The Impact of Contraceptive Failure on Unintended Pregnancy and Abortion

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Introduction

An estimated 80 million unintended pregnancies occur each year worldwide, resulting in 42 million induced abortions and 34 million unintended births (Speidel, Harper, and Shields 2008). These unintended pregnancies have grave consequences for the health and well-being of women and families, particularly in low- and middle-income countries where maternal mortality is high and abortions often unsafe. On the national level, unintended pregnancies contribute substantially to population growth that in many cases is unwanted, making it more difficult to provide education for all and eradicate extreme poverty and hunger, and inhibiting progress towards improving maternal health and reducing child mortality.

In the simplest view, unintended pregnancies have two causes: nonuse of contraception, and contraceptive failure. The proportion of unintended pregnancies that are due to contraceptive failure is directly linked to the proportion of the population that is using contraception: in a population with a 100 percent contraceptive prevalence rate, 100 percent of unintended pregnancies would be due to contraceptive failure. The impact of contraceptive failure on unintended pregnancy and abortion is also related to which contraceptive methods are being used, and how well they are being used, which can be examined through studying contraceptive failure rates. The links between contraceptive failure and unintended pregnancy and abortion has been well-studied in the US (e.g. Henshaw 1998; Trussell et al. 1999; Jones et al. 2002; Finer and Henshaw 2006; Frost et al. 2008), but few studies have examined the issue across a range of developing countries.

The Demographic and Health Surveys (DHS) are nationally representative, population-based surveys that provide information on unintended pregnancy, contraceptive use, failure, and abortion in low- and middle-income countries. A little-used portion of the DHS questionnaire is the contraceptive calendar: a month-by-month retrospective history of every pregnancy, birth, termination, and episode of contraceptive use a woman had in the five years preceding the survey. In the surveys included in this analysis, when a woman reported discontinuing a contraceptive method, she was asked what the primary reason was for that discontinuation. One reason commonly given is method failure, or "became pregnant while using," which allows us to directly calculate failure rates over a five-year time period. In addition, the DHS collected information on the wantedness status of each birth in the five years preceding the survey, which can be linked to the contraceptive calendar to determine whether each pregnancy was the result of a contraceptive failure.

Despite the wealth of information provided in DHS surveys, we were only able to locate one study that documented the impact of contraceptive failure on unintended pregnancy and abortion across multiple developing countries (Cleland and Ali 2004). Cleland and Ali used data collected between 1990 and 2000, and limited their analyses to the three years prior to each survey, reducing their sample sizes from the full five years of data collected. We could find no comparative analysis summarizing the link between contraceptive failure and unintended pregnancy across several countries using more recent data. This paper attempts to fill that gap by using recent (2002-2008) surveys from 17 countries to estimate the following:

1. The probability of contraceptive failure by contraceptive method;
2. The proportion of unintended pregnancies that result from contraceptive failure; and
3. Levels of unintended pregnancy that could be achieved in the absence of contraceptive failure.

In addition, this paper also estimates the impact of contraceptive failure on non-live births (in most surveys, information is not collected on whether a termination was an induced abortion, miscarriage, or stillbirth) and, in five European and Eurasian countries where data on induced abortion were collected, the impact of contraceptive failure directly on induced abortion.

Data and Methods:

We use nationally representative DHS data from the most recent survey in each country that collected calendar data on contraceptive failure since 2002.[1] These data are available for 17 surveys:[2] Armenia 2005, Azerbaijan 2006, Bangladesh 2004, Colombia 2005, Dominican Republic 2002, Egypt 2008, India 2005-06, Indonesia 2007, Jordan 2007, Kenya 2003, Malawi 2004, Moldova 2005, Philippines 2003, Tanzania 2004-05, Turkey 2003, Ukraine 2007, and Zimbabwe 2005-06. As shown in table 1, all surveys collected information from women age 15-49, except Colombia (13-49) and Bangladesh (10-49) which interviewed younger women. All analyses are limited to women age 15-49 for purposes of comparability. Several surveys in this analysis included only ever-married women. In these countries, host-country implementers generally felt that A) it would be culturally inappropriate to ask never-married women questions about sexual activity, contraceptive use, and childbearing; and B) premarital sexual activity was sufficiently rare that excluding never-married women would not bias calculations based on pregnancies. Assuming that the latter is true, we do not exclude women from our analyses on the basis of their marital status, with the exception of table 1 which shows the contraceptive prevalence rate among currently married women.

[1] Beginning in 2003, the expanded monthly calendar (including reason for discontinuation) was no longer included in the DHS core questionnaire. Continued inclusion of the expanded monthly calendar was determined in consultation with host-country partners. Only countries which were interested in reasons for discontinuation or other questions related to contraceptive use dynamics continued to implement the expanded calendar, leading to over-representation of Eastern European and former Soviet countries in this sample of countries that collected this information.

