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EDEAN PROOF OF CONCEPT

Final Evaluation Report

Evaluating a peer learning and
community theatre intervention to
increase fertility awareness and family
planning use

Georgetown University's Institute for Reproductive Health and Save the Children



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Fertility Awareness
for Community
Transformation

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ACRONYMS

CDO	Community Development Officer
CMC	Centre Management Committee
ECCD	Early Childhood Care and Development
EDEAN	Emorikinos Daadang Etogogongo Alatanakin Ngidwe
EFA	Exploratory Factor Analysis
FACT	Fertility Awareness for Community Transformation
FAM	Fertility Awareness-Based Methods
FGD	Focus Group Discussion
FP	Family Planning
ICRW	International Center for Research on Women
IDI	In-Depth Interviews
IRH	Institute for Reproductive Health, Georgetown University
IPV	Intimate Partner Violence
KII	Key Informant Interview
LAM	Lactational Amenorrhea Method
LOE	Level of Effort
mCPR	Modern Contraceptive Prevalence Rate
M&E	Monitoring & Evaluation
ODK	Open Data Kit
OR	Odds Ratio
PMC	Population Media Center
POC	Proof of Concept
SDM	Standard Days Method
ToT	Training of Trainers
TFR	Total Fertility Rate
USAID	United States Agency for International Development
VHT	Village Health Team

EXECUTIVE SUMMARY

INTRODUCTION

This report shares EDEAN's story, from intervention design to proof of concept testing and final evaluation findings in increasing fertility awareness and improve FP use in Karamoja region. EDEAN is grounded from [formative research](#), which showed that misconceptions about contraceptive side effects and pregnancy risk are key barriers to family planning (FP) use in Uganda's Karamoja region, where the modern contraceptive prevalence rate is 6.5% (UBOS and ICF 2016). Formative research suggests that the transition from a nomadic to sedentary lifestyle – in which men ceased migrating to cattle kraals for extended periods of time – altered couple dynamics on the use of post-partum abstinence as a traditional child spacing practice (IRH 2014). Karamoja's cultural transition suggests that unconventional, yet culturally-sensitive activities are necessary to reach couples with fertility and FP information.

ABOUT EDEAN

To address this gap, EDEAN was piloted under the Fertility Awareness for Community Transformation (FACT) Project as a peer learning and community theatre intervention to diffuse fertility awareness and FP information among hard-to-reach Karimojong communities. With the goal of increasing demand for FP, EDEAN is an eight month community-based intervention, covering four modules: 1. Couple Communication; 2. Menstruation; 3. Fertility, and; 4. FP. In each community, 10 male and 10 female youths between 18-25 years old learn about the above four topics through a series of gender synchronized same sex and mixed sex Peer Group Meetings. These Peer Group Meetings were facilitated by a trained male and female Peer Moderator pair from their local community. After finishing each peer group meeting module topic, the 20 Peer Group Members rehearse, and then enact a set of three performances to the community at large. During the Peer Group Members' theatre performances, the Peer Moderator pair ask reflection questions to the audience, catalyzing larger discussion and reflection on existing norms, beliefs and information on fertility awareness and FP within their community. More information about the EDEAN solution can be viewed through a micro-documentary found [here](#).

EVALUATION DESIGN AND METHODS

To understand potential for scale, EDEAN was pilot tested through a proof of concept phase in late 2016 – early 2017 in six agro-pastoral communities of Moroto and Napak Districts in the Karamoja region of Uganda. A quasi-experimental study using mixed-methods was conducted to assess the delivery and potential scalability of EDEAN, as well as the effectiveness of the approach in increasing fertility awareness knowledge and improving attitudes and behaviors toward FP use. Methods of verification included baseline and endline household surveys with independent representative samples of intervention and control

households (n=400 intervention and n=200 control); FGDs with 32 Peer Group Members and 48 community members; interviews with 9 key informants; attendance and systematic observational data of 80 peer group meetings, rehearsals and theatre performances, and; service statistics from 14 local health facilities.

Primary outcomes included self-reports of current modern FP use; intent to use modern FP, and; fertility awareness scores. Secondary outcomes included knowledge, attitudes and behaviors related to couple communication, menstruation, fertility and FP. Analyses were conducted through two estimation approaches: 1. Pre to post community-level analysis; and 2; Post-intervention exposure level analysis. Community level data were analyzed to understand intervention effect at larger scale within the community (regardless of performance exposure), while exposure level data were analyzed to better understand associations between those who attended the performances and potential improvements in fertility awareness and FP outcomes. For both analyses, bivariate descriptive comparisons were conducted, followed by multivariate logistic regression showing adjusted odds ratios. Content analyses were conducted on qualitative data from FGDs with community members and peer group members, and KIs with service providers and community leaders.

KEY FINDINGS

Key findings are presented below vis-à-vis three evaluation result components to better understand the model's potential scalability, including: 1. Intervention feasibility, 2. Intervention effectiveness in increasing fertility awareness and FP, and; 3. Acceptability of the model among participating stakeholders and communities.

Feasibility Delivering EDEAN Activities

Participation and Reach. Approximately 78% of the Peer Group Members attended all of the EDEAN Peer Group Meetings, rehearsals and performances. EDEAN was well received in the communities with large engaged audiences. Process data show wide reach, with a total of 6,669 points of contact made in the six communities from June to December 2016 (average 89 audience members at each performance).

Fidelity. Manual and messaging fidelity were closely assessed given Karamoja's resource scarce and low-literate environment (74% of the intervention household sample had no formal education). Systematic observations show Peer Moderators were able to follow the guidelines and manuals almost all the time (80%), ensuring fertility awareness and FP message fidelity. Other findings suggest the combination of scripted and "create your own drama" storylines ensured fertility awareness messaging fidelity, while allowing Peer Group Members to tap into their own cultural and societal experiences to deconstruct fertility awareness and FP beliefs and norms in their communities.



Female Peer Moderator with EDEAN Manual (Credit: Bridge Films)

Addressing gender and power dynamics. Finally, given the rigid cultural gender roles and structures in Karimojong society, ensuring equitable participation and discussion among men and women could be challenging. However, Peer Group Members also shared during FGDs that the gender synchronized meetings, facilitated more participatory and equitable discussion during the same-sex, and later mixed-sex meetings.

Acceptability and Diffusion in Communities

Community acceptability. Qualitative results show high community acceptability of the EDEAN model across community leaders, service providers, and community members. The high levels can be attributed to EDEAN's approach of using the community resource persons as peer moderators and peer group members. Community Development Officers (CDOs), who are respected in the communities, also played a vital role in the EDEAN implementation. Interviewed community leaders and members consistently reaffirmed that EDEAN was compatible with their culture and traditions. Engaging elders in intervention activities was key in encouraging young couples to attend the performances and in dispelling myths and "fear" around fertility awareness and FP topics.

Health Service Linkages within EDEAN activities. Providers perceived the EDEAN activities as a demand generation activity that could complement and improve their day to day FP work, generating increased numbers of FP clients. The qualitative findings also showed that health workers were interested in the EDEAN activities, and in some cases, attended some of the performances. The findings suggest that referral mechanisms to health systems need to be strengthened. Community based referral systems are notoriously challenging. EDEAN used a paper-based referral through FP invitation cards. Future programs might explore use of alternative and/or mobile referrals which have shown greater success (Lebetkin 2015).

Diffusion of FA/FP information among community members. Those who attended the EDEAN performances shared fertility awareness and FP information with their friends, neighbors, among others and brought them to attend subsequent performances. The performance locations – conducted at ECCD centers open to all in the community – also facilitated access and diffusion of information. Karamoja's mobility patterns facilitated the speed and feasibility of information to be diffused and shared among community members.

Effectiveness Increasing Fertility Awareness and FP

Community Participant Profiles. Approximately 74% of respondents in the intervention community had no education compared to 81% in the control community, consistent with Karamoja's low education levels. On average, respondents had about 3 children and had been married for eight years across both intervention and control groups. Both intervention and control groups reported low use of ever modern FP use in their lifetime, about 21% and 18% of intervention and control respondents, respectively. The majority of participants in both

intervention and control communities reported using traditional method of FP, and more specifically periodic abstinence (55% intervention vs. 62% control).

Community-level results on fertility awareness and FP. The proportion of respondents with high fertility awareness scores increased in intervention communities from 15% to 75% from baseline to endline, respectively. Respondents living in an intervention community were more than seven times more likely to have a high FA score, relative to those in control communities (aOR 7.3; $p<.0001$). The effect appears stronger when controlling for demographic variables (aOR 9.3; $p<.0001$). In intervention communities, intent to use a modern FP method increased among surveyed women (from 25% to 29%; $p=0.3427$) and men (8% to 17%; $p=0.009$) over the six month period. Consistent with these data, respondents in intervention communities were approximately three times more likely to intend to use a modern FP method (aOR 3.1; $p=0.026$). There were no community-level increases in current modern FP use among both intervention and control groups. At endline, 6% of intervention women and 14% of intervention men reported current modern FP use.

Exposure-level results on fertility awareness and FP. At endline, 79% of surveyed respondents in intervention communities had heard of the EDEAN performances, while 65% reported viewing at least one performance. A higher proportion of women in intervention communities viewed the performances (79%), relative to men (51%). Post-intervention exposure analysis comparing those who viewed at least one performance (in intervention community) vs. no performance (in intervention and control communities) show that viewers ($n=260$) were more than twice as likely to have higher fertility awareness scores (aOR 2.5; $p<.0001$), than non-viewers ($n=340$); six times more likely to seek information about FP from a health worker (aOR 6.5; $p<.0001$), and; significantly less likely to report that modern FP methods cause side effects (aOR 0.2; $p<.0001$), compared to non-viewers. Viewers were also more six times more likely to report intent to use modern FP (aOR 6.3; $p<.0001$). Women's reports of current modern FP use were similar and insignificant among the two viewer groups, with the majority reporting continued use of periodic abstinence.

Associations between fertility awareness and modern FP use. Using the pooled endline sample, chi-square tests of associations found some significant associations between intent to use modern FP, and correct fertility awareness knowledge about the following topics: 1. Healthy vaginal secretions are a sign of fertility (OR 3.2; $p<.0001$), 2. Vaginal secretions come during the middle of the menstrual cycle (OR 2.1; $p=0.0017$), and; 3. Men are fertile every day (OR 4.8; $p<.0001$). Only one fertility awareness measure was significantly associated with current modern FP use: respondents who correctly identified their pregnancy risk during the fertile window were twice more likely to use a current modern FP method relative to those who identified the fertile window incorrectly (OR 2.0; $p=0.0491$). Overall, the relative low prevalence of current modern FP use in the sample (about 10%), limited the ability to find robust associations between fertility awareness and current modern FP use. Future research should be conducted on populations with more prevalent modern FP use to better

understand associations between fertility awareness and FP, and other associated secondary factors.

LESSONS LEARNED

Overall, proof of concept findings suggest that: 1. Performances were well attended and accepted by community members; 2. Moderators and Peer Group Members were able to deliver the EDEAN performances with fidelity despite low literacy levels, and; 3. Demand and intent to use modern FP methods exist, but continued use of prolonged abstinence persists due to the combination of cultural abstinence practices and limited FP services availability in the region. The findings suggest that EDEAN's peer learning and community theatre approach was effective in increasing fertility awareness, creating a more supportive environment for FP and increasing intent to use modern FP. Qualitative findings reaffirm that viewers' motivation to use a method of FP was embedded in their desire to have healthy families, reduce malnutrition and child mortality, all common in the resource-scarce region of Karamoja. However, the gap between participants' high reports of intent to use a modern FP method, relative to their low current FP use, suggest that SBC demand generation activities focused on fertility awareness and FP should be paired with strong service delivery platforms and linkages to increase FP uptake.

As a SBC group engagement approach, EDEAN is an acceptable and feasible model to implement by low literate volunteer community resource persons to increase demand for FP information and services. Future research should test the EDEAN peer learning and community theatre model, paired with strong service delivery, to generalize the findings to other populations and communities.

INTRODUCTION

Background

In 2013, Georgetown University's Institute for Reproductive Health (IRH) was awarded funding from the United States Agency for International Development (USAID) to implement the project, "fertility awareness for Community Transformation (FACT)" (Cooperative Agreement No. OAA-A-13-00083). FACT is a five-year United States Agency for International Development (USAID)-funded project implemented by the Institute for Reproductive Health, Georgetown University (IRH) in partnership with the International Center for Research on Women (ICRW), Population Media Center (PMC), and Save the Children. USAID, IRH, and project partners envisioned the FACT Project as addressing fertility awareness and FP outside the traditional health system.

The project aims to foster an environment where women and men can take actions to protect their reproductive health throughout the life-course. FACT is a research, intervention, and technical assistance project that is developing and testing unique interventions in Nepal, Rwanda and Uganda. These interventions are investigating two primary hypothesis:

- Increased fertility awareness improves family planning (FP) use
- Expanded access to fertility awareness -based methods (FAM) increases uptake of FP and reduces unintended pregnancies

As part of the first hypothesis, the goal of the Emorikinos Daadang Etogogogoto Alatanakin Ngidwe (EDEAN) intervention - meaning "Let's Come Together and Strengthen Child Spacing" in Nga'Karimojong - is to increase fertility awareness and improve FP use through existing community groups among hard to reach populations outside of the health system. Under this intervention, trained community peer group members diffused fertility awareness and FP messages through forum theatre performances to peer networks and the community at large in the Karamoja region of Uganda.

About this Report

This report shares EDEAN's story from formative research to proof of concept design through final evaluation results. In the proof of concept testing phase, we were interested in understanding the feasibility, acceptability and effectiveness of EDEAN - as a peer learning and community theatre group intervention - in increasing fertility awareness and FP use. As such, this report presents not only information about the project solution cycle and implementation processes of EDEAN, but the results of three different study components related to "feasibility", "acceptability" and "effectiveness" found as three separate results sections further below. The lessons learned and discussion sections of this report bring the different evaluation findings together, highlighting overarching implications and opportunities for further research.

What is Fertility Awareness?

A systematic review of global literature conducted by IRH found that lack of fertility awareness and weak knowledge of pregnancy risk can be key barriers to FP access and use (IRH 2013). Specifically, some evidence shows that inaccurate assessment of pregnancy risk reduces FP use at critical points in the life cycle (Kauyate 2010; Makinwa-Abedusaye 1992; Kaye, Suellentrop, & Sloup 2009). As well, in some settings, FP use is stigmatized or people believe it is not within human power to control fertility (Sedgh et al. 2007). Others may believe pregnancy requires frequent sex, or that having had sex without becoming pregnant indicates they may be infertile. Other researchers have found that negative perceptions of FP, including lack of self-efficacy to control fertility, results in failure to discuss and seek FP services (Kauyate 2010; Makinwa-Abedusaye 1992; Kaye, Suellentrop, & Sloup 2009).

Based on the literature review conducted by IRH, FACT conceptualized and defined fertility awareness as actionable information about fertility throughout the life course and the ability to apply this knowledge to one's own circumstances and needs. The ability to apply this information to one's life requires individual knowledge, personal experience and skills, as well as an environment within the family and community that enables people to undertake appropriate actions.

FERTILITY AWARENESS DEFINED

Fertility Awareness is actionable information about fertility throughout the life course and the ability to apply this knowledge to one's own circumstances and needs. It includes basic information about the menstrual cycle, when and how pregnancy occurs, the likelihood of pregnancy from unprotected intercourse at different times during the cycle and at different life stages, and the role of male fertility. Fertility awareness also can include information on how specific FP methods work, how they affect fertility, and how to use them; and it can create the basis for understanding communication about and correctly using FP.

Family Planning in Uganda

To reduce global unmet need for FP, the goal of the Family Planning 2020 (FP2020) initiative is to enable 120 million additional women and girls to use contraceptives by 2020. In Uganda, the total fertility rate (TFR) and unmet need for FP remain high, despite recent improvements. As such, Uganda's FP2020 goal is to reduce unmet need to 10% by 2022 (FP2020 2017). Most recent data suggest improving FP trends at the national level. As of 2016, 28% of currently married women had an unmet need for FP, dropping substantially from 34% unmet need in 2011 (Uganda Bureau of Statistics [UBS] and ICF 2018; 2012). The country's modern contraceptive prevalence rate (mCPR) increased from 26% to 35% between 2011 and 2016, with about 1/5 of currently married women using injectables (19%; UBOS and ICF 2018; 2012). Knowledge of FP methods is almost universal in Uganda. When asked if they had heard of FP methods, the majority of Ugandan women and men were aware of at least one method (99%), and on average had heard of at least nine methods (UBOS and ICF 2018). Male

condoms are the most known method (97% of women; 98% of men), followed by injectables (96% and 89%) and pills (94% and 89%). Emergency contraception is the least known of modern methods (38% and 47%), followed closely by SDM (42% and 43%) and LAM (64% and 48%; UBOS and ICF 2018).

The Karimojong in Uganda

The Karimojong are a cluster of communities settled in the semi-arid region of Northeast of Uganda. Known as a nomadic agro-pastoralist society, the Karimojong of Uganda are currently undergoing rapid social changes, shifting away from cattle-centered livelihoods to settled agriculture economies. The Karimojong have long faced challenges to maintaining their way of life including external political and economic pressure to settle down and ‘modernize.’ The sparse literature on Karamoja’s transition shows that a government disarmament campaign of the region in the 2000’s, boosted security and stability in the region but also

altered Karamoja’s social fabric (Stites and Akabwai 2009). FACT formative research conducted in 2014 suggests that this transition to a more sedentary lifestyle – in which men ceased to migrate to mobile cattle kraals for extended periods of time – altered couple dynamics around fertility and spacing. Specifically, couples’ ability to negotiate post-partum and periodic abstinence as a natural child spacing practice has become more difficult with the societal transition (IRH 2014).



Figure1 | Karamoja sub-region of Uganda.

FERTILITY AND FP IN KARAMOJA

- ❖ Women on average have close to 8 children (**TFR: 7.9**)
- ❖ Less than 1 in 10 women use a modern FP method (**mCPR: 7%**)
- ❖ Close to 3 in 10 women have a demand for FP (**Demand for FP: 27%**)

To date, the Karamoja sub-region has some of the lowest national human and economic development indicators in Uganda. While the rest of Uganda progressed significantly over the last five years, FP-related indicators in Karamoja have stagnated. Karamoja continues to have the highest total fertility rate (TFR), jumping from 6.4 to 7.9 between 2011 to 2016 (UBOS and ICF 2018; 2012), and the lowest rates of modern contraceptive use among currently married women, stagnating at 7% between 2011 and 2016, compared to the current national average of 35% (UBOS and ICF 2018; 2012). Karamoja also has the lowest demand for FP nationally (27%), compared to other regional ranges of 60% to 72% (UBOS and ICF 2018). Use of traditional methods is higher in Karamoja,

relative to other regions. Women in Karamoja have the longest median duration of postpartum abstinence use, at about 11 months, compared to the 3 month national duration median (UBOS and ICF 2018). Following traditional family norms, Karimojong women desire large families (mean = 7.2 children; UBOS and ICF 2018) and close to 24% of women have begun childbearing between the ages of 15 to 19 years of age (UBOS and ICF 2018). Family

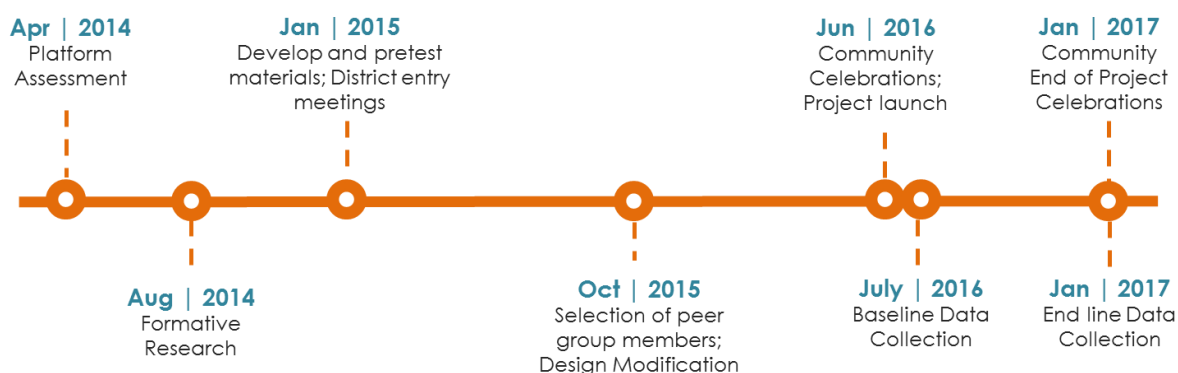
size is also influenced by polygamy, which is fairly common (27% of men report multiple wives; UBOS and ICF 2018).

Interestingly, the combination of traditional post-partum abstinence and low modern FP use result in a lower unmet need for FP than the national rate (20% of currently married Karimojong women compared to the 28% national average; UBOS and ICF 2018). Finally, evidence suggests that most Karimojong women and men do not seem to be receiving FP information at key points in the health system. About 45% of women not using a FP method discussed FP with a field worker or at a health facility in the past year (UBOS and ICF 2018). Opportunities are also missed when women are present in health centers, as only 18% of postpartum mothers received FP counseling prior to discharge (UBOS and ICF 2012). These data suggest gaps in FP information and dissemination, providing an opportunity to spread FP messages and demand among Karimojong women and men among harder accessed communities.

DESIGNING 'EDEAN'

The EDEAN intervention was guided by the Solution Development Cycle - an iterative process for the discovery, design, and development of solutions - using formative research, participatory design, and intervention testing to develop a scalable solution (defined here as intervention). This section gives a brief snapshot of EDEAN's intervention development from formative research to proof of concept testing.

Figure 2 | EDEAN Intervention Development Timeline (2014 - 2017).



Platform Assessment (April 2014)

Early Childhood Care and Development (ECCD) centers in Karamoja were identified as an ideal platform to integrate a potential community-based intervention on fertility awareness and FP. ECCDs in Karamoja aim to increase access to quality early childhood care and education, by providing 3-4 hours of daily caregiving activities to young children aged 0 to 8 years old, in addition to monthly parenting sessions. Centers are managed by Center Management Committees (CMCs), comprised of 10 members, typically including teachers,

caregivers and community leaders. These are members elected, respected and trusted by the communities. The ECCD management committees are provided with capacity building and training on parenting skills and health topics, and members conduct events in the community to share what they learned with other parents. This community platform was chosen because Save the Children – as the FACT implementing partner - has been implementing community level activities through the ECCD centers in the Karamoja region. In addition, the centers were well respected and trusted by the community. Finally, given that ECCD centers target young children, the platform was seen as a potential space to reach the target age group of 18 to 35 years old among parents attending the ECCD centers.

Community Development Officers (CDOs) were also identified as potential trainers and support resources of potential intervention activities. CDOs represent the Community Based Services Department, which has a mandate to mobilize communities to participate in the development process. CDOs are often respected and trusted by the community, making them key stakeholders for introducing topics covering fertility and FP to communities.

Formative Research (June - Aug 2014)

Following the platform assessment, formative research was conducted over a two month period in the Nadunget and Ngoleriet sub-counties of Karamoja to inform the intervention design. A full formative research report, highlighting the results from 20 focus group discussions and 12 in-depth interviews with ECCD members, ECCD caregivers and CMC members, community leaders, and FP providers, can be found [here](#). A brief summary is provided below.

Briefly, the FACT formative research results showed that despite the introduction of new health innovations and services, knowledge related to fertility and FP is still low among the Karimojong. With regard to fertility, participants, and in particular men, had little knowledge and many misconceptions about menstruation, fertile periods, vaginal secretions, and ultimately the likelihood of pregnancy. Participants were accepting of FP, linking child-spacing to the health of children as important Karimojong values. This acceptability was often cited with the common traditional practice of extended post-partum abstinence, facilitated by men leaving to herd cattle at mobile cattle kraals for long periods of time.

At the same time, formative research participants were increasingly familiar with modern methods of FP, including Implanon ® implants and Depo-Provera ®, despite very low use. Many women found these methods desirable, but most knew little about how the methods work and many held mistaken beliefs about FP. Further, they voiced strong concerns about side effects. Side effect-free FP methods were perceived as more acceptable, and participants had some exposure to Moon Beads¹ and Lactational Amenorrhea Method (LAM). FP was said to be viewed as a woman's issue, and low knowledge about modern FP among men was also said to be a barrier to couple communication. Men were identified as the primary decision-makers, and women were said to potentially face violence when

¹ Moonbeads is the marketed name for CycleBeads in Uganda, which was introduced in country through Population Service International (PSI).

bringing up the matter. Word of mouth and songs were identified as traditional communication channels to pass on information among communities.

Concept Design: From ‘Solution’ to ‘EDEAN’ (Oct 2014 – Jan 2015)

Findings from the formative research were used to design a locally driven solution through a series of meetings and workshops. A concept development workshop was conducted with local stakeholders, during which participatory design approaches including human centered design were used to identify potential key components of the solution. Suggestions were generated for feasible mediums for delivery of information and messages, resulting in a basic concept for the solution. During formative research dissemination events in four communities of Moroto and Napak, local community members discussed and voted on a local name for the “mystery solution.” The name “*Emorikinos Daadang Etogogogith Alatanakithi Ngidwe* (EDEAN),” meaning “Let’s Come Together and Strengthen Child Spacing” in the Nga’Karimojong language. The name “EDEAN” was selected by Karimojong community members to emphasize the importance of bringing men and women together to discuss fertility awareness and FP topics. During these series of meetings and based on formative research results, EDEAN was designed and developed to engage Karimojong women and men through community forum theatre to increase their knowledge about fertility awareness and FP and motivate their utilization of local FP services and methods.

Entry Meetings and Stakeholders Buy-In (January 2015)

To introduce the EDEAN intervention and develop buy-in at intervention sites, a series of introductory activities were conducted in the communities. In January 2015, Save the Children and IRH conducted district launch workshops with district officials in Moroto and Napak districts. The workshop included identification of roles of various stakeholders, including expected support from the district; composition and roles of a local advisory committee; and how the project would link to other FP programs in the districts.

IRH and Save the Children held an inaugural meeting of a local Technical Advisory Group in Moroto in January 2015. This Karamoja Advisory Team (KAT) was formed as an advisory body to provide guidance during the course of the intervention design, implementation and monitoring. Committee members were selected from stakeholders in the sexual and reproductive health (SRH) field, and included local district and sub-county officials, Christian and Muslim faith-based organizations, FP service providers, UN agencies, and representatives from the target community. KAT members had quarterly meetings in which they initially reviewed the EDEAN materials for cultural appropriateness, conducted visits to the field, discussed process and monitoring data, addressed implementation issues and guided intervention processes forward.

