HEALTH POLICY PROJECT

Does Contraception Use Always Lead to Lower Fertility? The Case of Malawi

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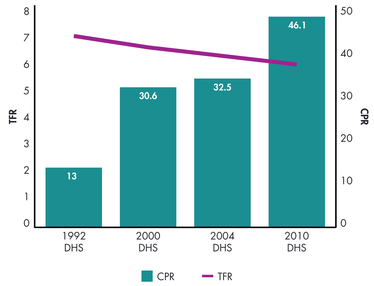
MALAWI'S RECENT SUCCESSES IN FP

In the past two decades, use of contraception among married women rose from 13% in 1992 to 46% in 2010, and unmet need declined from 36% in 1992 to 26% in 2010. Malawi is often highlighted as a family planning (FP) success story.

Yet the total fertility rate (TFR) decreased from 6.7 births per woman in 1992 to only 5.7 in 2010.



With CPR at 46%, shouldn't TFR be lower?

Globally, several studies suggest a linear relationship between TFR and the contraceptive prevalence rate (CPR). Tsui (2001) estimated for every 15-point increase in CPR, TFR should decline by 1.

With the dramatic increase in CPR over the past two decades, we might expect Malawi's TFR to be closer to 4.4 than 5.7.

RESEARCH QUESTIONS & HYPOTHESES

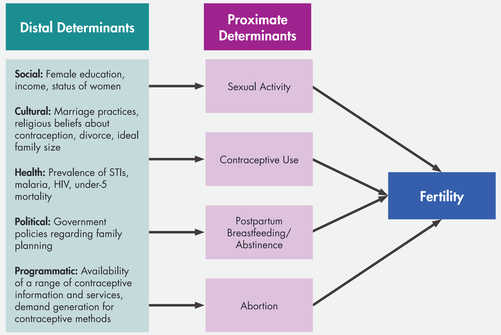
Question 1: Why has the rise in CPR not translated into significant reductions in TFR?

Hypothesis 1: Malawi's DHS fertility rates may be higher than the true fertility rates.

Question 2: Are there notable differences in CPR and TFR estimates in urban and rural areas?

Hypothesis 2: Urban or rural fertility is weighting the national fertility rates.

Proximate Determinants of Fertility



METHODOLOGY

The authors used Bongaarts' Proximate Determinants (PD) of Fertility Model to estimate TFR and compare it to the observed TFR reported in the Demographic and Health Surveys (DHS).

HPP generated values for these indices using Malawi's DHS data from 2000, 2004, and 2010.

PD Formula

$$TFR = C_m \times C_c \times C_a \times C_i \times TF$$

- C_m = index of marriage
- C_c = index of contraception
- C_a = index of induced abortion
- C_i = index of postpartum infecundability
- TF = total fecundability

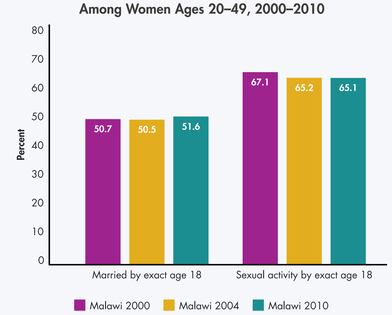
* Since 5.6% of Malawian women have never been married but have been sexually active, sexually active was used as the measure for C_m.
^ Abortion data are unavailable in Malawi. An estimate was used to calculate C_a (see below).

TRENDS

Sexual Debut and Marriage

Sexual debut is slowly shifting toward older ages, however Malawians are still getting married at a young age.

Percentage Married by Exact Age 18 and Sexual Activity by Exact Age 18 Among Women Ages 20–49, 2000–2010



Postpartum Infecundability Is Declining

Breastfeeding and abstinence between births provide natural contraception and reduce fertility. Between 2000 and 2010, women in Malawi reduced the number of months they breastfed, and also returned to sexual activity earlier (shortened period of postpartum abstinence). The proportion of women who were using contraception during the postpartum period (dual protection) also declined.

