

Final report

Maternal mortality risk and the gender gap in desired fertility

Nava Ashraf
Erica Field
Alessandra Voena
Roberta Ziparo

February 2017

When citing this paper, please
use the title and the following
reference number:
I-41025-ZMB-1

IGC

International
Growth Centre



DIRECTED BY



FUNDED BY



from the British people

MATERNAL MORTALITY RISK AND THE GENDER GAP IN DESIRED FERTILITY

Nava Ashraf, Erica Field, Alessandra Voena, and Roberta Ziparo | February 2017

IGC Contract CPR-ZMB-IGR-2012-CPP-41025

Final Report

I. INTRODUCTION

The purpose of this study is to understand what factors shape men's preferences for fertility and family planning and to determine the most effective method of educating men about the benefits of contraceptive use. In particular, the study examines whether providing information about maternal mortality risk increases the demand for contraceptives. With greater knowledge on these topics, we expect that men will be better able to support their wives in family planning decisions.

An earlier study conducted by this research team (Ashraf, Field, and Lee 2014) found that women who were given a voucher in private that guaranteed access to family planning were more likely to use contraceptives than women who were given the voucher in the presence of their husbands. Moreover, women given the voucher in private were more likely to ask for a concealable form of contraception, indicating that the opportunity to conceal use from their husbands was an important determinant of take-up. Furthermore, the effect was concentrated among women who reported wanting fewer children than their husbands. More broadly, the findings suggest that men's fertility and family planning preferences can potentially be an important determinant of household contraceptive use. Men are thus an important target group for health programs focused on increasing contraceptive use.

We hypothesize that the discordant fertility preferences between husbands and wives in Zambia may be due, in part, to a large gender-based gap in information on maternal mortality. Consequently, educating men on maternal mortality may significantly affect their support for family planning.

Through a field experiment in Lusaka, this study aims to provide accurate information about maternal mortality risk to both women and men. Using an innovative design that targets information to different members of the household, this study tests whether such information affects desired fertility and contraceptive use. By measuring the impact of this information on both beliefs and behavior, and how this information spreads in the household, this study will inform on the role of intra-household information dissemination and communication in determining household behavior.

The final research design is the result of two years of exploratory research conducted in poor settlements of Lusaka to refine both the research questions and the research design, so that the study results will be best suited to inform policy in a meaningful way. If promising pilot results are maintained in this larger study, information on maternal mortality risk could be incorporated into existing community-based health initiatives in line with the Ministry of Health's goal of increasing household demand for family planning.

In the following sections, we are going to briefly describe how this study contributes to the existing literature, the evaluation design, data collection stages, preliminary findings based on data collected during baseline and at the intervention, and next steps.

II. LITERATURE REVIEW

Our previous experiment contributed to our understanding of excess fertility by showing that intra-household disagreement in fertility preferences also contributes to unmet need and excess fertility. There is significant evidence that disagreement between husbands and wives about the ideal number of children is common throughout sub-Saharan Africa. Despite this, there has been very little research on what determines such differences.

Further, this study will contribute to a central and longstanding debate on determinants of fertility and to ongoing research into the role of men in household decision-making about fertility and its policy implications.

2.1 Determinants of Fertility

The economic literature (Pritchett 1994) recognizes two dichotomous theories that could potentially explain the enormous cross-sectional and time-series variation observed in total fertility rates.

In the “family planning gap” view, high fertility largely reflects the unavailability or high cost of contraception. While there are a large number of empirical studies demonstrating a correlation between access to contraception and reductions in fertility, few have established a causal relationship.

In contrast, the “desired children” view intuits that children are very costly relative to any possible costs of controlling fertility, and thus fertility should be inelastic to the cost of contraception. This theory is supported by a range of empirical evidence, including the high cross-country correlation between total fertility and desired fertility, and historical demographic transitions that led to reductions in birth rates without the aid of modern contraceptive technologies (Pritchett 1994). The findings of Miller (2010) and Pop-Eleches (2010) are consistent with the view that changes in fertility are driven largely by demand for children rather than the cost of contraception.