Material Development and Pre-testing (2015)

EDEAN materials were developed through consultations with community members and local stakeholders. Visuals and key messages developed from the design activities were pretested within the communities before final materials for the intervention were developed. Messages pretested included key fertility awareness topics and FP messages such as: couple communication, menstruation, fertility, fertile window and FP.



Figure 3 | Karimojong men pre-test initial concepts and designs on fertility awareness topics | **Photo Credit:** Dickens Ojamuge, Save the Children

The purpose of this pre-testing phase was to design with key messages and visuals that were culturally appropriate and relevant to local communities. As seen in the picture to the above, key fertility awareness and FP messages were presented in the form of visuals or posters locally drawn by the communities. The final EDEAN materials included a Peer Moderator manual with meeting lessons plans and theatre performance storylines, based on social and behavior change (SBC) theory and community theatre practices. The manual curricula covered four modules including: 1. Couple communication; 2. Menstruation; 3. Fertility, and; 4. Family planning. Peer moderator manuals were accompanied by locally-adapted visual aids, including large posters, activity cards and reminder cards for the four topics, and game cards.

The SBC-designed theatre storylines were pre-tested by a Uganda-based theatre group, RAFIKI, following three days of orientation on the EDEAN intervention and key messages. RAFIKI reviewed the outlines of activities and short scripts to be conducted, held rehearsals and performed in three Karimojong communities. This pre-testing phase informed several key design components. First, the pretesting revealed that the performances were well-attended, and that the topics in the storylines were acceptable to the community. The decision was also made to include moderation after each scene of the drama as opposed to waiting until the end of the skit to hold moderation. This would allow for reflection on the different topics included in each scene facilitating ongoing discussion and reflection throughout the performance. Finally both scripted story line and "create your own drama" prompts were included in the final moderator manual to allow contextualized adaptation of key fertility awareness and FP messages.

EDEAN PROOF OF CONCEPT

Grounded in the formative research, design and pre-testing phases described above, EDEAN was tested through a six month proof of concept phase from June to Dec 2016 in six ECCD catchment areas of Moroto and Napak districts of Karamoja. Intervention components are fully described below.



Figure 4 | EDEAN Intervention Sites

Intervention Summary

With the goal of increasing demand for FP, EDEAN was tested as an eight month community-based intervention, covering four modules: 1. Couple Communication; 2. Menstruation; 3. Fertility, and; 4. FP. In each ECCD catchment area, 10 male and 10 female youths aged 18-25 years old learned about the above four topics through a series of gender synchronized same sex and mixed sex Peer Group Meetings. These Peer Group Meetings were facilitated by a trained male and female Peer Moderator pair selected by local community members during entry meetings. After finishing each peer group meeting module topic, the 20 Peer Group Members rehearse, and then enacted a set of three performances to the community at large. During the Peer Group Members' theatre performances, the Peer Moderator pair ask reflection questions to the audience, catalyzing larger discussion and reflection on existing norms, beliefs and information on fertility awareness and FP within their community.

Trainers, Peer Moderators and Peer Group Members

Trainers: The Save the Children and IRH team trained CDOs, in addition to Assistant CDOs, as EDEAN trainers and supervisors to guide and support implementation of EDEAN activities. CDOs were chosen as trainers since they are the focal point persons for all community-based services at sub county level, hereby ensuring intervention acceptability and sustainability. After conducting trainings with Peer Moderators, the CDOs routinely provided supportive supervision and monitoring of the peer moderators and their group members to ensure that they adhered to the protocols and provide quality implementation. CDOs engaged the peer moderators in monthly reflection meetings to share project progress, any challenges faced and possible solutions for improvement. Generally, the CDOs were at the forefront of all the project activities in their respective sub counties.

Peer Group Members: The EDEAN peer group members were selected by CMC members and parents of children attending the ECCD center, and other community stakeholders. Selection criteria included being male or female, between the ages of 18 to 25 years old and being in marital union with a partner. In each ECCD catchment area, a total of 10 young females and 10 young males were selected to participate as volunteer peer group members. Peer Group members were then trained by the peer moderators to conduct peer meetings, rehearsals and performance on fertility awareness topics for their communities.

Peer Moderators: Peer Moderators were selected by CMC members and EDEAN peer group members through initial community meetings. Peer Moderators, aged 18-30 years, were selected for their potential to lead and facilitate peer meetings, rehearsals and performances in their communities. Profiles of the six moderator pairs can be found in Annex 2. In each ECCD catchment area, 1 female and 1 male facilitator pair were selected. Selection criteria were previously determined by the project team and local communities and spearheaded by CDOs as follows:

- He/she should be literate (known to read and write in local language)
- Must be a resident of village and must not be a Village Health Team (VHT) member
- Be brave, not shy, and be able to explain issues clearly
- Be friendly and approachable at all times
- Be willing to work voluntarily for the community
- Be married and readily available when wanted
- Same age group with the people he/she will be leading in the peer meetings
- Have good morals and relate well with the community
- Be experienced with community mobilization skills
- Be a simple person, confident, humble and able to talk in the community, in addition to being respected by community members

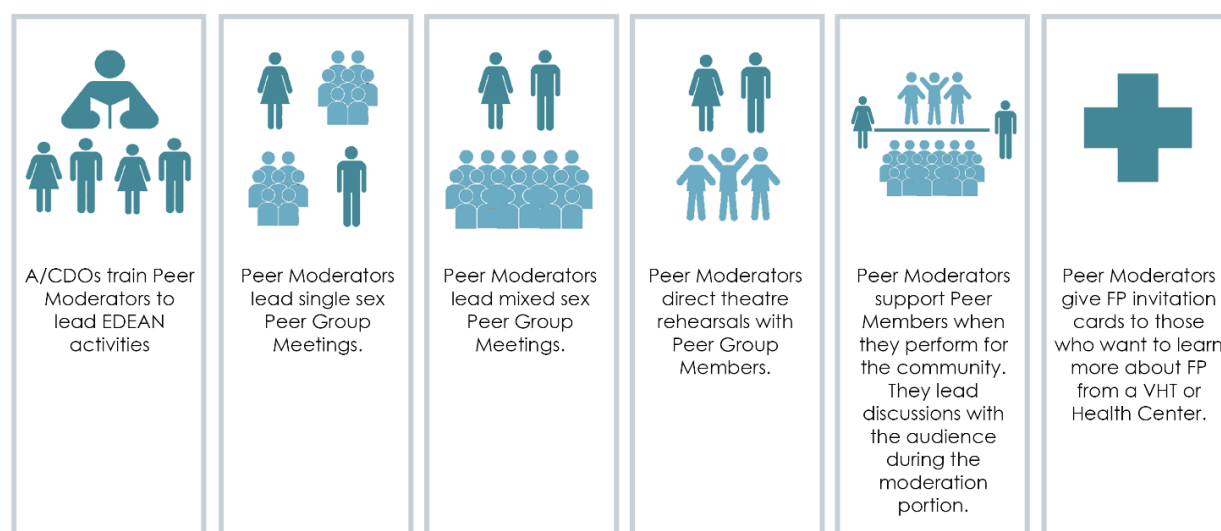


One day Save the Children called for a community meeting and requested the community members to select two peer moderators and 20 peer group members, who could spearhead the EDEAN project in my community. The community members set attributes that the members should possess to qualify. When elections were conducted I won the position of the female peer moderator. I was then trained by Save the Children and later started leading my peers in meetings and theatre performances.” – Female Peer Moderator, Moroto District

EDEAN Solution Components

EDEAN consists of two core components: Peer Group Meetings and Theatre Performances. Additionally, EDEAN created linkages to the health system to facilitate access for those interested in using an FP method and worked with key influential stakeholders in the community to generate support for fertility awareness and FP at the community level. The intervention began with a series of introductory community meetings, followed by trainings of trainers (ToT) and Peer Moderators. A process flow of EDEAN activities from Peer Group Meetings to monitoring and reporting is found below:

Figure 5 | EDEAN Activity Components



Training of Trainers, and Training of Peer Moderators



Following their engagement in community entry activities in Nadunget and Ngoleriate sub-counties, CDOs were invited to participate in a ToT delivered by the project team and a Karamoja-based theatre organization (Ngikukus Uganda Ltd). Following the EDEAN moderator guide, the CDOs subsequently trained the Peer Group Moderators on the four EDEAN content modules, group facilitation and drama skills, including developing, leading rehearsing and acting out the developed dramas. Given Karamoja's low literacy environment, the trainings were staggered across two training phases:

Table 1 | EDEAN Training Phases

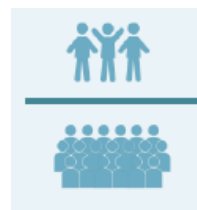
Phase	Timing	Couple Communication Module
Training 1	Following implementation launch	- ToT with CDOs conducted over three days covering the first two module topics of couple communication and menstruation - The following week, CDOs replicated the training they received by training Peer Moderators through a five day training on the same two modules
Training 2	Halfway through implementation (Three months after Training 1)	- ToT with CDOs conducted over three days covering the last two topics of fertility and FP - The following week, CDOs replicated the training with Peer Moderators through a five day training on the same two modules

Peer Group Meetings



During the Peer Group Meetings, Peer Moderators led 10 female and 10 male Peer Group Members through a series of eight meetings over the course of 29 weeks during which they learn core fertility awareness content related to couple Communication, menstruation, fertility, and FP. The peer group meetings were gender-synchronized, facilitating both single-sex and mixed-sex meetings on each topic area. The date, time and venue of the peer meetings were decided by all group members.

Rehearsals and Theatre Performances



Upon completing the Peer Group Meetings for a given module, Peer Moderators led Peer Group Members in rehearsing and then performing a set of 3 performances on the topic module to diffuse fertility awareness and FP information among the community. For each topic module, the first two performances were “scripted” storylines, following a standardized storyline from the EDEAN moderator manual. For the third “Create your own drama” performance, Peer Group Members developed their own storyline from a messaging prompt in the moderator manual, and as a group, decided on the story trajectory and ending of the performance. Audience members were mobilized by ECCD CMC members and Peer Moderators to attend the performances at the ECCD centers on the same day of performance. A sample schedule of activities for the couple communication module is below, and a full schedule of activities can be found in Annex 2.

Table 2 | Sample Schedule of Activities, Couple Communication Module

Week Number	Couple Communication Module
Week 1	Single Sex Peer Group Meeting
Week 2	Mixed Sex Peer Group Meeting
Week 3	Storyline 1 Theatre Rehearsal and Performance
Week 4	Storyline 2 Theatre Rehearsal and Performance
Week 5	Create Your Own Drama! Theatre Rehearsal and Performance

Linkages to Health System



To build linkages to and support for EDEAN, VHTs and health workers attended periodic EDEAN orientation and reflection meetings. These meetings provided information about the EDEAN activities. VHTs and health workers were invited to attend theatre performances and peer group meetings. Health center FP providers were encouraged to provide FP to those interested in a method, and oriented on the use of FP invitation cards. As a community-based platform, EDEAN created linkages with FP service providers so that those interested in using an FP method knew where to go to obtain one or get more information about FP methods. During performances, Peer Moderators gave out FP invitation

cards to interested community members wanting more information about FP methods at the local health facility.

Engaging Community Leaders



Stakeholders who were considered influential in the community such as community leaders and elders, among others, were invited to attend periodic sensitization and reflection meetings about their roles in supporting EDEAN. Given the strong cultural beliefs and myths around FP in Karamoja, engaging key opinion and cultural leaders was vital in dispelling myths and encouraging young community members to attend the performances. The periodic reflection meetings with community leaders provided a space for community leaders to express and then discuss/ resolve any sensitive topics or issues (for example discussing secretions during performances).

Supportive Supervision and Monitoring

CDOs and the FACT team provided ongoing support and coaching to the Peer Moderators through weekly check-in calls, field visits, and monthly in-person meetings. Supervision and mentoring visits were made during meetings and rehearsals, and to a lesser extent performances. The CDOs used coaching guides as a tool to record their observations and interactions. This was also an opportunity for facilitators to ask questions and bring up challenges or issues with the CDO.

Monitoring of EDEAN activities was conducted through a collaborative process among Peer Moderators, CDOs and FACT project staff. CDOs and Peer Moderators were trained on the monitoring forms and process as part of the aforementioned EDEAN training workshops. They practiced completing the forms both using a hypothetical scenario during the classroom portion, and as part of a practical activity that was incorporated into the training. Peer Moderators completed attendance registries at the beginning of each Peer Group Meeting, Rehearsal and Performance. CDOs collected forms from Peer Moderators during monthly supervisory visits. CDOs reviewed the monitoring forms with facilitators before collecting them, to identify and correct errors in completion or missing information.

A reflection meeting with CDOs and Peer Moderators was held at the end of every one of the four topic modules. This provided a space for CDOs and Peer Moderators to share successes and challenges, discuss issues they were facing, and collectively generate solutions. During this meeting, CDOs brought all of the forms that they had collected from Peer Moderators and gave them to the FACT program coordinator. Following the reflection meetings, a FACT EDEAN monitoring and evaluation (M&E) group meeting led by IRH and Save the Children was held to discuss process data and improvement areas. The data were useful in identifying issues in implementation, and the discussions promoted collective problem solving.

PROOF OF CONCEPT EVALUATION

Evaluation Purpose and Research

The purpose of the proof of concept evaluation was to describe the delivery and effectiveness of the peer learning and community theatre approach in increasing fertility awareness and FP use in the Karamoja region of Uganda. In addition, the evaluation aimed to understand the acceptability and potential scalability of the EDEAN intervention to other parishes in the Karamoja Region of Uganda. Specifically, the study objectives and research questions of this study were to:

- 1) Describe the delivery and **feasibility** to potentially scale the EDEAN community theatre intervention at the community level
- 2) Describe the **acceptability** of the EDEAN peer learning and community theatre approach among participating communities
- 3) Assess the **effectiveness** of the EDEAN peer learning and community theatre approach in increasing fertility awareness and FP use in participating communities

Evaluation Design

EDEAN was tested through a proof of concept evaluation in late 2016 – early 2017 in six agro-pastoral communities of Moroto and Napak Districts in the Karamoja region of Uganda. A quasi-experimental study using mixed-methods was conducted to assess the delivery and potential scalability of EDEAN, as well as the effectiveness of the approach in increasing fertility awareness knowledge and improving attitudes and behaviors toward FP use. Ethical clearance for this study was obtained from the Georgetown University Institutional Review Board, The AIDS Support Organization (TASO) review Board, and the Uganda National Council of Science and Technology (UNCST). Local authorities in Karamoja were also informed and approved of study activities.

The evaluation collected data related to 1. Feasibility; 2. Effectiveness, and 3. Acceptability of EDEAN's proof of concept model. Methods included cross-sectional baseline and endline household surveys with representative samples of intervention and control households (n=400 intervention and n=200 control); FGDs with 32 Peer Group Members and 48 community members; interviews with 9 key informants; attendance and attendance and systematic observational data of peer group meetings, rehearsals and theatre performances, and; service statistics from 14 local health facilities.

Table 3 | Timeline of Study Activities

ACTIVITIES	2016								2017				
	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Marc	April	May
IMPLEMENTATION ACTIVITIES													
• Training Phase 1 and implementation of Couple Communication and Menstruation Modules													
• Training Phase 2 and implementation of Fertility and FP Modules													
EVALUATION ACTIVITIES													
• Baseline Household Surveys													
• Endline Household Surveys													
• FGDs with Peer Group Members													
• FGDs with community members													
• KIs with leaders and providers													
• Service statistics from health facilities													
• Systematic observations of EDEAN activities													
• Community dissemination of preliminary results													

Sites were systematically selected in collaboration with Save the Children and district officials from the Community Development Office. Sites included seven ECCD catchment areas in the sub-counties of Ngoleriet, Nadunget and Rupa. Of these seven catchment areas, six were intervention sites linked to Peer Group Members implementing the EDEAN performances at the ECCD centers (Ngoleriet and Nadunget). The other ECCD catchment area in Rupa served as a control site. Catchment villages were systematically selected based on their proximity to the intervention ECCD center and distance to health services. The control ECCD catchment area in Rupa was selected with input from Save the Children based on its dominant ethnic group (Karimojong), participation in the ECCD program, distance from the other intervention sites (situated in a non-intervention sub-county), and proximity to other health services.

Data collection methods and sources, sampling and analyses procedures are explained in more detail below by 1. Feasibility; 2. Acceptability, and; 3. Effectiveness evaluation methods.

1. FEASIBILITY ASSESSMENT METHODS

To understand the delivery and potential scalability of EDEAN, monitoring data were collected as part of regular Save the Children monitoring and supervision activities across all six intervention communities. As well, two external local research consultants were hired to observe and document systematically identified peer group meetings, rehearsals and performances. A level of effort analysis was also conducted to understand time spent on monthly activities by Save the Children and IRH staff. Referrals to FP services were also

assessed through data collection of service statistics and on-site interviews. Feasibility data were collected and analyzed as follows:

Table 4 | Feasibility Methods

FEASIBILITY. Describe the delivery and feasibility to potentially scale the EDEAN community theatre intervention at the community level. <u>Methods of verification:</u>	
Attendance records	➤ 72 peer group meetings, 72 rehearsals, and 72 performances
Observations and debrief interviews	➤ 69 observations of 21 peer group meetings; 25 rehearsals; 23 performances ➤ 25 short semi-structured interviews with audience members after the performances ➤ 19 debriefs with Peer Moderator pairs after peer group meetings, rehearsals and performances ➤ 8 post-intervention debrief interviews conducted separately with 4 Peer Moderator Pairs
Level of effort analysis	➤ Monthly level of effort data collected from 5 EDEAN program staff in Uganda
Service Statistics	➤ 14 Facilities; <i>Moroto Hospital, HCIII, HCII, HCI, drug shops, Marie Stopes mobile clinic</i>

Attendance forms recorded de-identified participant demographics at each peer group meeting, rehearsal and performance. In addition FP invitation cards given out during performances were recorded on attendance records. All data were then entered into an excel database by a trained data coordinator. Frequencies of attendance numbers and demographics were tabulated quarterly, and subsequently presented at the FACT EDEAN M&E group meetings with IRH and Save the Children.

Systematic Observations of activities were conducted by two trained research assistants in each of the intervention communities. During each observation, the trained research assistant would record observation criteria as per: 1. Message delivery (e.g. fidelity and correct messaging); 2. Message receipt (e.g. participation and discussion), and; 3. Facilitation skills. Observers also recoded the process and flow of activities, including type of props used, environment, and interaction of male and female peer group members and/or audience members. Observations prioritized message delivery and fidelity to better understand the potential scalability of EDEAN in disseminating accurate fertility awareness and FP messaging. During select observations, the research assistants conducted moderator de-briefs to better understand Peer Moderators' experiences and time spent preparing for activities. At the end of select performances, observers also conducted short semi-structured interviews with male and female audience members to assess receipt and perceptions of the performances. At intervention end, eight intervention debrief interviews were conducted with four Peer Moderator pairs to better understand their experiences implementing EDEAN. Quantitative

and qualitative data were entered and analyzed separately in an excel matrix, segmented by topic module and type of activity (peer group meetings, rehearsals and performances).

Level of effort analysis was conducted to estimate the time needed to potentially implement or replicate EDEAN at a larger scale. Data were collected and sent monthly by five Save the Children and IRH program staff using a structured time-sheet, broken down by type of EDEAN activities spent each month (e.g. coordination, trainings, monitoring visits, etc.) LOE input were analyzed and tabulated according to the following project activities: 1. Administration and coordination; 2. Training of CDOs and/or moderators; 3. Supervisor support of peer group meetings, rehearsals and performances; 4. Support and coaching of supervisors / trainers (CDOs); 5. Monitoring and Evaluation, and; 6. Other activities (e.g. research).

Service Statistics. Anonymous, un-linked primary service statistics were collected from 14 local health facilities in the intervention and control catchment areas before, during and after the period of the intervention. These data captured the number and types of FP methods provided, women and couples counseled on FP, and referrals for FP related services. This was done in collaboration with local health officials and with the approval of the Ugandan MOH. Data were compiled into an excel database by health facility staff, and then analyzed and visually displayed over time trends vis-a-vis different measures (e.g. new FP clients; types of FP methods sought).

2. ACCEPTABILITY ASSESSMENT METHODS

To understand acceptability of the EDEAN activities, qualitative data was collected from Peer Group Members, community leaders and service providers and community members to determine acceptability, applicability and perceptions of EDEAN activities.

Table 5 | Acceptability Methods

ACCEPTABILITY. Describe the acceptability and applicability of the EDEAN peer learning and community theatre approach among participating communities. Methods of verification:

Focus group discussions	➤ 4 FGDs with 30 Peer Group Members (16 female / 14 male) ➤ 6 FGDS with 48 community members who attended performances (24 female / 24 male)
Key informant interviews	➤ 3 Health providers; 3 VHTs; 3 Leaders and Elders

FGDs with Peer Group Members. A total of four sex-disaggregated FGDs with 30 male and female Peer Group Members were conducted to explore their experiences with the EDEAN intervention, and understand how they applied fertility awareness and FP information in their own lives. Peer Group Members were systematically selected by Save the Children and consented to participate with other peer group members from different communities of the same sex.

FGDs with Community Members. FGDs respondents were selected from the sample of endline household survey respondents (described further below). After completing the endline

household surveys, respondents aged 15-35 years old were asked if they were interested in participating in a FGD with other members of their community and age groups. The FGDs were then segmented into same sex groups with community members aged 15 to 25 years old; and again with participants aged 26 to 35 year olds, who attended the EDEAN community theatre performances. Groups were segmented by sex and age to ensure a safe space for members to share and exchange information among their peers, and to better understand different experiences and perceptions based on the two different age groupings. The FGDs explored knowledge, application and diffusion of fertility awareness and FP information at the community level as a result of the community performances.

KIs with Community Leaders and Health Service Providers. Approximately three health service providers, three VHTs and three community leaders were systematically selected to participate in KIs in intervention areas (total n=9). The KIs collected information related to the respondent's awareness and level of knowledge of fertility awareness and FP, in addition to perceptions of EDEAN activities.

Analysis. All qualitative interview and FGD events were recorded, analyzed and translated from Nga'karimojong to English, synthesized and coded for processing and analysis. Data analysis software (Dedoose) was used to organize and prepare data to identify themes and key information. Content analysis was performed, with the following specific themes of interest: acceptability of discussing fertility awareness through community theatre performances, whether and how community members applied fertility awareness information to their lives; overall perceptions of the intervention, and; perceived advantages and disadvantages of this approach in dissemination and debunking myths around fertility awareness and FP.

3. EFFECTIVENESS ASSESSMENT METHODS

To assess intervention effectiveness on fertility awareness and FP outcomes, surveys were administered at the household level among the systematically assigned intervention and control communities at baseline, and again six months later, at endline (see Table 6).

Table 6 | Effectiveness Methods

EFFECTIVENESS. Assess whether the EDEAN peer learning and community theatre approach can lead to an increase in fertility awareness and FP use in participating communities. <u>Methods of verification:</u>	
Household surveys in intervention and control communities	➤ Baseline and endline interviews with 400 intervention and 200 control households (independent, representative samples)

Household Survey

Sampling. Two independent samples of households in the intervention and control ECCD center catchment area villages were selected to participate at baseline and again at end

line to assess community-level changes in fertility awareness and FP, and other secondary outcomes. An ECCD center catchment area was defined by three to four surrounding villages served by the ECCD center programs. For each of the ECCD catchment area, a list of two to four villages with its approximate number of households were generated to serve as enumeration areas. Each selected village was segmented according to the target number of households needed to achieve the necessary number of interviews. Households were then systematically selected to participate dependent on the sample size needed for that particular village. Based on existing population estimates, every other household in each village were visited to participate in the survey.

The final sample was comprised of two community-level cross-sectional samples of 600 respondents: 400 within intervention communities (200 women and 200 men) distributed proportionately across ECCD catchment areas where the EDEAN intervention was implemented; and 200 control participants (100 women and 100 men) in one control ECCD catchment area (see table in Annex 3). Estimating an intervention effect of 10% FP uptake (from 7.8% existing FP use in Karamoja to 17.8% expected use), a random sample of 172 women will permit 95% confidence that the true proportion who took up an FP method lies between 17.1% and 18.6%.

Recruitment of Participants. After households were systematically selected during the sampling process, interviewers went to each household in designated villages. If an eligible study participant resided at the household, interviewers would describe the study to them, and ask for their consent to participate. At least one return visit was made if the potential participant was not at home. Only one member per household was be eligible to be interviewed. Couples were not interviewed. Eligibility criteria to participate in the study included:

- Being of reproductive age (15-49 years old for woman, any age for men)¹
- Identify as either female or male
- Reside in one of the intervention or control study catchment areas
- Agree to participate in study

Measures. Baseline and endline interview guides included questions about background characteristics, knowledge, attitudes and behaviors related to the four intervention modules: 1. Couple communication; 2. Menstruation; 3. Fertility, and; 4. FP. The survey instrument also determined individual exposure to specific intervention components (sessions and performance attendance) in order to assess levels of community exposure to the intervention. Primary outcomes included increased fertility awareness, current use of a modern FP method and intent to use a modern FP method. Secondary outcomes included knowledge, attitudes and behaviors related to couple communication, fertility and FP.

¹ Women and men 15-18 years old were consented and included to participate in the study if they were parents or married and therefore considered emancipated adults per Ugandan law

Indicators were constructed to measure the aforementioned primary and secondary outcomes of interest, as highlighted below. A full explanation of the scale construction can be found in Annex 3.

Fertility Awareness

A composite score for correct knowledge of fertility awareness was constructed using 14 measures based on literature reviews earlier on in the FACT project. We defined fertility awareness as encompassing knowledge about the menstrual cycle, when pregnancy can occur, pregnancy risk and male and female fertility components. Each of the 14 measures were asked as knowledge-based questions, and subsequently recoded as correct or incorrect answers. The full list of fertility awareness measures and questions can be seen in Table 7 below.

Table 7 | Fertility Awareness Measures and Survey Questions

COMPONENTS	SURVEY QUESTIONS
MENSTRUAL CYCLE	1. What is the menstrual period? 2. What is the menstrual cycle? 3. When does the menstrual cycle begin? 4. When does the menstrual cycle end? 5. How long do most menstrual cycles last?
PREGNANCY RISK	6. When during her menstrual cycle is a woman most likely to get pregnant if you have unprotected sex? 7. From one period to the next, are there certain days when a woman is more likely to become pregnant? 8. Let's pretend a woman named [] had sex yesterday during her fertile day. She is not using a method of family planning or doing anything to avoid pregnancy. Can [] become pregnant?
MALE AND FEMALE FERTILITY	9. What is the sign that <u>a girl</u> is now able to become pregnant? 10. What is the sign that <u>a boy</u> is able to get a girl pregnant? 11. Other than sexual arousal, what are healthy vaginal secretions in a woman a sign of? 12. When during the menstrual cycle do vaginal secretions come? 13. When are men fertile? 14. What determines whether a baby will be a boy or girl at birth?

