TRENDS IN UNWANTED FERTILITY IN DEVELOPING COUNTRIES

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Rationale

The distinction between unwanted and wanted fertility has long been central in research on fertility. This reflects both theoretical and policy concerns. Most of the paradigmatic models of fertility feature fertility motivation, and accordingly distinguish between childbearing that is intentional and unintentional (with somewhat separable explanatory mechanisms for each of the two types). And from a policy standpoint, a primary goal of investments in family planning services is to reduce the incidence of unintended pregnancies (and especially those that result in unwanted births), guided by the assumption that such births have costs for the child, the household, and the community.

This paper will provide a comprehensive and up-to-date portrait of trends in unwanted fertility from the 1970s to the present. We will show that there have been large declines in unwanted fertility rates in most countries in Asia, Africa, and Latin America during this period. The magnitude of these declines has not been widely recognized, in part (we suspect) because the measures of unwanted fertility that have been commonly employed obscure the behavioral change that has been underway. In this research we focus on alternative measures that reveal with clarity that country after country has experienced sharp declines in unwanted fertility. This has been a major public health achievement of the past four decades that deserves higher billing.

The principal objectives of this research are as follows:

(i) To define a set of measures of unwanted fertility, including several which have not been used in trend analysis but which have desirable properties.

(ii) To provide a portrait of levels and trends in unwanted fertility in 49 developing countries.

We are unaware of any comparable recent analysis that possesses the societal breadth and historical depth of this research. The breadth and historical depth are achieved by going beyond the Demographic and Health Survey [DHS] program to incorporate data from the World Fertility Survey [WFS] of the 1970s and 1980s, the Reproductive Health Surveys [RHS] conducted in Latin America in collaboration with the U.S. CDC since the early 1990s, and the Pan-Arab surveys [PAPCHILD and PAPFAM, shortened to PAP in this abstract] conducted by the Arab League since the early 1990s.

Data and Methods

As just noted, this research uses data from four survey programs that provide relatively standardized

measurement of fertility and fertility desires: DHS, WFS, RHS, and PAP. In particular, these surveys contain three measures of fertility desires which can serve as the basis for estimation of the incidence of unwanted fertility:

- Preference for another child: whether the respondent wants another child or not
- Ideal number of children
- Wantedness of recent births, as reported retrospectively (not available in the WFS and in some RHS surveys)

As we review elsewhere (Casterline and el-Zeini 2007), a methodological literature shows that the first type of item – preference for another child – has the highest validity and reliability. By contrast, reliability is low for the ideal number of children and "rationalization" compromises its validity, and the validity of the direct retrospective reports of the wantedness of recent births is highly suspect. Hence in this analysis we use the method for estimating unwanted fertility that we have developed (Casterline and el-Zeini 2007) which is based on prospective preferences (i.e. preference for another child). We have demonstrated that, as compared to the other two methods, this method yields a higher percentage of births unwanted and hence higher estimated unwanted fertility rates. Note that the wording of the prospective preferences item differs little among these four survey programs (DHS, WFS, RHS, PAP).

More specifically, we calculate three measures of unwanted fertility for the three-year reference period preceding the survey. Each of the three measures has some analytical utility:

- the percentage of births unwanted
- the unconditional unwanted fertilty rate, i.e. unwanted births per woman-year of exposure
- the conditional unwanted fertility rate, i.e. unwanted births per woman-year of exposure to unwanted births

All three measures are calculated on an age-specific basis and then summed. In the case of the second measure (unconditional unwanted fertility rate), this yields the conventional "unwanted TFR" that is regularly calculated and presented for DHS surveys[1].

The third measure – the conditional unwanted fertility rate – arguably is the most pure indicator of the behavior of primary concern, namely success or failure in avoiding unwanted births. The first two measures are affected by the fraction of women who "want" vs. "do not want" another child – if the

[1] But DHS uses a different measure of unwanted births than we use in this research – to identify unwanted births, DHS uses a comparision of the ideal number of children with the number living at the time of conception, whereas we use the Casterline – el-Zeini (2007) estimator.

fraction "do not want" increases, then the first two measures of unwanted fertility will also increase, everything else being equal. That is, trends in these two measures are affected by trends in preference composition. We see much value, from both a theoretical and a policy standpoint, in distinguishing (i) trends in preference composition and (ii) trends in the implementation of those preferences. Unlike the first two measures, the third measure (conditional unwanted fertility rate) is a relatively pure indicator of the implementation of preferences. It also corresponds better with conventional demographic and epidemiological practice: rates are calculated with the sub-set of the population at risk, rather than the entire population, constituting the denominator.

But despite the compelling theoretical and policy rationale for use of the conditional unwanted rate, it has not been standard in the literature -- Bongaarts (1992) is among the few instances of which we are aware.[2] No doubt one explanation for the neglect of this measure is the challenge of defining exposure to unwanted births, i.e. allocating exposure between "want" and "do not want" states. Our method for doing this will be spelled out in the paper. In brief, we use prospective preferences at the survey and assume aggregate age-specific stability over the three-year reference-period. This approach fits neatly and tightly with the Casterline – el-Zeini estimator of unwanted fertility, which also relies on current status at the survey.

