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TECHNICAL REPORT

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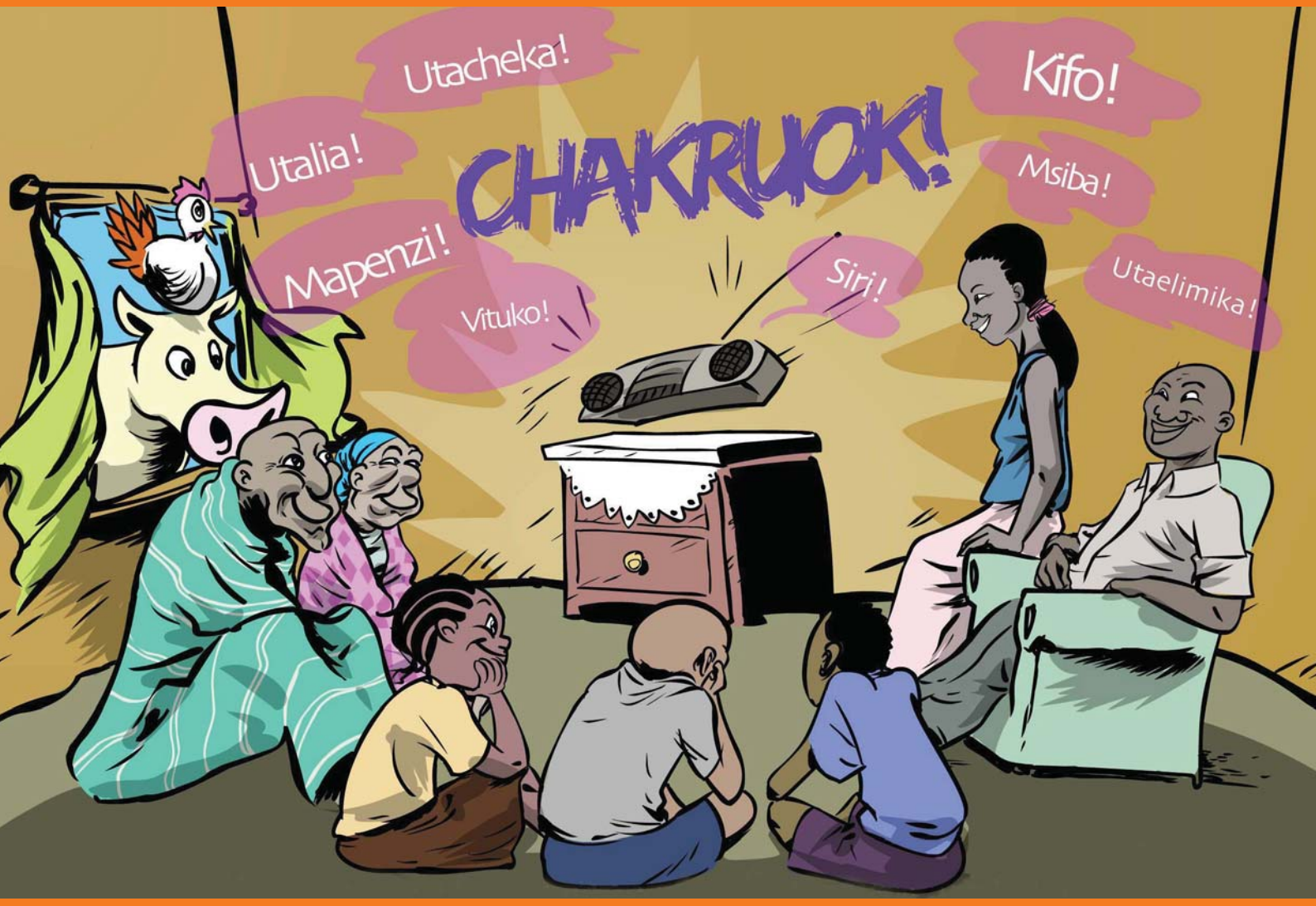

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Acronyms and abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
APHIA II OR	AIDS, Population, and Health Integrated Assistance
ART	Anti-Retroviral Therapy
ARV	Anti-Retroviral
CBHIS	Community-Based Health Information System
CHW	Community Health Worker
DHMT	District Health Management Team
FANC	Focused Antenatal Care
FP	Family Planning
HIV	Human Immuno-Deficiency Virus
IEC	Information, Education, and Communication
IUD	Intra-Uterine Device
KEMRI	Kenya Medical Research Institute
KNBS	Kenya National Bureau of Statistics
KNCST	Kenya National Council for Science and Technology
MAG	Married Adolescent Girl
MOPHS	Ministry of Public Health and Sanitation
PDA	Personal Digital Assistant
PMTCT	Prevention of Mother-to-Child Transmission
PNC	Post-Natal Care
RH	Reproductive Health
USAID	United States Agency for International Development
VCT	Voluntary Counseling and Testing

Acknowledgments

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Executive summary

The objectives of this operations research study were to: 1) identify and design a set of interventions that promote the uptake of comprehensive reproductive health (RH)/family planning (FP) and HIV prevention services and information among married adolescent girls; and 2) expand access to comprehensive RH/FP and HIV prevention services and information among this population. The study used a pre- and post-intervention design without a comparison group and was implemented in Homa Bay and Rachuonyo Districts of Nyanza Province between 2009 and 2011 by the APHIA II Operations Research Project in collaboration with Well Told Story and the Ministry of Public Health and Sanitation. The study demonstrated that the combined use of interactive media and community health worker visitation, health information provision, and referrals, is an effective means of reinforcing RH/FP and HIV messages, and of increasing access to RH/FP and HIV information and services among married girls in rural settings. This method is particularly effective in expanding married adolescent girls' access to family planning, antenatal care, delivery, and postnatal care services, and in expanding spousal support for accessing these services.