Answer values for each of the 14 fertility awareness questions included a correct answer response option, and an "other" response option (e.g. What is the sign that a girl is able to become pregnant? 1. The first menstruation; 2. Other [specify]). Answer options were never read out loud to the respondent. For each fertility awareness question, answers were then recoded as correct (1) or incorrect (0) answer values. Textual data (e.g., response given as "other") were reviewed and recoded into either correct or incorrect. "Don't know" or "no response" answer options were recoded as incorrect. Subsequently, a fertility awareness knowledge index score was created by summing all the correct responses for the 14 knowledge response items. Lastly, the median of the knowledge score was identified and a

dichotomous variable categorized the knowledge index score into those who scored above the median knowledge (high fertility awareness) and those who had less than or equal to the median level knowledge (low fertility awareness).

Self-efficacy to access and use FP

A FP self-efficacy scale was constructed based on exploratory factor analysis (EFA) composed of the following four measures (Cronbach alpha = 0.68). Items were answered and coded as a 5-point agree to disagree likert scale for each measure:

- I am confident I could use a method correctly all the time to delay or avoid pregnancy
- I am confident I could use a method correctly all the time to delay or avoid pregnancy even if my partner disagrees
- I have the information I need to make a decision about whether to use FP if I wanted to delay or avoid pregnancy
- I know where to obtain a method of FP to delay or avoid pregnancy

Scale items were recoded from a 5-point Likert to a 3-point Likert of agree, neutral, and disagree. A mean scale score was obtained by identifying the mean of the 4 scale items. Finally, a dichotomous variable was created to reflect respondents who scored less than or equal to the mean (low self-efficacy), and those who scored above (high self-efficacy).

Attitudes about FP

A FP attitudes scale was constructed based on exploratory factor analysis (EFA) composed of the following four measures (Cronbach alpha = 0.67). Items were answered and coded as a 5-point agree to disagree Likert scale for each measure:

- Using a FP method is safe for a woman's health
- It is acceptable for a woman to bring up the topic of FP with her husband
- It is acceptable for a man to bring up the topic of FP with his wife
- FP methods are a way to continue the Karamoja culture and way of life

Scale items were recoded from a 5-point Likert to a 3-point Likert of agree, neutral, and disagree. A mean scale score was obtained by identifying the mean of the 4 scale items. Finally, a dichotomous variable was created to reflect respondents who scored less than or equal to the mean (less positive FP attitudes), and those who scored above (more positive FP attitudes).

Social norms about FP

Similar to the two above scales, a FP social norms scale was constructed based on exploratory factor analysis (EFA) composed of the below three measures (Cronbach alpha = 0.68). Items were answered and coded as a 5-point agree to disagree Likert scale for each measure:

- Most couples in my community who want to prevent pregnancy use family planning (descriptive norm)
- Couples in my community who want to prevent pregnancy should use family planning (injunctive norm)
- I should use a family planning method if I want to prevent pregnancy (injunctive norm).

Scale items were recoded from a 5-point Likert to a 3-point Likert of agree, neutral, and disagree. A mean scale score was obtained by identifying the mean of the 4 scale items. Finally, a dichotomous variable was created to reflect respondents who scored less than or equal to the mean (less supportive FP norms) and those who scored above (more supportive FP norms).

Partner communication about FP

A partner communication about FP score was constructed from two binary measures (Yes, No):

- Do you feel that your opinion is taken into account when talking about family planning with your partner?
- In the last three months, have you discussed using FP to delay or avoid pregnancy with your partner?

Observations were restricted to respondents with a current partner. A composite score was generated from 0 to 2 (0 = no partner communication, answered no to both; 1 = moderate partner communication, answered yes to one question; 2 = high partner communication, answered yes to both questions).

Community communication about FP

A community communication about FP score was constructed from three binary measures (Yes, No):

- In the last 3 months, have you talked about fertile days during the menstrual cycle with anyone?
- In the last 3 months, have you corrected someone when/if you heard them saying something untrue about menstruation?
- In the last 3 months, have you corrected someone when/if you heard them saying something untrue about family planning?

A composite score was generated from 0 to 3 (0 = no community communication, answered no to both; 1 = low community communication, answered yes to one question; 2 = moderate community communication, answered yes to two questions; 3 = high community communication, answered yes to all three questions).

Data Analysis. All primary and secondary indicators were analyzed using frequency tables and simple bivariate analysis, along with analysis of differences between key indicators in the control and intervention areas. Analyses were conducted through two approaches: 1. Baseline to endline community-level analysis; and 2; Post-intervention exposure level analysis. For the baseline to endline community-level analysis, an intention to treat (ITT) approach was used which defined all respondents in intervention communities as “exposed” to intervention regardless of whether or not they attended a performance. While this approach aimed to understand community-level results, rather than individual, this approach generally results in a more conservative estimate of the treatment effect because it does not remove non-compliers from the analysis. A difference-in-difference approach was used to estimate intervention causality on primary and secondary outcomes, controlling for time and intervention assignment. A difference-in-difference approach is considered the gold standard for estimating the causality of an intervention since it not only compares an intervention group to a control group, but it also controls for any time-variant factors from baseline to endline (that is any differences in outcomes over time due to non-intervention factors such as seasonality, migration, other NGO FP programs, etc.) To address the limitation of a smaller sample size at control sites (n=200), sample weights were added in the regression analyses to ensure equivalence between control (n=200) and intervention sample size (n=400).

The ITT community-level analysis considered all community members in intervention communities exposed to the intervention regardless of whether or not they attended a performance. As a result, the second-stage exposure level analysis aimed to better understand individual-level associations between exposure to a performance and likelihood of experiencing a certain outcome. While more directly targeted, these data were only used at post-intervention (since no one was exposed at baseline). As a result, associations between EDEAN exposure and primary / secondary outcomes, do not take into account any temporal pre to post effects as a result of the intervention, and is a less robust estimation method to attribute causality. For both analyses, bivariate descriptive comparisons were conducted, followed by multivariate logistic regression showing adjusted odds ratios (aORs).

Limitations. As this was a proof of concept study, we did not aim to conduct a large-scale study in Karamoja, and as a result, sampled a small number of communities. The rather small sample size limited the robustness of the results. The study team opted to collect data from community-based independent samples at baseline and endline due to the high mobility and migration patterns of the region's population. Since this was not a cohort study, the ability to establish individual-level impact – rather than community level – was limited. However, qualitative data were used wherever possible to assess self-reported changes as a result of the EDEAN intervention. The post-exposure level analysis aimed to pinpoint exposure and outcome-level associations, stratified by age and sex groups. However, the original study design was not purposely powered for stratified sampling, resulting in some cases, in wide 95%

confidence interval ranges of sex and age stratified exposure results.¹ The baseline survey was conducted approximately one month after the launch of EDEAN activities. Approximately 2-3 peer group meetings on couple communication had been conducted (2-3 weeks) before baseline but this was not expected to have had a significant effect on fertility awareness and FP outcomes.

Lastly, spillover exposure in control area was not collected and assessed at end line. Yet, process-level, observational data suggested that some EDEAN participants and audience members moved back and forth between the intervention and control communities. This made pre and post comparisons controlling for contamination difficult. As a result, we used post-intervention level exposure analysis as described above to better understand specific exposure associations between attending performances and the likelihood of experience a specific outcome. As well, where possible we tried to validate the quantitative results with the qualitative data described below.

¹ 95% confidence intervals were used for this study, defined as the likely range of an outcome's odds ratio estimate that would be observed 95 out of 100 times if the study were repeated

EDEAN FEASIBILITY

RESULTS

FEASIBILITY RESULTS

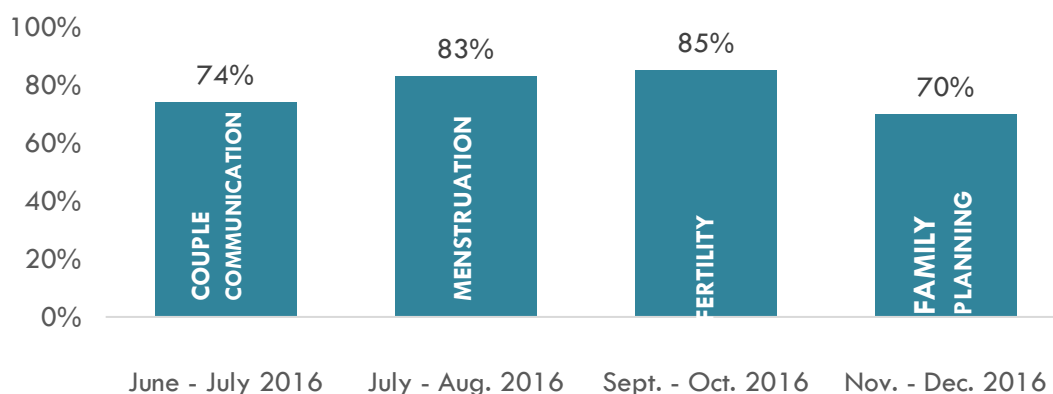
Feasibility results below are presented by 1. Peer Group Members profiles and participation; 2. Reach of EDEAN activities; 3. Delivery and Reception of fertility awareness / FP messaging; 4. Level of Effort in supporting and delivering EDEAN activities, and; 5. Linkages to FP services.

1. PEER GROUP MEMBERS PROFILE AND PARTICIPATION

Profiles of Peer Group Members. Of the 120 Peer Group Members in the six communities, all (were within the 18-25 year old criteria, with an average age of 23 years old (23 yrs female; 22 yrs male). About 89% of peer group members were married, and on average, peer group members had about 1.8 children (Min=0, Max=6). The majority of peer group members had no formal education (70%), 17% had attended an Alternative Basic Education in Karamoja (ABEK) educational centers, 3% had primary education, and 10% had some level of secondary education.

Peer Group Members' Attendance of EDEAN activities. There was overall high attendance of EDEAN activities by peer group members across all four activities. Attendance rates were similar across male and female peer group members. As seen in Figure 6, attendance dropped off however by the FP topic in November and December. Observational data suggest that the attendance drop-off was likely due to temporary migration to search for water and pasture for their cattle during the months of November and December, in addition to festival season, when most men tend to move to other places to participate in marriage and funeral rite festivals. When disaggregated by type of activity and sex, the attendance show similar attendance patterns among male and female peer group moderators, including a slight drop in attendance during rehearsals among both groups, relative to peer group meetings and performances. This drop-off was reaffirmed by systematic observations which documented the challenges that peer moderators had in coordinating performances with peer group members who had not attended the rehearsals, especially toward the end of the intervention when compliance in activity attendance became more challenging.

Figure 6 | Proportion of Peer Group Members attending meetings, rehearsals and performances, by topic (n=120)

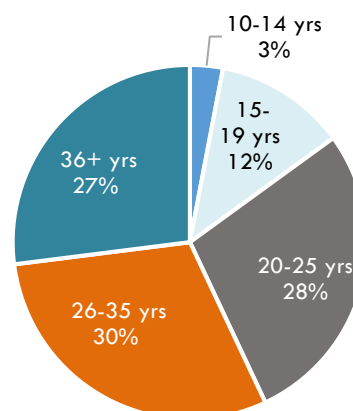


(Source: Attendance forms)

2. REACH OF COMMUNITY PERFORMANCES

Audience member attendance data were collected at each performance. Audience member numbers are defined as points of contacts, rather than unique individuals, since individuals often returned to more than one performance (and numbers may double-count individuals returning again). Across the 72 performances delivered in six months, 6,699 points of contact were made with community members at performances. Both women (53%) and men (47%) attended the performances. Majority of the audience members were married (76%). Of the 6,699 contacts made, 40% were in EDEAN's target age group of 15-25 years, and 30% between 26-35 years. There were also significant number of elders 36+ years who attended the performances (27%), while 3% were very young adolescents (10-14 years old).

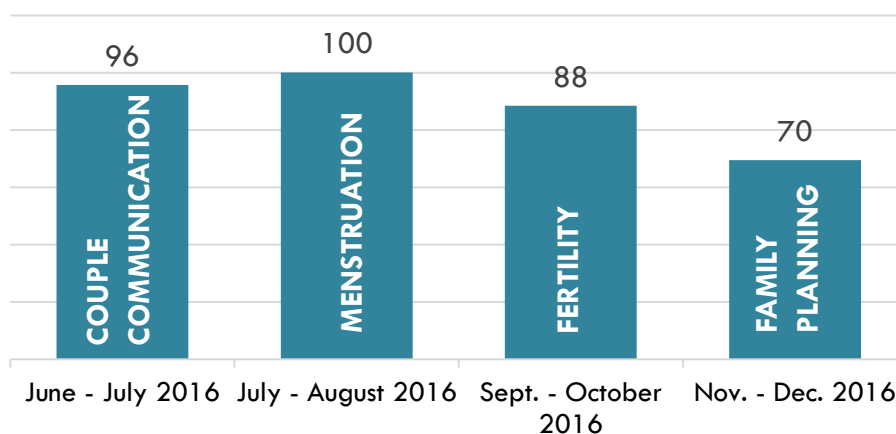
Figure 7 | Percentage of total audience members in age cohorts, all performances (n=6,135)*



(Source: Attendance data; *Note: age not recorded for every respondent, number therefore lower here than the total points of contacts recorded)

As seen in Figure 8, an average of 89 audience members attended each performance. Attendance lowered during the months of November and December similar to trends in peer group members' participation above, due to seasonal migration and festival trends.

Figure 8 | Average number of audience members at performances, by module



(Source: Attendance data)

The systematic observations suggest that the rehearsals were also key in increasing reach and mobilization for performances (it was not uncommon for community members to also attend the rehearsals). As well, reach varied with ECCD center side location, depending on the type

of mobilization strategy used. Typically, where the ECCD CMC presence was strong, performance attendance was high.

3. FERTILITY AWARENESS AND FP MESSAGE DELIVERY AND RECEPTION

Systematic observations of peer group meetings, rehearsals and performances were conducted to better understand delivery, participation, and receipt of EDEAN activities. A full observation results table can be found in Annex 4.

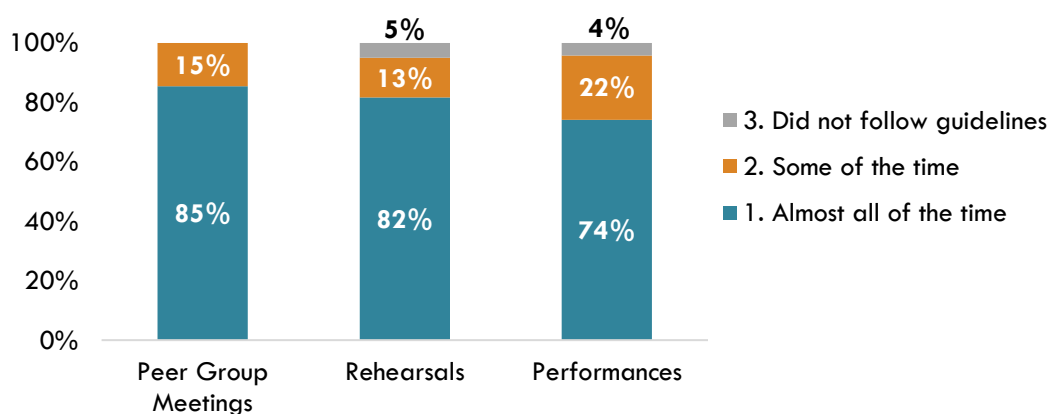
Message Delivery, Fidelity and Facilitation

Given Karamoja's low literacy context, research assistants scored Moderator Pairs' ability to follow the Moderator manual's sequenced activity plans and guidelines. Figure 9 shows fidelity of manual guidelines, as observed during peer group meetings, rehearsals and performances. Overall, during peer meetings, 85% of observed Peer Moderators were able to follow the manual all the time, while 15% followed some of the time. During rehearsals, 82% followed the manual all the time, 13% followed some of the time while 5% did not follow. For performances, the percentage of those who followed the guidelines all the time dropped to 74%.

"Peer Group Members were seated under a tree by the ECCD, there were also older people and younger children playing nearby the EDEAN rehearsal area. From a distance there were small kraals of goats and sheep making noise..."

– Observation of EDEAN Rehearsal

Figure 9 | Percentage of Moderators following guidelines (n=69)



(Source: Systematic Observations)

Ensuring fertility awareness and FP message fidelity. In general, almost all of the Peer Moderators and Peer Group Members maintained the fidelity of the fertility awareness and FP messaging when delivering the EDEAN activities. Very few observations documented delivery of incorrect messaging. Examples of incorrect messaging included "the egg is fertilized in the uterus" during a fertility module performance, and "a condom can only burst

when there is no space left at the tip," during a peer group meeting and rehearsal on FP, respectively. Incorrect messaging were more likely to occur during the FP module, partly due to the large number of questions peer moderators received from participants, and their challenges in answering technical, detailed questions about how methods work (see Annex 4 for examples of questions and answers). In some cases, peer moderators – and in some cases with the help of other peer group members - were able to correct incorrect messaging by peer group members during rehearsals:

"When the one Peer Group Member who was acting [in the rehearsal] as a VHT said that the injectable is for 3 years, members started murmuring looking at each other, even those who had stepped back came back concerned about this [Peer Group Member's statement]. One of them did not wait for the Peer Group Member to complete, she said please correct it right now before you make mistakes tomorrow it is three months, not years."

- Observation of rehearsal on FP topic

As seen in Annex 4, messaging were adapted to the local context. In some cases, peer group members – and in particular female ones - substituted vocabulary taught in the EDEAN manual due to fear of community backlash in discussing sexual reproductive vocabulary considered taboo in the community.

"The moderator also asked the males to name the different parts of the organs someone at the back named the male reproductive organ as "achia" the others burst into laughter this took about sometime. One of the males also said no this is wrong it is a penis call the spade by its name"-

Observation of Male Peer Group Meeting on Fertility topic

Peer moderators, with the support of the Trainers/Community Development Officers (CDO) often played a crucial role during rehearsals in ensuring that correct language were used by performance (as seen in last quote).

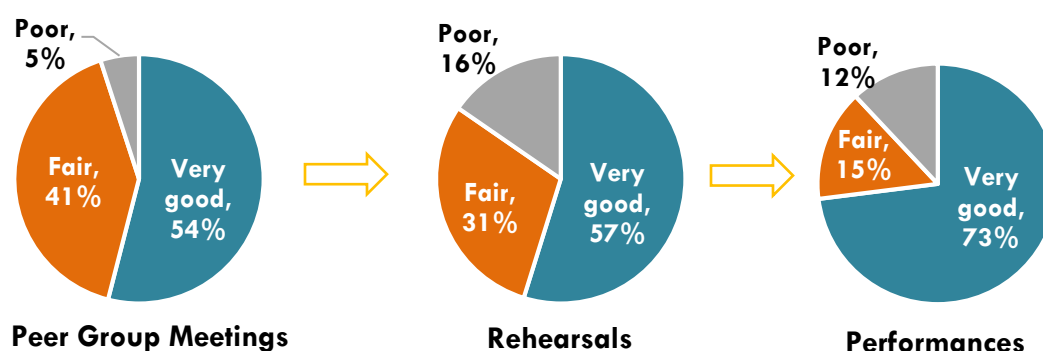
Adaptation of fertility awareness messaging to create own drama and songs—Whereas Peer Moderators were able to follow the manual well, peer group members valued being able to "create their own drama," as part of the third storyline under each module. Some groups created and adapted songs around their performances, and in some cases, some groups emphasized and linked the benefits of child spacing to improving child nutrition. One Peer Group Member explained:

"The dramas that we created or the dramas that we thought on our own, were not those ones in the manual that they used for teaching us. We created dramas that affected us but not calling other people's names." **Female Peer Group Member, 18-25 yrs, Nadunget Sub-County**

Moderator's ability to facilitate EDEAN activities. Peer moderators' ability to facilitate EDEAN activities improved overtime. During activities, observers scored Peer Moderators' facilitation

skills as: “very good,” “fair,” and “poor.” Overall the 73% of observed Peer Moderators were rated as very good in facilitating performances. The proportion of Peer Moderators who received “very good” facilitation skills rating were high for the couple communication module (83%), menstruation (86%) and FP (80%) but was weaker for fertility (43%). The lower performance rating during the fertility sessions may be due in part due to the content of the module, covering taboo topics such as male and female reproductive organs. During observed performances, audience members comprised of elders, relatives, in-laws, commented that topics were not culturally acceptable to discuss openly in the community. Figure 10 shows Peer Moderators’ ability to facilitate activities during Peer Group Meetings, rehearsals and performances. The results show that facilitators tended to perform better during performances, when fertility awareness and FP information were diffused to the community at large.

Figure 10 | Peer Moderators ability to facilitate EDEAN activities, by meetings, rehearsals and performances (n=69)



(Source: Systematic Observations)

‘You have chosen a sheep!’ Navigating gender dynamics during EDEAN activities. FACT formative research conducted in 2014 showed rigid age and gendered social hierarchies in Karimojong society. The systematic observations, coupled with qualitative data, showed that the use of gender synchronized single-sex meetings, followed by mixed-sex meetings for peer group members worked well to ease any gender power dynamics and sensitivities between the male and female Peer Group Members:

“When we first started, we would fear mentioning some words, girls were fearing to look at boys, and boys were fearing to look at girls. The boy would say, that is my sister, why are they talking about such words? But when we started mixing, we learned that they were just educating us.” - **Female Peer Group Member, 18-25 yrs, Nadunget Sub-County**

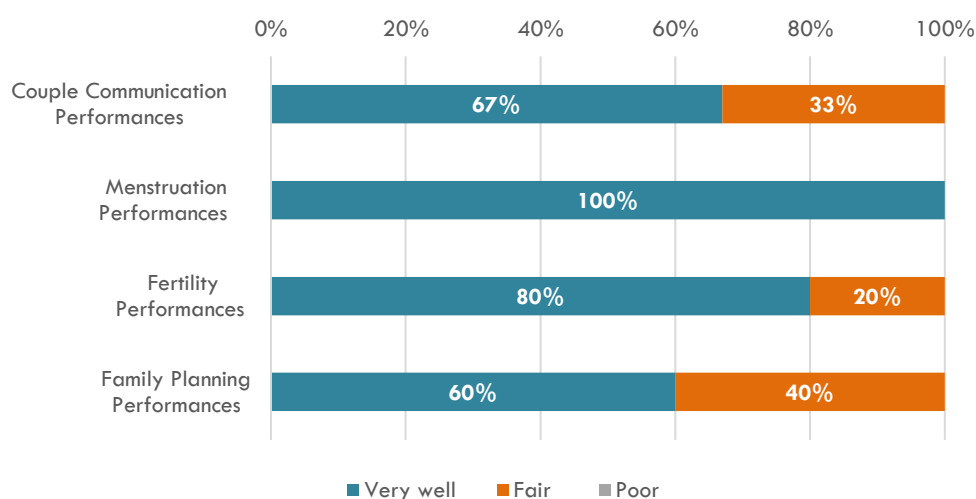
Observations captured some challenges with gender and power dynamics among peer group members especially during rehearsals. For instance, several observations frequently recorded male peer group members volunteering female peer group members during role-playing activities, and in some cases would tease and or laugh at female peer group

members. As one peer group member stated during an observation: 'you have chosen a sheep!' when reacting to a female peer group member's shyness during a rehearsal.

Message Receipt and Comprehension

Overall, fertility awareness and FP message content delivered by the peer moderators were well understood by both peer group members during peer group meetings and rehearsals (78% and 72% respectively); and by audience members during performances (77%). Figure 11 shows understanding of messages by audience members delivered by Peer Moderators disaggregated by the four topic modules for performances only. Understanding of messages were very high for the menstruation and fertility modules. However, only 67% and 60% of the observed performances on couple communication and FP, respectively, were marked to be "very well" understood by audience members.

Figure 11 | Audience understanding of content delivered, for performances only (n = 23)



(Source: Systematic Observations)

Audience Members' reaction to the performances. Select interviews with male and female audience members after performances showed that they appreciated the performances, stating that the performances created positive change especially among men in the community. Systematic observation revealed that the audience members were interested in the performances and considered the topics as relevant and reflective of couple dynamics within their community:

"These performances are good because look at the way that woman was able to talk to a very difficult man, most of our men here in Karamoja are like him. I really like it when she eventually managed to talk to him." - **Female audience member, 30 years old, attended Couple Communication Performance**

"I saw the women near him started to whisper at each other and then smile; 'This one has really been given a lot of guts, look at the way she is talking without fear. How I wish we [had] so many like her' – Observation of performance on couple communication

While elders dominated some of the audience conversations during performances, they also had positive reactions to the performances and expressed desires for "change" among young couples in their communities, many of which were now living different, more sedentary lives than elders themselves had lived. Observations captured dynamics and conversations between older and younger audience members, in particular related the 'old' methods of FP such as abstinence, and the new FP methods being introduced during performances:

"When the nurse [in the performance] talked about condoms and other methods of family planning available at the clinic, there were murmurs from the female audience members. One actually said that abstinence was better for them while they were growing up." – Observation of performance on FP

Similar to peer group member dynamics during rehearsals, gender and age dynamics were also observed during performances. Typical performances observations recorded female and male audience members in two distinct groups, seated separately under the community tree. During moderation questions, observations recorded that young females would shy away when asked questions in the presence of elders. Moderation questions were frequently answered by elders during performances since in Karimojong society, it is more culturally acceptable to "respect elders" when they talk.

4. LEVEL OF EFFORT NEEDED TO IMPLEMENT EDEAN

We collected monthly time input sheets from five program support staff, in addition to level of effort estimates from Peer Moderators during moderator debriefs, to better understand what it would take to implement and replicate EDEAN activities in other contexts.

Time Spent by Program Staff

Time input sheets were submitted in hours, but converted into days for easier interpretation. Table 8 shows the approximate number of days spent by staff during each month of intervention implementation, across a range of categories. The results show that most time were spent during the month of August 2016, when initial intervention activities were being implemented on the ground.