2.2 Men and family planning

The evidence on the role of men in household decision-making about fertility and its policy implications is mixed. Although several randomized public health studies found that providing health education to husbands may actually increase uptake of or adherence to modern contraception (Wang et al. 1998; Terefe and Larson 1993; Fisek and Sumbuloglu 1978), one large study (Gérard, Freedman, and Takeshita 1972) found no effect.

On men’s role in fertility decision-making, most studies conclude that men’s desires override the desires of their wives, and men maintain almost complete power in fertility decision-making. (Derose, Dodoo, and Patil 2002; Dodoo and Tempenis 2002; Ezeh 1993; Hollos and Larsen 2004b)

On the complex interaction between men and women in deciding how many children to have, when to have another child, and when to use contraceptives, there are limited findings that women indeed influence men’s decision-making (Bankole and Singh 1998; Feyisetan 2000; Thomson 1997). Most reported marital communication increased likelihood of joint decision-making and contraceptive use (Bankole and Singh 1998; Feyisetan 2000).

However, even under optimal circumstances such as increased spousal communication, greater education, and higher income, there is no evidence that women have *greater* autonomy over their reproductive decisions than their husbands (Feyisetan 2000; Hollos and Larsen 2004b).

In Zambia, researchers have focused on couples with at least one HIV positive spouse where clinic visits are more habitual and the desire for contraception is greater (Mark et al. 2007; Grabbe et al. 2009). Our study will be the first to systematically examine the determinants of men's fertility preferences and family planning in Zambia and will provide useful information for clinicians, researchers, and policymakers.

III. EVALUATION DESIGN

In order to better understand – and thus possibly influence – men's high fertility preferences that lead to unsafe pregnancies and deliveries, the research team designed an intervention to provide clear and credible information about dangers and risks related to pregnancy.

3.1 Sampling and randomization

The definition of the study population of interest are couples of child-bearing age in the catchment area of the Chipata and Chaisa clinics, two government-run facilities that serve low-income areas in Lusaka.

We did not include households who fit the exclusion criteria at the intervention stage: participated in the researchers' 2007 study, wives with medical conditions affecting the safety of contraceptive use, younger than 18 or older than 40, using semi-permanent or permanent contraceptive methods, currently pregnant, or trying to get pregnant, and spouses who were not living together. There were no inclusion or exclusion criteria based on race or ethnic origin, nor any explicit targeting by income, although this population was likely to be fairly representative of the low- to middle-income population in Lusaka. Exclusion criteria were also not based on reading ability or language spoken.

We recruited study-participants with the help of community health workers (CHWs). We randomly selected a list of households for each CHW to visit for screening. CHWs visited couples at their homes and provided a brief explanation of the project. Then, CHWs returned to the same households with trained data collectors, and participants were explained the purpose and approximate length of the survey, and asked for consent to participate in the study.

Couples were assigned to treatment using computer-generated random numbers. Random assignment was stratified by the following dimensions: 1) A binary variable showing if the husband wants to have more children or not. 2) A binary variable showing if the husband wants to have children immediately or not. 3) A binary variable showing if the couple have children or not. 4) Husband knows someone in the family who died at childbearing. 5) Woman aged over 35. 6) Residential block size.

3.2 Program intervention

Couples are invited to attend a community workshop together. Upon arrival, they are split into gender-specific meetings to receive information according to their randomly assigned treatment condition:

1. Wife receives maternal mortality (MM) curriculum, husband receives family planning (FP) curriculum;
2. Husband receives MM, wife receives FP;
3. Both husband and wife receive FP;

The curriculum was developed in collaboration with clinic nurses, the Zambian MoH, and local NGOs, such as the Society for Family Health. Extensively trained local facilitators of both genders deliver the curriculum, using color flipcharts, which are inexpensive and inclusive of participants who may not be literate. After the meeting, participants receive vouchers for ease of access to family planning services at the participating clinics.