The primary recommendations from the study are as follows:

1. For some settings, there is a need for a cognitive shift from married adolescent girls alone to 'married adolescent *couples*', or 'married youth couples', whose needs are likely to require tailored interventions;
2. Interactive radio programming should be used to target and inspire hard-to-reach groups, such as married adolescent girls;
3. Community health workers should be incentivized and monitored in order to effectively provide services to married adolescent girls;
4. Married adolescent girls and their partners should be considered as a key target group for the promotion of long-acting methods of family planning.
5. Spousal or intimate partner violence is an area that requires further, careful investigation and intervention among married adolescent girls and their partners.

Background and problem statement

Nyanza Province has been a focus of heightened attention in Kenya since the advent of the country's HIV epidemic. A 2001 study highlighted married adolescent girls (MAG) as a particularly vulnerable population in Nyanza due to their elevated risk for HIV infection compared to other sexually active girls elsewhere in the country. For instance, 32 percent of MAG aged 15 to 24 in Nyanza are HIV-positive compared to 22 percent of unmarried, sexually active adolescent girls in the same region.[1] Studies centering on MAG in various regions of the world indicate that sexual intercourse is more frequent among this population than among their unmarried, sexually active peers, while condom use is unconventional.[2] Given these realities, through the USAID-funded FRONTIERS program from 2006-2008, the Population Council designed and implemented an operations research project to expand access to HIV-prevention information and services for MAG and their partners in Nyanza Province. The project was specifically geared toward the promotion of joint-testing for HIV among MAG and their partners. A referral coupon was offered by outreach workers, which subsidized the cost of transportation for married adolescent girls and their husbands from their rural homes to voluntary counseling and testing (VCT) centers. These efforts culminated in the joint-testing of nearly 2,000 couples.[3]

The success garnered by this model highlighted the missed opportunity to integrate RH/FP services within the HIV-focused intervention, especially given that MAG in Nyanza have comparatively low utilization levels for RH/FP services. Estimates from the 2008-2009 Kenya Demographic and Health Survey (KDHS), for example, show that about half (51%) of the births among MAG in Nyanza are delivered at a health facility and fewer MAG (38%) utilize postnatal care (PNC) services. About 59% of MAG in Nyanza desire to delay childbearing; yet only 9% were currently using a modern method of contraception.

The high proportion MAG desiring to delay childbearing is an indication of the potential to make a difference in the level of uptake of RH/FP services through the implementation of appropriate interventions. Importantly, participants in the married adolescents' HIV prevention intervention also expressed the need for additional information on safe motherhood and family planning. The large number of couples that are amenable to VCT as a result of the project clearly presents an important opportunity to go beyond the provision of HIV information and services alone, by expanding access to comprehensive RH/FP *and* HIV prevention services among MAG and their partners.

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[1] Glynn, J.R., Caraël, M., Auvert, B., Kahindo, M., Chege, J., Musonda, R., Kaona, F., and Buvé, A., (2001). "Why do young women have a much higher prevalence of HIV than young men?" A study in Kisumu, Kenya and Ndola, Zambia. AIDS 15(suppl 4), S51-60.

[2] Clark, S., Bruce, J. & Dude, A. (2006). Protecting young women from HIV/AIDS: The case against child and adolescent marriage. *International Family Planning Perspectives* 32(2).

[3] Erulkar, A. & Ayuka, F. (2007). Addressing early marriage in areas of high HIV prevalence: A program to delay marriage and support married girls in rural Nyanza, Kenya. *Promoting healthy, safe, and productive transitions to adulthood. Brief No. 19*. Population Council; Haberland, N. (2007). Supporting married girls: Calling attention to a neglected group. *Promoting healthy, safe, and productive transitions to adulthood. Brief No. 3*. Population Council.

Project aims

The overall goal of this project was to expand access to comprehensive RH/FP and HIV information and services for married adolescent girls in order to improve their reproductive health outcomes. Specifically, the project aimed to:

1. identify and design a set of interventions that promote the uptake of comprehensive RH/FP and HIV prevention services among MAG; and
2. assess the combined effectiveness of the interventions on the uptake of comprehensive RH/FP and HIV information and services[4] among MAG and their partners.

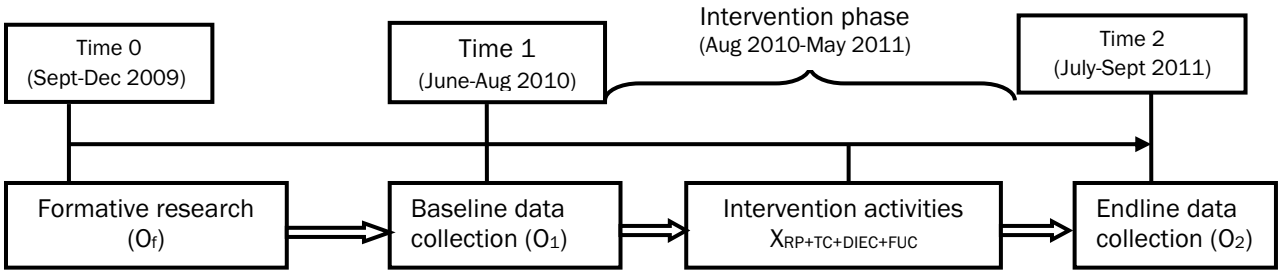
The study hypothesized that:

- married adolescent girls in the communities where RH/FP & HIV information and services are promoted would be more likely to use comprehensive services than before;
- men married to adolescent girls in the communities where RH/FP & HIV information and services are promoted would be more likely to support their partners' use of comprehensive services than before.

Project design

The study used a pre- and post-intervention design without a comparison group to test the hypotheses. It involved four major components, namely: a formative study, intervention development, implementation and monitoring of the intervention, and an evaluation. The schematic presentation of the project design is presented in Figure 1. The project was implemented in Homa Bay and Rachuonyo districts in Nyanza Province. The selection of the study sites was informed by the need to build upon the earlier MAG work under FRONTIERS, which was implemented in the same districts. This report is based on the baseline and endline studies conducted.