Table 8 | Approximate number of days spent on each implementation activities, by month (n=5 staff)

CATEGORIES	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	TOTAL
1. Administration & Coordination	7.7	4.2	1.8	2.3	3.2	3.8	22.8
2. Training of CDOs and Peer Moderators	3.0	8.6	14.9	0.0	0.0	0.0	26.6
3. Support of Peer Group Meetings & Performances	2.4	0.9	0.3	1.8	0.0	0.8	6.1
4. CDO support / coaching	0.7	0.5	0.5	0.2	0.6	0.0	2.4
5. Moderator support / coaching	0.2	1.4	1.7	0.5	1.3	0.0	5.0
6. Community Engagement meetings	0.0	4.5	0.0	4.1	3.0	8.0	19.6
7. Monitoring & Supervision	2.6	20.1	4.9	5.4	13.0	3.9	49.8
8. Other activities	1.0	3.4	2.6	0.0	6.4	3.3	16.7
TOTALS IN DAYS	17.6	43.6	26.6	14.3	27.5	19.6	149.1

(Source: LOE input sheets)

Figure 12 shows the percent time spent on all activities over the course of the eight month intervention period from the five program staff. Program staff included: 1. Save the Children Senior Program Officer; 2. Save the Children M&E Manager; 3. IRH Program Manager; 4. IRH Program Assistant, and; 5. IRH M&E Advisor. The data suggest that most of the time was spent on monitoring and supervision of activities on the ground, followed by the preparing for, and facilitating the trainings of CDOs and Peer Moderators.

Figure 13 shows percentage of time spent on all activities by month. The month by month trends show that monitoring and supervision activities remained consistent throughout implementation activities, and that additional time was spent in the first three months of intervention on administration and coordination, in addition to training of CDOs and Peer Moderators. More time was spend in the latter three months on community engagement meetings with leaders and providers and on “other” activities (e.g. mobilization for EDEAN end of project celebration, and field visits to the field with EDEAN advisory meeting).

Figure 12 | Percent Time Spent by Activity over six months, disaggregated by type of activity (n=5 staff).

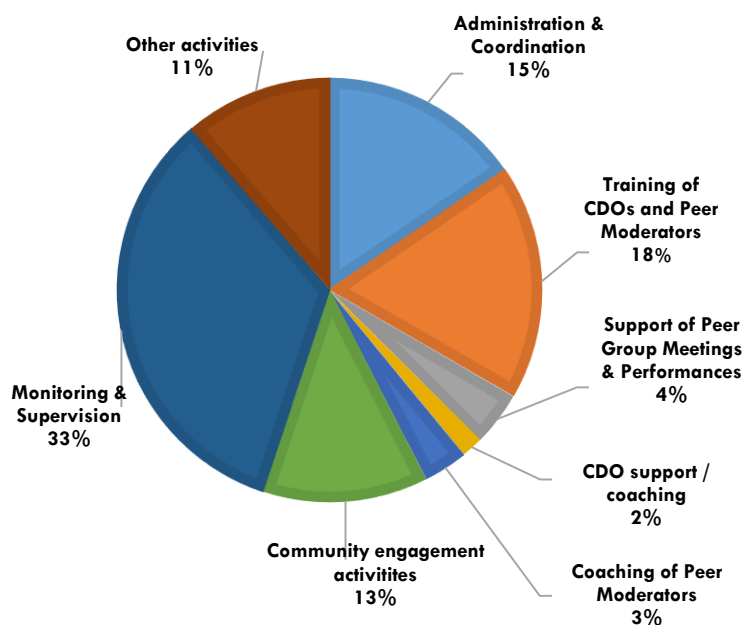
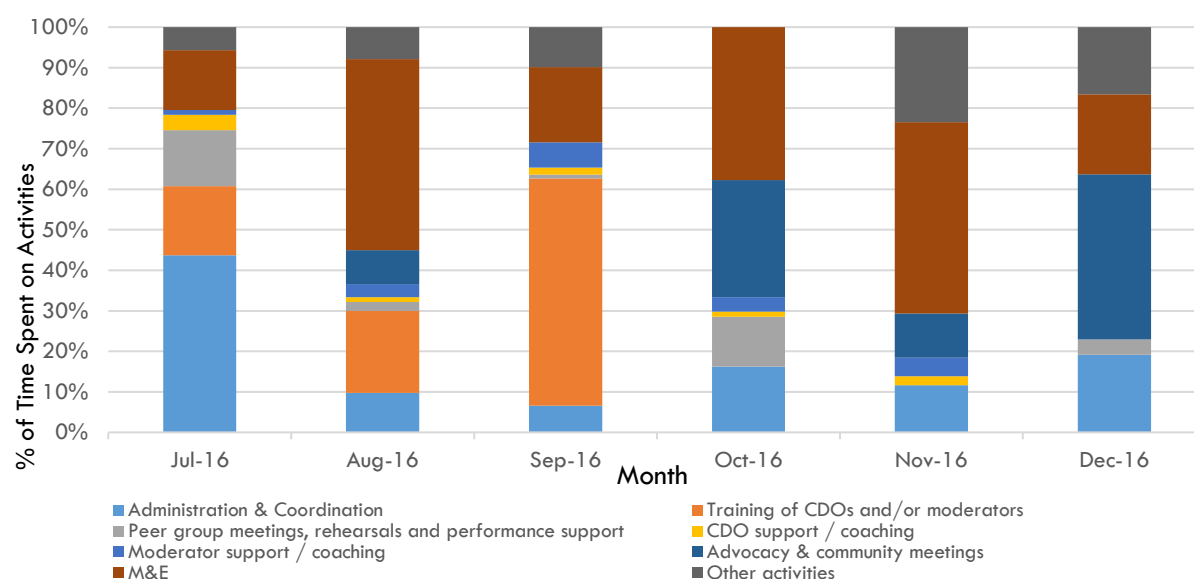


Figure 13 | Proportion of time spent on all activities, disaggregated by Month (n=5)



(Source: LOE input sheets)

Time Spent by Peer Moderators

On average, Peer Moderators reported spending a little over 1.5 hours facilitating peer meetings and rehearsals and a little over 1 hour moderating performances (see Annex 4 for breakdown of average hours spent by type of activity and module). As seen in Table 9, Peer moderators reported spending more time and energy preparing for, and in facilitating rehearsals. During debrief interviews, Peer Moderators shared that the increased time spend during rehearsals was due to time spent mobilizing Peer Group members, and starting to develop characters and teaching Peer Group Members the new storyline and characters. Peer Moderators also shared that performances tended to be easier, relative to rehearsals. Overall, Peer moderators felt well prepared for the sessions, and shared that CDOs aided them in understanding the material, mentored them in the handling of peer group members, and helped mobilize participants and community acceptance of the project.

Table 9 | Average time preparing and facilitating for EDEAN activities, reported by Peer Moderators (n=69)

	Preparation time	Facilitation time
Peer Group meeting	1 hour	1.6 hours
Rehearsal	2 hours	1.6 hours
Performance	0.6 hour (35 minutes)	1.2 hours

(Source: Systematic Observations; Debrief Interviews with Peer Moderators)

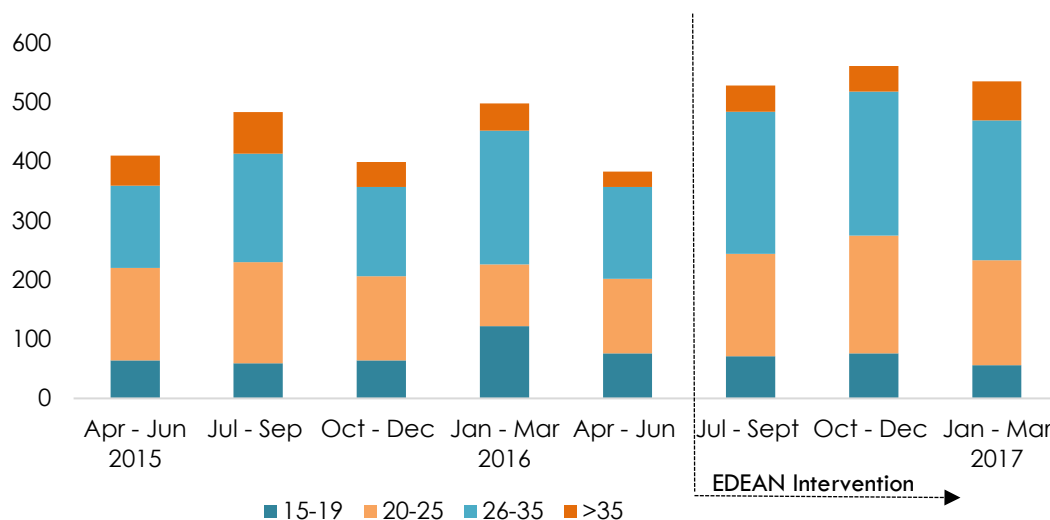
Peer Moderators were also asked about benefits and challenges in working as a pair with another partner. In general, Peer Moderators appreciated their partners' commitment to their shared role and collaboration to lead activities together. Some peer moderators indicated that their role in EDEAN improved their leadership skills, while also citing challenges

such as absenteeism, lack of incentives, members attending sessions while drunk, and fears of discussing taboo topics around fertility awareness and FP. Some male peer moderators shared the perception of an imbalanced workload (male Peer Moderator taking on more of the workload), while females felt the work was shared evenly. As well, male Peer Moderator felt that peer group members respected them more than their female counterparts, feeling the need to take on the lead during facilitation of EDEAN activities. This was supported by short semi-structured interview data in which female Peer Moderators indicated spending less time preparing for the EDEAN activities.

5. LINKAGES TO FP SERVICES

FP service statistics were collected from 14 health facilities to understand trends in nearby services use over time. The collected FP service statistics from the health facilities in Napak and Moroto districts, from primary health centers, to Moroto regional hospital show similar trends in FP clients by age cohorts from July 2016 to March 2017, although trends increased slightly after intervention start (see Figure 14).

Figure 14 | Number of FP clients from April 2015 to March 2017, by age cohorts



During service statistics collection, health service administrators were also asked a set of questions about their familiarity with EDEAN, receipt of FP invitation cards, and any reported stock outs. While some interviewed health administrators confirmed that clients had come in after being referred from EDEAN activities, very few reported seeing the FP invitation cards. Only health centers based in Moroto district, rather than Napak district, reported receiving FP invitation cards. Moreover, service providers in Napak also reported frequent stock-outs of FP methods, such as pills, IUDs, and Implanon (see Table 10). Interestingly, of the 27 reported FP invitation cards received in Moroto district, eight were received in the Rupa health center,

located in the control catchment area, suggesting potential diffusion and spillover of EDEAN activities into control communities.

Table 10 | Summary of Q&A with service provider / administrator during data collection

DISTRICT	Familiarity of FP providers with EDEAN	Received community members from EDEAN activities?	FP Invitation cards received?	Stock outs in the last 3 months?
NAPAK (7 Facilities)	All were well aware of EDEAN, and each clinic had attended the reflection meetings, and were actively involved by CDOs	Slightly more than half of the providers received clients who mentioned EDEAN. Providers referenced peer moderators as the link to the health system.	No invitation cards received.	All clinics reported stock outs. The majority reported being out of pills (4), implants (5), IUDs (4). One clinic did not have any methods. Another clinic only offered non-hormonal methods due to stock out.
MOROTO (7 Facilities)	Almost all of the FP providers, had heard of EDEAN, most had attended sensitization meetings and been in contact with CDOs and technical staff.	All but one facility received referrals, with one mentioning a peer moderator referral, while two others cited the performances.	Cards were received at Nadunget Health Center (19) and Rupa (8).	The majority of clinics did not report any stock out (4). One clinic only offered non-hormonal methods. Another reported being out of the injectable, implant, pills, IUDs, and condoms.

LESSONS LEARNED ABOUT FEASIBILITY

Peer moderators and peer group members can deliver EDEAN activities and messages correctly. Despite early project concerns about low literacy levels in Karamoja, Peer Moderators were able to follow the guidelines in the manual and use job aids correctly for the EDEAN activities. Peer Moderators prepared in advance and learned FA/FP messages during single and mixed sex meetings before rehearsing and performing to the entire community. The moderator's ability to follow the manual as a guide to the activities led delivery of correct messages. The PMs and PGMs were quick to adapt the messages shared into songs and created their "own drama". The ability of the PMs to facilitate and direct dramas and of peer group members to quickly grasp the FA/FP messages enabled them to translate these messages in to songs and dramas. This was a good way to pass information to and engage low literate communities.

Early-on, systematic engagement of community leaders is key in ensuring feasibility of activities. For EDEAN, engaging community leaders and CDOs early on in the project were crucial in introducing new taboo topics while also being respectful of community leaders' authority and decision-making process on the introduction of new non-normative information within their communities. Community engagement – both in terms of leaders, CDOs and service providers – were also key from a technical support standpoint. For instance, Peer Moderators were not always able to answer all questions during performances, especially

technical questions related to fertility and physiology (e.g. ovulation) and FP methods. In other cases, peer group members sometimes feared using vocabulary and images in the menstruation, fertility and FP modules. The presence and support of supervisors (CDOs) were key in answering technical questions, in addition to handling problems related to absenteeism and incentives. Lastly, as Karamoja is a resource-scarce environment, the absence of incentives were also a key challenge in the initial phase of intervention implementation. Involving community leaders and elders were instrumental in mitigating material expectations and ensuring continual participation of participants.

High demand exists for fertility awareness and FP information by peer group members and audience members. The receptiveness and desire to learn new information among the Karimojong about EDEAN drew large crowds to the performances. EDEAN was well-received as new but relevant information that could enable the continuation of their long tradition of spacing children through postpartum and periodic abstinence. Given Karamoja's tradition of songs and dramas, the theatre approach was attractive to both women and men, both of whom returned to multiple performances to learn about fertility awareness and FP topics. However, attendances of performances varied by type of mobilization. Where CMCs were strong in an ECCD centre, mobilization was strong and generated high attendance.

Presence of elders is key, but challenges exist in balancing the participation of youth and elders during performances. Performances attracted large crowds, and targeting 18-25 year olds, the EDEAN target group, exclusively was not possible. Given that some of the ECCD centers don't have permanent structures and performances were conducted out in the open community, narrow targeting of the intended 18 to 25 year old age group was difficult. The presence of different community members had both pros and cons: while elders tended to dominate conversation during moderation questions, their presence was also crucial in encouraging younger community members to learn and reflect on the new fertility awareness and FP information seriously.

Addressing gender and power dynamics. Finally, given the rigid cultural gender roles and structures in Karimojong society, ensuring equitable participation and discussion among men and women could be challenging. Not surprisingly, male and female Peer Group Members faced difficulties in openly discussing taboo topics and sex-related vocabulary without "fear." Peer Group Members also shared during FGDs that the gender synchronized meetings facilitated more participatory and equitable discussion during the same-sex, and later mixed-sex meetings. However, additional attention should be paid to these gendered dynamics during training, and routine monitoring and supervision.

EDEAN

ACCEPTABILITY

RESULTS

ACCEPTABILITY RESULTS

Community acceptability of EDEAN's peer learning and community theatre model was also assessed given the proof of concept phase's emphasis on potential for scalability. Acceptability results are presented below, highlighting: 1. Community members' reaction to EDEAN; 2. Community leaders' and service providers' reaction to the EDEAN activities; 3. Diffusing and applying fertility awareness and FP information.

1. COMMUNITY MEMBER REACTIONS TO EDEAN

Qualitative FGDs conducted with community members and peer group members highlight that the EDEAN activities were generally well attended and welcomed by the communities. The majority of FGD participants expressed the desire for activities to be sustained, in order for communities to continue learning about the benefits of child spacing. In particular, community members cited the importance of receiving information on child spacing, because of the "loss of knowledge" around the cultural practice of postpartum abstinence as a child spacing mechanism.

"EDEAN was real positive in our community, the community was not negative or even arguing. They said, thank you for bringing this program because before family planning was hard." – **Female Peer Group Member FGD Nadunget, 15 – 25 years old**

Given Karamoja's scarce resource environment, child malnutrition and mortality was a common concern raised by FGD participants. Given this context, FGD participants commonly associated the performances topics on fertility awareness and FP with information they could use to prevent child malnutrition and mortality. Accordingly, observations also captured that in some cases, peer group members included messaging and songs on child malnutrition in the "create your own drama" rehearsals and performances. The importance of FP as a way to prevent child morbidity and mortality was highlighted by both male and female FGD participants, and peer group members and audience members alike:

"People became happy with the project and said the government has brought good information that is teaching us well, it has brought knowledge. The information they are teaching us is to space children. In the past when children were not spaced, children were not surviving, others would die." - **Male Peer Group Member, FGD Nadunget, 15 – 25 years old**

"I think I will first talk to my wife about spacing our children so that we can get food to feed them. Then I will also talk to my elder brother because he has many children." - **Male audience member, 22 years old**

Overall, the consistent positive reactions shared during FGDs across different age groups, gender, and communities points to a large demand for sexual and reproductive health

information in Karamoja, a hard to reach communities with very limited access to education and services.

2. COMMUNITY LEADER AND PROVIDER PERCEPTIONS OF EDEAN

Interviewed community leaders and service providers were receptive to the EDEAN activities. Similar to the community member FGDs, leaders and providers urged the continuation of EDEAN activities, in addition to the expansion of activities to different regions of Karamoja.

Community leaders including religious leaders, local councils (LCs), cultural leaders, ECCD CMC members and opinion leaders - were engaged during community entry meetings and routine implementation activities to encourage community acceptability for intervention activities. During endline interviews, community leaders reported encouraging young couples to attend the performances and take-up the issue of child spacing seriously. Some credited the EDEAN messages as bringing them out of “darkness,” while others acknowledged that the EDEAN performances were well aligned with their culture and tradition of child spacing.

“The plays of EDEAN are showing good works. I have not yet seen anything so far that might be against our tradition. Like the injectable, condoms, they are things that work between you and your mind and your home. EDEAN has not come to kill people but instead to clarify the myths about family planning.”

– Male Religious Leader, Nadunget Sub-county

Health workers. Both service-based providers and community-based VHTs were engaged through periodic orientation meetings, during which community performances and the use of FP invitation cards were explained. Endline interviews suggest that providers and VHTs appreciated and valued the EDEAN performances and activities. In some cases, VHTs reported attending some of the performances. When present, observations also showed that VHTs were also able to provide technical support, answering questions raised by audience members that peer moderators were unable to answer. During interviews, service providers shared that EDEAN activities had eased their work by facilitating outreach activities and bringing in clients to facilities in need of FP information and services. Interviewed service providers recognized the value of the EDEAN messaging as a compliment to their FP work, a difficult topic to discuss among communities of Karamoja:

“Those youth are lively and they really pass the message according to the way they really feel. I am always happy when I hear them performing and talking about family planning, which is not an easy topic when you talk about it to the community, especially to the men. When you see young ladies and young men talking... At least the message has been understood and disseminated.”

- Female health worker, Nadunget Sub-county

Consistent with the service statistics data collected from local health services, some interviewed health providers expressed concerns and confusion about the invitation cards. Specifically, health workers did not always understand the use of the FP invitation cards. Given

that the cards were in local language, health workers – whom are often not from Karamoja - could not understand the content of the FP invitation cards.

3. DIFFUSING AND APPLYING INFORMATION ABOUT FERTILITY AWARENESS AND FP

During concept design, performances were identified as a potential vehicle to diffuse and spread information about fertility awareness and FP throughout Karimojong communities. Coupled with the aforementioned survey data results, qualitative data suggest that diffusion occurred beyond performances, and between peer group members and other community members in other non-performance settings.

EDEAN messages were shared beyond performances. During FGDs, peer group members cited sharing and discussing the information from performances with others, but in particular neighbors, siblings and friends, encouraging them to share the information with their partners. According to peer group members, the most common type of information shared among community members included the messages around couple communication, menstruation, FP and child spacing. Consistent with Karamoja's gendered hierarchies, information was typically shared among gendered lines: whereas women shared information with their fellow female peers (sisters, female friends), men shared more with their fellow males (brothers, male friends). The type of information shared also varied among men and women. For instance, male peer group members shared more information about condoms, and men's role in determining the sex of a baby, while female peer group members shared information about menstruation and FP.

Elders encouraged the diffusion of the EDEAN messages without fear. Consistent with observational data and interviews with community leaders, male peer group members reported that elderly men often encouraged them to spread the messages without "fear." His finding reinforces the importance of the sensitization and reflection meetings as a key EDEAN component to engage influential reference groups such as community elders.

"Those very days, elders started spreading messages and telling boys that they should start spreading messages to people without fear. The elders are helping so much. Some elders begun enjoying the performances [...] Next time during the subsequent shows, the boy comes along with his friends. For example, he comes along with four, then next time those ones also keep on coming along with others." - Male community member, FGD Ngoleriet, 15-25 years old

Applying Couple Communication Messages. The first EDEAN module focused on couple communication messaging, based on formative research showing community demand for couple communication skills to reduce couple conflicts and disagreements. Qualitative FGD data suggest that the couple communication messages were easily adopted by Karimojong couples attending the performances. During FGDs, participants commonly defined couple communication as "couples respecting each other" and "couples listening to each other." The majority of FGD participants reported increased discussions with their partners about child

spacing, their children's health and shared caregiving responsibilities (e.g. taking them to school and/or providing food). Improvements in couple communication were shared by both peer group members and community members attending the performances. As seen in the second quote, while male community members also cited improvements, they also commonly pointed to their female partner as the initiator and instigator of arguments.

"What changed in my life? Couple conversation. You need to share so much information with your husband. Like if you are over producing children, you will go and say: 'my husband it is like this: we are supposed to do family planning, we have to let children reach like 2 years upwards then we can start to have another child, so that our home also looks healthy.' " - **Female Peer Group Member, FGD Ngoleriet, 15-25 years old**

"This teaching has been good for me, especially the one about listening to each other. It is about togetherness. That is why when she decides to quarrel in the near future I will just remind her that we made an agreement to listen to each other. That knowledge was good for me". - **Male Community Member, FGD Ngoleriet, 26 to 35 years old**

In almost all the qualitative FGDs, couple communication was frequently referenced as a skill that has helped couples solve sources of conflict. The prevalence of violence cited in the qualitative data are consistent with anthropological research conducted in Karamoja, pointing to increased use of violence as Karimojong families adjusted to a sedentary lifestyle and consequent loss of their cattle-centered livelihood (Stites and Marshak 2016). Within the endline qualitative data, some EDEAN participants cited improved couple communication as having helped improve their relationships and reduced violence in their family.

"So many people no longer fight, they now do couple conversation in their homes and they like now sharing information because, somebody will remember what he/she learned from out, saying, this is the very thing they teach us, to remove fighting and violence at home." - **Female Peer Group Member, FGD Nadunget, 15-25 years old**

The improvements in couple communication was not isolated to young community members. Interviewed community leaders, elders and CMCs also reported using and benefitting from couple communication information with their own families and personal lives.

Applying Menstruation and Fertility Messages. FACT's formative research (2014) identified a number of menstruation myths present in Karimojong, including that when menstruating, women cannot cook, cannot milk a cow, nor cannot go to the pumpkin garden, among other myths. Qualitative data suggest that the menstruation performances helped debunk some of these myths among peer group members and community members of both sexes. Interestingly, a few male community members cited the importance of "respecting" your wife during her menstruation, translated as not having sex with your partner when she is menstruating.

During the fertility module, peer group members and community members learned about the fertile and non/fertile days during the menstrual cycle. Qualitative data suggest that this information was shared among couples, even when only one partner attended the performance. Qualitative data suggest that information passed on was not only conveyed in the taught fertility awareness methodology. For instance, in many cases secretions were shared among networks as “whitish” substances that come a few days after the menstrual period:

“We talked about this information first of all with my wife. She told me that she has discovered the days when she is on her menstrual period [cycle]. When the blood shades off then something that is whitish like water starts to come. Then something thick like semen starts to come then that is when you are able to conceive if we slept together. That is the information I heard from my wife” –
Male Community Member, FGD Ngoleriet, 15 to 25 years old

Qualitative results suggest that community members valued information related to menstrual cycle and timing of the fertile window. In particular, audience members viewed the information and knowledge they gained from the menstruation and fertility topics as information that could aid them in preventing pregnancies:

“I used that one [method] of the menstrual cycle and found that, there are some days when a child cannot get in your womb even when you sleep with a man. I use the method of the menstrual cycle when I know, these days, I am going to sleep with my husband and these days I cannot sleep with my husband” –
Female Community Member, FGD Nadunget, 15 to 25 years old

“If men get to know the menstruation cycle of their wives, it can help them to use this as a method of family planning and also avoid unwanted pregnancies.”
- Audience member reaction after performance on menstruation

While this is encouraging in that it shows interest in, and general understanding of this key topic, it is also important to recognize that EDEAN performances did not attempt to convey specific information that is essential for using, for example, the TwoDay Method or SDM. Consideration should be given to either providing that information (preferable via trained community or facility providers) or clarifying with performance audiences that this is general information, and not to be used as a FP method.

Applying FP Messages. Family planning was the last module introduced in the EDEAN set of intervention activities. During qualitative FGDs and interviews, community members and peer group members acknowledged their increased awareness of modern FP methods and how they work. This was particularly salient among men, who expressed increased interest in learning about new modern methods of FP like the pills, injectables, implants and permanent methods (vasectomy).

"At least now we know that there are some other methods of family planning. Unlike those days, there was only the method of the kraal [post-partum abstinence] that we knew" – **Male Community Member, FGD Ngoleriet, 15 to 25 years old**

While most community members and peer group members reported applying the learned FP information by discussing child spacing, a few participants cited either using a method of FP or knowing of someone who had taken up a method. Consistent with the survey results which showed that men increased their intent to use modern FP, and in particular condoms, one male community member shared how he approached his wife about using condoms:

"I used the knowledge and decided to use condoms. Maybe when we are going to sleep or when we are sleeping, I get my condom and I dress in it, then I inform my wife that instead of us spoiling our family let us share this very thing such that we can space children". – **Male Community Member, FGD Ngoleriet, 15 to 25 years old**

"There is a woman called [...] she went to the performances and she was carrying her child and was still young. She did go and then got an injection even now as we talk she is having the injection." – **Female Community Member, FGD Nadunget, 15 to 25 years old**

During FGDs, some community members shared that they continued to space their children through the use of post-partum and periodic abstinence, while others did not specify if and/or what methods they were using. Some male FGD participants shared that since the start of EDEAN, their wives had not yet conceived. Specifically, a few male peer group members reported discussing with their wives the use of LAM as a way of spacing birth.

'I stood there and listened to everything they discussed, I listened. Then I discovered that this information is vital. Like for me since my wife is still having one child I should leave that one to grow, to grow till when I have discovered that he has grown then I can sleep with the mother. – **Male Community Member, FGD Ngoleriet, 15 to 25 years old**

Overall, the qualitative results suggest that communities are demanding fertility awareness and FP information and have intent to use modern FP methods, but in many cases are continuing the use of post-partum and periodic abstinence as a method of child spacing. Interestingly, the qualitative results also highlight that couple communication appears to be a vital and integral part of applying the EDEAN messages into their own lives. Lastly, the results suggest that the messaging of the menstrual cycle game helped women and men learn about their bodies, and that there was interest in using this information to prevent pregnancies.