Couples who are unable to attend the community meeting will receive the training directly at their residence. The so-called *door-to-door* intervention is designed to maximize both privacy in the delivery of the information and comparability to community meetings. These couples will maintain their original treatment assignment. For those who were temporarily ineligible at the time of community meetings, one stage of randomization will be used to determine the information treatment to which the household will be assigned.

3.3 Outcomes of interest

The primary outcomes of the study will be:

1. Contraceptive take-up;
2. Fertility outcomes over a one-year period;
3. Change in demand for family planning – measured through the contraceptive choice of women, and subsequent pregnancy and willingness to pay for family planning services by husbands at intervention.

To increase the likelihood of detecting a change in behavior resulting from the intervention, we will also examine a wider set of outcomes collected in baseline, midline, and endline surveys that, as proximate determinants, are anticipated to respond more rapidly than fertility. These include:

1. Change in reported knowledge about family health and childbearing
2. Change in choice of contraceptive method
3. Existence of spousal bargaining over fertility and birth
4. Changes in joint family planning goals, including number of offspring and desired spacing

IV. DATA COLLECTION

The data collection for this study includes four key stages: baseline, intervention, midline, and endline. All data is digitized, collected through electronic devices by trained data collectors, and secured in a password-protected location. A team of roughly 40 data collectors is responsible for collecting data on respondents at each round of collection.

4.1 Baseline

Between August and December 2014, the research team collected baseline data to assess demographics, spouses' fertility preferences, contraceptive knowledge and attitudes, maternal health knowledge, intra-household communication, and balance between spouses – among other outcomes – before inviting couples to take part in the project intervention. Additionally, we collected GPS information on the households to help track participants for follow-up during the midline.

Even though we originally wanted to recruit 2000 couples for this study, the combination of cultural taboos surrounding family planning and high mobility among our target constituents led to several unforeseen challenges and project delays during the baseline survey. The survey team experienced difficulties tracking men since very often they were either away for work or working very long hours. Additionally, the survey team believed that the men were actively avoiding them due to the sensitive topic of the survey, which was widely considered a “woman’s topic” among Zambia’s urban poor. During baseline, the field team introduced several strategies for improving response rates among men—including targeting men during off hours and introducing financial incentives—however, these strategies proved insufficient to increase surveyors’ productivity. Cumulatively, the aforementioned issues inflated our expenses and timeline for surveying activities. We thus decided to halt the baseline survey and continue with the intervention and midline for the already completed households—715 in total.

4.2 Intervention

Immediately following the intervention, treated individuals were asked measures of maternal risk assessment. We also developed new measures of demand for family planning that were recorded during community meetings. These measures allowed us to answer new questions that emerged through the analysis of baseline data and to accommodate a reduced sample by offering additional statistical power. These new measures include:

1. Wife’s willingness to pay (WTP) for her spouse to receive MM treatment: this sheds light on the barriers to communication about maternal risk in the household and the existence of demand for the services provided by the intervention;
2. Husband’s WTP for a voucher to get priority access to FP services: this allows us to measure the effect of the intervention on the valuation of FP services by the main target group of our study – men – immediately after the intervention, whilst also helping to mitigate the issue of tracking husbands at midline.

In addition to the invitation of the 715 baseline households, 422 new households were recruited and invited to the intervention to address potential attrition and to have sufficient sample size. A subset of baseline questions needed for stratification were asked to wives of those households.

Households needed to meet eligibility requirements at the intervention stage to participate. 246 baseline households were found to be ineligible at screening, and 555 of the eligible households actually attended the community meetings, implying a 62% attendance rate. Of these couples, 204 will be targeted by the door-to-door intervention.

4.3 Clinic records

In the months following the community meetings and door-to-door intervention, our research team is collecting records from Chipata and Chaisa clinics to assess study-participants' contraceptive take-up and frequency. As previously explained, husbands are offered a voucher for priority access to family planning, which can be redeemed at either Chipata or Chaisa clinic. The clinics' activity sheets record these visits, as well as the family planning card number, contraceptive take-up, and frequency.