[2] Ethiopia 2005 collected calendar data on contraceptive failure, but was excluded due to issues with converting from Ethiopia's 13-month calendar to a 12-month Gregorian calendar.

Twelve-month failure rates, or the probability of a woman becoming pregnant while using contraception within the first year of use, are calculated using a competing risks or multiple-decrement life table approach. Competing risks show the failure rates as they occur (observed rates), and such rates are affected by rates of discontinuation for other reasons. The period of observation for failure rates is the 3-62 months prior to the date of interview, excluding the 3 months immediately prior to interview to avoid underreporting of current pregnancies and failures preceding those pregnancies in the first trimester.

We link information from the calendar on whether each pregnancy was the result of failure with information on the wantedness status of each resulting live birth. This information is taken from the question "At the time that you became pregnant, did you want to become pregnant then, did you want to wait until later, or did you not want to have any (more) children at all?" Questions were asked separately for each child born in the five years preceding the survey. Pregnancies that were wanted later were considered mistimed, and those not wanted at all were considered unwanted. Though the denominator for many of the results below is live births, we generally use the term "unintended pregnancies" to describe pregnancies that were wanted later or not at all, rather than "unintended births," because women were asked about the wantedness at the time they became pregnant, not when they gave birth. Pregnancies for which wantedness status was missing are excluded from analyses. We also do not include current pregnancies, as they have not had full exposure to the risk of termination (i.e., the final outcome of the pregnancy is unknown).

For non-live births (miscarriages, stillbirths, or induced abortions), information on whether the pregnancy was wanted is not available, so the percentage of non-live births that are the result of failure is not disaggregated by the wantedness status of the pregnancy. The data do not allow us to determine whether non-live births are the result of induced abortions, stillbirths, or miscarriages, except in the countries shown in table 7, in which induced abortions were asked about directly.

Results

Table 1 shows the contraceptive prevalence rate (CPR) among currently married women in each country. Total CPR is lowest in the sub-Saharan African countries – between 26 and 39 percent – except Zimbabwe, which has a CPR of 60 percent. The CPR is highest in Colombia at 78 percent, and is moderately high in the European and Eurasian countries, from 51 percent in Azerbaijan to 71 percent in Turkey. However, up to 70 percent of this CPR is made up of traditional methods, which have much higher failure rates[3] (Figure 1). Conversely, in India, Colombia, and the Dominican Republic, the dominant method is female sterilization, which has an almost non-existent failure rate.

[3] Note that figure 1 includes all contraceptive users, not just currently married women. However, the percentage of contraceptive use that is made up of traditional methods is over 70 percent in Azerbaijan among currently married women also.

Failure rates (table 2) are fairly low for short-term hormonal methods (2.2-6.9 percent for pills, 0.4-5.1 percent for injectables) and extremely low for long-acting and permanent methods (0.5-2.5 percent for IUDs, 0.1-1.6 percent for implant use[4], 0-0.2 percent for sterilization). Condom failure rates are higher, at 1.8-9.7 percent. For all modern methods combined, rates range from less than 2 percent in India and Indonesia to 6 percent in Armenia and Azerbaijan. Traditional methods are much less effective, with failure rates up to 22 percent, equivalent to 2 in 10 women who were using traditional methods becoming pregnant within the first year of use. The all-method failure rate is heavily influenced by the method mix in each country. The failure rate for all methods combined is over 14 percent in Armenia and Azerbaijan, where withdrawal is used by over half of contraceptive users; and less than 3 percent in Egypt, Indonesia, and Zimbabwe where over 90 percent of contraceptives used are modern methods.

Table 3 gives an overview of the wantedness status of births and pregnancies. Among all live births that occurred in the five years prior to the survey, between 14 and 54 percent were either not wanted at all, or not wanted at that time (unintended). One-third or more of all births in Kenya, Malawi, Zimbabwe, the Philippines, Turkey, Colombia, and the Dominican Republic were unintended. Slightly larger percentages of unintended pregnancies resulting in live births are mistimed rather than unwanted in the majority of countries. The percentages of non-live births, which include induced abortions as well as miscarriages and stillbirths, vary from 5 percent in Kenya and Malawi where induced abortion is highly restricted [legal only to save the life of the mother (Biddlecom 2008; Munthali, Chimbiri, and Zulu 2004)] to 52 percent in Armenia and Azerbaijan where induced abortions are legal and widely available.

Table 4 examines the percentage of births that were the result of contraceptive failure across the different categories of wantedness. Between 1 and 10 percent of wanted births resulted from contraceptive failure. This finding is not inconsistent with previous studies that have found substantial proportions of contraceptive failures to end in reportedly wanted births (Trussell et al. 1999; Cleland and Ali 2004). The percentage of unintended (unwanted or mistimed) pregnancies that were the result of contraceptive failure varies widely across countries, from 6 percent in Malawi to 56 percent in Turkey. Between 8 and 59 percent of pregnancies that were mistimed, and 4 to 54 percent of pregnancies that were unwanted, were the result of contraceptive failure. Though there are considerable differences across countries, the percentages of mistimed and unwanted pregnancies that resulted from failure are generally quite similar within the same country.