The countries included in this analysis are shown in Table 1. This table shows the earliest and latest survey in each country. Most of these countries have more than two surveys; Egypt has the maximum – eight surveys between 1980 and 2008. Our analysis will use all available surveys in each country in order to generate the most reliable portrait of change. It is evident from Table 1 that casting our net beyond the DHS and including WFS, RHS, and PAP surveys – this has entailed considerable data management and programming effort – has markedly expanded the country coverage and historical coverage, especially in Latin America and the Arab region.

Analysis

The analysis is straightforward, although construction of the measures entails rather complicated calculations. For each survey, we will calculate age-standardized values for women aged 15-49 of each of the three measures specified above, namely:

- the percentage of births unwanted
- the unconditional unwanted fertilty rate

[2] And we have used the conditional unwanted rate in our recent research (Casterline 2010).

- the conditional unwanted fertility rate

Trends in each measure will be examined country-by-country, and presented graphically. This will be a descriptive demographic analysis.

We have already carried out all the calculations, although we expect to update (as new surveys arrive) and refine before completing the PAA paper. That is, data management and programming are already under control. We have also spent some time reviewing the trends country-by-country. While we have not prepared tables or figures for this submission, we can report that unwanted fertility – the conditional unwanted fertility rate in particular – shows substantial decline over multi-decade periods in most every country. The declines are with few exceptions monotonic in those countries with many surveys – the estimates are well-behaved -- and impressive in their magnitude.

References

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Table 1. Countries and Survey Dates

Region and Country	Earliest Survey	Latest Survey
Latin America & Caribbean		
Bolivia	1989 (DHS)	2008 (DHS)
Brazil	1986 (DHS)	2006 *
Colombia	1976 (WFS)	2010 (DHS)
Costa Rica	1976 (WFS)	1993 (RHS)
Dominican Republic	1975 (WFS)	2007 (DHS)
Ecuador	1979 (WFS)	2004 (RHS)
El Salvador	1985 (DHS)	2008 (RHS)
Guatemala	1987 (DHS)	2008 (RHS)
Guyana	1975 (WFS)	2009 (DHS)
Haiti	1977 (WFS)	2005 (DHS)
Mexico	1976 (WFS)	2003 *
Nicaragua	1992 (RHS)	2006 (RHS)
Paraguay	1979 (WFS)	2008 (RHS)
Peru	1977 (WFS)	2008 (DHS)
South and Southeast Asia		
Bangladesh	1975 (WFS)	2007 (DHS)
India	1993 (DHS)	2006 (DHS)
Indonesia	1976 (WFS)	2007 (DHS)
Nepal	1976 (WFS)	2006 (DHS)
Pakistan	1975 (WFS)	2006 (DHS)
Philippines	1978 (WFS)	2008 (DHS)
West Asia & North Africa		
Algeria	1992 (PAP)	2002 (PAP)
Egypt	1980 (WFS)	2008 (DHS)
Jordan	1975 (WFS)	2009 (DHS)
Morocco	1980 (WFS)	2003 (DHS)
Sudan	1978 (WFS)	1993 (PAP)
Syria	1978 (WFS)	2001 (PAP)
Tunisia	1978 (WFS)	2001 (PAP)
Turkey	1978 (WFS)	2008 (DHS)
Yemen	1979 (WFS)	2003 (PAP)

Sub-Saharan Africa		
Benin	1981 (WFS)	2006 (DHS)
Burkina Faso	1992 (DHS)	2003 (DHS)
Cameroon	1978 (WFS)	2004 (DHS)
Cote d'Ivoire	1980 (WFS)	1998 (DHS)
Ghana	1979 (WFS)	2008 (DHS)
Kenya	1978 (WFS)	2008 (DHS)
Lesotho	1977 (WFS)	2009 (DHS)
Liberia	1986 (DHS)	2007 (DHS)
Madagascar	1992 (DHS)	2008 (DHS)
Malawi	1992 (DHS)	2004 (DHS)
Mali	1987 (DHS)	2006 (DHS)
Namibia	1992 (DHS)	2006 (DHS)
Niger	1992 (DHS)	2006 (DHS)
Nigeria	1982 (WFS)	2008 (DHS)
Rwanda	1983 (WFS)	2008 (DHS)
Senegal	1978 (WFS)	2005 (DHS)
Tanzania	1991 (DHS)	2010 (DHS)
Uganda	1988 (DHS)	2006 (DHS)
Zambia	1992 (DHS)	2007 (DHS)
Zimbabwe	1988 (DHS)	2005 (DHS)

* Survey that is not a part of one of the four major survey programs

Short Abstract

This paper presents a comprehensive analysis of trends in unwanted fertility in developing countries from the 1970s to the present. The wanted vs. unwanted fertility distinction is meaningful for both theoretical and policy purposes: conclusions about causes of fertility decline hinge on the relative contribution of reductions in wanted vs. unwanted births, and public policy places priority on the reduction of unwanted fertility. This research examines three measures of unwanted fertility: percent of births unwanted, unconditional unwanted fertility rate, and conditional unwanted fertility rate. The first two are common in the literature, although we calculate them using the Casterline – el-Zeini method that corrects for downward bias in the conventional estimates. The third is unconventional but brings into sharper focus success/failure in avoiding unwanted births. We present trends in 49 developing countries. In most countries unwanted fertility rates have fallen substantially in recent decades, a remarkable and unappreciated public health achievement.

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