PROGRESS IN FAMILY PLANNING

RESEARCH BRIEF

Assessing the Feasibility of Providing Family Planning Information via Mobile Phones in Kenya and Tanzania

Objective

To evaluate the acceptability, feasibility, and potential behavioral impact of providing contraceptive information via text message on mobile phones in Kenya and Tanzania.

Methods

This study collected data from the PROGRESS supported Mobile for Reproductive Health (m4RH) pilot program between September 2010 and June 2011 in Tanzania, and between January 2010 and June 2011 in Kenya. m4RH is an on-demand text message-based mobile phone service that provides information about contraceptives and locations of nearby clinic services. Researchers used three methods of data collection to assess the m4RH program. First, a total of 7,687 unique users who accessed the m4RH system were electronically logged (mobile number, type of information queried, date of the query, and time of the query). Second, all users who accessed the m4RH system were sent four questions via SMS to determine gender, age, promotion point, and potential family planning impact; response rates were 40% in Tanzania and 27% in Kenya. Third, a subset of m4RH users was interviewed by telephone (26 users in Tanzania, 22 in Kenya).

Findings

- During the pilot period, 7,687 unique users accessed m4RH in Tanzania and Kenya (17,767 total queries, i.e., "hits" on an item in the system) to learn about specific contraceptive methods.
- m4RH reached several important demographic segments. Women were the majority of users (61% Kenya, 56% Tanzania) among those reporting their gender; however, men also represented a large portion of users, and reported seeking information on contraceptive methods for themselves as well as their female partners.
- Adolescents and young adults up to 29 years old were the most frequent users of m4RH, among those reporting their age (82% in Kenya and 59% in Tanzania).
- Condom information was a top choice for users 29 and younger, and mentions of condom use were the first or second most frequently cited family planning change among these younger age groups responding to the text message-based survey. Importantly, younger users also were interested in a variety of short- and long-acting methods.
- In the text message-based survey of four questions, m4RH users mentioned a variety of changes in family planning use, which were consistent with the reproductive life cycle of the respondent.
- In Kenya, users accessed natural family planning information and condoms most frequently (22% and 17%, respectively, of total queries),

while in Tanzania, natural family planning and emergency contraception were accessed most frequently (21% and 16%, respectively, of all queries).

- Telephone interview participants liked the simple language and confidentiality of receiving health information via mobile phone, and reported increased contraceptive knowledge and use after using m4RH. Younger users also appreciated that m4RH is a free service.
- Some users accessing the system were community health workers and reported using m4RH as a tool to complement their family planning counseling.

Conclusion

Providing contraceptive information via text-message based mobile phone service is an effective strategy for reaching the general public, including young people and men, and influencing their contraceptive behavior. However, more research is needed to learn how to effectively link young people to youth friendly services.

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Background

Although total fertility rates (TFR) have been declining across Africa over the past 10 years, they remain high in Tanzania (5.4) and Kenya (4.7), where unmet need for family planning continues to be a critical public health issue. WHO classifies both Kenya and Tanzania as countries with critical shortages of trained health personnel. Tanzania has one of the lowest doctor-patient ratios in the world—one doctor for every 50,000 patients—and Kenya has only one doctor for every 10,000 patients. With such health worker shortages, health sector leaders are increasingly turning to alternative means of providing essential health information and support.[1]

Evidence has shown that mass media interventions are effective in encouraging the use of contraceptives.[2] The widespread presence, reach, convenience, and privacy of mobile phones present a major opportunity to reach a wider audience with health information outside of a clinical setting. During the past decade, mobile phone penetration has rapidly spread across Africa.[3] Between 2000 and 2010, mobile phone subscriptions in Kenya increased by nearly 200%.In 2010, nearly half of the population in Tanzania (20 million people) used mobile phones, and mobile phone penetration is expected to increase by another 70% by 2015. Mobile phones are surprisingly accessible to younger populations in Sub-Saharan Africa where subscriptions for people under 30 are expected to reach 108 million in 2012. Use of SMS (short message service protocol), which is available on every mobile phone and is often referred to as "text messaging," has increased dramatically on a global scale, with more than 200,000 text messages sent every second (2010). Several factors make communicating via SMS appealing: text messages are an inexpensive (typically US$.01-.05/message), private, and efficient means of communicating.

