit, Southwest, Ethiopia, 2020. International Journal of Africa Nursing Sciences, 17, 100509. https://doi.org/10.1016/j.ijans.2022.100509

ANNEXES

Annex 1: Model specifications for the time series analysis

We used data from the pre-intervention period (January 2019-December 2022) to fit a model that *describes the pre-existing trends* in family planning update. For our time series models, we use a negative binomial regression model. This model was selected because our primary outcomes were non-zero count data.

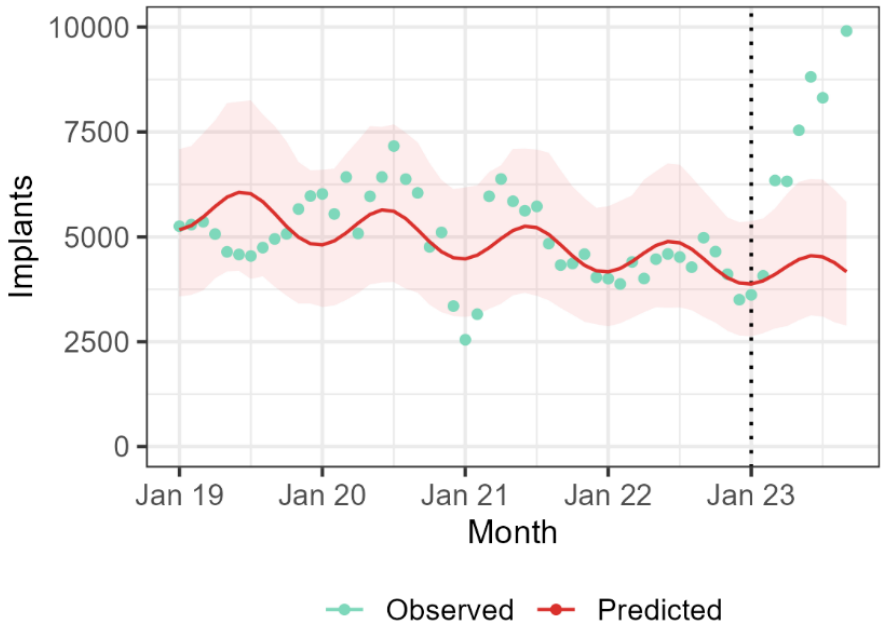
When fitting this model, we explored a wide range of model specifications. We started with a simple model, fitting a linear term for time on the pre-intervention data. We explored expanding the model by:

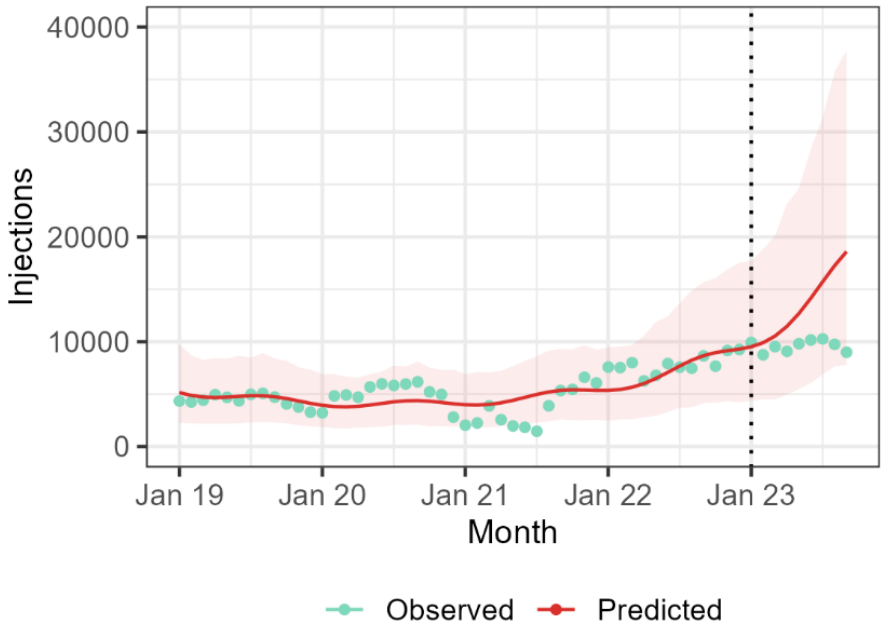
1. **Adding quadratic and cubic terms for time to capture any non-linear trends in the data** - We hypothesize that non-linear trends over time could occur due to rapid uptake of new methods or saturation of the market for existing methods. When assessing whether to include non-linear terms in our model, we extrapolated our model-based predictions values through the end of the intervention period (2026) to assess for plausibility of the model. In general, we observed that including cubic terms in our model often resulted in extrapolated predications that were not plausible. Consequently, we restricted our models to include either linear only or linear and quadratic terms.
2. **Accounting for any seasonal trends using sine and cosine functions** - We hypothesized that seasonal trends in family planning update could occur as a result of various secular trends (e.g. wedding season, back-to-school periods) and included sine and consine function of time to account for these annual fluctuations.
3. **Adjusting for the impact of the COVID-19 pandemic** - Our pre-intervention period coincided with the COVID-19 pandemic, which could have impacted health service utilization. In order to explore the potential impact of COVID-19 on health service utilization, we used the Oxford Coronavirus Government Response Stringency Index, which is designed to measure the overall strictness of government policy with regard to COVID-19 over time by combining information from 9 different metrics such as school closures; workplace closures; cancellation of public events; and restrictions on public gatherings. Although we used this data source to explore the impact of adjusting for COVID-19 in our models; ultimately, this index was not found to have a statistically significant relationship with any outcome of interest and was therefore dropped from the analysis.

