



Original research article

The Senegal urban reproductive health initiative: a longitudinal program impact evaluation☆☆☆



Aimee Benson¹, Lisa Calhoun¹, Meghan Corroon¹, Abdou Gueye¹, David Guilkey¹, Essete Kebede¹, Peter Lance¹, Rick O'Hara¹, Ilene S. Speizer^{*1}, John Stewart¹, Jennifer Winston¹

Carolina Population Center, University of North Carolina at Chapel Hill
IntraHealth International, Dakar, Senegal (Gueye)

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ABSTRACT

Objectives: This paper presents the impact of key components of the Senegal Urban Reproductive Health Initiative, including radio, television, community-based activities, Muslim religious-leader engagement and service quality improvement on modern contraceptive use by all women and the sub-sample of poor women.

Study design: This study uses baseline (2011) and endline (2015) longitudinal data from a representative sample of urban women first surveyed in 2011 to examine the impact of the Initiative's demand- and supply-side activities on modern contraceptive use.

Results: By endline, there was increased exposure to radio and television programming, religious leaders speaking favorably about contraception, and community-based initiatives. In the same period, modern contraceptive use increased from 16.9% to 22.1% with a slightly larger increase among the poor (16.6% to 24.1%). Multivariate analyses demonstrate that women exposed to community-based activities were more likely to use modern contraception by endline (marginal effect (ME): 5.12; 95% confidence interval (CI): 2.50–7.74) than those not exposed. Further, women living within 1 km of a facility with family planning guidelines were more likely to use (ME: 3.54; 95% CI: 1.88–5.20) than women without a nearby facility with guidelines. Among poor women, community-based activities, radio exposure (ME: 4.21; 95% CI: 0.49–7.93), and living close to program facilities (ME: 4.32; 95% CI: 0.04–8.59) impacted use.

Conclusions: Community-based activities are important for reaching urban women, including poor women, to achieve increased contraceptive use. Radio programming is also an important tool for increasing demand, particularly among poor women. Impacts of other program activities on contraceptive use were modest.

Implications: This study demonstrates that community-based activities led to increased modern contraceptive use among all women and poor women in urban Senegal. These findings can inform future programs in urban Senegal and elsewhere in francophone Africa.

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1. Introduction

Prior research has demonstrated that both mass media programs and interpersonal communication activities generally lead to increases in knowledge, attitudes, discussion, and intentions to use family planning (FP), as well as actual use [1–6]. Supply-side programs including quality of FP services and increasing access have also led to increases in knowledge, discussion, and in some cases, FP use [1,7–10]. Less is known about the impact of multi-component programs on FP outcomes

[1]. Further, most previous evaluations focus on national-level programs, small-scale programs, or programs targeted to rural settings [1,6]. Few evaluation studies have been undertaken in francophone Africa where recent analyses have demonstrated that there are gaps in uptake and use of FP [11]. This paper begins to fill these gaps by examining the impact of an integrated, multi-component FP program in urban settings in Senegal where at the time of program launch (2010), the modern contraceptive prevalence rate was only 20% based on Demographic and Health Survey data [12].

Using recently collected data from six cities of Senegal, this paper examines the impact on modern contraceptive use of the Senegal Urban Reproductive Health Initiative (called Initiative Sénégalaise de Santé Urbaine – ISSU) that included radio, television, community-based activities, religious-leader engagement, and improved quality of services. It considers impact among all women and poor women over a four-year follow-up period.

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* Corresponding author. Tel.: +1 919 962 3513.

E-mail address: ilene_speizer@unc.edu (I.S. Speizer).

¹ Senegal Measurement, Learning & Evaluation Project Team in alphabetical order.

1.1. The Initiative Sénégalaise de Santé Urbaine

The ISSU project, led by IntraHealth International, was launched in 2010 with funding from the Bill & Melinda Gates Foundation (BMGF) with the goal of increasing use of modern FP in targeted urban sites. ISSU aimed to improve quality and integration of FP services, increase public-private partnerships and demand for FP methods, and advocate for increased funding for FP.

The ISSU project included demand generation activities as well as supply-side interventions. The first demand generation activity was working with Muslim religious leaders to become FP champions. The ISSU team trained Muslim religious leaders to promote FP messages in religious settings, in small group discussions, and to participate in debates about FP on the radio and television. Second, the ISSU program used radio, television, and the print media as part of their program activities. For example, ISSU included FP messages in various types of radio shows including health programs, religious programs, music programs, and through debates on the radio. They also undertook activities on specific, popular radio stations. Likewise, ISSU aired FP messages and advertisements on the television using specific stations that are popular in the study cities. There were also non-ISSU led national-level FP campaigns on the radio and television. The project undertook a small number of activities using print media including promoting FP through newspapers and magazines. ISSU also undertook community-based activities such as training community-health volunteers (called Badiénou Gokh) to share information about FP through one-on-one discussions with women and other members of the household or through small group discussions with multiple women in the home. Other community-level activities included: meetings where FP was raised and debated; conversations about FP that may have been led by a Muslim religious leader or another FP champion; educational discussions or awareness raising sessions (called “niche”) led by a community worker; and theater that raised issues related to FP.