The Mobile for Reproductive Health (m4RH) program is an automated, interactive, and on-demand SMS system that provides basic information about the full range of contraceptive methods.

Study Design, Population, and Methods

The Mobile for Reproductive Health (m4RH) program is an automated, interactive, and on-demand SMS system that provides basic information about the full range of short-acting and long-acting contraceptive methods. m4RH text messages present information in a concise format consisting of 2-3 message screens per method. The messages communicate essential facts about contraceptive methods and address common misconceptions. They were developed using best practices for health communication programs, global guidance from the WHO, country-specific national family planning (FP) guidelines, and assistance from local agencies.[4]

m4RH provides a family planning clinic locator database that allows users to locate nearby clinics. For the pilot program in Tanzania, m4RH was initially promoted in a small number of Marie Stopes International (MSI) family planning clinics through posters, fliers, and business-size palm cards. Later, promotion was extended to some public sector clinics and a network of private clinics affiliated with PSI, and through outreach efforts by community health workers, peer educators, and during community events. In Kenya, m4RH was promoted in several clinics run by MSI and Family Health Options of Kenya and as part of a radio campaign promoting family planning to young people, led by PSI.

The goals of this study were to investigate the acceptability, feasibility, and potential behavioral impact of providing information about contraceptives and locations of nearby clinic services via mobile phone. The study investigated three main questions related to use of the m4RH system:

1. Is m4RH an acceptable means of providing information about contraceptives?

2. What types of information do people request from m4RH?

3. How does using m4RH influence people's contraceptive behavior?

During the pilot period, researchers used three methods of data collection:

- *Automatic logging of all m4RH queries.* System logs automatically captured basic data for each query made to the m4RH system including the associated mobile number, type of information queried (e.g., contraceptive method type), and the date and time of the query.

- *Questions sent via SMS to all m4RH users.* Every m4RH user who accessed the system received four demographic and behavior change questions (in Swahili in Tanzania and English in Kenya) via SMS. The questions asked users about their gender, age, where they learned about m4RH, and how m4RH has affected their use of family planning. Questions were sent in batches, with an average of nine months elapsed between the user's initial query to the m4RH system and receipt of the SMS questions. Every respondent was entered into a lottery to receive free air time.

- *In-depth telephone interviews.* Users who responded to the SMS questions about gender and age received a request via SMS to participate in a telephone interview. Those who answered the request affirmatively were contacted and interviewed based upon their availability at the time the researcher called. Researchers conducted 26 interviews in Kenya and 22 in Tanzania in August, September, and December 2011 with a convenience sample of respondents. Trained research associates based in Nairobi and Dar es Salaam conducted the interviews. Interviews lasted an average of 30 minutes, and participants received free air time as an incentive for participation.

Results

Automatic logging of all m4RH queries. During the pilot period, users made a total of 4,813 contraceptive queries (2,870 unique users) to the m4RH system in Tanzania and 12,954 queries (4,817 unique users) to the Kenyan system. The most popular contraceptive method queried was natural family planning (21% in Tanzania; 22% in Kenya), followed by condoms (12% in Tanzania; 17% in Kenya) (see table).

Questions sent via SMS to all m4RH users. In Tanzania, approximately 40% of all users responded to questions sent via SMS about their gender, age, or where they learned about m4RH, while in Kenya, just more than a quarter (27%) of users reported these data. Slightly more than half of the users who reported their gender were female (56% in Tanzania and 61% in Kenya). Most of the users in both countries were 29 years old or younger: 82% in Kenya and 59% in Tanzania.