4.4 Midline

Midline data collection measures spouses' fertility preferences, contraceptive knowledge and attitudes, maternal health knowledge, intra-household communication and balance between spouses – among other outcomes – up to one year after the intervention. From November 2016 to mid-March 2017, couples who participated in the community meeting are completing the midline survey. Afterwards, an additional round of midline data collection will be conducted for door-to-door intervention participants, as well as for all other participants who were recruited to the study.

Households that did not receive a full baseline survey are asked both the midline questions, and a subset of questions from the baseline instrument. Also, due to the sensitive nature of the survey instrument, we prepared a new midline survey form that best addresses separated/divorced or widowed study participants.

Frequent postponing of interviews by respondents (especially men), as well as inclement weather and frequent floods, has slowed the pace of data collection. We have accounted for these challenges by increasing team size for a few weeks, and postponing follow-up to separated, divorced, widowed, and difficult-to-reach couples until the end of data collection when we will reduce the number of surveyors.

4.5 Endline

The endline survey will be conducted approximately one year after midline and will focus on realized fertility and maternal health outcomes—which require a longer time-horizon to measure. The instrument will be shorter than the midline and baseline surveys.

V. PRELIMINARY FINDINGS

Initial analysis of baseline and intervention data supports the project's theory of change. As expected, we found that the baseline ideal number of children is larger on average for men than for women and that women are on average better informed about the causes of complications during pregnancy. In addition, the larger the demand gap in the household, the lower the probability that spouses communicate about maternal risk, meaning wives are unlikely to be able to close the information gap on maternal risk through communication.

Community meeting intervention data indicates that the information conveyed at the community meetings was understood by the respondents and affected their perception of risk as expected. This was demonstrated by a convergence in husbands' and wives' beliefs, with the respondents that started with the highest under- or over-estimation of risk being more reactive. At baseline, wives estimated a much higher probability of women dying of complications: for wives, more than 20% of women would die, while husbands'

expectations ranged between 11% and 15% of women dying. After attending the maternal mortality meeting and learning that in reality one out of 59 women dies of complication in Zambia, both groups reduce their expectations.

On the perceived risk of becoming pregnant just after giving birth, women at baseline perceived a higher risk than men: on average, they estimated 8 chances out of 10 of experiencing complications while men's average risk perception was 6.8 out of 10. After the intervention, both groups converged towards a 75% risk of complications.

In addition, husbands who received information on maternal mortality were significantly more likely to purchase the voucher, with the gains concentrated among those couples whose gap in fertility demand was the greatest.

VI. CONCLUSIONS

The preliminary results are promising, but limited given the changes to the timeline and design of this study due to difficulties tracking male respondents. In the baseline survey, tracking issues resulted in recruitment of only 715 out of the targeted 2,000 couples and several design changes—including post-baseline recruitment and the addition of the door-to-door intervention—to adjust to a smaller sample. Given the delays caused by these design changes, a full assessment of the results, as well as intra-household communication regarding family planning and self-reported ideal fertility, is pending completion of the midline and door-to-door intervention. A working paper is expected by December 2017.

The researchers will disseminate the findings locally and globally in early 2018. If funded, endline data collection will take place in 2018. We are committed to actively involving and updating the International Growth Centre during all stages of dissemination and policy influence.

