



# Assessing the Effects of mCenas! SMS Education on Knowledge, Attitudes, and Self-Efficacy Related to Contraception Among Youth in Mozambique



Like the youth population, over the past decade, the use of mobile phones in Mozambique has surged. Mobile phone subscriptions increased from 152,652 in 2001 to 12,401,290 in 2013.<sup>4</sup> Using mobile phones, particularly SMS, is a growing mechanism for delivering health-education messages. However, there is a gap in evidence linking SMS to sexual and reproductive health (SRH) outcomes, specifically knowledge and intentions to use contraception in low-income settings such as Mozambique.

To fill this evidence gap, the Evidence to Action for Strengthened Family Planning and Reproductive Health Services for Women and Girls Project (E2A) used a comprehensive youth program called mCenas! to assess the effects of a text message intervention for youth on their knowledge, attitudes, and self-efficacy related to contraception. Pathfinder International, through the USAID-funded Extending Service Delivery/Family Planning Initiative, implemented mCenas!, with assistance from Dimagi, Inc., in Mozambique's Matola district of Maputo province and Inhambane City district of Inhambane province from September 2013 to June 2014. mCenas! targeted youth 15-24, with and without children, in an interactive two-way SMS system that engaged them with SMS to increase their knowledge about contraceptive methods, dispel common myths around contraception, and address common barriers youth face regarding use of contraception. Youth received story messages three times a week for eight weeks and then contraceptive information messages three times a week for four weeks. Youth also had access to a menu of the frequently asked SRH questions and contraceptive method information messages, and were linked to a youth-friendly hotline

## About E2A

The Evidence to Action for Strengthened Family Planning and Reproductive Health Services for Women and Girls Project (E2A) is USAID's global flagship for strengthening family planning and reproductive health service delivery. The project aims to address the reproductive healthcare needs of girls, women, and underserved communities around the world by increasing support, building evidence, and facilitating the scale-up of best practices that improve family planning services.

Awarded in September 2011, this five-year project is led by Pathfinder International, in partnership with the African Population and Health Research Center, ExpandNet, IntraHealth International, Management Sciences for Health, and PATH.

## About the assessment

This policy brief is derived from a comprehensive assessment report that can be downloaded at: [www.e2aproject.org/publications-tools/assessing-the-effects-of-mcenas.html](http://www.e2aproject.org/publications-tools/assessing-the-effects-of-mcenas.html)

## Introduction

Mozambicans younger than 25 years of age now comprise half of the country's population. This large youth population tends to marry and bear children early: 38 percent of adolescents (15-19) have a child or are pregnant and the median age at first birth is 19.<sup>1</sup> The majority of young women do not use modern contraceptives. In 2011, among young women, 5.8 percent aged 15-19 and 11.4 percent aged 20-24 were using a modern method—rates of contraceptive use that had declined since the previous Demographic and Health Survey in 2003.<sup>1,2</sup> Mozambique's youth have limited knowledge, skills, and services to protect themselves from unintended and early pregnancy, HIV, and other sexually transmitted infections. Misconceptions that impede contraceptive use are common, women and girls often lack the autonomy to make independent decisions about using contraceptives, and structural barriers such as long distances to health facilities and commodity stock-outs are a reality for many.<sup>3</sup>

<sup>1</sup>Instituto Nacional de Estatística. *Demographic and Health Survey, 2011* (Maputo, Mozambique, 2011) Available at: <http://www.measuredhs.com/pubs/pdf/FR266/FR266.pdf>.

<sup>2</sup>Instituto Nacional de Estatística. *Demographic and Health Survey, 2003* (Maputo, Mozambique, 2003) Available at: <http://www.measuredhs.com/pubs/pdf/FR161/FR161.pdf>.

<sup>3</sup>Pathfinder International. *Barriers to Institutional Deliveries and Family Planning: A Qualitative Study from Cabo Delgado, Zambezia, and Inhambane, Mozambique* (Maputo, Mozambique, 2013).

<sup>4</sup>Union IT. 2013 Global ICT Data. 2013. Available at: <http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>.

(Alo Vida) managed by the Ministry of Health where they could get answers to questions about contraception and referrals to health facilities.

E2A undertook the study to generate evidence on whether delivering information on contraception via SMS is acceptable to youth 18-24 in Mozambique and could lead to improvement in their contraceptive knowledge, attitudes, and self-efficacy. The study also offers youth perspectives on barriers to accessing and utilizing SRH services. Data can be applied to improve future SRH programming for youth in Mozambique and beyond. Improved SRH programming for youth could have significant effects on the large youth population: stymieing unintended and early pregnancy by enabling young people to access contraceptive information and a broad range of methods, and empowering them to demand services that are respectful of their rights and unique needs.