	Mean Duration (months)		
	2000	2004	2010
Postpartum amenorrhea	14.1	13.1	12.7
Postpartum abstinence	9.0	8.4	8.2
Postpartum insusceptibility	16.1	15.0	14.9

Abortion

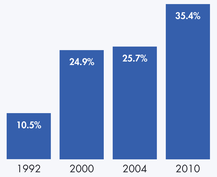
Two data sources were used to calculate the abortion rates:

- Levandowski et al., (2013), who estimated 23 abortions per 1,000 women ages 15–44 in 2009
- WHO's East Africa estimate of 31 abortions per 1,000 in 2000 and 36 per 1,000 in 2008

The authors first calculated the yearly amount of change in abortions from 2000 to 2008 using WHO regional estimates. This yearly change was applied to the Levandowski abortion estimate to calculate values for 2000, 2005, and 2010.

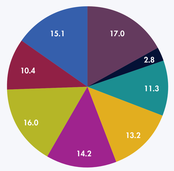
This calculation yielded abortion estimates of 19.8 in 2000, 21.6 in 2004, and 23.4 in 2010.

CPR and Method Mix

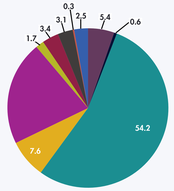


The CPR increase in Malawi has been uneven. While use of almost all methods increased over this period, injectables and female sterilization accounted for the majority of the rise in contraceptive use.

Malawi FP Method Mix, 1992 (CPR = 13%)

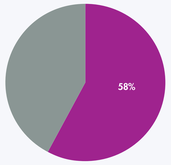


Malawi FP Method Mix, 2010 (CPR = 46%)



Pill | IUD | Injectable | Male Condom | Female Sterilization | Periodic Abstinence | Withdrawal | Implant | Female Condom | Other

Of those women who wish to limit births, 58% are using less-effective short-acting methods (pills, injectables, and condoms) and traditional/folkloric (withdrawal, abstinence, and lactational amenorrhea method, among others).



RESULTS

The authors estimated TFR as 6.0 in 2000, which is lower than the reported DHS TFR.

The estimated TFR for 2004 was also 6.0, likely due to an increase in the index of postpartum insusceptibility offset by small increases in the use of contraception and abortion. This estimate corresponded with the reported DHS TFR.

The rise in contraceptive use in 2010, coupled with unchanged postpartum infecundability began to drive the TFR downward between 2004 and 2010. This resulted in an estimated TFR of 5.2, lower than the observed TFR of 5.7.

	2000	2004	2010	Pushes TFR
Sexual activity (C_m)	0.938	0.934	0.932	↓
Contraception (C_c)	0.754	0.745	0.644	↓
Postpartum infecundability (C_i)	0.578	0.597	0.599	↑
Abortion (C_a)	0.955	0.949	0.938	↓
Total fecundity	15.3	15.3	15.3	-
Estimated TFR	6.0	6.0	5.2	-
Observed TFR	6.3	6.0	5.7	-

Rural/Urban Differences

When HPP applied the Proximate Determinants model calculations to rural/urban areas, the estimated TFR was higher than the DHS reported TFR.

	Urban			Rural		
	2000	2004	2010	2000	2004	2010
Estimated TFR	6.2	6.4	5.5	6.6	6.8	5.9
Observed TFR	4.5	4.2	4.0	6.7	6.4	6.1

CONCLUSIONS

Differences between the estimated and observed TFRs are less than half a child, which falls into a reasonable realm of variation. This does not conclusively suggest that Malawi's DHS fertility rates are higher than the true fertility rates.

In urban areas, the estimates were found to be vastly different than the observed fertility rates, but methodology provides no explanation.

- Measurement error? (only 20% of population lives in urban areas)
- HIV acquisition influencing desire for children? (not accounted for in Proximate Determinants model)
- Untreated sexually transmitted infections? (which may cause sterility)

Additional qualitative and quantitative research to supplement understanding of these issues may address the following questions:

- Does discontinuation of contraceptive methods play a role in why TFR is not lower than expected? What is the duration of non-permanent method use?
- Why did sexual debut and age at marriage remain virtually unchanged from 2000 to 2010? Have early marriage beliefs evolved over time?
- Given the observed urban/rural TFR differences, are migratory patterns of urban men affecting fertility?
- What are client preferences and health system factors that result in a method mix skewed toward injectables?

For more information: Jain, Aparna, John Ross, Erin McGinn, and Jay Gribble. 2014. *Inconsistencies in the Total Fertility Rate and Contraceptive Prevalence Rate in Malawi.* Washington, DC: Futures Group, Health Policy Project.

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