LESSONS LEARNED ABOUT ACCEPTABILITY

EDEAN's peer learning and community theatre model was highly accepted in Karamoja.

EDEAN's high acceptability can be attributed to EDEAN's approach of using the community resource persons as peer moderators and peer group members. CDOs also played vital role in the EDEAN implementation and are respected in the communities. Interviewed community leaders and members consistently reaffirmed that EDEAN was compatible with their culture and traditions. Engaging elders in intervention activities was key in encouraging young couples to attend the performances and in dispelling myths and “fear” around fertility awareness and FP topics.

Potential to integrate fertility awareness and FP messaging with nutrition and maternal and child health (MCH) activities.

The EDEAN messages were relevant and applicable due to the current scarce resource environment in Karamoja. Hunger in Karamoja is a driving factor behind interest in FP and desire to space children. Qualitative respondents repeatedly raised the harsh realities of their day to day life, including poverty, child malnutrition, and child mortality as key factors for wanting to learn more about FP methods. As private investments increase to the region and foreign assistance transitions away from humanitarian assistance, programs should explore ways to integrate the EDEAN fertility awareness and FP messages into existing nutrition and MCH programming.

Health providers welcomed the EDEAN activities and have potential to be more involved.

Providers perceived the EDEAN activities as a demand generation activity that could complement and improve their day to day FP work, generating increased numbers of FP clients. However, the findings also suggest that the FP invitation cards may not have been an effective linkage and referral system. However, the findings also suggest that referral mechanisms to health systems need to be strengthened. Community based referral systems are notoriously challenging. EDEAN used a paper-based referral through FP invitation cards. Future programs might explore use of a paper-based plus or mobile referral which have shown greater success (Lebetkin 2015).

Wide diffusion of FA/FP information with others in the community.

Karamoja's mobility patterns facilitated the speed and feasibility of information to be diffused and shared among community members. Those who attended the EDEAN performances shared FA/FP information with their friends, neighbors, brothers and sisters among others and brought them to attend in subsequent performances. The performance locations – conducted at ECCD centers open to all in the community – also facilitated access and diffusion of information. The diffusion of information shared by qualitative participants also supports our assumption that messaging may have spilled over to control communities (as shown in survey results).

Participants learned and applied information about the menstrual cycle game, and in some cases to prevent pregnancy.

The results show that some community members shared that they used the knowledge of the menstrual cycle game as a “method” to space their children.

While better than not using any method at all, caution should be undertaken when teaching fertility awareness and in particular the menstrual cycle games in context with low literacy, low modern FP use and limited services availability. In such contexts, emphasis on cycle regularity and eligibility should be emphasized and special considerations should be given toward gender power dynamics and couple agreement on how the information will be used (for example, in planning vs. preventing a pregnancy). One potential avenue could be including the participation of a health provider during intervention activities such as the menstrual cycle game to clarify menstrual cycle eligibility, and emphasize the presence of FP methods and services at nearby health facilities.

Couple communication was valued as skill to reduce intimate partner conflict and violence.

While IPV was not directly addressed in the EDEAN curricula, the qualitative data suggest clear improvements in couple communication between couples who attended the performances. Both men and women shared that the skills they learned around couple communication from the performances helped resolve conflicts related to income generation, household chores and child spacing decisions. As well, men's increased awareness and interest in FP and child spacing juxtapose other studies showing that Ugandan men in particular have very limited accurate knowledge and access to information about FP methods (Thummalachetty, et al. 2017). Despite the couple-level improvements, the qualitative data –while triangulated with the systematic observational data – suggest that gender disparities still remain and that more could be integrated within the EDEAN model to incorporate more gender deconstructing content and reflection.

EDEAN EFFECTIVENESS RESULTS

EFFECTIVENESS RESULTS

Effectiveness results are presented below by 1. Community-wide results baseline to endline; 2. Exposure level results at endline, and; 3. Fertility awareness and FP outcome association results. Community level data were analyzed to understand intervention effect at wider scale within the community (regardless of performance exposure), while exposure level data were analyzed to describe more in-depth associations between those who viewed the performances and potential improvements in fertility awareness and FP outcomes. Lastly, associations between high fertility awareness scores and, 1. Current modern FP use, and; 2. Intent to use modern FP are presented to assess whether a high fertility awareness score is associated with improved FP outcomes.

1. COMMUNITY-WIDE RESULTS

Demographic Characteristics

Table 11 shows survey respondent demographics at baseline. At baseline, survey respondents in intervention and control groups had similar age distributions (on average 30 years old). All survey respondents identified themselves as Karimojong (data not shown). Consistent with Karamoja's low education levels, there were no significant differences in educational background between intervention and control respondents: 74% of respondents in the intervention community had no education compared to 81% in the control community at baseline. About 92% of intervention respondents were living with a partner compared to 98% of control respondents. On average, respondents had about 3 children and had been married for eight years across both groups. Both intervention and control groups reported low lifetime use of modern FP, about 21% and 18% of intervention and control respondents, respectively. The majority of participants in both intervention and control communities reported using traditional method of FP, and more specifically periodic abstinence (55% intervention vs. 62% control).

Table 11 | Socio-demographic characteristics of participants, at baseline (n=600)

DEMOGRAPHICS	Intervention		Control		P-value
	n=400	%	n=200	%	
Sex					
Male	199	49.8	100	50.0	N/A
Female	201	51.3	100	50.0	
Age					
Mean (Std)	29.8 (8.4)		30.1 (7.4)		0.1354
Min, Max	15, 49		17, 49		
Highest level of school attended					
None	297	74.3	161	80.5	0.1354
ABEK	33	8.3	7	3.5	
Some primary education	45	11.3	23	11.5	
Completed primary	10	2.5	5	2.5	
Some secondary	13	3.3	2	1.0	
Completed secondary	2	0.5	2	1.0	
Have job or work					
Yes	223	55.8	139	69.5	0.0012
No	177	44.3	61	30.5	
Type of work					
Farming/ agriculture	98	44.0	27	19.4	<.0001
Formal paid work	9	4.0	10	7.2	
Informal paid work	116	52.0	102	73.4	
Currently living with partner					
Yes	367	91.8	196	98.0	0.0027
No	33	8.3	4	2.0	
Time married or living together					
Mean (Std)	8.13 (6.55)		7.97 (6.79)		0.7804
Min, Max	0.1, 30		0.5, 32.0		
Husband has another wife					
1 wife	171	46.6	111	56.6	0.0232
2 + wives	196	53.4	85	43.4	
Number of living children					
Mean (Std)	3.3 (2.7)		3.1 (2.1)		0.3547
Min, Max	0, 18		0, 12		
Ever use modern FP					
Yes	84	21.0	35	17.5	0.3379
No	316	79.0	165	82.5	
Type of FP method ever used					
Male condom	14	3.5	7	3.5	
Female condom	0	0.0	0	0.0	
Pills	2	0.5	0	0.0	
Injectable	11	2.8	1	0.5	
Implant	3	0.8	1	0.5	
IUD	0	0.0	0	0.0	
Vasectomy	0	0.0	0	0.0	
Tubal ligation	0	0.0	0	0.0	
CycleBeads	1	0.3	1	0.5	
TwoDay Method	1	0.3	0	0.0	
LAMW	60	15.0	29	14.5	
Withdrawal	10	2.5	13	6.5	
Abstinence	219	54.8	124	62.0	
Other	20	5.0	1	0.5	

(Source: Baseline Survey)

Demographic tables disaggregated by sex, and by total sample at endline can be found in Annex 5). Significantly different demographic variables between intervention and control groups were controlled for in the adjusted regression models presented further below.

Community Exposure to EDEAN Performances

At endline, respondents in intervention communities were asked if they heard about, and/or attended the EDEAN theatre performances. Table 12 shows levels of EDEAN exposure for all intervention participants, and disaggregated by male and female samples. Approximately

79% of surveyed intervention participants had heard of the EDEAN performances, while 65% reported attending at least 1 performance. About 16% of the intervention sample identified themselves as EDEAN peer group members (39 female study participants and 25 male study participants). Peer moderators and peer group members were a primary source of information for hearing about the EDEAN intervention, especially for women. At endline, 69% and 57% of the community members indicated that they heard of EDEAN intervention from Peer Moderators (PMs) and Peer Group Members (PGMs) respectively.

Table 12 | Exposure at endline, among participants in intervention communities, by total, male and female (n=400)

	ENDLINE					
	TOTAL SAMPLE		FEMALE		MALE	
	n=400	%	n=202	%	n=198	%
Have you heard of the EDEAN community theatre performances?						
Yes	315	78.8	189	93.6	126	63.6
No	85	21.2	13	6.4	72	36.4
Have you attended any EDEAN theatre performances?						
Yes	260	65.0	160	79.2	100	50.5
No	140	35.0	42	20.8	98	49.5
Are you an EDEAN peer group member?						
Yes	64	16.0	39	19.3	25	12.6
No	336	84.0	163	80.7	173	87.4
How did you hear about the community performances? (multiple response)						
ECCD Center	91	22.8	28	13.9	63	31.8
ECCD CMCs	51	12.8	27	13.4	24	12.1
Save the Children	92	23.0	26	12.9	66	33.3
CDO	40	10.0	5	2.5	35	17.7
EDEAN Peer Group Moderator	179	44.8	122	60.4	57	28.8
EDEAN Peer Group Member	149	37.3	99	49.0	50	25.3
Community leader	18	4.5	16	7.9	2	1.0
My partner	7	1.8	4	2.0	3	1.5
Family member	1	0.3	1	0.5	0	0.0
Friend	24	6.0	22	10.9	2	1.0
Other	2	0.5	1	0.5	0	0.0
How many performances did you attend?						
One to three	136	34.0	86	42.6	50	25.3
Four to six	45	11.3	26	12.9	19	9.6
Seven to nine	26	6.5	15	7.4	11	5.6
Ten to twelve	52	13.0	33	16.3	19	9.6

(Source: Endline Survey)

Baseline to Endline results

Baseline to endline descriptive results are presented below for outcomes related to: 1. Fertility awareness; 2. FP use; 3. Self-efficacy to use and access FP; 4. FP attitudes; 5. Social norms around FP; 6. Partner communication about FP, and; 7. Community communication about fertility awareness and FP.

Fertility Awareness

Table 13 shows changes over time from baseline to endline in key fertility awareness and FP outcomes in both intervention and control communities. A fertility awareness score was considered high if a score was above the median score of 8 (e.g. answering questions about fertile window; signs of onset fertility in boys and girls). Both intervention and control

communities had higher fertility awareness scores at endline, suggesting possible spillover effects in control communities. A higher percentage of participants in the intervention group increased fertility awareness scores (from 15% to 75%).

Table 13 | Fertility Awareness at baseline to endline, among intervention and control groups (n=600)

PRIMARY OUTCOMES	INTERVENTION					CONTROL				
	Baseline		Endline		P-Value	Baseline		Endline		P-Value
	n=400	%	n=400	%		n=200	%	n=200	%	
Fertility Awareness Score										
High (1 >8)	60	15.0	298	74.5	<.0001	60	30.0	105	52.5	<.0001
Low (0 ≤8)	340	85.0	102	25.5		140	70.0	95	47.5	

(Source: Baseline and Endline Surveys)

Figures 15 and 16 show high fertility awareness score proportions from baseline to endline segmented by male and female survey respondents in intervention (left) and control communities (right). The changes over time suggest that both women and men in intervention communities increased their fertility awareness knowledge over time, but men experienced the highest knowledge jumps: at baseline, 14% of men had high fertility awareness scores, compared to 81% of men at endline. Women and men in control communities also experienced improvements in fertility awareness scores among, albeit by smaller margins.

Figure 15 | Intervention women and men with high fertility awareness scores (>8), at pre and post (n=400)

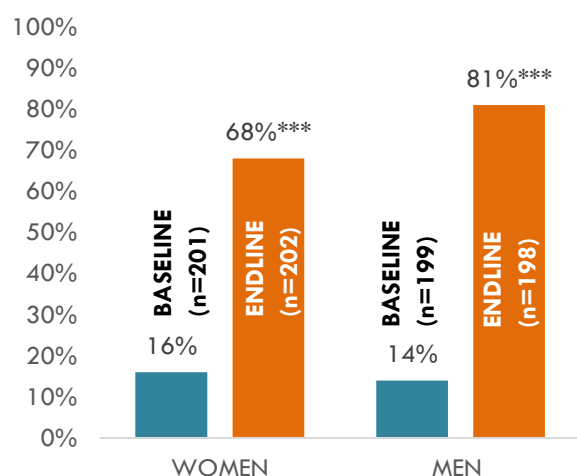
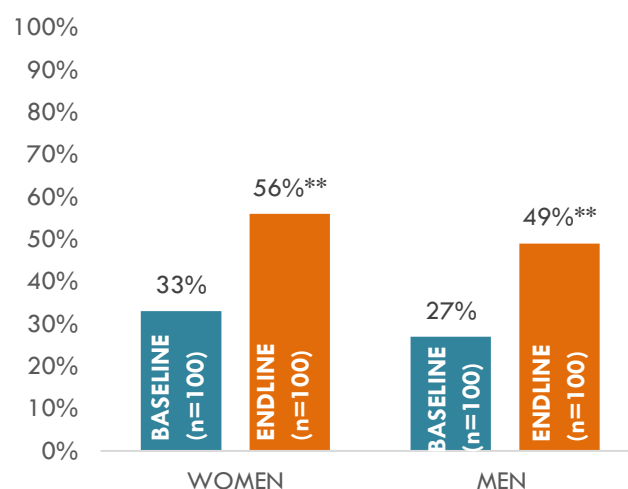


Figure 16 | Control women and men with high fertility awareness scores (>8), at pre and post (n=200)



(Source: Baseline and Endline Survey; Note: p-values: * <.05; ** <.01; ***<.001)

Table 14 shows the proportion of women and men by intervention arm who answered the 14 Fertility Awareness questions correctly at baseline and endline. The proportion of women and men who answered questions correctly about the menstrual cycle more than doubled from baseline to endline. Women and men in control areas also experienced improvements in menstrual cycle knowledge, although these marginal gains were smaller from baseline to

endline. Knowledge of pregnancy risk was relatively high for intervention women (93.5% at baseline), and no improvements were observed over time. In contrast, the proportion of men who knew of fertile days during the menstrual cycle jumped from 65% to 90%, while a decrease in knowledge was found among control men (84% to 52%). Knowledge of the fertile window – or when pregnancy risk can occur – was much lower among respondents, although knowledge improved over time among intervention respondents. About 22% of intervention women were able to identify the correct fertile window at baseline, increasing to 42% at endline; while only 7% of intervention men were able to answer the same question correctly, more than doubling to 18% at endline. Improvements in fertile window knowledge were not found among control men, but not control women.

Table 14 | Proportion of women and men who answered Fertility Awareness questions correctly, by intervention arm and time point (n=600)

FERTILITY AWARENESS MEASURES	WOMEN				MEN			
	INTERVENTION		CONTROL		INTERVENTION		CONTROL	
	Baseline % (n=201)	Endline % (n=202)	Baseline % (n=100)	Endline % (n=100)	Baseline % (n=199)	Endline % (n=198)	Baseline % (n=100)	Endline % (n=100)
MENSTRUAL CYCLE								
Menstrual period is when woman has monthly bleeding	93.0	99.0	100.0	100.0	92.0	99.0	96.0	100.0
Menstrual cycle is all the days before the start of one menstrual period to the day before the next one starts	38.3	78.2	56.0	78.0	44.8	86.4	67.0	92.0
Menstrual cycle begins on the first day of bleeding	37.1	87.6	45.0	56.0	35.7	83.8	54.0	88.0
Menstrual cycle ends on the day before the start of the next menstrual period	26.4	76.7	48.0	72.0	23.6	81.3	42.0	62.0
Regular menstrual cycle lasts between 26 to 32 days	36.3	85.2	34.0	44.0	36.2	81.3	29.0	49.0
PREGNANCY RISK								
There are certain days in a menstrual cycle when women are more likely to become pregnant	93.5	91.6	83.0	88.0	64.8	89.9	84.0	52.0
A woman is most likely to get pregnant if you have unprotected sex halfway between two menstrual cycles	21.9	42.1	2.0	2.0	6.5	17.7	5.0	34.0
You can become pregnant if had unprotected sex during fertile day	75.6	80.7	74.0	68.0	85.9	89.4	88.0	98.0
MALE AND FEMALE FERTILITY								
First bleeding is sign girl is able to become pregnant	93.0	97.5	96.0	93.0	84.9	94.4	90.0	71.0
First ejaculation is sign boy is able to get a girl pregnant	45.3	67.3	70.0	42.0	81.9	95.0	84.0	87.0
Other than sexual arousal, healthy vaginal secretions are sign of fertility	50.3	85.2	62.0	98.0	72.9	81.3	58.0	94.0
Vaginal secretions come during the middle of the menstrual cycle	11.0	38.1	58.0	83.0	10.1	21.2	6.0	46.0

FERTILITY AWARENESS MEASURES	WOMEN				MEN			
	INTERVENTION		CONTROL		INTERVENTION		CONTROL	
	Baseline % (n=201)	Endline % (n=202)	Baseline % (n=100)	Endline % (n=100)	Baseline % (n=199)	Endline % (n=198)	Baseline % (n=100)	Endline % (n=100)
Men are fertile every day	58.2	83.2	80.0	99.0	89.5	87.4	96.0	100.0
Baby's sex is determined by father's sperm	8.0	24.8	0.0	0.0	3.0	31.3	9.0	0.0

(Source: Baseline and Endline Surveys)

Based on menstruation myths identified in formative research, changes in myths and misconceptions around menstruation were measured at baseline and endline among survey respondents. As highlighted in Table 15, the proportion of intervention women and men who reported believing menstruation myths (asked as “true” or “false” answer options), dropped from baseline to endline. These include beliefs that the pumpkin garden will dry if a woman gardens during her period (intervention women: 80% to 51%; intervention men: 68% to 54% from baseline to endline); and that a woman is unclean or “polluted” during her menstrual period (intervention women: 70% to 54%; intervention men: 81% to 74% from baseline to endline).

Table 15 | Proportion of women and men who answered “true” when asked about menstruation myths, by intervention arm and time point (n=600)

MENSTRUATION MEASURES	WOMEN				MEN			
	INTERVENTION		CONTROL		INTERVENTION		CONTROL	
	Baseline % (n=201)	Endline % (n=202)	Baseline % (n=100)	Endline % (n=100)	Baseline % (n=199)	Endline % (n=198)	Baseline % (n=100)	Endline % (n=100)
If a woman touches a cow during her period, the cow will go blind	50.0	35.6	61.0	68.0	57.8	50.5	67.0	72.0
A woman is unclean or “polluted” during her menstrual period	69.5	53.5	88.0	79.0	80.9	74.2	98.0	93.0
If a woman goes to the pumpkin garden when she has her menstrual period, the plants will dry	80.1	51.0	97.0	100.0	67.8	53.5	82.0	71.0

(Source: Baseline and Endline Surveys)

In addition, intervention women and men were more likely to believe that a woman is able to milk a cow during her menstrual period (intervention women: 26% to 50%; intervention men: 33% to 44% from baseline to endline); and that a woman can clean the nose of a child during her period (intervention women: 16% to 43%; intervention men: 51% to 72% from baseline to endline.¹ No improvements over time were found among control female or male respondents.

Family Planning Use

Trends over time show increases in intent to use modern FP, but limited improvements in current modern FP use. As seen in Table 16, intervention respondents' reported intent to use a modern FP method increased significantly from baseline to endline, increasing from 17% to

¹ Data not shown in table

23% over time ($p=0.0219$). Specifically, intervention respondents reported increased intent to use pills (0% to 5% baseline to endline), injectable (2% to 7%) and condoms (3% to 5%). No significant changes were reported in the control group in intent to use a modern FP method. There were no significant improvements over time in current use of modern FP, decreasingly slightly over time for both intervention and control groups. Intervention respondents' reported current modern FP use decreased from baseline to endline, 14% to 12% ($p=0.2868$), although this change was not significant. Trends in reported abstinence use decreased slightly among intervention respondents, from 39% to 33% baseline to endline, respectively.

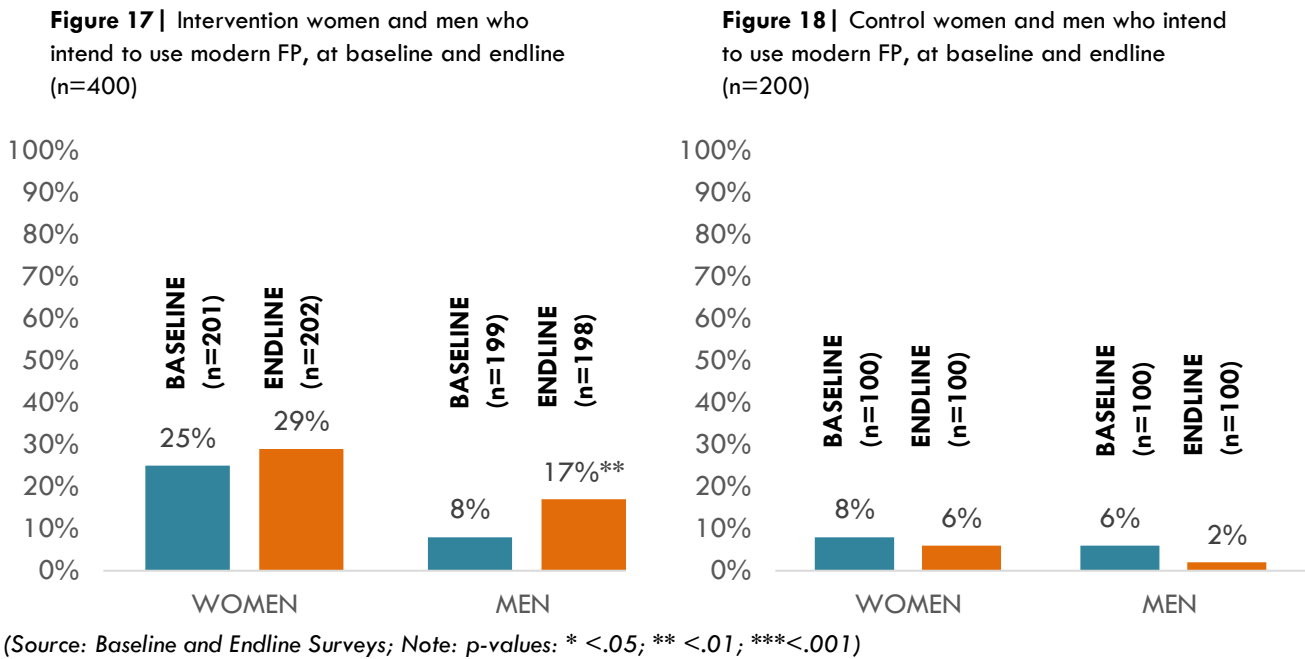
Table 16 | FP outcomes baseline to endline, among intervention and control groups (n=600)

FAMILY PLANNING USE MEASURES	INTERVENTION					CONTROL				
	Baseline		Endline		P-Value	Baseline		Endline		P-Value
	n=400	%	n=400	%		n=200	%	n=200	%	
Intends to use modern FP in next 3 months	66	16.5	92	23.0	0.0219	14	7.0	8	4.0	0.1882
Type of Method Intend to Use										
Male condom	13	3.3	20	5.0		4	2.0	1	0.5	
Female condom	0	0.0	0	0.0		0	0.0	0	0.0	
Pills	0	0.0	19	4.8		1	0.5	0	0.0	
Injectable	7	1.8	26	6.5		2	1.0	2	1.0	
Implant	14	3.5	16	4.0		1	0.5	0	0.0	
IUD	0	0.0	1	0.3		0	0.0	0	0.0	
Vasectomy	0	0.0	0	0.0		0	0.0	0	0.0	
Tubal ligation	0	0.0	1	0.3		0	0.0	0	0.0	
CycleBeads	0	0.0	1	0.3		0	0.0	0	0.0	
TwoDay Method	0	0.0	0	0.0		0	0.0	0	0.0	
LAM	32	8.0	8	2.0		6	3.0	5	2.5	
Withdrawal	1	0.3	0	0.0		2	1.0	0	0.0	
Abstinence	149	37.3	168	42.0		97	48.5	103	51.5	
Other	9	2.3	4	1.0		0	0.0	0	0.0	
Currently using modern FP	57	14.3	47	11.8	0.2868	23	11.5	17	8.5	0.3173
Type of FP Method Using										
Male condom	9	2.2	14	3.5		5	2.5	3	1.5	
Female condom	0	0	0	0.0		0	0.0	0	0.0	
Pills	1	0.3	4	1.0		0	0.0	0	0.0	
Injectable	5	1.3	3	0.8		0	0.0	0	0.0	
Implant	1	0.3	1	0.3		0	0.0	0	0.0	
IUD	0	0.0	0	0.0		0	0.0	0	0.0	
Vasectomy	0	0.0	0	0.0		0	0.0	0	0.0	
Tubal ligation	0	0.0	0	0.0		1	0.5	0	0.0	
CycleBeads	1	0.3	1	0.3		0	0.0	0	0.0	
TwoDay Method	0	0.0	0	0.0		0	0.0	0	0.0	
LAM	45	11.3	28	7.0		20	10.0	14	7.0	
Withdrawal	2	0.5	0	0.0		10	5.0	0	0.0	
Abstinence	157	39.3	131	32.8		93	46.5	96	48.0	
Other	4	1.0	0	0.0		1	1.0	0	0.0	

(Source: Baseline and Endline Surveys)

Table 16 above that the use of modern FP use decreased slightly from 14% to 12% among the intervention sample ($p=0.2868$). Sex-disaggregated data suggest that current use of modern FP reported by intervention women decreased from baseline to endline from 16% to 6%, respectively, and this decrease was mainly attributed specifically to decreased use of LAM over time (14% to 4%). Current use of modern FP by intervention men remained unchanged at 14% at both baseline and endline.

Figures 17 and 18, show trends in intention to use modern FP use by male and female respondents. Both women and men in intervention communities reported increased intent to use a modern FP method at endline. Approximately 25% to 29% of intervention women reported an intent to use modern FP from baseline to endline, respectively (p=0.3427). Among intervention men, 8% reported an intent to use a modern FP method at baseline, doubling significantly to 17% at endline (p=0.009). Intent to use modern FP was generally lower among control respondents, decreasing insignificantly from baseline to endline.