## Methodology

E2A developed closed- and open-ended survey questions which were asked mainly through face-to-face interviews. The number of questions answered by each respondent depended upon their sex and whether or not they had children. The endline questionnaire assessed the acceptability of the mCenas! intervention.

### Study Questions

1. *Is using SMS an acceptable method of delivering SRH, including contraception information, to youth aged 18-24 in Mozambique?*
2. *Does the provision of information through SMS messaging (when integrated into a larger program that encompasses interpersonal communication with peer educators and small groups) improve youth's knowledge of contraceptive methods and reduce misconceptions about contraception?*
3. *Does the provision of stories based on behavior change theory through SMS messaging (when integrated into a larger program that encompasses interpersonal communication with peer educators and small groups) lead to improvements in self-efficacy, outcome expectations, and attitudes related to contraceptive methods among youth in Mozambique?*

## Study Limitations

Because mCenas! was a program that integrated the SMS component with facility- and community-based interventions, and not just a standalone SMS intervention, it was impossible to determine the relative contribution of the SMS intervention to observed improvements in knowledge, attitudes, and self-efficacy related to contraception. All we can say is that the SMS intervention contributed to those observed improvements. Additionally, while 895 youth aged 18-24 were recruited for the study at baseline, only 504 of them could be reached at endline. Consequently, the study focuses on the 504 participants, the majority of whom were aged 20-24 (about 60 percent of males and females) and had never been married, but had had sex. Per the study's sampling design, about half of respondents had one or more children, while the other half had no children. The loss of youth during the endline survey makes it difficult to precisely determine the effects of the intervention on contraceptive knowledge, attitudes, and self-efficacy.

## Key Findings

### Knowledge about contraception:

mCenas! contributed to an increase in the number of contraceptive methods the young participants knew about. While 74.4 percent of females with children and 59.9 percent of females without children had medium-high knowledge of three or more methods at baseline, 86.6 percent and 73.9 percent did respectively at endline. And while 33.5 percent of males with children and 30.9 percent of males without children had medium-high knowledge of three or more methods at baseline, 53.4 percent and 57.7 percent of them respectively had medium-high knowledge of three or more methods at endline.<sup>5</sup>

### Safety, ease of use, and effectiveness of contraceptive methods:

Perceptions of safety, ease of use, and effectiveness improved significantly among both males and females for multiple modern methods between baseline and endline. Among female respondents, there were significant increases in the percentages who perceived condoms, emergency contraception, implants, injectables, and IUDs as safe to use, and among males, the percentages who perceived the combined oral pill, injectables, and IUDs to be safe increased significantly. The percentages of female youth that perceived emergency contraception, implants,

injectables, and IUDs to be very easy to use also increased significantly, and among male youth, the percentages who perceived emergency contraception, implants, combined oral pills, injectables, and IUDs to be very easy to use increased during the intervention. Although perceptions of the effectiveness of the methods were generally low, there were significant increases in the percentages of male and female youth who perceived emergency contraception, implants, combined oral pills, and IUDs to be very effective.

### Ever use and current use of contraception:

The study shows statistically significant inter-survey increases only for combined oral pill and emergency contraception (only among females with children). This is not unexpected considering the short duration (three months) of the intervention. Among female youth, current use increased significantly only for the male condom and combined oral pill, and these significant increases were observed only among those with children; among male youth, current use of a method increased significantly only for partner's use of combined oral pill. As with ever use, the statistically insignificant increases in current use should not be unexpected in view of the short duration of the intervention.

### Intention to use a contraceptive method:

Intention to use a method was examined separately for respondents who reported to be using a method and those who reported they were not. The interventions contributed to some increases in intention to use a method in the future: (i) Intention to use a contraceptive method during the year following the surveys was high among male and female respondents, whether or not they had children or reported to be using or not using a method at the time of the surveys; (ii) There were significant increases in the intention to use a method during the year following the surveys among males without children who reported to be using a method and among females without children who reported not to be using a method; (iii) Among males, the percentage reporting intention to use a method during the year following the endline survey was higher among those who reported to be using a method, whether or not they had children; among females, the percentages reporting intention to use a method in the year following the endline survey did not differ by whether or not respondents were using a method at the time of the survey.

<sup>5</sup>To be classified as having medium-high knowledge, respondents gave accurate answers for 2-4 method-specific issues raised.

# Key Findings

**Contraception attitudes, beliefs, and outcome expectations:** Youth were better informed about contraception and its effects following exposure to the SMS interventions. During mCenas!, there were significant declines in the percentage of youth who believe that use of contraception will make it difficult to have children after stopping use and significant increases in the percentage of youth who agreed it was okay for a young married/unmarried woman to use other contraceptive methods besides condom. Furthermore, youth who view contraception as a way to increase opportunities for further education increased significantly, though only among those without children.