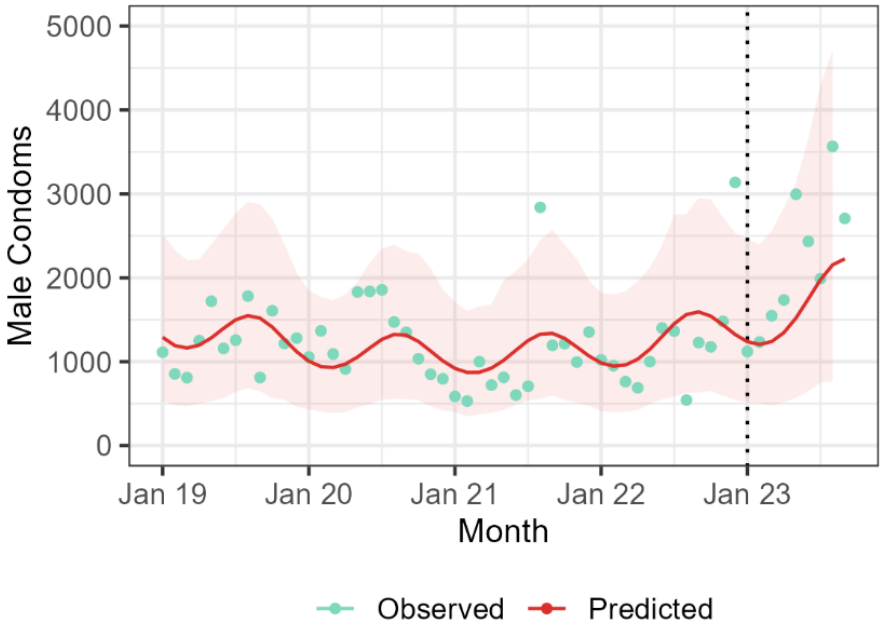
We assessed model fit by conducting likelihood ratio tests to compare two 'nested' models (e.g. a linear vs. a quadratic) in order to determine which model has the best fit with our pre-intervention data. We also visually assessed our models for quality of fit by verifying that the data that was observed during the pre-intervention period fell within our band of predicted values. Where data did not fall within this band, we assessed whether there were idiosyncratic events (e.g. the health care worker strike December 2020-Februrary 2021) that could have explained this discrepancy.