Figure 1: Schematic presentation of the study design



Notes:

O_f: Preparatory stage:

- Formative research in the study community
- Implemented at 0-4 months

O_1: Pre-intervention measurements of:

- Key dependent variables for MAG and partners of MAG in the catchment area in which intervention took Place
- Started at 10-12 months

[4] These include counseling and testing for HIV, contraceptive use in general, antenatal care, post-natal care, prevention of mother to child transmission services use among HIV-positive MAG, skilled attended birth, and postpartum family planning use.

$X_{RP+TC+FUC+PIEC}$ Development (5-11 months) and implementation (12-22 months) of interventions. Where:
X = combined interventions
RP = radio programming (12-19 months)
TC = training of Community Health Workers (16-17 months)
DIEC= distribution of IEC materials (16-19 months)
FUC= follow-up of trained Community Health Workers (18-22 months)

O_2 Post-intervention measurements of:

- Key dependent variables for MAG and partners of MAG after the intervention. Started at month 23, approximately twelve months after commencement of interventions.

Intervention description

The intervention involved three main activities: 1) an interactive media campaign that was implemented over an 8-month period (August 2010 to March 2011); 2) the training (December 2010 to January 2011) and following-up of four cohorts of community health workers, carried out over a period of 5 months (February to June 2011); and 3) the distribution of RH/FP and HIV information, education, and communication (IEC) materials, over 4 months (December 2010 to March 2011).

a) Interactive media campaign

Well Told Story, in collaboration with the APHIA II OR project, developed a radio soap opera series revolving around the life of a married adolescent girl, consisting of 20-minute episodes. The soap opera aired twice a week in the evenings, along with a weekly discussion segment exploring key educative topics. Entitled *Chakruok* (meaning 'Beginnings' in Dholuo), the soap opera was aired on three FM stations in Nyanza province over an 8-month period. Text messaging and call-ins were incorporated into the radio drama to encourage listener participation and communication about the RH/FP and HIV issues raised in the episode concerned. During the discussion segment, some listeners that sent in text messages or letters were telephoned for interviews, and a pre-recorded interview with an expert in that week's topic was played. A Facebook page[5] was also set up for the listeners to explore the issues raised in the show in more detail. Several times a week, different questions were posted on the Facebook page to encourage discussion and debate.

Some excerpts from the text messages and letters received from listeners are provided below.

On HIV-testing: "*Dayo* [a married adolescent girl who is also the soap opera's protagonist] *loves Luka* [her partner] *and I think that if Luka agrees to go for testing and also takes her back to school, it will be good. It is good for us to know our status before getting married so that we can plan and take better care of ourselves, in case we are found to be HIV negative. This shall prevent further spread of the virus." (female listener)*

On family planning: "*Dayo was wrong, she should have spoken to Luka about her plans on contraception. She has a good idea, but she should have included her partner in the decision making." (male listener)*

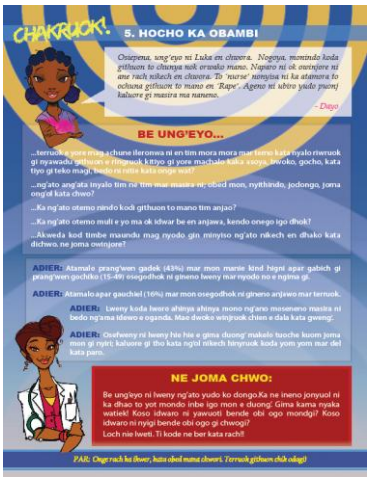
[5] The *Chakurok* Facebook page was discontinued shortly after the end of the intervention.

A thank you note: "*As my family & I were listening to Chakruok, I noticed my sister sobbing. I guess it waz what Dayo waz going thru that made her cry so. I really felt so good knowing in* [my] *mind that truly she gets a lot from this programme. I don't know how much 2 thank CHAKRUOK, but I hope God will bless the people who planned 4 this. U MEAN ALOT 2 ME." (listener– sex not identified)*

From a participating radio station: "*I write to express our gratitude as Nam Lolwe family for allowing us to air the drama series, it was such a success to an extent that our mail boxes are full* [with the] *audience complaining when it stopped going on air. We may have to do a repeat of the same (the drama) for our own good." (Programs Manager, Radio Nam Lolwe FM)*

b) Provision of IEC materials

Leaflets referencing the radio soap opera were developed (in Dholuo) to accompany the key topics explored within *Chakruok* and link readers to the radio program. Each leaflet tackled a separate topic. Leaflets were distributed to MAG by CHWs during periodic home-visits, and were also mailed free, twice monthly, to *Chakurok* listeners who requested copies, sending in their names and addresses via text message. Posters were also designed and printed to ensure longevity of the key messages presented within *Chakruok* and the leaflets. Each poster included information and facts about the key topics.[6] Copies of each poster were distributed to fifty health facilities around Homa Bay and Rachuonyo.



c) Training and follow-up of Community Health Workers (CHWs)

The training of CHWs was carried out in collaboration with the Nyanza District Health Management Team (DHMT) under the Ministry of Public Health and Sanitation (MOPHS). Select Community-Based Health Information System (CBHIS) monitoring documents (used under Kenya's Community Strategy) were modified to reflect the RH/FP and HIV information, services, and referral needs of MAG in particular. A total of 194 CHWs in the study sites were then identified and trained on the following:

- key RH/FP and HIV information and services relevant to the needs of MAG and their partners as identified in this report;
- the use of the modified CBHIS monitoring tools; and
- intensive follow-up (via regular home visits) and referral of MAG to health facilities as needed.

The DHMT, in collaboration with APHIA II OR, held monthly supervision support meetings with the trained CHWs to monitor their progress in visiting and interacting with MAG for the provision of RH/FP and HIV information, and referral. During these supervision support meetings, the monitoring/record-keeping tools of CHWs were collected and reviewed, visits to randomly selected MAG households occurred during which CHW engagement with the married girls was observed, and challenges and areas in need of improvement were discussed and addressed.