**Perceived self-efficacy:** At both baseline and endline, self-efficacy was high for males and extremely low for females. While at baseline and endline there was no task

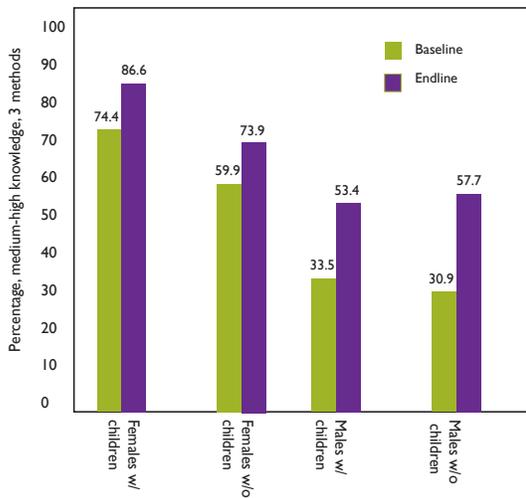
for which less than 7 of 10 male youth expressed confidence in their ability to perform/accomplish, there was not a single task in which up to 1 of 10 female youth expressed confidence in their ability to perform/accomplish. While the SMS interventions could be said to have moderately enhanced the confidence of male youth to perform some tasks, the same cannot be said of female youth: the SMS intervention appears to have had no effect on their confidence to perform contraception-related tasks.

**Potential barriers to contraceptive use:** To determine potential barriers to contraceptive use, respondents were asked to agree/disagree with statements that reflect attitudes/conditions that either promote (facilitators) or discourage (barrier) contraceptive use. At both baseline and endline, the overwhelming majority of respondents (in

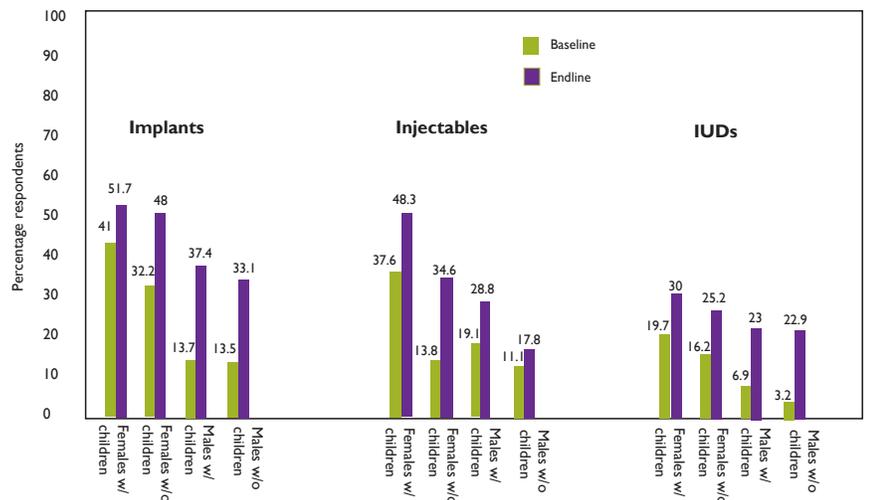
most cases more than 8 of 10) agreed with statements that reflect attitudes/conditions that promote contraceptive use and disagreed with statements that reflect attitudes/conditions that hinder contraceptive use.

**Acceptability of mCenas!:** The majority of participants were satisfied with the intervention. They felt comfortable sending and receiving SMS messages about SRH and expressed willingness to receive SMS messages on SRH in future. They were largely comfortable with the days and times of the week that they received the messages. More than half of the respondents said there were just enough messages and that they were satisfied with their length. Despite some challenges, including network failure and difficulties in sending messages, more than 90 percent of participants said they would be willing to pay for the same type of messages in the future.

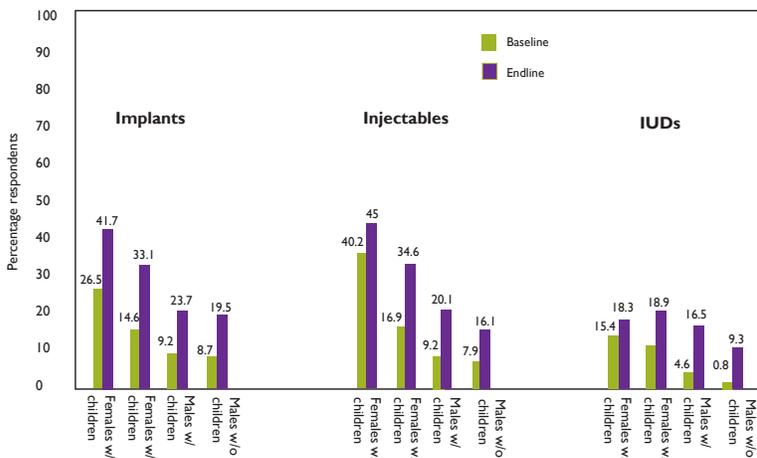
**Knowledge about contraception: medium-high knowledge of three or more contraceptive methods**