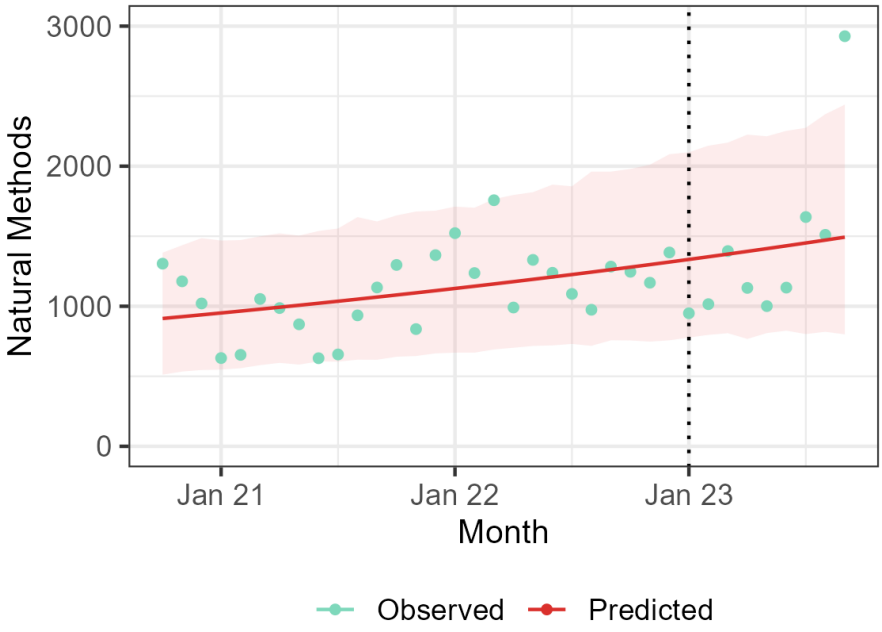
Annex 2: Time series analysis for specific family planning methods

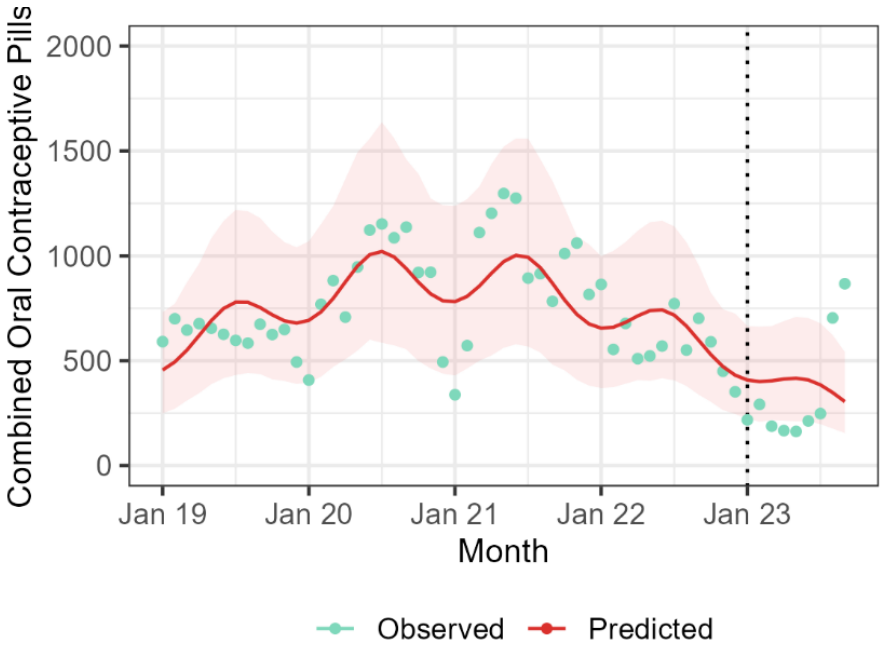
Methods are presented in order of frequency of use.