[6] The following 10 topics were treated in the leaflets and posters: 1) antenatal care; 2) Couples' HIV Counseling and Testing; 3) pregnancy at school; 4) family planning; 5)post-rape counseling; 6) skilled attendance at birth; 7) post-natal care; 8) HIV facts; 9) HIV discordant couples; and 10) summary of important facts.

The CHW visits with MAG were interactive and included conversations guided by the *Chakruok* health leaflets, in addition to an assessment of MAGs' current health needs (which a monitoring tool helped identify), and following up on the issues identified during subsequent visits. Although MAG partners were typically absent from the household when CHW visits were made, on occasions when they were present, CHWs would interact with them as a couple. Out of their own initiative, some CHWs additionally organized and held periodic group meetings with married adolescent girls and their partners for the purpose of conveying RH/FP and HIV information.

Each CHW was put in charge of an average of 10-20 MAG households, depending on the number of MAG located in the respective villages. All MAG in each village were to be visited during the month, and if issues for follow up were identified (e.g., the MAG concerned had never had an HIV test), they were to be given a referral and visited the following week to find out if the referral was successful, and to help address any barriers to referral follow-through. MAG with no health issues requiring referral were visited at least once a month and provided with available IEC materials.

Incentives were provided to participating CHWs as follows:

- monthly honoraria (in the amount currently proposed by government under the national Community Strategy – i.e., the equivalent of about USD 25) for CHWs that attended monthly meetings and whose records demonstrated adequate evidence of engagement with MAG over the previous month
- distinct t-shirts designed specifically for CHWs, with MOPHS and USAID/APHIA II OR logos printed on them, along with the phrase, "I am a CHW. Ask me about your health."
- certificates of participation at the end of the intervention period for the CHWs.

The total package of materials developed as part of this intervention includes: the complete series of scripts from the radio soap opera in English (for ease of translation into other languages) and Dholuo; the complete audio version of the radio program in Dholuo; and 11 leaflets and 9 posters devoted to providing information on a range of separate FP/RH and HIV topics.

By the end of the intervention period:

- 3,407 questions/comments were submitted by text to the *Chakruok* radio program;
- 39,500 *Chakurok* health leaflets were distributed;
- 7,2000 *Chakurok* health posters were distributed to 50 health facilities in the study areas;
- The *Chakruok* Facebook page had garnered 406 Facebook fans;
- The entire *Chakurok* radio soap opera series was repeated twice on 3 different FM stations in Nyanza in response to popular demand.; and
- *Chakurok* won a 2011 'Radio for Peace-building Africa' award in the 'Gender' category: http://www.radiopeaceafrica.org/index.cfm?lang=en&context_id=2&context=events&action=oneevent&content_id=203.

By the time of the endline survey, 66% of married adolescent girls interviewed had either listened to *Chakruok*, or been visited by a CHW in the past one year.

Data collection

Baseline and endline household surveys were carried out from July to August 2010, and from July to September, 2011, respectively, using structured questionnaires administered by trained research assistants. A total of 472 MAG (aged 14-19 years) and 235 of their partners took part in the baseline survey. Following the intervention, a total of 485 MAG and 202 of their partners participated in the endline survey.

Individual, written informed consent was obtained from all participants before conducting the interviews. Information was collected on basic socio-demographic characteristics (age, sex, educational attainment, and socio-economic status), knowledge and use of contraception and FP, pregnancy and childbearing experiences and intentions, utilization of other key RH services, couple communication, access to support services for HIV-positive participants, access to media, and sexual and physical violence. The survey tools were translated into the local language (*Dholuo*), pre-tested, and adjusted accordingly. In addition, the research assistants received training on the goals of the project, the content of the tools, community entry, data collection, and ethics over a one-week period. The Institutional Review Board of the Population Council, the National Ethical Review Committee of the Kenya Medical Research Institute (KEMRI), and the Kenya National Council for Science and Technology (KNCST) provided ethical and research clearance for the study.

In the first stage of the sampling process, a total of 14 sub-locations were randomly selected in both of the districts for inclusion in the study. The Kenya National Bureau of Statistics (KNBS) provided the list of sub-locations in the two districts for sampling purposes. With the help of the provincial administration (Chiefs, Assistant Chiefs, and village heads), the project obtained the list of all villages in the sampled sub-locations. From this list, five villages were randomly selected in each sub-location. All households in each of the selected villages were visited and a household listing questionnaire administered to the household head. Information was collected on age, sex, relationship to household head, and marital status for all household members aged 14 years and above. Those that satisfied the following criteria were eligible for individual interviews:

- Female household members aged 14-19 years and married to any member of the household. In households with more than one female member satisfying these criteria, all were interviewed.
- Male household members, regardless of age, married to a female household member aged 14-19 years. In households where a male member was married to more than one wife aged 14-19 years, the interview questions referred to the youngest wife.

Data analysis

The data were collected using Personal Digital Assistants (PDAs), downloaded into ACCESS database, and subsequently analyzed using STATA. The effect of the intervention is assessed by comparing the two study sites combined at baseline and at endline, and testing for any significant differences between these two time periods. The intervention was considered to have had an effect on the uptake of RH/FP and HIV information and services if significant differences were found between baseline and endline. The expectation was that married adolescent girls in Homa Bay and Rachuonyo districts would demonstrate increased use of comprehensive RH/FP and HIV services at endline as a result of exposure to the intervention activities compared to baseline. Comparisons on select indicators were also made between those married adolescent girls that were exposed to the interventions and those that were not, to ascertain the intervention effects.

Study Populations

The greatest proportion of partners of MAG in this study (nearly 50%) were 20-24 years old (Table 1), followed by the 25-29 year olds (about a third). The majority of female participants (over 70%) were 18-19 years of age (Table 2).