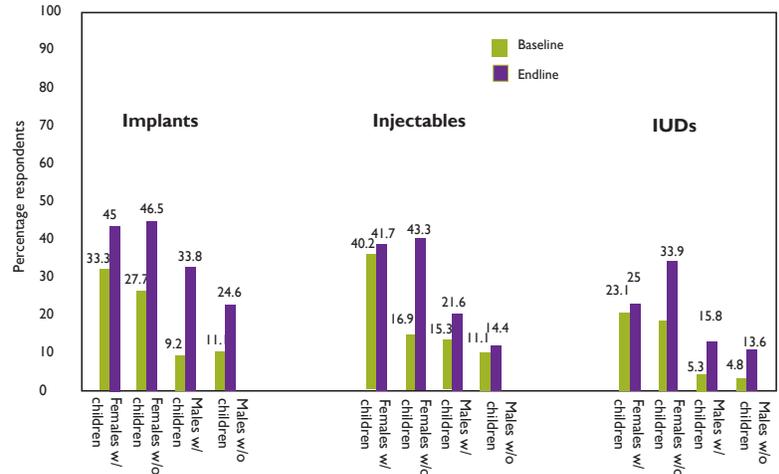
**Respondents' Perceptions of Implants, Injectables, IUDs as 'Very Safe'**



**Respondents' Perceptions of Implants, Injectables, IUDs as 'Very Easy to Use'**



**Respondents' Perceptions of Implants, Injectables, IUDs as 'Very Effective'**



## Recommendations

**Give mobile phone interventions sufficient time.** Disseminating contraception messages to youth via SMS has the potential to increase knowledge of contraception, reduce misconceptions, and improve attitudes about contraception among youth. To maximize the benefits of mobile phone interventions, they may need to be implemented over a relatively long period of time to give beneficiaries sufficient time to process and act on the information they receive. It usually takes time to translate knowledge to practice and three months may not be enough.

**Consider focus on safety and effectiveness of methods.** Knowledge, specifically about the safety and effectiveness of contraceptive methods, was low among the youth in this study. In view of the fact that perceptions of the safety and effectiveness of contraceptive methods might inform the decision to use them, subsequent mHealth interventions may consider developing additional content/messages focused on safety and effectiveness of methods, potentially including comparative effectiveness of methods.

**Address self-efficacy among female youth.** Self-efficacy about contraception was considerably low among female youth, and, unfortunately, mCenas! did not appear to improve the situation. Subsequent mobile phone interventions should devote significant effort to addressing self-efficacy among female youth by reviewing messages to ensure an emphasis on building confidence to seek and use contraception services, and by complementing mHealth with community activities, such as face-to-face communication with peers and peer educators, which can include role play and coaching. Also, there needs to be better understanding of the reasons for low self-efficacy for contraceptive use among young women, and where gender inequity is implicated, interventions should involve young men.

**Design mHealth studies to permit an assessment of the relative contribution of the mobile phone application to improvements in knowledge, attitudes, and self-efficacy related to contraception.** mCenas! was an integrated program (use of mobile phone plus other community- and facility-level activities), making it difficult to assess the relative contribution of the mobile phone application to the observed increase in contraceptive knowledge and improvements in attitudes toward contraception. A design that permits a comparison of an integrated program with a standalone program would have permitted a richer assessment of these elements.

**Explore how interventions like mCenas! can be implemented and sustained in Mozambique.** The overwhelming majority of respondents expressed acceptance of mCenas!, implying that SRH messages delivered through this channel have high probability of reaching youth. As mobile phone ownership increases among youth, mHealth interventions might become an increasingly important channel to address SRH issues among youth in Mozambique.

**Use stories delivered via SMS to reach young people with SRH content.** Findings from the assessment suggest that longer fictional narratives delivered via SMS are a feasible and acceptable way of reaching young people with SRH content. The use of realistic stories to complement informational messages may have contributed to young people's engagement with the intervention and the positive findings.



EXPANDNET



This publication was made possible through support provided by the Office of Population and Reproductive Health, Bureau for Global Health, U.S. Agency for International Development, under the terms of Award No. AID-OAA-A-11-0002. The opinions expressed herein are those of the author(s) and do not necessarily reflect the views of the U.S. Agency for International Development.

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