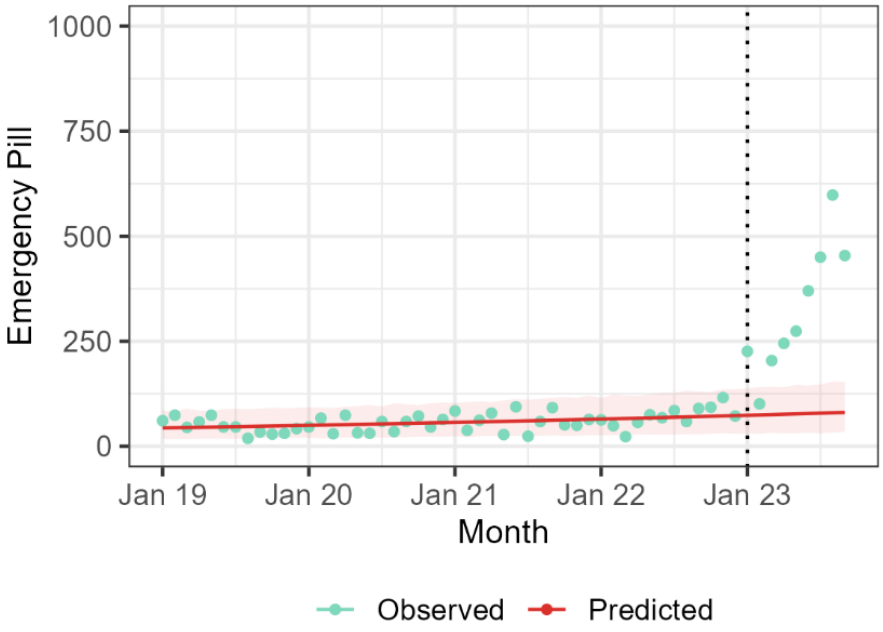


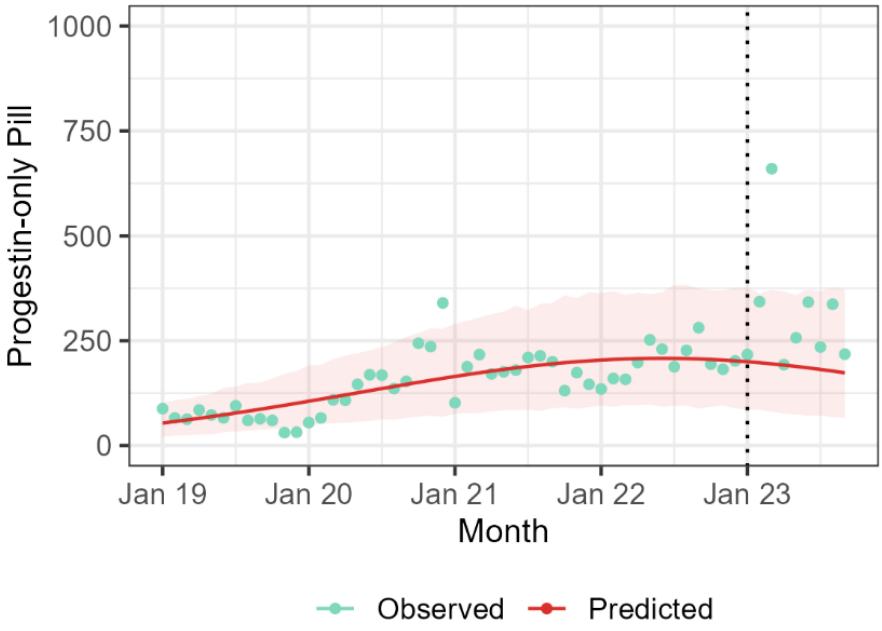


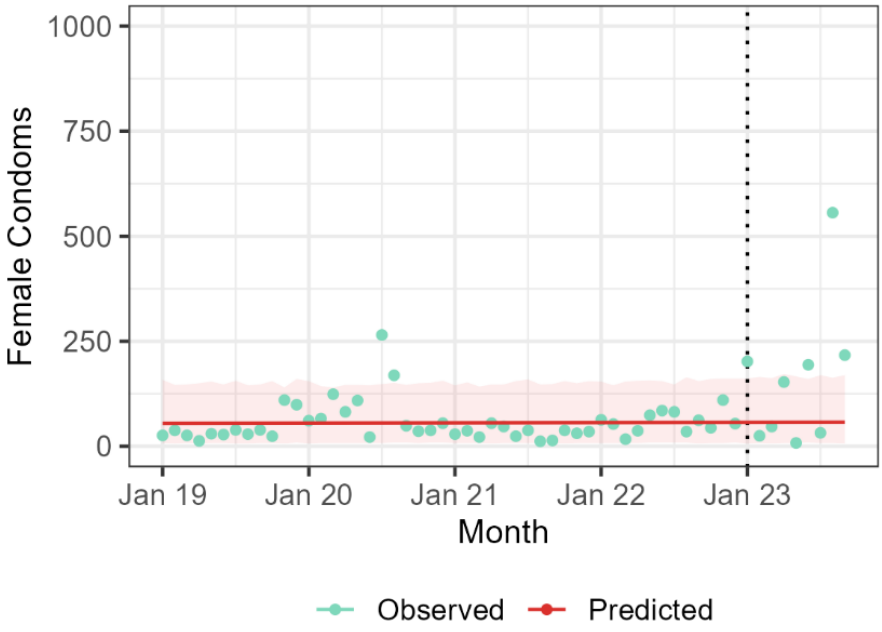

Male Condoms
5000
4000
3000
2000
1000
0
Jan 19
Jan 20
Jan 21
Jan 22
Jan 23
Month
Observed
Predicted