VII. REFERENCES

- Ashraf, Nava, Erica Field, and Jean Lee. 2014. "Household Bargaining and Excess Fertility: An Experimental Study in Zambia." *The American Economic Review* 104 (7). doi:10.1257/aer.104.7.2210.
- Bankole, Akinrinola, and Susheela Singh. 1998. "Couples' Fertility and Contraceptive Decision-Making in Developing Countries: Hearing the Man's Voice." *International Family Planning Perspectives*, 15–24.
- Derose, Laurie F., F. Nii-Amoo Doodoo, and Vrushali Patil. 2002. "Fertility Desires and Perceptions of Power in Reproductive Conflict in Ghana." *ResearchGate* 16 (1): 53–73. doi:10.1177/0891243202016001004.
- Doodoo, F. Nii-Amoo, and Maria Tempenis. 2002. "Gender, Power, and Reproduction: Rural-Urban Differences in the Relationship Between Fertility Goals and Contraceptive Use in Kenya*." *Rural Sociology* 67 (1): 46–70. doi:10.1111/j.1549-0831.2002.tb00093.x.
- Ezeh, Alex Chika. 1993. "The Influence of Spouses over Each Other's Contraceptive Attitudes in Ghana." *Studies in Family Planning* 24 (3): 163–74. doi:10.2307/2939231.
- Feyisetan, Bamikale J. 2000. "Spousal Communication and Contraceptive Use among the Yoruba of Nigeria." *Population Research and Policy Review* 19 (1): 29–45.
- Fisek, Nusret H., and K. Sumbuloglu. 1978. "The Effects of Husband and Wife Education on Family Planning in Rural Turkey." *Studies in Family Planning* 9 (10/11): 280–85.

- Gérard, Hubert, R. FREEDMAN, and JY TAKESHITA. 1972. *Family Planning in Taiwan. An Experiment in Social Change*. JSTOR. <http://www.jstor.org/stable/41971302>.
- Grabbe, Kristina, Rob Stephenson, Bellington Vwalika, Yusuf Ahmed, Cheswa Vwalika, Elwyn Chomba, Etienne Karita, Kayitesi Kayitenkore, Amanda Tichacek, and Susan Allen. 2009. "Knowledge, Use, and Concerns about Contraceptive Methods among Sero-Discordant Couples in Rwanda and Zambia." *Journal of Women's Health* 18 (9): 1449–56.
- Hollos, Marida, and Ulla Larsen. 2004. "Which African Men Promote Smaller Families and Why? Marital Relations and Fertility in a Pare Community in Northern Tanzania." *Social Science & Medicine* 58 (9): 1733–49.
- Mark, Karen E., Jareen Meinzen-Derr, Rob Stephenson, Alan Haworth, Yusuf Ahmed, Dana Duncan, Andrew Westfall, and Susan Allen. 2007. "Contraception among HIV Concordant and Discordant Couples in Zambia: A Randomized Controlled Trial." *Journal of Women's Health* 16 (8): 1200–1210.
- Miller, Grant. 2010. "Contraception as Development? New Evidence from Family Planning in Colombia." *The Economic Journal* 120 (545): 709–36.
- Pop-Eleches, Cristian. 2010. "The Supply of Birth Control Methods, Education, and Fertility Evidence from Romania." *Journal of Human Resources* 45 (4): 971–97.
- Pritchett, Lant H. 1994. "Desired Fertility and the Impact of Population Policies." *Population and Development Review*, 1–55.
- Terefe, Almaz, and Charles P. Larson. 1993. "Modern Contraception Use in Ethiopia: Does Involving Husbands Make a Difference?" *American Journal of Public Health* 83 (11): 1567–71.
- Thomson, Elizabeth. 1997. "Couple Childbearing Desires, Intentions, and Births." *Demography* 34 (3): 343–54.
- Wang, Caroline C., Eric Vittinghoff, Lu Shu Hua, Wang Hai Yun, and Zhou Mei Rong. 1998. "Reducing Pregnancy and Induced Abortion Rates in China: Family Planning with Husband Participation." *American Journal of Public Health* 88 (4): 646–48.

The International Growth Centre (IGC) aims to promote sustainable growth in developing countries by providing demand-led policy advice based on frontier research.

Find out more about our work on our website
www.theigc.org

For media or communications enquiries, please contact
mail@theigc.org

Subscribe to our newsletter and topic updates
www.theigc.org/newsletter

Follow us on Twitter
[@the_igc](https://twitter.com/the_igc)

Contact us
International Growth Centre,
London School of Economic and Political Science,
Houghton Street,
London WC2A 2AE

IGC

**International
Growth Centre**

DIRECTED BY



FUNDED BY



Designed by soapbox.co.uk