Self-efficacy to access and use FP

Table 17 shows the proportion of intervention and control respondents with high self efficacy to use and access FP (defined by mean score > 3.8) at baseline and endline, followed by the individual measures used to construct the self-efficacy score. Overall, both study arms reported high FP self-efficacy at baseline, increasing significantly from baseline to endline and in particular among the control group (intervention 62% to 69%; p=0.027; control 73% to 94%; p<0.0001). The individual measures show a high proportion of intervention and control respondents who agreed that they felt confident they could use a method correctly to delay or avoid pregnancy (intervention 88% to 90%; control 94% to 98%), and that they knew where to obtain a method of FP to delay or avoid pregnancy (intervention 80% to 86%; control 86% to 99%).

Table 17 | Self-efficacy to access and use FP at baseline to endline, among intervention and control groups (n=600)

	INTERVENTION					CONTROL				
	Baseline		Endline		P-Value	Baseline		Endline		P-Value
	n=400	%	n=400	%		n=200	%	n=200	%	
SELF-EFFICACY TO ACCESS AND USE FP SCORE										
% with high self-efficacy (mean > 3.8)	242	62.2	272	69.0	0.027	143	72.6	188	94.0	<.0001
SELF-EFFICACY MEASURES										
% who agree with following statements:										
I am confident I could use a method correctly all the time to delay or avoid pregnancy	350	87.7	359	89.8	0.316	187	93.5	197	98.5	0.011
I am confident I could use a method correctly all the time to delay or avoid pregnancy even if my partner disagrees	287	71.9	298	74.5	0.380	158	79.0	188	94.0	<.0001
I have the information I need to make a decision about whether to use FP if I wanted to delay or avoid pregnancy	324	81.2	342	85.5	0.088	180	90.0	197	98.5	<.0001
I know where to obtain a method of FP to delay or avoid pregnancy	322	80.7	344	86.0	0.037	172	86.0	198	99.0	<.0001

(Source: Baseline and Endline Surveys)

Sex-disaggregated data suggest that the high baseline ceiling effect and improvements were primarily due to the reports of male respondents. Among intervention men, 66% had high self-efficacy scores, compared to 82% at endline ($p=0.0003$), compared to 79% at baseline to 100% at endline for control men ($p<0.0001$).

Attitudes about FP

The proportion of intervention and control respondents with more positive attitudes about FP (defined by mean score > 2.9) increased significantly for both intervention and control respondents over time (intervention 70% to 92%; $p<0.0001$; control 86% to 95%; $p=0.001$). Among intervention respondents, 78% reported agreeing that FP methods are a way to continue the Karimojong way of life at baseline, increasing to 97% at endline. The majority of intervention and control respondents agreed that using FP methods is safe for a woman's health at both baseline and endline (intervention 93% to 97%; control 96% to 100%), while a larger proportion of intervention respondents agreed that it is acceptable that a women bring up the topic of FP with her husband (88% to 96% baseline to endline). Trends in FP attitudes from baseline to endline were similar between female and male respondents in respective intervention and control groups (data not shown).

Table 18 | Attitudes about FP at baseline to endline, among intervention and control groups (n=600)

	INTERVENTION					CONTROL				
	Baseline		Endline		P-Value	Baseline		Endline		P-Value
	n=400	%	n=400	%		n=200	%	n=200	%	
FP ATTITUDES SCORE										
% with more positive FP attitudes (mean > 2.9)	276	70.2	365	92.0	<.0001	168	85.7	189	94.5	0.001
FP ATTITUDES MEASURES										
% who agree with following statements:										
Using a FP method is safe for a woman's health	369	92.5	388	97.0	0.003	191	95.5	199	99.5	0.010
It is acceptable for a woman to bring up the topic of FP with her husband	349	87.5	385	96.3	<.0001	181	90.5	193	96.5	0.015
It is acceptable for a man to bring up the topic of FP with his wife	347	87.0	389	97.3	<.0001	185	92.5	198	99.0	0.001
FP methods are a way to continue the Karamoja culture and way of life	310	77.7	386	96.5	<.0001	190	95.0	196	98.0	0.103

(Source: Baseline and Endline Surveys)

Social Norms and Expectations about FP use

Table 19 shows respondent's perceptions of social norms and expectations of FP use among couples. The proportion of respondents who reported more supportive social expectations around FP use among couples (defined by mean score > 2.7) increased for both intervention and control groups, although control respondents were more likely to report supportive FP norms at both time points (intervention 62% to 81%; $p<0.0001$; control 73% to 99%; $p<0.0001$). At baseline, 74% of intervention respondents agreed with the descriptive social expectation that most couples in their community who want to prevent a pregnancy use a method of FP, increasing to 92% of respondents at endline (control 84% to 99%), while 80% to 95% of intervention respondents agreed that couples in their community who want to prevent pregnancy should use a method of FP from baseline to endline (control 82% to 100%).

Table 19 | Social norms around FP at baseline to endline, among intervention and control groups (n=600)

	INTERVENTION					CONTROL				
	Baseline		Endline		P-Value	Baseline		Endline		P-Value
	n=400	%	n=400	%		n=200	%	n=200	%	
FP SOCIAL NORMS										
% who report more supportive FP norms (mean > 2.7)	237	61.7	321	81.3	<.0001	143	72.6	197	98.5	<.0001
FP SOCIAL NORMS MEASURES										
% who agree with following statements:										
Most couples in my community who want to prevent pregnancy use family planning	297	74.4	368	92.0	<.0001	168	84.0	198	99.0	<.0001
Couples in my community who want to prevent pregnancy should use family planning	320	80.2	381	95.3	<.0001	164	82.0	199	99.5	<.0001
I should use a family planning method if I want to prevent pregnancy	339	85.0	370	92.5	0.001	189	94.5	199	99.5	<.0001

(Source: Baseline and Endline Surveys)

Additional analysis shows that an increasing proportion of intervention men reported more perceived supportive norms around FP over time, increasing from 53% to 76% from baseline to endline, respectively. However intervention women's reports remained unchanged over time.

Couple Communication about FP

As seen in Table 20, respondents in intervention communities reported increased partner communication about FP over time, relative to respondents in control communities. Approximately 58% of intervention respondents reported high communication with their partner about FP (both discussing FP in the last three months and feeling that their opinion is valued when discussing FP), increasing to 73% of intervention respondents at endline ($p<0.0001$). No significant improvements were found among the control group (74% baseline and endline; $p=0.4103$). More specifically, 60% to 74% of intervention respondents reported talking about FP with their partner in the last three months from baseline to endline respectively (control 75% to 78%). Within the intervention group, improvements in couple communication from baseline to endline were similar between female and male respondents (data not shown).

Table 20 | Couple Communication about FP at baseline to endline, among intervention and control groups (n=600)

	INTERVENTION					CONTROL				
	Baseline		Endline		P-Value	Baseline		Endline		
	n=367	%	n=344	%		n=196	%	n=189	%	
COUPLE COMMUNICATION ABOUT FP										
High communication	206	57.5	243	73.0	<.0001	140	74.1	140	74.1	0.4103
Low communication	131	36.6	88	26.4		46	24.3	42	22.2	
No communication	21	5.9	2	0.6		3	1.6	7	3.7	
COUPLE COMMUNICATION MEASURES										
% of respondents who report										
Feeling that their opinion is taken into account when talking about FP with their partner	327	89.3	326	94.8	0.006	185	94.4	174	92.1	0.364
Discussing FP to delay or avoid pregnancy with their partner in last 3 months	220	60.1	253	73.6	<.0001	146	74.5	148	78.3	0.378

(Source: Baseline and Endline Surveys; Note: restricted to respondents living with a partner)

Community Communication about Fertility Awareness and FP

Table 21 shows that both intervention and control respondents reported slightly higher community communicating about fertility awareness and FP from baseline to endline. About 14% of intervention respondents reported high communication with other in their community about fertility awareness and FP (talking about fertile days during the menstrual cycle with someone, correcting someone when they heard them saying something untrue about menstruation, and; when saying something untrue about FP methods) increasing to 25% of intervention respondents at endline ($p=0.0004$). Increases in high communication with others in the community were also found in the control group (from 8% to 25%; $p<0.0001$). While a larger proportion of respondents in intervention communities reported talking about fertile days and correcting something untrue about menstruation from baseline to endline, the proportion of intervention respondents correcting something untrue about FP methods stayed relatively the same at both time points (34%).

Table 21 | Community Communication about Fertility Awareness and FP at baseline to endline, among intervention and control groups (n=600)

	INTERVENTION					CONTROL				
	Baseline		Endline			Endline		Baseline		
	n=400	%	n=400	%	P-value	%	n=200	%	n=200	P-value
COMMUNITY COMMUNICATION ABOUT FERTILITY AWARENESS FP										
High communication	55	14.2	99	25.1	0.0004	16	8.3	49	24.9	<.0001
Moderate communication	36	9.3	30	7.6		12	6.2	0	0.0	
Low communication	97	25.0	68	17.2		24	12.4	9	4.6	
No communication	200	51.6	198	50.1		141	73.1	139	70.6	
COMMUNITY COMMUNICATION MEASURES										
% of respondents who report that in the last three months										
Talked about fertile days during the menstrual cycle with someone	111	27.8	163	40.8	<.0001	37	18.5	52	26.0	0.071
Corrected someone when heard them saying something untrue about menstruation	92	23.1	125	31.3	0.009	24	12.0	49	24.5	0.001
Corrected someone when heard them saying something untrue about FP methods	134	33.6	137	34.3	0.823	37	18.5	56	28.0	0.043

(Source: Baseline and Endline Surveys)

Difference-in-Difference Results: Intervention effect across time

Following the descriptive comparisons, bivariate and multivariate logistic regression models were conducted – using difference-in-difference estimation – to assess potential effect of living in an intervention community and experiencing improved fertility awareness and FP outcomes. The models assumed an intention to treat (ITT) approach, defining all respondents in intervention communities as “exposed” to intervention regardless of whether or not they attended a performance. The difference-in-difference estimation was used to estimate causality of the intervention since it not only compares an intervention group to a control group, but also controls for any time-variant factors from baseline to endline (that is controlling for any differences in outcomes over time due to non-intervention factors such as seasonality, migration, other NGO FP programs, etc.) While this approach aimed to understand community-wide effect, rather than individual effect, this approach generally results in a more conservative estimate of the treatment effect because it does not remove non-exposed community members from the analysis.

Multivariate logistic regression models were used reporting AORs, and controlled for significantly different at baseline and endline were controlled for in the model, including:

- Gender
- Age
- Education
- Employment
- Living with a marital partner
- Number of children

Tables 22 - 24 show the results of the adjusted regression models on fertility awareness and FP outcomes using the difference-in-difference estimation, controlling for time trends from baseline to endline between intervention and control groups. The results show the effect of living in an intervention community – regardless of whether a survey respondent attended a performance - on the likelihood of experiencing a high fertility awareness score, reporting current use of modern FP and intent to use modern FP. In each table, three separate effect variables are presented: 1. DID effect, or the likelihood of experiencing an outcome if living in an intervention community, controlling for time trends; 2. Time effect, or the likelihood of experiencing an outcome at endline, relative to baseline, and; 3. Intervention effect, or the likelihood of experiencing an outcome if intervention community, pooling both baseline and endline time points. Each of the three tables show results of three separate regression models: Model 1. Unadjusted and not controlling for other demographics or predictor variables; Model 2. Adjusted for significantly different demographic variables between intervention and control groups; Model 3. Adjusted for both demographic and secondary predictors (e.g. FP attitudes, FP self-efficacy, etc.)

Table 22 shows that respondents living in an intervention community were more than seven time more likely to have a high FA score, relative to those in control communities (aOR 7.3; $p<.0001$). The effect appears stronger when controlling for demographic variables (aOR 9.3; $p<.0001$), in addition to secondary outcome indicators (aOR 13.8; $p<.0001$). This is consistent with descriptive results showing that the proportion of respondents with high fertility awareness increased in both intervention and control communities, but significantly more so among intervention communities (15% to 75% baseline to endline in intervention; 30% to 53% in control). Predictors of high fertility awareness score included being older (aOR 1.3; $p<.0001$), and having higher levels of education (aOR 1.3; $p<.0001$), and having high communication with others in the community about fertility awareness and FP topics (aOR 1.7; $p<.0001$). Respondents reporting more supportive FP norms and expectations in their community were less likely to have a high FA score (aOR 0.63; $p=0.037$). Further regression modeling exploring heterogeneous effects among male and female respondents separately, show that both women and men had high fertility awareness scores when controlling for demographic variables, although the likelihood of having a high fertility awareness score were higher among intervention men (male aOR 19.0; $p<.0001$; female aOR 9.8; $p<.0001$).

Table 22 | Intervention effect on high fertility awareness, using difference-in-difference

	Fertility Awareness Unadjusted model 1		Fertility Awareness Adjusted demographics model 2		Fertility Awareness Adjusted demographics + predictors model 3	
	OR (95% CI)	P-value	aOR (95% CI)	P-value	aOR (95% CI)	P-value
Effect variables						
DID (<i>Time * Intervention</i>)	7.33 (4.21, 12.77)	<.0001	9.28 (5.21, 16.52)	<.0001	13.77 (7.17, 26.42)	<.0001
Time	2.64 (0.21, 0.51)	<.0001	2.56 (1.67, 0.52)	<.0001	2.39 (1.49, 3.84)	<.0001
Intervention	0.33 (1.75, 3.99)	<.0001	0.34 (0.22, 3.92)	<.0001	0.25 (0.15, 0.41)	<.0001
Sociodemographic variables						
Gender			1.00 (0.74, 1.36)	0.994	1.32 (0.92, 1.90)	0.131
Age			1.25 (1.10, 1.42)	<.0001	1.26 (1.10, 1.46)	0.001
Education			1.32 (1.14, 1.52)	<.0001	1.16 (0.99, 1.37)	0.075
Employment			1.08 (0.79, 1.47)	0.636	0.92 (0.64, 1.33)	0.674
Has child/ren			0.96 (0.89, 1.05)	0.387	0.94 (0.86, 1.04)	0.225
Living with a partner			0.44 (0.27, 0.73)	0.002	--	--
Predictor variables						
Current modern FP use					1.23 (0.76, 1.98)	0.392
FP self-efficacy					1.08 (0.72, 1.62)	0.700
FP attitudes					1.55 (0.89, 2.69)	0.118
FP norms					0.63 (0.41, 0.97)	0.037
Couple communication about FP					0.86 (0.62, 1.19)	0.354
Community communication about FA and FP					1.70 (1.46, 1.98)	<.0001
Number observations	n=1,200		n=1,200		n=1,016	

(Source: Baseline and Endline Surveys; Note: Living with a partner variable omitted from Model 3 due to multicollinearity with couple communication about FP variable)

As seen in Table 23 respondents in intervention communities were approximately three times more likely to intend to use a modern FP method, and this effect was significant (aOR 3.11; p=0.026). This effect is consistent with descriptive data showing a proportional increase in intent to use modern FP from 17% to 23% baseline to endline among intervention respondents. The results show a number of sociodemographic predictors of modern FP use intentions, including gender (aOR 2.5; p<.0001), age (aOR 0.65; p<.0001), education (aOR 1.5; p<.0001) and having formal employment (aOR 2.8; p<.0001). Further regression models explored gendered differences in modern FP use intent (data not shown here) and showed that likelihood of reporting an intent to use a modern FP method was statistically significant and strong among men in intervention community (aOR 8.5; p= 0.032), but not women (aOR 2.0; p=0.332). The results suggest that having high self-efficacy to use FP and community

communication about fertility awareness and FP are also significantly associated with intending to use modern FP (aOR 3.8; $p<0.0001$; aOR 1.3; $p=0.006$).

Table 23 | Intervention effect on intent to use modern FP, using difference-in-difference

	Intent to use modern FP Unadjusted model 1		Intent to use modern FP Adjusted demographics model 2		Intent to use modern FP Adjusted demographics + predictors model 3	
	OR (95% CI)	P-value	aOR (95% CI)	P-value	aOR (95% CI)	P-value
Effect variables						
DID (<i>Time * Intervention</i>)	2.72 (1.04, 7.10)	0.041	3.11 (1.14, 8.46)	0.026	3.67 (1.24, 10.91)	0.019
Time	0.55 (0.23, 1.35)	0.194	0.42 (0.17, 1.05)	0.064	0.31 (0.12, 0.85)	0.022
Intervention	2.63 (1.44, 4.82)	0.002	2.01 (1.06, 3.78)	0.032	1.95 (0.98, 3.89)	0.057
Sociodemographic variables						
Gender			2.51 (1.64, 3.86)	<.0001	4.11 (2.46, 6.88)	<.0001
Age			0.65 (0.54, 0.78)	<.0001	0.67 (0.54, 0.82)	<.0001
Education			1.47 (1.25, 1.72)	<.0001	1.42 (1.17, 1.73)	<.0001
Employment			2.82 (1.86, 4.30)	<.0001	2.53 (1.55, 4.11)	<.0001
Has children			1.09 (0.96, 1.23)	0.193	1.06 (0.92, 1.22)	0.429
Living with a partner			2.23 (1.35, 3.68)	0.002	--	--
Predictor variables						
High fertility awareness					0.89 (0.54, 1.48)	0.656
FP self-efficacy					3.84 (2.25, 6.55)	<.0001
FP attitudes					0.55 (0.30, 1.02)	0.056
FP norms					1.29 (0.74, 2.25)	0.367
Couple communication about FP					1.13 (0.74, 1.72)	0.568
Community communication about FA and FP					1.29 (1.08, 1.54)	0.006
Number observations	n=1,199		n=1,199		n=1,016	

(Source: Baseline and Endline Surveys; Note: Living with a partner variable omitted from Model 3 due to multicollinearity with couple communication about FP variable)

The regression results in Table 24 show that respondents in intervention communities were no more likely to use modern FP than those in control communities (aOR 1.1; $p=0.797$). These results are consistent with the descriptive results showing that use of modern FP stalled at about 14% to 12% among the intervention sample over time. Both age and education were significantly associated with current modern FP use: those younger were more likely to be using a modern of FP (aOR 0.84; 0.046), in addition to those with higher levels of education (aOR 1.2; $p=0.037$). Interestingly, having more positive attitudes about FP were inversely associated with current use of modern FP (aOR 0.4; $p=0.004$).

Table 24 | Intervention effect on current modern FP use between intervention and control groups and across time, using difference-in-difference estimation

	Current modern FP use Unadjusted model 1		Current modern FP use Adjusted demographics model 2		Current modern FP use Adjusted demographics + predictors model 3	
	OR (95% CI)	P-value	aOR (95% CI)	P-value	aOR (95% CI)	P-value
Effect variables						
DID (<i>Time * Intervention</i>)	1.12 (0.51, 2.44)	0.780	1.11 (0.50, 2.45)	0.797	1.28 (0.54, 3.01)	0.579
Time	0.71 (0.37, 1.38)	0.319	0.72 (0.37, 1.40)	0.330	0.61 (0.31, 1.23)	0.167
Intervention	1.28 (0.76, 2.15)	0.345	1.23 (0.72, 2.07)	0.448	1.09 (0.61, 1.92)	0.779
Sociodemographic variables						
Gender			1.00 (0.67, 1.48)	0.982	1.14 (0.74, 1.76)	0.547
Age			0.84 (0.71, 1.00)	0.046	0.87 (0.73, 1.04)	0.133
Education			1.19 (1.01, 1.39)	0.037	1.14 (0.95, 1.37)	0.153
Employment			0.90 (0.60, 1.35)	0.616	0.70 (0.44, 1.09)	0.117
Has children			1.11 (1.00, 1.23)	0.055	1.10 (0.99, 1.23)	0.090
Living with a partner			0.88 (0.46, 1.69)	0.697	--	--
Predictor variables						
High fertility awareness					1.25 (0.78, 2.00)	0.350
FP self-efficacy					1.59 (0.97, 2.60)	0.067
FP attitudes					0.44 (0.25, 0.77)	0.004
FP norms					1.50 (0.90, 2.51)	0.124
Couple communication about FP					0.97 (0.66, 1.43)	0.871
Community communication about FA and FP					1.13 (0.95, 1.34)	0.163
Number observations	n=1,199		n=1,199		n=1,016	

(Source: Baseline and Endline Surveys; Note: Living with a partner variable omitted from Model 3 due to multicollinearity with couple communication about FP variable)

2. EXPOSURE LEVEL RESULTS AT ENDLINE

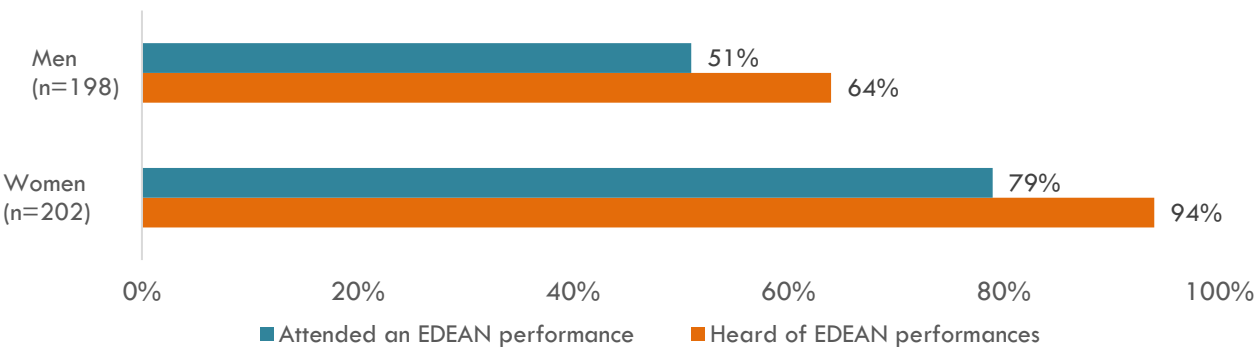
Following the community-level analyses, exposure level analyses were conducted on the endline sample only to better understand individual-level associations between exposure to a performance and likelihood of experiencing higher fertility awareness and positive FP outcomes. This secondary analysis was conducted since the above ITT community-level analysis considered all community members in intervention communities exposed to the intervention regardless of whether or not they attended a performance. The exposure level analysis is a more targeted analysis approach, but only uses endline data since no one was exposed at baseline. As a result, associations between EDEAN exposure and outcomes did

not take into account any temporal baseline to endline effects outside of the intervention, and is a less robust estimation method to attribute causality. For this section, those exposed to at least one performance were considered “viewers,” and non-exposed as “non-viewers.”

Community Exposure to EDEAN Performances

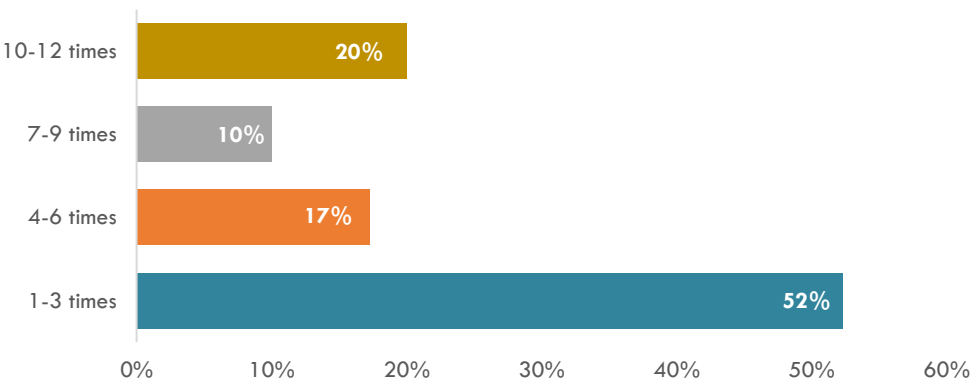
As seen in Figure 19, almost all women (94%) and two-thirds of men (64%) had heard about the EDEAN performances in intervention communities and more female respondents in the intervention communities viewed the performances than men (79% and 51%, respectively).

Figure 19 | Exposure to EDEAN performances at endline, by intervention men and women (n=400)



The number of performances attended was similar for men and women. As reflected in Figure 20, half of the participants viewed two to three performances (52%), while 1/5 went 10 to 12 times (20%).

Figure 20 | Frequency of EDEAN performance attendance among exposed participants (n=260)



(Source: Endline Survey)

Association between viewing performances and key FA/FP outcomes

Table 25 shows aOR results from logistic regression models comparing viewers versus non-viewers (viewers defined as having attended at least one performance) for the total endline

sample; female sample (female viewers vs. female non-viewers at endline); male sample (male viewers vs. male non-viewers at endline); 15-25 year old sample (15 – 25 year old viewers vs. 15-25 year old non-viewers at endline), and so forth with higher age categories.

The results show that individuals who viewed the theatre performances were more than twice as likely to have higher fertility awareness (aOR=2.52; $p<.0001$), compared to non-viewers. Relative to non-viewers, performance viewers were more than five times more likely to report intent to use modern FP (aOR=5.68; $p<.0001$), and twice more likely to report current modern FP use (aOR=2.02; $p=0.007$), the latter of which was mainly attributed to exposed men's reported use of condoms. Women's reports of current modern FP use were similar and insignificant among female viewers and non-viewers. At endline, approximately 21% of women viewers compared to 35% of non-viewers reported use of abstinence as method of FP. Qualitative findings suggest that while some women and men knew of peers going to health services to seek more information about FP after performances, others reported that peers continued use of post-partum abstinence practices (sleeping in different houses until the child is about eight months).

Associations between viewing at least one performance and key fertility awareness and FP outcomes were stronger for younger individuals: viewers between the ages of 15 to 25 years were 4 times more likely to report current modern FP use (aOR 4.05; $p=.028$), and 10 times more likely to report intent to use modern FP (aOR 10.08; $p<.0001$), than 15-25 year old non-viewers.