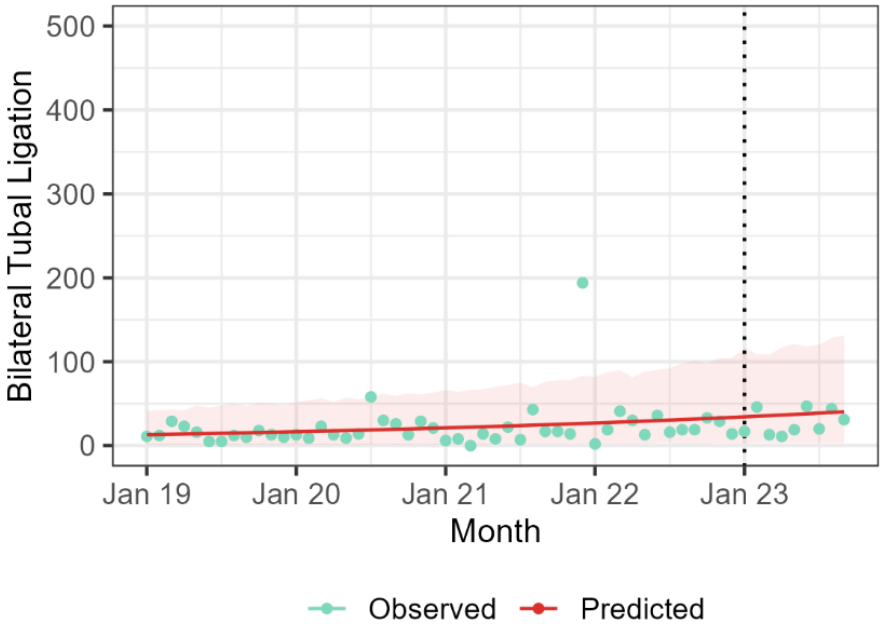

Natural Methods
3000
2000
1000
0
Jan 21
Jan 22
Jan 23
Month
Observed
Predicted


Combined Oral Contraceptive Pills
2000
1500
1000
500
0
Jan 19
Jan 20
Jan 21
Jan 22
Jan 23
Month
Observed
Predicted


Emergency Pill
1000
750
500
250
0
Jan 19
Jan 20
Jan 21
Jan 22
Jan 23
Month
Observed
Predicted


Progestin-only Pill
1000
750
500
250
0
Jan 19
Jan 20
Jan 21
Jan 22
Jan 23
Month
Observed
Predicted


Female Condoms
1000
750
500
250
0
Jan 19
Jan 20
Jan 21
Jan 22
Jan 23
Month
Observed
Predicted


Bilateral Tubal Ligation
500
400
300
200
100
0
Jan 19
Jan 20
Jan 21
Jan 22
Jan 23
Month
Observed
Predicted

Annex 3: Social Norms Scales

Item composition of sexual and reproductive health scales. For each scale, response options included 1. Strongly disagree, 2. Disagree, 3. Unsure, 4. Agree and 5. Strongly agree. Reverse coded items are indicated with an asterisk superscript (*).