Table 1: Age profile of partners

Age ranges (partners)	Baseline % n=235	Endline % n=201
15-19 years	4	6
20-24 years	44	47
25-29 years	35	31
30-34 years	9	12
35-39 years	3	2
40-44 years	1	1
45 and above	3	2

Table 2: Background characteristics of married adolescent girls

	Baseline n= 472	Endline n=485
Specific Age	%	%
19 years	47	43
18 years	32	30
17 years	13	14
16 years	7	10
15 years	1	3
14 years	0	0
District	n=472	n=485
Homabay	49	59**
Rachuonyo	51	41**
Highest level of education attained	n=472	n=485
Incomplete primary education	46	52
Complete primary education	38	31*
Incomplete secondary education	12	14
Complete secondary	2	2
Collage/tertiary	1	1
No education	1	1
Form of marriage	n=472	n=485
Monogamous	89	90
Polygamous (2 wives)	10	10
Polygamous (More than 2 wives)	1	0
Work outside the home	21	28*
Access to mobile phone & radio	n=472	n=485
Have a personal mobile phone	39	45
Have a radio in the household	76	80
Listen to the radio regularly	90	96**
Listen to radio programs as a couple	74	72

*p<0.05; **p<0.01

The highest completed level of education that most married adolescent girls and their spouses had attained was primary school education (31% for women and 37% for men at endline). The vast majority of couples interviewed were in monogamous unions. While a significant proportion of MAG were full-time homemakers (doing no work outside the household), their partners were mainly self-employed in the informal sector/informal trading or casual laborers. A large proportion of female and male respondents reported having a radio in the household, but only 45% of MAG had a mobile phone of their own, compared to 97% of their spouses. There was no significant difference between baseline and endline in the distribution of MAG interviewed by most of these characteristics (Table 2).

Key findings

Level of spousal support for MAGs' access to family planning and reproductive health services

The importance of male involvement in ensuring women's access to reproductive health services is well-documented. Male participation is especially essential in the case of married adolescent girls, who, due to their young age and reproductive health vulnerabilities, are more likely to require this kind of support. Female respondents were therefore asked about the forms of

spousal support they received in the last one year in obtaining family planning services. The specific forms of support they were asked about included spousal permission to obtain services; provision of transportation or money for transportation to obtain services; money to pay for the services; or being accompanied by a spouse to obtain services (Table 3). Higher proportions of MAG were likely to report having obtained the various forms of support from their partners at endline than at baseline; however, these differences in spousal support for FP access were not statistically significant.

Table 3: Percentage of MAG that were supported by their husbands in accessing 'FP services in the last one year' and other 'RH services during the last pregnancy'

Family Planning Services	Baseline (n=59)	Endline (n=78)
	%	%
Gave permission to go	47	49
Provided transportation/transportation money	17	30
Provided money to pay for services	30	33
Accompanied spouse	8	15
Other RH Services	**(n=350)**	
Provided transportation/transportation money to go for ANC services	**53**	**65****
Gave permission deliver at a health facility	73	68
Provided money to plan for the delivery	**69**	**79****
Provided transportation/transportation money for delivery services at a health facility	51	57
Provided money to pay for delivery services	**62**	**60***
Accompanied spouse for delivery	43	37

MAG=married adolescent girls; RH=reproductive health; ANC=antenatal care
*p<0.05; **p<0.01

Where obtaining a family planning method is concerned, the most common form of spousal support received by married adolescent girls came in the form of permission to obtain the service (34% at baseline; 39% at endline). Spouses of MAG were least likely to accompany their wives to obtain FP services as a form of support (10% at baseline; 13% at endline).

In general, support by MAG partners for accessing other reproductive health services (specifically, antenatal care and delivery) was higher than their support for obtaining FP services. Even in regard to accompanying MAG to obtain services – the least popular form of partner support for both FP and other RH services – MAG partners were still about twice as likely to accompany their spouses for delivery as for FP services. Spousal provision of transportation or transportation money to ensure ANC access by MAG, and spousal provision of money to plan for delivery in the last year recorded a highly statistically significant increase by endline ($p=0.001$ and $p=0.003$, respectively). Spousal provision of money to pay for delivery services in the past year also significantly increased ($p=0.021$).

Family planning utilization

The largest proportion of MAG (67%) and partners (58%) would like to have a total of 3 or 4 children if they could begin life all over again and have children exactly according to their wishes. A considerable proportion had thus already reached (or were on the verge of reaching) their

desired family size, as 72% of married adolescent girls had 2-3 living children at endline. Furthermore, there was a shared desire among about a third of couples, at baseline, to space their next birth by three years, and a desire among about a third of MAG to space their next birth by five years. Despite these realities, married adolescent girls were depending almost exclusively on short-acting (as opposed to long-acting) methods of family planning during the baseline phase.

As Table 4 indicates, prior to the intervention, 38% of MAG were currently using an FP method, with the injectable being the most commonly-used method (66%), followed by the condom (13%), and the pill and Standard Days Method (both at 9%). Following the intervention, 46% of married adolescent girls were currently using a family planning method – a significant increase in FP use between baseline and endline (p=0.005). A highly statistically significant increase was also evident in the use of implants and condoms by the end of the intervention. An increase was equally observed in the current use of the IUD (although this was not significant), while a decrease was noted in the proportion of those using other, non-modern methods of family planning. Married adolescent girls exposed to the interventions were more likely to be currently using FP compared to their peers who were not exposed to the interventions (p=0.006).