Table 25 | Adjusted logistic regression results for fertility awareness and FP, by sex and age

	Total aOR (n=600)	Female aOR (n=302)	Male aOR (n=298)	15-25 yrs aOR (n=231)	26 – 35 yrs aOR (n=236)	36+ yrs aOR (n=133)
High fertility awareness (score > 8)	2.52 (1.66, 3.82) $p<.0001$	2.23 (1.29, 3.86) $p=0.0042$	2.48 (1.20, 5.09) $p=.0135$	2.31 (1.18, 4.49) $p=0.0141$	2.28 (1.14, 4.56) $p=0.0203$	3.31 (1.06, 10.33) $p=0.0392$
Current modern FP use	2.02 (1.12, 3.66) $p=0.0066$	1.19 (0.44, 3.18) $p=0.7318$	2.84 (1.25, 6.44) $p=0.0127$	4.05 (1.17, 14.09) $p=0.0278$	1.62 (0.66, 3.97) $p=0.2879$	1.35 (0.28, 6.59) $p=0.7074$
Intent modern FP use in next 3 months	5.68 (3.04, 10.61) $p<.0001$	6.58 (2.87, 15.08) $p<.0001$	8.06 (2.51, 25.91) $p=0.0005$	10.08 (3.93, 25.86) $p<.0001$	2.92 (1.08, 7.86) $p=0.0342$	8.20 (0.54, 124.56) $p=0.1297$

(Source: Endline Surveys; p -values: * $<.05$; ** $<.01$; *** $<.001$; model adjusted for age, employment, education, living with partner, having children)

Logistic regression models were also conducted on the same key fertility awareness and FP outcomes, but restricted to individuals in the sample **who desire to prevent pregnancy** (see Annex 5). Desire to prevent pregnancy was assessed by asking respondents "do you want to get pregnant in the next 12 months?" Any respondent answering "no" was considered to have a desire to prevent a pregnancy. In total, 74.7% of the endline sample reported a desire to prevent a pregnancy (n=448); these proportions were similar when segmenting male and female respondents. The results show that among those who desire to prevent a pregnancy, viewers were more than twice as likely to have a high fertility awareness score, relative to non-viewers (aOR 2.66; $p=0.0002$). Male viewers were 14 times more likely to report intent to use a

modern FP method relative to male non-viewers (aOR 14.38; p=0.0215), while 15-25 year old viewers were 22 times more likely to report an intent to use modern FP, relative to non-viewers of the same age range (aOR 22.16; p=0.0005).

Table 26 below shows associations between viewing at least one performance and other outcomes, such as self-efficacy to use FP and health seeking behaviors, among others. The results show that individuals who viewed the theatre performances close to six times more likely to seek information about FP from a health worker (aOR 5.79; p<.0001), and; significantly less likely to report that modern FP methods cause side effects when asked what they had heard about modern FP methods (aOR 0.16; p<.0001), compared to non-viewers. The segmented sex and age analysis suggest that performances had differential impacts on different viewers: associations were significantly stronger for those 15-25 years old, relative to older age groups. Across gender, female viewers were more likely to report higher partner communication about FP and community communication about menstruation and fertility, relative to unexposed (aOR 8.07; p<.0001).

Table 26 | Adjusted logistic regression analysis results for secondary outcomes, by age and sex

	Total aOR (n=600)	Female aOR (n=302)	Male aOR (n=298)	15-25 yrs aOR (n=231)	26 – 35 yrs aOR (n=236)	36+ yrs aOR (n=133)
High FP self-efficacy	0.81 (0.52, 1.28) p=0.3643	0.46 (0.26, 0.81) p=0.0071	6.49 (1.93, 21.85) p=0.0025	1.72 (0.78, 3.80) p=0.1789	0.75 (0.36, 1.58) p=0.4533	0.36 (0.11, 1.17) p=0.0889
Sought info about FP from health worker in last 3 months	6.04 (3.47, 10.51) p<0.0001	3.26 (1.58, 6.73) P=0.0014	11.68 (4.69, 29.11) p<0.0001	5.97 (2.36, 15.09) p=0.0002	6.38 (2.604, 15.63) p<.0001	5.55 (1.38, 22.37) p=0.0159
FP methods help prevent pregnancy	4.99 (2.60, 9.56) p<.0001	19.09 (6.51, 56.03) P<.0001	0.60 (0.20, 1.81) p=0.3639	10.07 (2.70, 37.62) p=0.0006	2.97 (1.20, 7.30) p=0.0176	6.02 (0.96, 37.80) p=0.0554
FP methods cause side effects	0.25 (0.14, 0.44) p<.0001	0.10 (0.05, 0.20) <.0001	----- ¹	0.54 (0.22, 1.33) p=0.1820	0.12 (0.04, 0.37) p=0.0002	0.12 (0.02, 0.69) p=0.0182
High FP attitudes	1.18 (0.58, 2.37) p=0.6514	1.14 (0.50, 2.63) p=0.7570	2.19 (0.49, 9.78) p=0.3058	1.68 (0.63, 4.49) p=0.3001	0.70 (0.20, 2.46) p=0.5774	1.93 (0.11, 34.91) p=0.6554
High support for FP social norms score	1.17 (0.66, 2.08) p=0.5823	0.51 (0.21, 1.22) p=0.1278	2.48 (0.96, 6.45) p=0.0621	0.90 (0.35, 2.28) p=0.8209	2.18 (0.83, 5.68) p=0.1125	0.59 (0.12, 3.03) p=0.5308
High FP communication with partner	2.33 (1.44, 3.74) p<.0001	2.56 (1.41, 4.68) p=0.0021	1.97 (0.91, 4.25) p=0.0853	2.94 (1.37, 6.33) p=0.0037	3.98 (1.58, 10.04) p=0.0034	1.43 (0.51, 4.00) p=0.4981
High communication on fertility awareness and FP with community	4.15 (2.79, 6.18) p<.0001	8.07 (4.08, 15.98) p<.0001	2.57 (1.48, 4.47) p=0.0008	5.07 (2.69, 9.54) p<.0001	3.89 (2.00, 7.58) p<.0001	3.56 (1.23, 10.29) p<.0189

(Source: Endline Surveys; p-values: * <.05; ** <.01; ***<.001; model adjusted for age, employment, education, living with partner, having children)

¹ aOR not shown since no unexposed men (0) responded this answer affirmatively / negatively

3. ASSOCIATION BETWEEN HIGH FERTILITY AWARENESS AND FP USE

The relationship between high fertility awareness and modern FP use within the endline sample was explored, using contingency tables with chi square tests. Any statistically significant associations were followed by OR calculation to determine the odds of experiencing an FP outcome based on a high fertility awareness score. This process was repeated for the composite high fertility awareness score and the 14 individual fertility awareness measures (for each question answered correctly).

There were no significant associations between having an overall high fertility awareness score and current modern FP use nor intent to use modern FP, respectively. However, a few significant associations were observed for individual fertility awareness measures and current modern FP use (1 measure), and intent to use modern FP (4 measures).

As seen in Table 27, respondents who correctly identified the fertile window were twice more likely to use a current modern FP method relative to those who identified the fertile window incorrectly (OR 2.02; $p=0.0491$).

Table 27 | Odds of current modern FP use, by correct knowledge of fertile window (n=600)

	Current FP Use	
	Odds Ratio (95% CI)	P-value
A woman is most likely to get pregnant if she has unprotected sex halfway between two menstrual cycles	2.02 (1.00, 4.08)	0.0491

(Source: Endline Surveys; p-values)

Table 28 shows significant associations between individual measures and intent to use a modern FP method in the next three months. Answering the following three measures correctly were all statistically significantly associated with an increased likelihood of intent to use modern FP: 1. healthy vaginal secretions are a sign of fertility (OR 3.23; $p<.0001$), 2. Vaginal secretions come during the middle of the menstrual cycle (OR 2.14; $p=0.0017$), and; 3. Men are fertile every day (OR 4.82; $p<.0001$). Interestingly, respondents who knew that most menstrual cycles last between 26 to 32 days were half as likely to intend to use modern FP, relative to those who did not answer the question correctly (OR 0.49; $p=0.0078$).

Table 28 | Odds of intent to use modern FP, by fertility awareness individual measures (n=600)

	Intent to use FP	
	Odds Ratio (95% CI)	P-value
Other than sexual arousal healthy vaginal secretions are a sign of fertility	3.23 (1.89, 5.52)	<.0001
Vaginal secretions come during the middle of the menstrual cycle	2.14 (1.33, 3.45)	0.0017
Men are fertile every day	4.82 (2.73, 8.49)	<.0001
Most menstrual cycles last between 26 to 32 days	0.49 (0.28, 0.83)	0.0078

(Source: Endline Surveys)

LESSONS LEARNED ABOUT EFFECTIVENESS

EDEAN led to higher fertility awareness among performance viewers and the community at large. The pilot results strongly suggest that surveyed respondents in intervention communities had increased fertility awareness – that is knowledge about male and female fertility, pregnancy risk, and fertile window - relative to respondents in the control community. The community-level effect was strong among both male and female respondents, even when including non-compliers in the intervention sample (those who did not attend the performances) into the modeling analyses. Beyond the community level effect, having high fertility awareness was also significantly and positively associated with performance viewing. These findings suggest that the peer learning and community theatre can not only increase fertility awareness among those who viewed the performances, but also among others at the community-at-large, regardless of performance viewing. The findings highlight that community communication about fertility awareness and FP was significantly associated with having a high fertility awareness score, suggesting that communication and diffusion of the performance messages may have enabled the community-wide improvement in fertility awareness.

Intent to use modern FP can be generated through a peer learning and community theatre model in Karamoja. Increases in intent to use modern FP were reported from baseline to endline among participants in intervention communities, relative to those in control communities. The community-level results were further corroborated by the post-exposure level results which showed that participants who viewed the performances, especially women and youth between 15-25 years old, were more likely to intend to use modern FP than those who did not view the performances. These results suggest an increased demand for modern FP methods as a result of the performances, circling back to the region's need to find effective communication channels to increase demand for FP services and methods. As well, the findings suggest significant positive associations between education and employment and current modern FP use. Programs and investments focused on increasing education and employment opportunities, while also integrating fertility awareness and FP information, in Karamoja could also potentially improve overall FP outcomes in the region.

In settings with low use of FP services like Karamoja, demand generation activities like community theatre need to be paired with strong service delivery platforms to enable behavior change from *intent* toward *use* of modern FP methods. The gap between participants' high reports of intent to use a modern FP method, relative to their low current FP use, suggest that SBC demand generation activities focused on fertility awareness and FP may need to be paired with strong service delivery platforms. The community level findings show mixed results on current use of modern FP. While intervention women had increased odds of using a current modern method of FP at endline, current modern FP use was still low at approximately 6%. The majority of female and male respondents continued to use periodic abstinence as a main method of modern FP use. The limited effect on current modern FP use

is not surprising given that as a pilot intervention, the length of implementation was limited to 6 months.

EDEAN performances resonated with women and men in hard to reach communities. At endline, close to 7 out of 10 women in intervention communities had attended the performances, compared to 5 out of 10 men. The vast majority of women and men had also heard of the performances (79% and 64% respectively). The results suggest that that women who attended several performances (four or more) had higher fertility awareness scores and higher intent to use modern FP, compared to those who attended few performances (one to three). The finding that male viewers benefitted equally, regardless of their performance dosage, suggest that a low intervention dosage (one to three performances) may be enough to engage men in intervention activities and improve their fertility awareness and related FP outcomes.

Several fertility awareness indicators were associated with FP outcomes. Four of the 14 individual fertility awareness knowledge-based questions had a positive association with intent to use modern FP. These included measures related to male fertility (men are fertile every day) and female fertility (vaginal secretions are a sign of fertility; secretions come during the middle of the menstrual cycle). One measure related to pregnancy risk (a woman is most likely to get pregnant if she is fertile “for several days” halfway between two periods she has unprotected sex halfway between two menstrual cycles) was associated with higher modern FP use. The refinement of the exact body of fertility awareness questions is still under development. However based on the EDEAN data, no significant associations were found between having a high fertility awareness score (defined as answering more than 8 out of 14 fertility awareness questions correctly) and current modern FP use, nor intent to use modern FP.

Future research is needed among other populations to confirm and ascertain a fertility awareness and FP association. In the case of Karamoja, the FACT project purposely intended to work among a very hard to reach group with very low modern FP use. While lack of knowledge of fertility and pregnancy risk may be a key barrier to using modern FP in Karamoja, not surprisingly qualitative and process data suggest that structural access and lack of facility-based services, among other strong socio-gender normative factors may also be contributing to the low modern FP use. For instance, at the time of the endline data collection, Marie Stopes clinics - often the sole source of FP methods in Karimojong communities - had closed down in the region. Further research may be needed among populations with higher levels of current modern FP use to ascertain associations between fertility awareness and FP use, and the intra-relationships of FA, and other secondary outcomes, such as social norms, self-efficacy and partner communication about FP.

Further research is needed to assess community-level impact of the peer learning and community theatre model. Significant improvements fertility awareness and FP-related outcomes were experienced among control communities, suggesting potential spillover effects and messaging diffusion among neighboring communities. This finding is not surprising

given the migratory movements of Karimojong community members. While the suggested diffusion of EDEAN messaging is promising, the spillover effects limited the potential to isolate a community-level intervention impact, using difference-in-difference analysis, on fertility awareness and FP outcomes. In response to these study limitations, the study attempted to generate exposure-level associations between performance exposure and fertility awareness and FP outcomes, and found significant strong associations across gender and age groups. If this proof of concept peer learning and community theatre model is brought to larger scale, alternative research design may be needed to isolate a community-level intervention impact.

CONCLUSION

So What?

CONCLUSION AND RECOMMENDATIONS

The EDEAN proof of concept evaluation results suggest that hard to reach Karimojong communities are, in fact, ready and willing to use modern FP methods to improve the health and well-being of their families, if investments in health and FP services can be increased in the region. The quantitative and qualitative evaluation results are promising, with potential for future adaptation and scale. If coupled with strong service delivery platforms and community engagement activities, the peer learning and community theatre model has potential to achieve improvements in FP use and creating an enabling environment for FP among hard to reach populations. Key take away points and recommendations are highlighted below.

KEY TAKE AWAYS

- **Feasibility.** Trained, low literate peer moderators are able to learn and deliver correct FA/FP messages, follow their moderator manual guidelines and ensured overall messaging fidelity. Messages about fertility awareness and FP were equally well understood by audience members attending the performances. The feasibility of the EDEAN peer learning and community theatre approach suggest that the model could be scaled up beyond a proof of concept phase, although considerations for scale include volunteer retention and necessary imaging and text adaptations for other contexts.
- **Acceptability.** EDEAN is acceptable in the communities and by the leaders including service providers. Engaging influential reference groups - and in the case of Karamoja, specifically community elders – was key in generating demand and acceptability of the performances and reflection of taboo and sensitive topics. Messages about fertility awareness and FP were widely diffused throughout the communities, and messages about couple communication appeared to be the most relevant and valuable skills shared by interviewed community members. As well, a key component of fertility awareness is the ability to apply this information to one's own life. The findings suggest that community members were interested in applying fertility awareness and FP messages to their own lives. Their interest needs to be supported with effective counseling and increased access to modern FP methods.
- **Effectiveness.** The peer learning and community theatre approach, combined with community engagement activities, is effective in increasing FA, and increasing intent to use FP. However, the gap between participants' high reports of intent to use a modern FP method, relative to their low current FP use, suggest that SBC demand generation activities focused on fertility awareness and FP may need to be paired with strong service delivery platforms and linkages to increase FP uptake. Future scale-up and/or adaptation efforts should ensure that the peer learning and community theatre model is paired with strong service delivery linkages and platforms.

RECOMMENDATIONS

The EDEAN model has potential to be adapted and implemented at larger scale, if combined with a strong service delivery component. Recommendations for both future programming and research are below.

Recommendations for Programming at Scale

- Stronger linkages with health facilities are needed to increase modern FP use. As a community group engagement approach intended to function outside the health system, EDEAN did not directly provide FP services, rather FP invitation cards were used to link those interested in FP methods to health facilities. For future adaptations, health providers and community health workers (CHWs) could be engaged more actively, by attending performances and providing FP information at those performances.
- Ensure appropriate community engagement is a part of the peer learning and community theatre model. Both CMCs and community leaders were key in ensuring the acceptability and feasibility of the project, and future adaptations or replications will need to ensure that key community engagement activities are part of the intervention model.
- Ensure that monthly reflection meetings are integrated into the model for Peer Moderators to strengthen content, facilitation and theatre skills especially on sensitive and more technical topics like fertility and FP, while also keeping in mind training burden. Ensure that CDOs – or identified trainers - supporting the peer moderators especially when Peer Moderators may be underperforming.
- Considerable attention should be paid to gendered power dynamics during training, and routine monitoring and supervision. Given the firm gender and social roles and structures in Karimojong society, observations showed that ensuring equitable participation and discussion about taboo topics among men and women could be challenging. Future activities should continue to be conducted in a gender-synchronized approach in order to ensure participatory and equitable discussion during same- and mixed-sex meetings.
- Address and discuss issues of incentives and other expectations that can affect the project attendance and participation at the beginning of the project. Explicit discussions are warranted to emphasize that there are no additional incentives for Peer Moderators and Peer Group Members.
- The EDEAN activities and audiences may need further segmentation. Other strategic approaches should be explored to increase the participation of adolescents in the community theatre performances. As well, the EDEAN activities should be synchronized according to the local context. In particular the FP module may need to be taught earlier on in the intervention activities sequence.
- When teaching the menstrual cycle game, ensure that enough focus is given to sharing and understanding information about menstrual cycle regularity and the benefits and limitations of using the menstrual cycle information as a way to prevent pregnancy. As well, the presence of a health provider during intervention activities such as the menstrual cycle

game could help emphasize the presence of FP methods and services at nearby health facilities.

Recommendations for Future Research:

- The proof of concept evaluation did not collect quantitative data related to IPV, yet the qualitative data suggest that reductions in couple conflict as a result of couple communication may have occurred. Further quantitative research could be conducted to better understand linkages between couple communication - as incorporated in the peer learning and community theatre model – and reduction of family violence especially in post-conflict contexts like Karamoja.
- Increased attention is being given to better understanding intervention dosage and segmented impacts of SBC interventions. The evaluation results confirmed that the peer learning and community theatre model had differential associations on male versus female, and young versus older exposed participants. However, as a less-resource intensive proof of concept evaluation, the sample design was not powered enough to identify and attribute different intervention impacts across different population segments. Further research should test and confirm the associations found in this evaluation, including for instance, the differences in dosage comparisons between men (no differences between going to a few versus many performances) and women (women attending more performances were more likely to have improved outcomes).
- Finally, we conducted fertility awareness and FP tests of associations to test the FACT hypothesis that increased fertility awareness leads to increased FP use. Our findings found a few associations between intent to use modern FP and limited number of fertility awareness methods. However, the relative low prevalence of modern FP use in the region (about 7%), limited the ability to find robust associations. Future research should be conducted on populations with more prevalent modern FP use to better understand associations between fertility awareness and FP, and other associated secondary factors.

The FACT Project begun work in the Karamoja region in 2014 in recognition of the potential challenges ahead in working with one of the most excluded and marginalized communities of Uganda. Four years later - and with the efforts of the communities and implementation stakeholders along the way - the proof of concept findings today suggest that Karimojong are interested and would like to learn more about modern FP methods, and that the theatre model is an appropriate vehicle to increase the demand, in combination with strong FP service delivery and platforms.

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ANNEX 1. FACT EDEAN RESOURCES

1. EDEAN [Website and Resources](#)
2. EDEAN [Solution Brief](#)
3. EDEAN [Micro Documentary Video](#)
4. EDEAN [Formative Research Report](#)
5. EDEAN Blog ["In EDEAN, Youth Leaders Create a Space to Reflect on Fertility and Family Planning"](#)
6. EDEAN Blog ["Through EDEAN, Communities "Come Together to Strengthen Child Spacing"](#)
7. EDEAN [Evaluation Tools](#)

ANNEX 2. INTERVENTION TABLES

Table 29 | Profiles of Peer Moderators

SEX	AGE	EDUCATION	MARITAL STATUS	OCCUPATION	RELATIONSHIP WITH ECCD	PREVIOUS COMMUNITY EXPERIENCE
Peer Moderator Pair 1						
Male	25	Secondary	Married	Farmer	None	Coordinating group events, facilitating activities in the community and mobilize for group events
Female	20	None	Married	None	None	None
Peer Moderator Pair 2						
Male	25	Primary	Single	Farmer	None	Mobilize for group events
Female	19	Primary	Married	Moderator	Supervising members	Supervising or mentoring members, mobilize for group events
Peer Moderator Pair 3						
Male	22	Completed high school	Married	Business man	Translating speeches to visitors, mobilizing community for the ECCD activities, built the pit latrine for the center	Coordinating group events, supervising or mentoring members, mobilizing for group events, facilitating activities in the community
Female	30	Primary	Married	Lead mother	None	Mobilizing for group events, preparing reports.
Peer Moderator Pair 4						
Male	28	Secondary	Married	Business man	Participated in the building of the ECCD center and built the stands for the children to play	Coordinating group events, supervising or mentoring members and mobilizing for group events
Female	28	Secondary	Married	None	None	None
Peer Moderator Pair 5						
Male	24	Secondary	Married	Farmer	Participated in the construction of the ECCD center	Coordinating group events, supervising or mentoring members, mobilizing for group events and facilitating activities in the community
Female	22	Primary	Married	None	None	Coordinating group events
Peer Moderator Pair 6						
Male	23	Secondary	Single	Teacher	None	Mobilizing for group events and facilitating activities in the community
Female	20	Secondary	Married	Moderator	Mobilizing community members for meetings and conduct outreach in communities.	Supervising or mentoring members and mobilizing for the group events

Table 30 | EDEAN Schedule of Activities

WEEK #	ACTIVITY
Week 1	Training of Trainers (ToT) #1 (3 Days) <u>Topics:</u> Couple Communication and Menstruation
Week 2	Training of Peer Moderators #1 (5 Days) <u>Topics:</u> Couple Communication and Menstruation
1. COUPLE COMMUNICATION MODULE	
Week 3	Couple Communication Single Sex Peer Group Meeting
Week 4	Couple Communication Mixed Sex Peer Group Meeting
Week 5	Couple Communication Storyline 1 Theatre Rehearsal and Performance
Week 6	Couple Communication Storyline 2 Theatre Rehearsal and Performance
Week 7	Couple Communication Create Your Own Drama! Theatre Rehearsal and Performance
Week 8	Reflection Meetings
2. MENSTRUATION MODULE	
Week 9	Menstruation Single Sex Peer Group Meeting
Week 10	Menstruation Mixed Sex Peer Group Meeting
Week 11	Menstruation Storyline 1 Theatre Rehearsal and Performance
Week 12	Menstruation Storyline 2 Theatre Rehearsal and Performance
Week 13	Menstruation Create Your Own Drama! Theatre Rehearsal and Performance
Week 14	Reflection Meetings
Week 15	TOT #2 (3 Days)
Week 16	Training of Peer Moderators #2 (5 Days)
3. FERTILITY MODULE	
Week 17	Fertility Single Sex Peer Group Meeting
Week 18	Fertility Mixed Sex Peer Group Meeting
Week 19	Fertility Storyline 1 Theatre Rehearsal and Performance
Week 20	Fertility Storyline 2 Theatre Rehearsal and Performance
Week 21	Fertility Create Your Own Drama! Theatre Rehearsal and Performance
Week 22	Reflection Meetings
4. FAMILY PLANNING MODULE	
Week 23	Family Planning Single Sex Peer Group Meeting
Week 24	Family Planning Mixed Sex Peer Group Meeting
Week 25	Family Planning Storyline 1 Theatre Rehearsal and Performance
Week 26	Family Planning Storyline 2 Theatre Rehearsal and Performance
Week 27	Family Planning Storyline 3 Theatre Rehearsal and Performance
Week 28	Family Planning Create Your Own Drama! Theatre Rehearsal and Performance
Week 29	Final Reflection Meeting and Community Celebration

ANNEX 3. EVALUATION METHODS TABLES

Table 31 | Household survey sample

ECCD Center Catchment Area			
	FEMALE	MALE	TOTAL
Intervention			
Nadunget Sub-County, Moroto District			
1. Nangorit ECCD (2 villages)			
2. Nachele ECCD (2 villages)	100	100	200
Ngoleriet Sub-County, Napak District			
3. Nagule angolol ECCD (2 villages)			
4. Longariama ECCD (3 villages)			
5. Narongor ECCD (2 villages)	100	100	200
TOTAL (I)	200	200	400
Control			
Rupa Sub-county, Moroto District			
6. Rupa ECCD (4 villages)	100	100	200
TOTAL (I + C)	300	300	600

Table 32 | Construction of Outcome Indicators

Indicator	Measures incorporated (include questions and question numbers)	Narrative Summary of Indicator Construction
FA score	- q201. First bleeding: sign girl is able to become pregnant"; - q202. First ejaculation: sign boy is able to get girl pregnant"; - q203. Menstrual period is when woman has monthly bleeding"; - q204. Menstrual cycle is all the days before the start of one menstrual period to the day before the next one starts"; - q205. Menstrual cycle begins on the first day of bleeding"; - q206. Menstrual cycle ends on the day before the start of the next menstrual period"; - q207. Menstrual cycle lasts between 26 to 32 days"; - q208. There are certain days in a period women are more likely to become pregnant"; - q209. A woman is most likely to get pregnant if you have unprotected sex halfway between two menstrual cycles"; - q210. You can become pregnant if had unprotected sex during fertile day"; - q211. Other than sexual arousal, healthy vaginal secretions are sign of fertility"; - q212. Vaginal secretions come during the middle of the menstrual cycle"; - q214. Men are fertile every day"; - q215. Baby's sex is determined by father's sperm"	• First, fertility awareness knowledge items (q201-q217) were coded numerically. Textual data (e.g., specify other) were reviewed and recoded into numeric data, according to the categories provided in the question. • Second, fertility awareness knowledge items were coded correct or incorrect. Correct responses were assigned a numeric value of 1. Incorrect responses were assigned a numeric value of 0. • Third, a knowledge index score was created by summing all the correct responses for q201-q212, q214-q215. • Fourth, the median of the knowledge score was identified and a dichotomous variable categorized the knowledge index score into those who had less than or equal to the median level knowledge, and those who scored above the median knowledge.
Current use of modern FP	- Q412 Have you or your partner <u>ever</u> used a family planning method? - Q416 Are you or your partner currently using a family planning method? - Q417 What method of family planning are you or your partner using? (mark all that apply)	• First, ensured all responses to current FP method (q417) were coded numerically. Textual data (e.g., specify other) were reviewed and recoded into numeric data, according to the categories provided in the question. • Second, current use of modern FP was constructed using variables q412, q416, and 417: • Respondents who reported currently using any of the following a modern FP method in q417 were coded as currently using a FP method. • Respondents who reported currently using a non-modern FP method in q417, not currently using FP method in q416), and who have never used a FP method in q412 were coded as not currently using a FP method.
Intent to use modern FP	- Q418 Do you plan on [using] or [continue using] a family planning method in the next three months? - Q419 Which method of family planning do you intend to use?	• First, ensured all responses to current FP method (q419) were coded numerically. Textual data (e.g., specify other) were reviewed and recoded into numeric data, according to the categories provided in the question. • Second, intent to use of modern FP in the next 3 months was constructed using variables q418 and q419: • Respondents who reported intending to use any of the modern FP methods in q419 in the next three months were coded as having an intent to use a modern FP method.