Contraception Use Stigma Scale
1. A girl who uses a contraceptive method is promiscuous (sexually immoral, likes to have many sexual relationships)
2. A girl who uses a contraceptive method will encourage other girls to have a promiscuous lifestyle
3. A girl cannot decide for herself to use a contraceptive method.
4. A married woman is more deserving of a contraceptive method than an unmarried woman.
5. A girl who uses contraceptives will have problems when she decides to get pregnant.
6. A girl who carries condoms is likely to have many sexual partners.
7. A girl should not insist on using a condom; it is the man to decide whether to use a condom.
Parent-child Communication Scale
1. *It is the role of a parent to talk to their child about sexual and reproductive health issues.
2. *It is the role of teachers at school to teach the children about sexual and reproductive health.
3. Talking to children about sexual and reproductive health topics will encourage them to engage in sexual activities.
4. Adolescents are too young to be having sexual and reproductive health discussions with.
5. It is better for adolescents to learn about sex and sexuality from their peers than from their parents.
6. *Discussing sex and contraception with adolescents is important.
7. *It is important for parents to explain the changes that occur during puberty to their children.
8. *Talking to children about puberty can make them feel more comfortable with their changing bodies.
Equity for Girls Scale
1. *Girls should be able to work outside the home after they have children if they want to.
2. *Girls should have the same chance to work outside the home as boys.
3. *Girls should be told that an important reason not to have too many children is so they can work outside the home and earn money.
4. *Girls should be able to work outside the home so she can support herself if necessary.
Girls Empowerment Scale
Societal norms around teenage pregnancy & early marriage
1. *A girl who is pregnant should continue with her schooling
2. A girl who is pregnant should be given out in early marriage

3. A girl who is pregnant should be sent away from home
4. *A girl who is pregnant should be supported to have the baby
5. A teenage girl who is pregnant does not have a future.
6. A girl who is pregnant should be stigmatized in the community
7. Getting married before the age of 18 is beneficial
8. Parents who marry off their daughters early are good parents.
Girls' autonomy for marriage decisions
9. *Girls should have a say whether they want to marry or not.
10. *Girls should have the final decision over the decision to marry
Perceptions around older marriage for girls
11. If a girl does not marry early, she will not be marriageable when older.
12. Getting married before the age of 18 is beneficial

Methodology for scale development

We reviewed the literature to identify validated scales or validated questions from existing contextually relevant scales whenever possible. When validated scales were not available, we reviewed qualitative and quantitative literature to develop relevant items. Each candidate item was assessed for face validity, clarity, unambiguity, simplicity, and lack of implicit assumptions. This process resulted in a final list of 31 items. Following the coding used by the Contraceptive use stigma scale, we reverse scored items that were positively worded, so that lower scores (1 and 2) were in line with progressive attitudes, while higher scores (3 and 4) were linked to more stigmatizing attitudes. We initially hypothesized that these items would create three scales to measure the three priority norms, as detailed below:

1. **Acceptability for youth access to contraceptives** - assessed using the Contraception Use Stigma Scale[19].
2. **Acceptability of intergenerational communication about sex and puberty** – assessed using questions formulated and adapted from literature on parental-child communication[20] [21] [22].

[19] Developed and validated in Kenya by: Makenzius, M., McKinney, G., Oguttu, M., & Romild, U. (2019). Stigma related to contraceptive use and abortion in Kenya: Scale development and validation. Reproductive Health, 16(1), 136. https://doi.org/10.1186/s12978-019-0799-1

[20] Manu, A.A., Mba, C.J., Asare, G.Q. et al. Parent–child communication about sexual and reproductive health: evidence from the Brong Ahafo region, Ghana. Reprod Health 12, 16 (2015). https://doi.org/10.1186/s12978-015-0003-1

[21] Toru, T., Sahlu, D., Worku, Y., & Beya, M. (2022). Parent-adolescents communication on sexual and reproductive health issues and associated factors among students in high school and preparatory in Arekit, Southwest, Ethiopia, 2020. *International Journal of Africa Nursing Sciences*, *17*, 100509. https://doi.org/10.1016/j.ijans.2022.100509

[22] Silva, M., Kassegne, S., Nagbe, R. Y., Babogou, L., Ezouatchi, R., Ado, A. L., Moussa, F., & Dougherty, L. (2022). Changing the Script: Intergenerational communication about sexual and reproductive health in Niamey, Niger. Journal of health communication, 27(10), 755–763. https://doi.org/10.1080/10810730.2022.2160527

3. **Attitudes towards early marriage and teen pregnancy** – assessed using questions adapted using from studies done in Nigeria[23] and Ethiopia[24] [25] as well as the four-item Equity for Girls subscale in the Gender Norms Attitudes Scale[26]

We had originally hypothesized that the remaining items would load onto a third scale of Attitudes towards early marriage and teen pregnancy; however, our factor analysis resulted in four eigenvalues greater than one, suggesting that these items did not capture a unidimensional construct. Four of the items in this scale loaded on a single factor and belonged to the Equity for Girls subscale of the Gender Norms Attitudes scale, a previously developed and validated scale in Egypt used to measure egalitarian beliefs about male and female gender norms (Nanda, 2011). These four items exhibit moderate internal reliability (Cronbach's alpha =0.6); however, given their existences as an independent scale in the literature, we chose to present the Equity for Girls items as a separate scale.