Table 4: Type of family planning method among those currently using a method

	Baseline	Endline
Currently using family planning	**(n=383) 38%**	**(n=387) 45%***
Type of family planning method currently used	**Baseline n=146**	**Endline n=176**
	%	**%**
Injectables	**68**	**56***
(Male) Condoms	**13**	**25****
Standard Days Method	9	9
Pills	**9**	**1***
Implants	**2**	**9****
Intra-Uterine Device (IUD)	0	2
Fertility awareness method	0	2
Male sterilization	1	0
Female sterilization	0	0
Withdrawal	0	1
Emergency contraception	0	0
Lactational amenorrhea method	1	1
Other	2	0

Questions allowed for multiple responses.
*p<0.05; **p<0.01

Table 5: Perceived self-efficacy to convince partner to use family planning

"Even if he doesn't agree at first ..."	Baseline (n=472)	Endline (n=485)
	%	%
"... I could convince my spouse to use condoms to prevent pregnancy if I feel we should."	67	72
"... I could convince my spouse to use condoms to prevent HIV if I feel we should."	69	73
"... I could convince my spouse to use some other FP method if I feel we should."	66	72

As a corollary to these findings, self-efficacy has been observed as having the potential to influence family planning use. The perceived self-efficacy of married adolescent girls to negotiate the use of condoms and other family planning methods with their partners was therefore assessed. Increases were observed from baseline to endline in the expected direction for each self-efficacy indicator listed in Table 5, although these were not statistically significant.

Antenatal care

Delays in accessing health services during pregnancy are noted as significantly contributing toward pregnancy complications and maternal morbidity. The specific timing of an expectant woman's first antenatal care visit is thus of critical importance, as is the frequency with which subsequent ANC visits are made. Female respondents that had ever been pregnant were asked questions to explore how ANC visits are prioritized among married adolescent girls (Table 6). Respondents largely continued to make their first ANC visit late in the pregnancy. There was, however, a significant decrease (p=0.046) between baseline and endline, in the proportion of those that attended ANC for the first time at 7-8 months of pregnancy.

Table 6: Antenatal care and delivery

Month of pregnancy at which 1st ANC visit made	Baseline (n=332)	Endline (n=350)
	%	%
< 4 months	46	43
5-6 months	41	40
7-8 months	**13**	**8***
9 months	0	2
Don't know/remember	1	7
Total number of ANC visits made	**n=332**	**n=350**
1	4	5
2	13	13
3	25	26
4	**22**	**30***
More than 4	34	27
Don't know/remember	2	0
Place of delivery	**n=351**	**n=365**
Home	44	36
Govt. health facility	48	55
Private health facility	3	3
Other	5	6
Attendant at birth	**n=350**	**n=365**
Health professional	53	59
Traditional Birth Attendant	38	34
Relative	5	3
Friend	3	1
No one	1	2
Other	1	1

ANC=antenatal care; TBA=traditional birth attendant
*p<0.05

Over ninety percent of those that had ever been pregnant had attended ANC services during their last pregnancy. Of these, 30% reported attending ANC four times as recommended by the Ministry of Public Health and Sanitation's guidelines for Focused Antenatal Care (FANC) at endline, compared to 22% at baseline, representing a statistically significant increase (p=0.017). Married adolescent girls exposed to the interventions were more likely to have attended ANC four times during their last pregnancy compared to those not exposed to the interventions (p=0.009).

Skilled attendance at birth

Despite almost all married adolescent girls in this study making at least one ANC visit during their last pregnancy, at baseline, 44% ended up having home births without skilled attendance (Table 6). This proportion decreased significantly at endline to 36% (p<0.05), while the proportion of government health facility births among MAG increased from 48% at baseline to 55% at endline (This was not statistically significant). There was little difference between the likelihood of married adolescent girls exposed to the interventions and those not exposed to have had skilled attendance at birth (60% versus 57%). This was not statistically significant.

Postpartum family planning use

The use of a family planning method during the postnatal period is key to limiting unintended pregnancies within a period during which the reproductive health of adolescent girls in particular can be severely compromised. Given the desire of many married adolescent girls in this study to space their next birth by three or more years, it is also useful to understand their current utilization of long-acting methods of family planning postpartum.

Immediately after their last delivery, 36% and 44% of married adolescent girls had a health care provider talk to them about family planning at baseline and endline, respectively. Among these, there was an increase (though not statistically significant), from 61% at baseline to 67% at endline, in the proportion of those that accepted an FP method postpartum. As with the case of current use of FP among MAG, injectables were the most commonly chosen postpartum FP method, and there was a significant increase in the uptake of implants (p=0.028) and condoms (p=0.001) among postpartum married adolescent girls between baseline and endline (Table 7).

Table 7: Use of postpartum family planning methods

Method	Baseline (n=124)	Endline (n=153)
	%	%
Injection	69	65
Condom	6	19
Pill	7	6
Standard days method	4	5
Implants	2	7
Lactational amen. Method	1	0
Intra-Uterine Device (IUD)	1	2
Male sterilization	1	0
Emergency contraception	0	0
Female sterilization	0	0
Fertility awareness method	0	1
Withdrawal	0	1

**Questions allowed for multiple response options.*

HIV counseling and testing

Nearly all married adolescent girls that attended antenatal care during their last pregnancy received an HIV test (90% at baseline; 95% at endline), and of these, most (86% baseline; 87% endline) shared their HIV test results with their partners.

In contrast, at baseline, MAG that had never been pregnant and had therefore never been for ANC, were significantly less likely than their ever pregnant peers to have been tested for HIV (74%). Their likelihood of obtaining an HIV test increased to 82% by endline, though this was not statistically significant. The largest proportion of never pregnant MAG (55%) reported being tested within government health facilities as opposed to within Voluntary Counseling and Testing (VCT) centers (25%) at endline. There was, however, an increase in VCT Center-based testing among never pregnant MAG, from 18% at baseline to 25% by the endline period.

Eighty-two percent of MAG partners had ever been tested for HIV at endline, with over half of these tests (57%) taking place at government health facilities, followed by at VCT centers (21%), and via mobile VCT initiatives (13%). Ninety percent of men that had been tested for HIV had shared their test results with their wives. There were no remarkable differences in the HIV testing behavior of MAG partners between baseline and endline.