In Tanzania, 18% of m4RH users responded to the open-ended question, "How has m4RH changed your family planning use?";

Number of Family Planning Methods Queried by m4RH Users during Pilot Period (shown by country below)

Methods Queried	Kenya (12,954 queries) Jan. 2010 – June 2011	Tanzania (4,813 queries) Sept. 2010 – June 2011
Natural family planning	2,851 (22%)	1,012 (21%)
Condoms	2,146 (17%)	585 (12%)
Implants	1,458 (11%)	560 (12%)
Injectables	1,409 (11%)	536 (11%)
IUCD	1,269 (10%)	457 (9%)
Oral contraceptive pills	1,426 (11%)	450 (9%)
Emergency contraception	1,350 (11%)	754 (16%)
Permanent methods	1,045 (8%)	459 (10%)

12% of users responded to that question in Kenya. Self-reported changes in family planning mentioned in response to this question referred to long-acting methods most frequently, followed by short-acting and natural methods, respectively.

Users reported that they learned about m4RH through: posters placed in health facilities or clinics (59% in Tanzania; 22% in Kenya); partners, relatives, and friends (18% in Tanzania; 30% in Kenya); or community health workers (18% in Tanzania; 11% in Kenya). In Kenya, 33% of users reported that they learned of m4RH from the radio.

Telephone interviews. Of the 26 telephone interview participants in Tanzania and 22 in Kenya, m4RH users were overall very satisfied with the program. Telephone interview participants reported that the messages were easy to understand and informative. "It is using terms you can understand," said a 22-year-old female. "It has clear knowledge on what you want to know. It is simple to understand, simple language that everyone can understand."

Young people especially liked the convenience of m4RH, noting that the program is fast, simple to use, confidential, and free. "I like [m4RH] a lot!" said a male, age 21. "It is time saving—only you and your phone, and [it's] confidential—only you and your phone!" Users reported consulting m4RH for both general and specific information about family planning.

Participants' responses suggest that m4RH may be associated with an increase in family planning knowledge. Most participants reported that they learned new contraceptive information from m4RH. "I learned about different methods of FP, the ones I did not know existed," said a 22-year-old female. "[I] did not know other FP methods like implants existed." Participants also reported that they better understood the correct use of various contraceptive methods because of knowledge gained through m4RH. Participants stated that m4RH taught them about contraceptive side effects and even about dual protection. "I decided to continue using condoms because it has a dual protection against STI and pregnancy," said a male, age 21.

Male participants reported learning that family planning is an issue for men and about how to communicate with their partners about family planning. "Family planning was perceived long term as an issue for women but now I understand it's for all women and men," said a male, age 21. "I told my wife, and actually we read the messages together," said a 34-year-old male, suggesting that m4RH may facilitate partner communication around family planning.

When asked whether accessing m4RH had prompted them to take action, many of the 48 participants reported changing their behavior after accessing information from m4RH. The most common behavior changes reported were use of condoms and changing family planning methods. "I changed my method from condoms to oral pills," said a female, age 24. Some participants reported attending a clinic as a result of information they received from m4RH, and a few referred to increased self-efficacy for visiting a clinic and adopting FP. "m4RH gave me courage to go and choose a method at the clinic," said a female, age 31. Among participants who reported no change, many reported maintaining their current family planning method, indicating that m4RH may also support contraceptive continuation. "I did not change my method, I just continued with injections," said a female, age 26. These reported behavior changes suggest the use of m4RH may influence users' family planning decisions.

Findings Are Promising

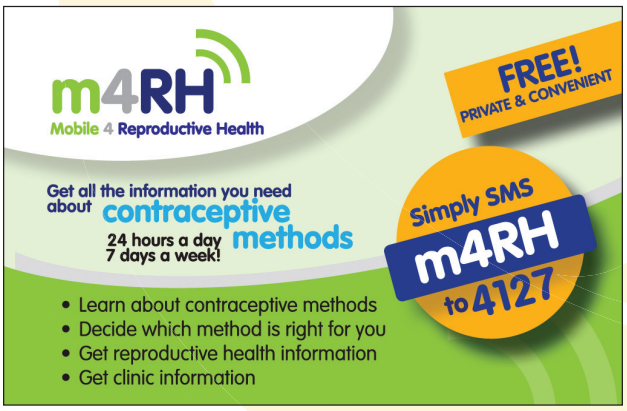
This study is the one of the first to provide evaluation data from a pilot mobile phone program targeting the general public with family planning information in sub-Saharan Africa. Other mobile phone programs in high-income countries have shown that providing sexual health information to youth is feasible and effective in promoting use of health services and healthy sexual behavior.[5] This study adds to the evidence base by demonstrating that information about the full range of contraceptive methods can be feasibly delivered and accessed by women and men of reproductive age via mobile phone. Additionally, data from some participants suggest the potential for positive behavioral impact.