When we re-ran our factor analysis on the remaining 12 items, we noted moderate-to-high loadings on the first component for all items (eigen value 4.35). However, items 9 and 10 loaded more strongly on component 2 (eigenvalue 1.37) while items 7 and 11 loaded more strongly– on component 3 (eigenvalue 1.14). Based on the factor loadings as well as the interpretability of these items, we retained the 12 items as one Girls' empowerment scale (Cronbach's alpha =0.8); with three subscales: a) Societal norms surrounding Teenage Pregnancy (TP) and Early Marriage (EM) (Cronbach's alpha =0.8); b) Girls' autonomy for marriage decisions (Cronbach's alpha =0.6); and c) perceptions against older marriage of girls (Cronbach's alpha =0.7).

Table 11: Factor loadings of the teenage pregnancy and early marriage scale

Items	Component 1 (4.35)	Component 2 (1.37)	Component 3 (1.14)
Item 1	**0.2943**	- 0.1430	- 0.2669
Item 2	**0.3528**	- 0.0593	- 0.2101
Item 3	**0.3664**	- 0.1887	- 0.1778
Item 4	**0.3017**	0.0257	- 0.1811
Item 5	**0.2458**	- 0.2864	0.2122
Item 6	**0.3024**	- 0.1513	- 0.2473

[23] Mgbokwere, D.O., Esienumoh, E.E., & Uyana, D.A. (2015). Perception and attitudes of parents towards teenage pregnancy in a rural community of Cross River State, Nigeria. *Global Journal of Pure and Applied Sciences, 21*, 181-190.

[24] Abdurahman, D., Assefa, N., & Berhane, Y. (2022). Parents' intention toward early marriage of their adolescent girls in eastern Ethiopia: A community-based cross-sectional study from a social norms perspective. Frontiers in Global Women's Health, 3. https://doi.org/10.3389/fgwh.2022.911648

[25] Gulema, H., Hamdan, A., Gingles, J., Friedman, L. E., Gelaye, B., Worku, A., Worku, A., & Berhane, Y. (2019). Attitudes towards early marriage and related factors among adolescent girls in Ethiopia. https://doi.org/10.21203/rs.2.11060/v1

[26] Nanda, Geeta. (2011). Compendium of Gender Scales. FHI 360/C-Change.

Item 7	**0.3132**	0.2779	- 0.1712
Item 8	**0.3337**	0.0893	0.0169
Item 9	0.2134	**0.5402**	0.1752
Item 10	0.1491	**0.6345**	0.1231
Item 11	0.2437	-0.1508	**0.6388**
Item 12	0.2742	- 0.1803	**0.4801**

Annex 4: SRH Norms Analysis

The performance of the final scales defined above were used to assess the norms status in Migori county. The analysis was conducted for all the respondents, by location, gender and their norm's activities engagement.

Table 12 shows the overall results of the scale performance across Rongo and the comparison sub counties. The internal consistency of the scales was measured using Cronbach's alpha. Overall, there was high to moderate reliability of the scales, with the alpha coefficients ranging from 0.6 to 0.8 across the scales.

The parent-child communication scale, which was constructed with different validated questions from literature, was further explored in terms of its reliability especially since the alpha coefficient was on the lower side compared to the other scales. We identified two items that had very low item-rest correlations of 0.1 and 0.04, while the other items' correlations ranged from 0.3 to 0.5. The item-rest coefficient shows the correlation between an item and a scale that is formed by all other items (excluding the item itself). After conducting an analysis where these two items were removed from the scale, we found that the alpha increases to 0.71 from 0.59, making the scale more reliable. Further review of the two items revealed that there was high variation in their response distribution compared to the responses of the other items in the scale, which were skewed to either strongly disagree or disagree. As a result, we decided to retain the two items in the scale, to allow for more insights from within-person changes in responses at midline and endline.