Utilization of Prevention of Mother to Child Transmission (PMTCT) of HIV services

Ninety-five percent of MAG in this study that had been tested for HIV were willing to share their test results with the interviewer. Of these, 3% reported seropositivity at baseline, compared to 4% at endline. Disaggregation of these data by district, however, indicates that the burden of HIV for married adolescent girls is greater in Homa Bay, where the HIV prevalence of MAG was 5% (versus 1% in Rachuonyo) at baseline– about twice the national prevalence for this age group. At endline, the HIV prevalence of MAG in Homa Bay remained at 5%, compared to 3% in Rachuonyo. The HIV prevalence among spouses of married adolescent girls was 3% at baseline, versus 5% at endline.

Half of the married adolescent girls who reported seropositivity at baseline (n=10) were not currently using a family planning method. Of those that were currently using a method (n=5), 3 were using condoms. At endline, only a third of HIV-positive MAG (n=15) were currently using an FP method, and the majority of these (8 out of 10) were using condoms.

Despite being tested for HIV and receiving their results, at baseline, a third of the HIV-positive married adolescent girls interviewed were not taking anti-retroviral (ARV) medication for PMTCT purposes during their last pregnancy, and a third of the children born as a result of these pregnancies had not been tested for HIV (Table 8). At baseline, nearly half of HIV-positive MAG who had had a pregnancy in the last year were not on antiretroviral therapy (ART) postpartum. Endline results, however, indicate an increase in this regard, with 11 out of 14 HIV-positive MAG that were pregnant in the last year receiving postpartum antiretroviral therapy. Nearly all MAG living with HIV were on ARVs for PMTCT purposes at endline, and 11 out of 14 had their child tested for HIV after their last pregnancy.

Generally, at endline, more HIV-positive MAG received skilled attendance at birth and delivered at a government health facility during their last pregnancy than was the case at baseline.

Table 8: Number of HIV-positive MAG using PMTCT services during last pregnancy

General services	Baseline (n=9)	Endline (n=14)
Taking ARVs for PMTCT	6	13
Child tested for HIV	6	11
Taking ART post-partum	4	12
Received counseling on exclusive breastfeeding	7	12
Place of delivery		
Home	2	2
Government health facility	6	12
Other	1	0
Delivery attendant		
Health provider	6	12
TBA	2	2
Friend	1	0
Other	0	0

PMTCT=prevention of mother-to-child transmission; MAG=married adolescent girls; ARVs=anti-retrovirals; ART=anti-retroviral therapy; TBA=traditional birth attendant

Table 9: Frequency of postnatal care visits among HIV-positive and HIV negative MAG

PNC check-ups at health facility	HIV-negative MAG		HIV-positive MAG	
	Baseline (n=9)	Endline (n=13)	Baseline (n=367)	Endline (n=350)
			%	%
Within 48 hours of delivery	6	9	40	49
2 weeks after delivery	4	6	32	34
6 weeks after delivery	3	2	26	19
6 months after delivery	3	4	21	11

MAG= married adolescent girls

Although postnatal care is an essential component of PMTCT services, a third of HIV-positive MAG did not undergo a health check-up in a health facility within 48 hours of delivery at baseline (Table 9), and the proportion that did obtain PNC services declined for almost every subsequent visit recommended by the national postnatal care guidelines (i.e., at 2 weeks, 6 weeks, and 6 months after delivery). The decline in PNC visits from the initial 48 hour period to six months post-partum also applied to HIV-negative MAG at baseline. At endline, slightly more than half of HIV-positive MAG had a PNC check-up in a health facility within the first 48 hours of delivery during their last pregnancy. There was an increase (which was not statistically significant) in the proportion of HIV-negative MAG that had a similar PNC check-up at endline. The steady decline in subsequent PNC visits, however, is maintained at endline for married adolescent girls, regardless of HIV status.

An emerging issue: Spousal violence

Violence and HIV form a lethal combination, with each having the potential to elevate the risk and impact of the other. Given the relatively high prevalence of HIV among MAG in Nyanza Province, it is important to also explore their experiences with violence. All female study participants, regardless of their HIV status, were asked questions about their experiences with spousal violence. Thirty-nine percent of married adolescent girls had ever been slapped or had a harmful object thrown at them by their husbands at endline, with 82% of those who had experienced such violence

Table 10: Spousal (physical and sexual) violence among married adolescent girls

	Homa Bay MAG aged 15-19		Rachuonyo MAG aged 15-19	
	Baseline	Endline	Baseline	Endline
Physical Violence				
Spouse has ever:	(n=229)	(n=288)	(n=227)	(n=197)
Slapped you or thrown something at you that could hurt you?	44%	48%	26%	27%
This happened in the last one year	(n=101)	(n=137)	(n=60)	(n=54)
	86%	91%	75%	61%
Sexual Violence				
Spouse has ever:	**(n=229)**	**(n=288)**	**(n=227)**	**(n=197)**
Physically forced you to have sexual intercourse when you did not want to?	42%	37%	7%	9%
This happened in the last one year	**(n=97)**	**(n=107)**	**(n=15)**	**(n=19)**
	84%	92%	93%	63%
Forced you to do something sexual that you found degrading or humiliating?	17%	18%	5%	5%
This happened in the last one year	**(n=39)**	**(n=51)**	**(n=12)**	**(n=10)**
	69%	78%	83%	40%

MAG=married adolescent girls

reporting that this has occurred in the last year. Experiences of spousal violence were more frequent in Homa Bay compared to Rachuonyo, however, with almost twice as many MAG in Homa Bay having experienced this form of physical violence at baseline and endline compared to Rachuonyo. Nationally, 25% of married girls aged 15 to 19 reported having experienced spousal physical violence.[7]

Experiences of coercive marital sex were also much more likely to occur among MAG in Homa Bay than in Rachuonyo at both baseline and endline. Nationwide, 10% of married adolescent girls aged 15-19 reported having experienced forced sex in marriage.[8]

Discussion, conclusion and recommendations

The relatively poorer health and health service utilization outcomes of married adolescent girls compared to their unmarried peers in developing countries has long been recognized. Challenges remain, nonetheless, in addressing their access to critical services, including those related to reproductive health (and family planning in particular) and HIV. Studies from around the world indicate that married girls are often isolated and have limited access to information in general; there is often a generational gap between married girls and their partners, making contraceptive use negotiation and the uptake of other RH services difficult; and yet married girls often have sex more frequently than their unmarried peers, given the constant availability of their marriage partners. The present study, set in Nyanza Province, therefore aimed to expand married adolescent girls' access to comprehensive RH/FP and HIV information and services and to test the effects of a set of interventions designed for this purpose.