m4RH reached several important demographic segments. Men represented a large portion of users, and they seemed to be investigating contraceptive methods for themselves as well as their female partners. Evidence shows that communication between couples and shared decision-making predict increased use of family planning,[6] and women are more likely to use contraceptives if men are involved in and supportive of the decision.[7] Mobile phones provide a new channel for reaching men and encouraging shared decision-making around contraceptives.

Adolescents and young adults were the heaviest users of m4RH, among those reporting their age. This is not surprising considering that young people tend to be frequent users of mobile phones and text messaging.[8] Condom information was a top choice for users 29 and younger, and mentions of condom use were the first or second most frequently cited family planning change among these younger age groups. Importantly, younger users also were interested in a variety of short- and long-acting methods. Some evidence suggests that when presented with the option to use long-acting methods, young people intending to use short-acting methods may accept the longer acting method instead.[9] Data from this study suggest that using mobile phones to reach adolescents and young adults with information about the range of

contraceptive options may help to overcome barriers that limit their use of modern contraceptive methods, such as lack of knowledge, limited access, and concerns about side effects.

Another interesting finding came from the users who were also community health workers (CHWs) and peer educators. Both of these groups reported that they promote m4RH and use it as a means to review information when counseling about family planning. They recommend m4RH to their clients, and their clients use m4RH to supplement what they learn from the CHW. The use of m4RH to support the work of peer educators and community health workers is an unintended positive outcome that demonstrates the applicability of this tool in multiple settings.



Palm cards provided information to users.

This research has several limitations. The first is that data were collected during the pilot period when m4RH promotion was confined to a small number of clinics. Second, only 40% of all m4RH users in Tanzania and 27% in Kenya reported any demographic data or family planning behavior, and only a small number of m4RH users (n=48) were interviewed by telephone; non-responders may have different characteristics or alternative perspectives. Third, responses to the text questions may be biased by socially desirable reporting; for example, some young people may have felt uncomfortable reporting their age accurately due to stigma against sexual activity among unmarried adolescents, and others may have felt pressure to report a positive change in their family planning use.

Next Steps

The m4RH text-messaging system has prompted wide interest among partners in Tanzania and Kenya, as well as interest in other countries. This interest has led to additional uses and expansions of the system tested in this study, contributed to a more focused discussion about this approach among task forces associated with the Ministries of Health, and has raised questions about sustainability and ongoing service costs.

In Tanzania, m4RH was incorporated into a national family planning campaign called Jiamini and promoted through radio, TV, and magazine advertisements. The campaign had a major impact on the reach of m4RH. During the three-month period of April to June 2012, about 50,000 unique users accessed m4RH. During the preceding three months, without this campaign, about 3,000 users accessed the system. The mass media campaign resulted in about 17 times more people using m4RH.

Another project, which is developing a mobile job aid for family planning, has included a link to m4RH in the system; FHI 360, D-Tree International, and Pathfinder International are testing this mobile job aid. Other expanded uses of the m4RH platform are underway in Kenya and Rwanda. In Rwanda, the program is being expanded to focus on health content for youth including information about HIV, other sexually transmitted infections, and puberty.

The results from this pilot project suggest that family planning information can be delivered feasibly via mobile phone and may reach many different population segments—including young people and men. The study also found that m4RH has the potential to affect contraceptive and condom use knowledge and behavior. This study presents a first look at the promise of mobile phones for family planning education and support. Future research can build on this pilot to explore such issues as the relationship between text messaging and uptake of contraceptive methods, continuation rates, and how best to link users of mobile phone-based systems to services, among other issues. At the same time, growing interest in this platform can utilize the findings from the study when addressing issues such as sustainability, involvement of partners, and integration into related mobile platforms.

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