Table 12: Overall SRH beliefs in Migori County

Scales	Overall (n=305)	
	Alpha	**Mean [95% CI]**
Contraception use stigma scale	0.8	2.48 [2.39,2.57]
Parent-child communication scale	0.6	1.76 [1.71,1.82]
Equity for girls' scale	0.6	2.33 [2.24,2.41]
Girls' empowerment scale	0.8	1.53 [1.49,1.58]
Societal norms around TP & EM scale	0.8	1.43 [1.39,1.47]
Girls' autonomy for marriage decisions scale	0.6	1.80 [1.71,1.89]
Perceptions around older marriage scale	0.7	1.68 [1.60,1.75]

Table 13: SRH norms by gender and region

Scales	Male role models (n=151) Mean [95% CI]			Female role models (n=154) Mean [95% CI]		
	Rongo (n=76)	Comparison (n=75)	adjusted *p*-value[1]	Rongo (n=78)	Comparison (n=76)	adjusted *p*-value[1]
Contraception use Stigma Scale	2.31 [2.13,2.48]	2.57 [2.38,2.75]	0.058	2.45 [2.26,2.64]	2.60 [2.42,2.78]	0.267
Parent-child communication scale	1.70 [1.60,1.81]	1.69 [1.57,1.81]	0.56	1.80 [1.72,1.88]	1.86 [1.77,1.95]	0.348
Equity for girls' scale	2.27 [2.11,2.42]	2.26 [2.08,2.43]	0.733	2.38 [2.22,2.55]	2.39 [2.20,2.58]	0.536
Girls' empowerment scale	1.51 [1.42,1.59]	1.44 [1.36,1.53]	0.322	1.60 [1.51,1.68]	1.58 [1.49,1.67]	0.674
Societal norms around TP and EM	1.40 [1.32,1.48]	1.32 [1.24,1.40]	0.216	1.52 [1.43,1.61]	1.48 [1.39,1.57]	0.935
Girls' autonomy for marriage decisions	1.77 [1.58,1.96]	1.78 [1.56,2.0]	0.905	1.81 [1.67,1.94]	1.83 [1.65,2.0]	0.927
Perceptions around older marriage	1.66 [1.51,1.81]	1.6 [1.42,1.78]	0.438	1.71 [1.59,1.84]	1.73 [1.58,1.88]	0.209

[1]p-values are adjusted for significantly different demographic characteristics between the respondents in Rongo and comparison, including respondent age, marital status, and religious denomination.

Table 14: SRH norms by norms interventions involvement and region

Scales	Not engaged in recent norms change activities. (n=92) Mean [95% CI]			Engaged in recent norms change activities. (n=213) Mean [95% CI]		
	Rongo (n=34)	Comparison (n=58)	adjusted *p*-value[1]	Rongo (n=120)	Comparison (n=93)	adjusted *p*-value[1]
Contraception use Stigma Scale	2.83 [2.58,3.08]	2.80 [2.60,3.0]	0.792	2.25 [2.11,2.39]	2.45 [2.29,2.61]	0.048
Parent-child communication scale	1.80 [1.67,1.94]	1.77 [1.64,1.89]	0.798	1.74 [1.66,1.82]	1.78 [1.69,1.88]	0.626
Equity for girls' scale	2.43 [2.19,2.67]	2.22 [2.03,2.42]	0.357	2.30 [2.17,2.42]	2.39 [2.22,2.56]	0.271
Girls' empowerment scale	1.58 [1.44,1.71]	1.52 [1.42,1.62]	0.873	1.55 [1.48,1.62]	1.51 [1.43,1.59]	0.612
Societal norms around TP and EM	1.53 [1.38,1.67]	1.41 [1.31,1.50]	0.505	1.44 [1.37,1.51]	1.39 [1.32,1.47]	0.602
Girls' autonomy for marriage decisions	1.79 [1.59,2.0]	1.73 [1.50,1.97]	0.846	1.79 [1.65,1.92]	1.85 [1.68,2.02]	0.643
Perceptions around older marriage	1.56 [1.41,1.71]	1.75 [1.54,1.96]	0.072	1.73 [1.61,1.84]	1.61 [1.47,1.75]	0.26

[1]p-values are adjusted for significantly different demographic characteristics between the respondents in Rongo and comparison, including respondent age, marital status, and religious denomination.

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