		• Respondents who reported no, undecided, don't know, or no response to intending to use a FP method (q418), or who selected a non-modern FP method in q419 were coded as not having an intent to use a modern FP method in the next three months.
Self-efficacy to use and access FP	- Q421a I am confident I could use a method correctly all the time to delay or avoid pregnancy"; - Q421b I am confident I could use a method correctly all the time to delay or avoid pregnancy even if my partner disagrees"; - Q421f I have the information I need to make a decision about whether to use FP if I wanted to delay or avoid pregnancy"; - Q421g I know where to obtain a method of FP to delay or avoid pregnancy."	• The final self-efficacy items were identified using exploratory factor analysis (Cronbach alpha = 0.684608). Scale items were recoded from a 5-point Likert to a 3-point Likert of agree, neutral, and disagree. A mean scale score was obtained by finding the mean of the 4 scale items. Finally, a dichotomous variable was created to reflect respondents who scored less than or equal to the mean, and those who scored above.
Attitudes about FP	- Q308a Using a FP method is safe for a woman's health - Q308c It is acceptable for a woman to bring up the topic of FP with her husband - Q308d It is acceptable for a man to bring up the topic of FP with his wife - Q308f FP methods are a way to continue the Karamoja culture and way of life	• The final FP attitude items were identified using exploratory factor analysis (Cronbach alpha = 0.673875). Scale items were recoded from a 5-point Likert to a 3-point Likert of agree, neutral, and disagree. A mean scale score was obtained by finding the mean of the 4 scale items. Finally, a dichotomous variable was created to reflect respondents who scored less than or equal to the mean, and those who scored above.
Social norms on FP use among young couples	- Q308g Most couples in my community who want to plan or prevent pregnancy use family planning - Q308h Couples in my community who want to plan or prevent pregnancy should use family planning - Q308i I should use a family planning method if I want to plan or prevent pregnancy	• The final social norms around FP items were identified using exploratory factor analysis (Cronbach alpha = 0.681678). Scale items were recoded from a 5-point Likert to a 3-point Likert of agree, neutral, and disagree. A mean scale score was obtained by finding the mean of the 3 scale items. Finally, a dichotomous variable was created to reflect respondents who scored less than or equal to the mean, and those who scored above.
Partner communication about FP	- Q110 are you currently living together with a person who is your husband/wife or boyfriend/girlfriend? - Q303 Do you feel that your opinion is taken into account when talking about planning pregnancy with your partner? - Q305 In the last three months, have you discussed using FP to delay or avoid pregnancy with your partner?	• This variable was created for respondents who had a current partner (q110=1). A composite score up to 2 was created using 2 variables: q303 and q305.
Community communication about FP	- Q503 In the last 3 months, have you talked about fertile days during the menstrual cycle with anyone? - Q504 In the last 3 months, have you corrected someone when/if you heard them saying something untrue about menstruation? - Q505 In the last 3 months, have you corrected someone when/if you heard them saying something untrue about family planning?	• A composite score up to 3 points was created using 4 variables: q503, q504 and q505.

ANNEX 4. FEASIBILITY RESULTS

Table 33 | Observation scores, Message delivery and participation

	Couple communication			Menstruation			Fertility			Family planning		
	Peer meetings (4)	Rehearsals (5)	Performances (6)	Peer meeting (6)	Rehearsals (6)	Performances (7)	Peer meeting (6)	Rehearsals (6)	Performance (5)	Peer meeting (5)	Rehearsals (8)	Performance (5)
Moderators ability to follow the manual activity plan												
1. Almost all of the time	75%	60%	67%	67%	83%	83%	100%	83%	67%	100%	100%	80%
2. Some of the time	25%	20%	17%	33%	17%	17%	0%	17%	33%	0%	0%	20%
3. Did not follow guideline.	0%	20%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Moderators ability to facilitate (write and explain the response)												
Very good	25%	60%	83%	83%	29%	86%	67%	83%	47%	40%	56%	80%
Fair	75%	20%	17%	17%	43%	14%	33%	17%	29%	40%	44%	0%
Poor	0%	20%	0%	0%	43%	0%	0%	0%	28%	20%	0%	20%
Peer group members understood the content and message shared.												
1. Yes very well	50%	60%	67%	83%	100%	100%	100%	67%	80%	80%	63%	60%
2. Partially understood	50%	20%	33%	17%	0%	0%	0%	33%	20%	20%	37%	40%
3. Not well understood	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PGMs responded and discussed questions asked by PMs												
1. Yes a lot	0%	75%	50%	83%	50%	71%	67%	17%	60%	60%	13%	40%
2. Yes, sometimes	100%	25%	50%	17%	50%	29%	33%	83%	40%	40%	87%	60%
3. No, Not at all	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Table 34 | Examples of messages delivered and discussion questions, by topic module

Topic Module	Examples of messages delivered	Examples of questions and answers
Couple Communication	• “Child spacing or family planning does not mean stop producing but produce as many but spaced” • “Couples should learn to listen when the other is talking or passing a message and learn to ask questions if they do not understand what the partner is trying to say” • “There is need for couples to discuss and decide together whether to use family planning or not but the decision should be agreeable to both.” • “Wives and husbands should sit down and talk if there is a problem at home” • “Good couple communication makes a family stronger” • “With family planning and child spacing, children will not fall sick, be malnourished, they will be able to go to school”	Question: Now if you ask a woman who does not space her children to do so in this Karamojong, will her? Answer: That is the mere reason we are here. To learn this information about family planning so that we become change agents to people like that in this community. Look when you talk to this person and she gets to sit down to think and they will wonder where they missed out, it will make them rethink the information they were given and act on it
Menstruation	• “Menstruation is natural and comes from God” • “Menstruation is a sign that a girl is able to become a mother” • “Myths about menstruation are lies” • “Pests spoil vegetables not bleeding women” • “Menstruation does not harm plants and animals” • “In the middle of the cycle occur secretions where a female is most likely to conceive” • “Secretions are healthy”	Question: Why is it that some women even give birth when they have never seen their menstruation? Answer: it is God who created them like and some women do experience menstruation even when they do not see the blood but you can tell by looking at their hands.
Fertility	• “When a man begins wet dreams it means he can make a woman pregnant” • Sperms can survive in the uterus for up to 5 days • “It is the man's sperm that determines a child's sex and but neither the husband or wife can dictate on the child they want to have” • “Once a woman starts menstruating, it is a sign that she can get pregnant as long as secretions occur” • Secretions are a sign of fertility • “It is always good to consult the VHT and visit the health center to know more about family planning”	Question: Why is the egg fertilized at the corner of the fallopian tubes? Answer: That is how God created a man that it should be like that but in case there is anything else you need an answer for, come and I'll let you know about what I know.
Family Planning	• Family planning methods are a way couples can space their pregnancies	Question: How about the condoms when we need them can they be given for free or we need to have some money?

- There are three LAM Conditions:
 - *A child should be below 6 months*
 - *The mother should breast feed exclusively without giving the child any food*
 - *The mother should have not received back her periods*
- Pills, injectable, IUDs, implants and tubal ligation may make a woman experience some side effects in the beginning such as heavy bleeding, irregular periods or cramps but he added that these do not last.
- *"Healthy timing is waiting till one turns 18 to get pregnant and healthy spacing is leaving a pace of 2 years between births"*

Answer: Condoms are available at the hospitals or health centers or even with the VHTs for free of charge".

Question: How much time do IUDs take for it to stop functioning?

Answer: It take strictly one year and then there was this peer group member with a manual she decided to read out from the manual, then the moderator apologized and then gave in the correction according to the one the peer group member read.

Question: A peer group member asked the peer moderator whether vasectomy is like castration. He actually asked if the testicles are physically crushed.

Answer: The P.M answered him that the testicles are not crushed but rather the sperm duct cut. The peer again asked if the process for vasectomy would be reversed such that a man can have children again. The Peer Moderator and some peers told him that the method is permanent."

Table 35 | Average time facilitating EDEAN activities during systematic observations, disaggregated by module and type of activity (n=69)

	Couple Communication	Menstruation	Fertility	Family Planning
Single-sex female meetings	0.6 hour (34 mns)	1.5 hours	1.5 hours	2.1 hours
Single-sex male meetings	N/A	1.0 hour	1.0 hour	1.7 hours
Mixed-sex meetings	1.9 hours	1.5 hours	1.9 hours	1.9 hours
Rehearsals	1.8 hours	1.5 hours	1.5 hours	1.7 hours
Performances	2.0 hours	0.8 hour (46 mns)	1 hour	0.8 hour (45 mns)

(Source: Systematic Observations)

ANNEX 5. EFFECTIVENESS RESULTS

Table 36 | Socio-demographic characteristics of participants, at baseline (n=600)

DEMOGRAPHICS	ENDLINE				
	Intervention		Control		P-value
	n=400	%	n=200	%	
Sex					
Male	198	49.5	100	50.0	N/A
Female	202	50.5	100	50.0	
Age					
Mean (Std)	28.2 (7.6)		32.6 (7.9)		<.0001***
Min, Max	16, 49		19, 49		
Highest level of school					
None	298	74.5	154	77.0	0.6646
ABEK	35	8.8	10	5.0	
Some primary	43	10.8	25	12.5	
Completed primary	10	2.5	7	3.5	
Some secondary	9	2.3	2	1.0	
Completed secondary	3	0.8	2	1.0	
More than secondary	2	0.5	0	0.0	
Have job or work					
Yes	211	52.8	90	45.0	0.0735
No	189	47.3	110	55.0	
Type of work					
Farming/ agriculture	121	57.4	13	14.4	<.0001***
Formal paid work	8	3.8	5	5.6	
Informal paid work	82	38.9	72	80.0	
Currently living with partner					
Yes	344	86.0	189	94.5	0.0018*
No	56	14.0	11	5.5	
Time married or living together					
Mean (Std)	8.1 (7.08)		9.8 (7.57)		0.0100*
Min, Max	0.1, 32.0		1.0, 34.0		
Husband has another wife					
1 wife	150	43.6	98	51.9	0.0678
2+ wives	194	56.4	91	48.2	
Number of living children					
Mean (Std)	3.1 (2.5)		3.8 (2.4)		0.4166
Min, Max	0, 14		0, 11		
Ever use modern family planning					
Yes	70	17.5	27	13.5	0.2096
No	330	82.5	173	86.5	
Type of FP methods ever used (multiple response)					
Male condom	16	7.1	3	1.8	
Female condom	0	0.0	0	0.0	
Pills	7	3.1	0	0.0	
Injectable	6	2.7	2	1.2	
Implant	8	3.5	0	0.0	
IUD	0	0.0	0	0.0	
Vasectomy	0	0.0	0	0.0	
Tubal ligation	0	0.0	0	0.0	
CycleBeads	2	0.9	0	0.0	
TwoDay Method	0	0.0	0	0.0	
LAM	39	17.3	22	13.0	
Withdrawal	1	0.4	0	0.0	
Abstinence	193	85.4	168	99.4	
Other	6	2.7	0	0.0	

(Source: Endline Survey)

Table 37 | Socio-demographic characteristics of women, baseline and endline (n=302)

DEMOGRAPHICS	BASELINE							ENDLINE						
	Total		Intervention (I)		Control (C)		I vs. C	Total		Intervention (I)		Control (C)		I vs. C
	n=301	%	n=201	%	n=100	%	P value	n=302	%	n=202	%	n=100	%	P value
Age														
Mean (Std)	31.0 (8.2)		30.8 (8.3)		31.2 (7.8)		0.5117	29.6 (7.8)		28.1 (7.1)		32.8 (8.3)		0.0004
Min, Max	18.0, 49.0		18.0, 49.0		18.0, 49.0			17.0, 49.0		17.0, 49.0		19.0, 49.0		
Highest level of school attended														
None	238	79.1	153	76.1	85	85.0	0.1828	246	81.5	167	82.7	79	79.0	0.6845
ABEK	29	9.6	25	12.4	4	4.0		20	6.6	14	6.9	6	6.0	
Some primary	30	10.0	19	9.5	11	11.0		33	10.9	19	9.4	14	14.0	
Completed primary	3	1.0	3	1.5	0	0.0		3	1.0	2	1.0	1	1.0	
Some secondary	1	0.3	1	0.5	0	0.0		0	0.0	0	0.0	0	0.0	
Completed secondary	0	0.0	0	0.0	0	0.0		0	0.0	0	0.0	0	0.0	
Have job or work														
Yes	132	43.9	82	40.8	50	50.0	0.1296	85	28.2	47	23.3	38	38.0	0.0074
No	169	56.2	119	59.2	50	50.0		217	71.8	155	76.7	62	62.0	
Type of work														
Farming/ agriculture	12	9.1	4	4.9	8	16.0	0.0593	7	8.2	1	2.1	6	15.8	0.0250
Formal paid work	2	1.5	2	2.4	0	0.0		4	4.7	2	4.3	2	5.3	
Informal paid work	118	89.4	76	92.7	42	84.0		74	87.1	44	93.6	30	79.0	
Living with partner														
Yes	282	93.7	183	91.0	99	99.0	0.0052	268	88.7	177	87.6	91	91.0	0.3823
No	19	6.3	18	9.0	1	1.0		34	11.3	25	12.4	9	9.0	
Time married														
Mean (Std)	9.7 (7.1)		9.5 (7.0)		10.0 (7.5)		0.5684	7.7 (6.8)		7.5 (7.3)		7.9 (5.8)		0.0064
Min, Max	0.1, 32.0		0.1, 30.0		0.6, 32.0			0.1, 32.0		0.1, 32.0		1.0, 26.0		
Husband has another wife														
1 wife	186	66.0	114	62.3	72	72.7	0.0776	168	62.7	111	62.7	57	62.6	0.9905
2+ wives	96	34.0	69	37.7	27	27.3		100	37.3	66	37.3	34	37.4	
Number living children														
Mean (Std)	3.2 (1.8)		3.4 (1.8)		2.9 (1.6)		0.0427	3.3 (1.8)		3.2 (1.8)		3.5 (1.9)		0.1509
Min, Max	0, 9		0, 9		0, 8			0, 9		0, 9		0, 8		
Ever use modern FP														
Yes	160	53.3	111	55.5	49	49.0		156	51.7	84	41.6	72	72.0	
No	138	46.0	87	43.5	51	51.0		146	48.3	118	58.4	28	28.0	
Don't know	2	0.7	2	1.0	0	0.0		0	0.0	0	0.0	0	0.0	
Type of FP methods ever used (multiple response)														
Male condom	0	0.0	0	0.0	0	0.0		0	0.0	0	0.0	0	0.0	
Female condom	0	0.0	0	0.0	0	0.0		0	0.0	0	0.0	0	0.0	
Pills	2	1.3	2	1.8	0	0.0		6	3.9	6	7.1	0	0.0	
Injectable	5	3.1	4	3.6	1	2.0		6	3.9	4	4.8	2	2.8	
Implant	2	1.3	1	0.9	1	2.0		6	3.9	6	7.1	0	0.0	
IUD	0	0.0	0	0.0	0	0.0		0	0.0	0	0.0	0	0.0	
Vasectomy	0	0.0	0	0.0	0	0.0		0	0.0	0	0.0	0	0.0	
Tubal ligation	0	0.0	0	0.0	0	0.0		0	0.0	0	0.0	0	0.0	
CycleBeads	1	0.6	1	0.9	0	0.0		1	0.6	1	1.2	0	0.0	
TwoDay Method	1	0.6	1	0.9	0	0.0		0	0.0	0	0.0	0	0.0	
LAM	64	40.0	49	44.1	15	30.6		32	20.5	11	13.1	21	29.2	
Withdrawal	10	6.3	10	9.0	0	0.0		1	0.6	1	1.2	0	0.0	
Abstinence	125	78.1	81	73.0	44	89.8		137	87.8	66	78.6	71	98.6	
Other	16	10.0	16	14.4	0	0.0		6	3.9	6	7.1	0	0.0	

(Source: Baseline and Endline Surveys)

Table 38 | Socio-demographic characteristics of men, baseline and endline (n=299)

DEMOGRAPHICS	BASELINE							ENDLINE						
	Total		Intervention (I)		Control (C)		I vs. C	Total		Intervention (I)		Control (C)		I vs. C
	N=299	%	n=199	%	n=100	%	P value	N=298	%	n=198	%	n=100	%	P value
Age														
Mean (Std)	29.3 (8.0)		28.8 (8.4)		30.3 (7.0)		0.0202	29.8 (8.1)		30.3 (7.0)		29.8 (8.1)		0.0002
Min, Max	15.0, 49.0		15.0, 49.0		17.0, 49.0			16.0, 49.0		17.0, 49.0		16.0, 49.0		
Highest level of school attended														
None	200	73.6	144	72.4	76	76.0	0.6184	206	69.1	131	66.2	75	75.0	0.2938
ABEK	11	3.7	8	4.0	3	3.0		25	8.4	21	10.2	4	4.0	
Some primary education	38	12.7	26	13.1	12	12.0		35	11.7	24	12.1	11	11.0	
Completed primary	12	4.0	7	3.5	5	5.0		14	4.7	8	4.0	6	6.0	
Some secondary	14	4.7	12	6.0	2	2.0		11	3.7	9	4.6	2	2.0	
Completed secondary	4	1.3	2	1.0	2	2.0		5	1.7	3	1.5	2	2.0	
More than secondary	0	0.0	0	0.0	0	0.0		2	0.7	2	1.0	0	0.0	
Have job or work														
Yes	230	76.9	141	70.9	89	89.0	0.0004	216	72.5	164	82.8	52	52.0	<.0001
No	69	23.1	58	29.2	11	11.0		82	27.5	34	17.2	48	48.0	
Type of work														
Farming/ agriculture	113	49.1	94	66.7	19	21.4	<.0001	127	58.8	120	73.2	7	13.7	<.0001
Formal paid work	17	7.4	7	5.0	10	11.2		9	4.8	6	3.7	3	5.8	
Informal paid work	100	43.5	40	28.4	60	67.4		80	37.0	38	23.2	42	80.8	
Currently living with partner														
Yes	281	94.0	184	92.5	97	97.0	0.1202	265	88.9	167	84.3	98	98.0	0.0004
No	18	6.0	15	7.5	3	3.0		33	11.1	31	15.7	2	2.0	
Time married together														
Mean (Std)	6.4 (5.7)		6.8 (5.8)		5.9 (5.2)		0.9111	7.7 (6.8)		7.5 (7.3)		7.9 (5.8)		0.6268
Min, Max	0.2, 29.0		0.2, 29.0		0.5, 26.0			0.1, 32.0		0.1, 32.0		1.0, 26.0		
Husband has another wife														
1 wife	96	34.2	57	31.0	39	40.2	0.1210	80	30.2	39	23.4	41	41.8	0.0016
2+ wives	185	65.8	127	69.0	58	59.8		185	69.8	128	76.7	57	58.2	
Number of living children														
Mean (Std)	3.3 (3.1)		3.3 (3.3)		3.3 (2.6)		0.9111	3.3 (3.0)		2.9 (3.0)		4.1 (2.7)		0.0019
Min, Max	0, 18		0, 18		0, 12			0, 14		0, 14		0, 11		
Ever use modern FP														
Yes	283	79.6	152	76.4	86	86.0		239	80.2	142	71.7	97	97.0	
No	58	19.4	46	23.1	12	12.0		50	16.8	49	24.8	1	1.0	
Don't know	3	1.0	1	0.5	2	2.0		8	2.7	7	3.5	1	1.0	
No response	0	0.0	0	0.0	0	0.0		1	0.3	0	0.0	1	1.0	
Type of FP methods ever used (multiple response)														
Male condom	21	8.8	14	9.2	7	8.1		19	8.0	16	11.3	3	3.1	
Female condom	0	0.0	0	0.0	0	0.0		0	0.0	0	0.0	0	0.0	
Pills	0	0.0	0	0.0	0	0.0		1	0.4	1	0.7	0	0.0	
Injectable	7	2.9	7	4.6	0	0.0		2	0.8	2	1.4	0	0.0	
Implant	2	0.8	2	1.3	0	0.0		2	0.8	2	1.4	0	0.0	
IUD	0	0.0	0	0.0	0	0.0		0	0.0	0	0.0	0	0.0	
Vasectomy	0	0.0	0	0.0	0	0.0		0	0.0	0	0.0	0	0.0	
Tubal ligation	0	0.0	0	0.0	0	0.0		0	0.0	0	0.0	0	0.0	
MoonBeads/ CycleBeads	1	0.4	0	0.0	1	1.2		1	0.4	1	0.7	0	0.0	
TwoDay Method	0	0.0	0	0.0	0	0.0		0	0.0	0	0.0	0	0.0	
LAM	25	10.5	11	7.2	14	16.3		29	12.1	28	19.7	1	1.0	
Withdrawal	13	5.5	0	0.0	13	15.1		0	0.0	0	0.0	0	0.0	
Abstinence	218	91.6	138	90.8	80	93.0		224	93.7	127	89.4	97	97.0	
Other	5	2.1	4	2.6	1	1.2		0	0.0	0	0.0	0	0.0	

(Source: Baseline and Endline Surveys)

Table 39 | Adjusted logistic regression analysis results for fertility awareness and FP outcomes, by desire to prevent pregnancy

	Total aOR (n=448)	Female aOR (n=225)	Male aOR (n=223)	15 - 25 yrs aOR (n=150)	26 - 35 yrs aOR (n=194)	36+ yrs aOR (n=104)
High fertility awareness Score (fertility awareness > 8)	2.66 (1.60, 4.41) <i>p</i> =0.0002	2.20 (1.09, 4.48) <i>p</i> =0.0289	3.23 (1.35, 7.75) <i>p</i> =0.0085	1.58 (0.61, 4.10) <i>p</i> =0.3448	2.04 (0.98, 4.25) <i>p</i> =0.0579	6.56 (1.57, 27.43) <i>p</i> =0.0100
Current modern FP use	1.47 (0.76, 2.81) <i>p</i> =0.2509	0.72 (0.22, 2.28) <i>p</i> =0.5710	2.65 (1.07, 6.56) <i>p</i> =0.0347	4.09 (0.86, 19.57) <i>p</i> =0.0774	1.43 (0.57, 3.62) <i>p</i> =0.4498	0.56 (0.09, 3.53) <i>p</i> =0.4501
Intent modern FP use in next 3 months	9.65 (3.70, 25.20) <i>p</i> <0.0001	9.50 (2.90, 31.17) <i>p</i> =0.0002	14.38 (1.48, 139.47) <i>p</i> =0.0215	22.16 (3.85, 127.44) <i>p</i> =0.0005	5.02 (1.45, 17.40) <i>p</i> =0.0109	9.55 (0.44, 206.20) <i>p</i> =0.1499

(Source: Endline Surveys; model adjusted for age, employment, education, living with partner, having children)

Table 40 | Adjusted logistic regression analysis results for secondary outcomes, by **desire to prevent pregnancy**

	Total (n=448)	Female (n=225)	Male (n=223)	15 - 25 yrs (n=150)	26 - 35 yrs (n=194)	36+ yrs (n=104)
High FP self-efficacy	0.72 (0.41, 1.26) <i>p</i> =0.2502	0.16 (0.07, 0.38) <i>p</i> <0.0001	18.25 (3.63, 91.88) <i>p</i> =0.0004	2.11 (0.73, 6.09) <i>p</i> =0.1696	0.37 (0.15, 0.90) <i>p</i> =0.0276	0.49 (0.12, 1.97) <i>p</i> =0.3143
Sought info about FP from health worker in last 3 months	5.45 (2.68, 11.10) <i>p</i> <0.0001	3.23 (1.21, 8.66) <i>p</i> =0.0197	9.47 (2.79, 32.15) <i>p</i> =0.0003	11.73 (2.35, 58.61) <i>p</i> =0.0027	5.89 (1.91, 18.18) <i>p</i> =0.0020	1.62 (0.30, 8.92) <i>p</i> =0.5780
FP methods help prevent pregnancy (q. what do you know about FP methods?)	4.82 (2.26, 10.32) <i>p</i> <0.0001	14.43 (4.63, 44.96) <i>p</i> <.0001	0.83 (0.24, 2.88) <i>p</i> =0.7634	33.97 (3.44, 335.65) <i>p</i> =0.0026	2.99 (1.17, 7.65) <i>p</i> =0.0224	2.83 (0.42, 19.09) <i>p</i> =0.2858
FP methods cause side effects (q. what do you know about FP methods?)	0.16 (0.08, 0.32) <i>p</i> <0.0001	0.06 (0.02, 0.15) <i>p</i> <.0001	----- ¹	0.52 (0.16, 1.64) <i>p</i> =0.2616	0.05 (0.01, 0.20) <i>p</i> <0.0001	0.07 (0.01, 0.89) <i>p</i> =0.0401
High FP attitudes	0.92 (0.37, 2.29) <i>p</i> =0.8531	0.47 (0.16, 1.42) <i>p</i> =0.1811	4.07 (0.28, 59.54) <i>p</i> =0.3054	1.14 (0.29, 4.47) <i>p</i> =0.8534	0.62 (0.13, 3.06) <i>p</i> =0.5564	1.21 (0.08, 18.50) <i>p</i> =0.8910
High support for FP social norms score	1.43 (0.74, 2.75) <i>p</i> =0.2856	0.35 (0.11, 1.11) <i>p</i> =0.0748	3.32 (1.16, 9.48) <i>p</i> =0.0253	0.79 (0.26, 2.38) <i>p</i> =0.6761	2.01 (0.71, 5.72) <i>p</i> =0.1881	3.28 (0.25, 43.34) <i>p</i> =0.3664
High FP communication with partner	0.32 (0.18, 0.56) <i>p</i> <0.0001	0.17 (0.07, 0.41) <i>p</i> <0.0001	0.64 (0.27, 1.48) <i>p</i> =0.2938	0.19 (0.06, 0.55) <i>p</i> =0.0024	0.31 (0.12, 0.78) <i>p</i> =0.0125	0.62 (0.18, 2.11) <i>p</i> =0.4454
High communication with fertility awareness and FP with community	0.50 (0.32, 0.78) <i>p</i> =0.0026	0.16 (0.07, 0.37) <i>p</i> <.0001	1.08 (0.57, 2.03) <i>p</i> =0.8186	0.34 (0.15, 0.78) <i>p</i> =0.0109	0.67 (0.33, 1.36) <i>p</i> =0.2631	1.16 (0.37, 3.65) <i>p</i> =0.7952

Source: Endline Surveys; model adjusted for age, employment, education, living with partner, having children)

¹ aOR not shown since no control men (0) responded this answer affirmatively / negatively