The project also implemented supply-side activities in study cities. The first, and most extensive, of these activities was the Informed Push Model (IPM), a novel stocking and commodity tracking system that drew on private sector supply strategies to push commodities to facilities when they were at risk of depleting their stock rather than waiting for clinics/facilities to request stock when they were running low. ISSU implemented this innovation initially in two of the study sites (Pikine and Kaolack) and subsequently expanded nation-wide based on positive results in the initial sites. In addition, the ISSU program undertook activities to improve access to and quality of FP services, including: training providers; strengthening the referral system through training on the use of a systematic screening tool to identify client's FP needs; deploying midwives into facilities with gaps in services; and improving the private sector through pharmacy strengthening and support to Marie Stopes International in augmenting their FP services. The project was launched in 2010 in four initial urban sites: Dakar, Guédiawaye, Pikine, and Mbao with expansion in 2013 to two additional urban sites, Mbour and Kaolack.

At the same time that ISSU was funded, BMGF funded the Measurement, Learning & Evaluation (MLE) project that was tasked with designing and implementing a comprehensive impact evaluation of the ISSU project. The Carolina Population Center at the University of North Carolina at Chapel Hill led the MLE project.

2. Materials and methods

This study uses longitudinal data from women and facilities collected in 2011, prior to the start of ISSU program activities (baseline data), and 2015 (endline data) in all six cities. Longitudinal data for women allow us to use fixed effects methods that allow each woman to act as her own control [13]. At baseline, in each city, we collected data from a representative sample of women identified using a two-stage sampling design. In the first stage, we used the 2002 General Population

and Housing Census's list of census districts (updated in 2009) as our primary sampling units (PSU) to select a random sample of PSU in each city. On average, census districts contain about 150–200 households. In total, we selected 268 PSU: 64 PSU from Dakar; 32 each from Guédiawaye, Pikine, and Mbao; and 54 each from Mbour and Kaolack. Prior to selection, we worked with municipal leaders to classify neighborhoods as poor and non-poor based on five characteristics: type of housing, residential security, neighborhood density, access to water, and access to flush toilets. Municipal leaders also gave an overall classification of the poverty level of the neighborhood. We weighted the five characteristics of neighborhoods (access to water had a weight of 2; toilets a weight of 1.5; and all others a weight of 1) and then summed. We considered those neighborhoods scoring in the lowest 40% as poor and all others as non-poor. Prior to selection, we stratified PSU by poor and non-poor and half of selected PSU were from the poor strata to increase inclusion of poor households and women. In the selected PSU, we listed/mapped all households and randomly selected 21 households for interview with equal probability [14].

In total, we selected 5628 households. In each selected household, all women of reproductive age (15–49) were eligible for interview. A trained female interviewer approached all eligible women and asked for their signed consent to participate. At baseline, we interviewed 9614 women across the six cities to provide a representative sample for each city at baseline. At endline, we tracked all baseline women who were usual residents (not visitors) of the household ($n=9421$) and, if found, asked them for consent to be re-interviewed.

The Institutional Review Board at the University of North Carolina at Chapel Hill and the Comité National d'Ethique in Senegal approved all study procedures.

Women interviewed at both baseline and endline are the analysis sample for examining the impact of the program on modern contraceptive use over the four-year follow-up period. We also undertake a subsample analysis of “poor” women, identified from the matched sample as those women who were in the two lowest wealth quintiles (poorest and poor women) at both baseline and endline.

At baseline and endline, we also collected data from health facilities in the study cities. We approached all public and private facilities offering reproductive health services ($n=269$) for interview. At each study facility, an interviewer administered a facility audit, provider interviews (up to four per facility), and exit interviews [15].

The key dependent variable for this analysis is use of modern contraception. At baseline and endline, trained interviewers asked women if they were using a contraceptive method to delay or avoid childbearing and if yes, interviewers asked what method the woman was using. Modern methods of contraception include male and female sterilization, daily pill, IUD, implants, injectables, male and female condoms, emergency contraception, Standard Days Method, and lactational amenorrhea. We coded women who reported traditional method use (e.g., rhythm method, withdrawal, or folkloric methods) as non-users. At each time point, we coded women who were abstinent or not sexually active as non-users.

This analysis examines the impact of exposure to various ISSU and non-ISSU demand generation activities and the ISSU and non-ISSU supply-side activities on the probability of modern method use. We classified the exposure variables as demand-side and supply-side. At endline, we included detailed questions on exposure to ISSU specific radio and television activities to assess the contribution of ISSU programming in target cities above and beyond the national-level radio and television programming (see Appendix Table A for details of questions used to measure exposure). We coded each of the exposure variables as dichotomous variables categorized as exposed versus unexposed. All exposure measures that were ISSU-specific and did not exist at baseline were coded zero (unexposed) at baseline.

We included four supply-side variables in this analysis. One of these is specific to the ISSU program: exposure to the ISSU Informed Push Model (IPM). To link the IPM variable to the women's data, we created a variable capturing whether the woman lived within 1 km of a facility with IPM at the time of the endline survey. This variable is coded zero at

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