The study hypothesized that:

- married adolescent girls in the communities where RH/FP & HIV information and services are promoted would be more likely to use comprehensive services than before; and
- men married to adolescent girls in the communities where RH/FP & HIV information and services are promoted would be more likely to support their partners' use of comprehensive services than before.

The study resulted in the following major findings:

- ***About half of married adolescent girls in the study sample were married to adolescents/youth:*** Some studies on married adolescent girls have emphasized the often large generation gap separating these girls and their partners, while others have highlighted variations in age patterns between married adolescent girls and their partners in particular countries. Findings from this study indicate that about half of adolescent girls (48% at baseline; 53% at endline) were married to partners in the 15-24 year age category. At baseline and endline respectively, 79% and 73% of married adolescent girls interviewed were 18-19 years of age. This dynamic raises a new set of issues to contend with when targeting adolescent girls married to adolescent/youth partners.
- ***There was increased uptake of family planning methods among married adolescent girls exposed to the interventions:*** At endline, the proportion of married adolescent girls that reported currently using a family planning method was significantly higher among those

[7] KDHS 2008-9.
[8] KDHS 2008-9.

who had either listened to the radio program or been visited by a CHW in the last year than among those who did not listen to the radio program, or had no CHW visit. There was also an increase in the use of long-acting methods of family planning by married girls, including implants and the IUD. Although the use of contraceptive implants was higher among those exposed to the intervention than among those not exposed, the difference was not statistically significant.

- ***There was increased support among partners for married adolescent girls' access to reproductive health services:*** Among partners who participated in the endline interviews, the proportion that supported their wives' access to ANC and delivery services (by providing transportation or transportation money for ANC in the last year, and by providing money to plan for delivery in the last year) was significantly higher at endline than at baseline. Support by MAG partners for accessing other reproductive health services (specifically, antenatal care and delivery) was higher than their support for obtaining FP services.
- ***There was increased attendance of the four recommended antenatal care visits among married adolescent girls exposed to the interventions:*** Among married girls that participated in the endline interviews, the proportion that indicated that they had attended antenatal care visits four times, as recommended by the Ministry of Public Health and Sanitation's guidelines for Focused Antenatal Care, was significantly higher among those who had listened to the radio program or had been visited by a CHW in the past year than among those who had not listened to the radio program, or had not been visited by a CHW in the last year.
- ***There was decreased use of unskilled birth attendants during the last pregnancy among married adolescent girls:*** At endline, the proportion of married adolescent girls that had home-based births without skilled attendance decreased significantly, while the proportion of government health facility births among married girls increased. There was no significant difference in the proportion of married adolescent girls exposed to the interventions and those not exposed that had skilled attendance at birth.
- ***There was increased use of postnatal care services among married adolescent girls:*** At endline, the proportion of married adolescent girls that had a postnatal care check-up in a health facility within the first 48 hours of delivery during their last pregnancy increased. There was a steady decline, however, in the recommended, subsequent post-natal care visits, with no significant difference between baseline and endline results. There was also an increase at endline (though not statistically significant) in the proportion of those that accepted an FP method postpartum, along with a statistically significant increase in the uptake of implants and condoms among postpartum married adolescent girls between baseline and endline.
- ***There was decreased likelihood of worrying about being HIV-positive among married adolescent girls and partners, and increased uptake of HIV-testing among never pregnant married adolescent girls:*** The proportion of married adolescent girls and partners that worry they might be HIV-positive decreased significantly between baseline and endline. The proportion of never pregnant married girls that had obtained an HIV test increased by endline, although this was not statistically significant.
- ***Spousal violence is an emerging issue among married adolescent girls and their partners:*** Baseline and endline results indicated that spousal physical and sexual violence is a major issue in Homa Bay district of Nyanza province in particular. Married adolescent girls aged 15-19 in Homa Bay were about twice as likely to report spousal physical violence as their peers nationally and in Rachuonyo district. They were also about four times as likely as

their peers nationwide and in Rachuonyo district to report spousal sexual violence. Although the issue of violence was not a main focus of the interventions, formative study results suggested that violence might be prevalent, and questions on this subject were posed solely to married adolescent girls to gain a sense of the scale of the problem.

In conclusion, the study demonstrated that the combined use of interactive media and community health worker visitation, health information provision, and referrals, is an effective means of reinforcing RH/FP and HIV messages, and of increasing access to RH/FP and HIV information and services among married girls in rural settings. This method is particularly effective in expanding married adolescent girls' access to family planning, antenatal care, delivery, and postnatal care services, and in expanding spousal support for accessing these services.

The primary recommendations from the study are as follows:

(i) For some settings, there is a need for a cognitive shift from married adolescent girls alone to 'married adolescent *couples*', or 'married youth couples', whose needs are likely to require tailored interventions;

(ii) Interactive radio programming should be used to target and inspire hard-to-reach groups, such as married adolescent girls;

(iii) Community health workers should be incentivized and monitored in order to effectively provide services to married adolescent girls;

(iv) Married adolescent girls and their partners should be considered as a key target group for the promotion of long-acting methods of family planning;

(v) Spousal or intimate partner violence is an area that requires further, careful investigation and intervention among married adolescent girls and their partners.

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