Similar to the overall percentages of live births, the percentages of non-live births that result from failure also vary dramatically between countries where abortion is restricted (3-9 percent in Kenya, Malawi, Tanzania, and Zimbabwe) and where abortion is widely available (34-48 percent in Armenia, Azerbaijan, Moldova, Turkey, and the Ukraine).

[4] Only two countries, Indonesia and Egypt, had enough episodes of use of implants to produce estimates.

Table 5 compares the percentage of all births that were mistimed, unwanted, or unintended, and the percentage that were due to failure. The percentage due to failure can also be interpreted as the percentage point reduction in mistimed, unwanted, or unintended pregnancies found in the absence of failure (assuming that all other factors remained the same – an assumption that we note has some limitations). If contraceptive failure were eliminated, we estimate that the percentage of unintended pregnancies would drop by between 2 and 22 percentage points. The difference is largest in Colombia, which has the highest level of unintended pregnancy at 54 percent. Mistimed pregnancies would decrease by between 1 and 11 percentage points, and unwanted pregnancies would decrease by up to 12 percentage points in the absence of failure. This translates into unwanted births being cut in half in Armenia, Turkey and the Ukraine, and cut by more than one-third in Bangladesh, Jordan, Moldova, and Colombia.

We apply the same methodology from table 5 to non-live births in table 6. We estimate that the prevalence of non-live births could be reduced by up to 23 percentage points by eliminating contraceptive failure. As expected, the impact is largest in countries with high levels of reported non-live births, particularly in Armenia, Azerbaijan, Moldova, Turkey and the Ukraine.

Although in most countries we cannot determine from the data which non-live births are induced vs. spontaneous abortions, we can try to get closer to estimating abortions by excluding pregnancy outcomes that occur at gestational lengths of 6 months or longer, presumably excluding stillbirths. Both the levels of non-live births and the percentages that resulted from contraceptive failure are very similar between overall non-live births and non-live births of less than 6 months gestation, suggesting that very few of the terminations we capture are stillbirths. By eliminating contraceptive failure, we estimate that terminations at less than 6 months' gestation would be cut by over 40 percent in Armenia, Moldova, Turkey, and the Ukraine, and by over one-quarter in Bangladesh, Azerbaijan, and Colombia.

In the five European and Eurasian countries in this study, women were asked directly about induced abortions, and so we are able to separate induced abortions from miscarriages and stillbirths (Table 7). The total percentage of pregnancies that ended in induced abortion ranges from 11 percent in Turkey to 46 percent in Armenia and Azerbaijan. Even these levels are likely underestimates: as Henshaw et al. (1999) noted, induced abortion is often underreported in surveys. The percentage of induced abortions that were the result of contraceptive failure ranges from 8 to 22 percent. In every one of these countries, more than one-third of abortions could be avoided by eliminating contraceptive failure. In the absence of failure, in the Ukraine the abortion rate would be cut by more than half, and in Turkey the abortion rate would be cut by two-thirds.

Limitations

There are several limitations that should be considered when interpreting results from this study. The first involves the underreporting of abortions. A 1999 Guttmacher study found that when good data are available, abortion rates in developed and developing countries are quite similar. However, when

abortions are illegal or carry greater stigma, they – and the pregnancy that resulted in an induced abortion – may be underreported (AGI 1999). Levels of terminated pregnancies – overall and those resulting from contraceptive failure – may be heavily underreported, particularly in the countries in this study outside Europe and Eurasia.

Even within Europe and Eurasia, however, induced abortions may be underreported. The levels reported in these surveys generally are lower than the government's figures from clinic data (TransMONEE database). Underreporting may particularly be an issue in Turkey, where estimates are substantially lower than for the other four countries. These differences may be primarily due to reasons of data quality: first, the use of abortion as a method of fertility regulation was widely accepted in the former soviet countries, whereas there is likely to be greater stigma surrounding abortion in Turkey leading to underreporting of induced abortion. Second, in the four former soviet countries the data on abortions were collected using a pregnancy history that was specifically designed to minimize the omission of abortions, while in Turkey the data on abortions were only collected in the DHS calendar.

In terms of unintended pregnancy, even though the DHS questions are intended to ascertain the wantedness of the pregnancy at the time the woman became pregnant, it may be difficult for women to accurately recall whether a pregnancy that happened up to five years ago was wanted at that time – especially when that pregnancy has now become a living child. Indeed, we analyzed the reporting of wantedness of current pregnancies compared to live births, and found that women were substantially more likely to say a current pregnancy was unwanted than to say a living child was unwanted at the time they became pregnant (analysis not shown). To ensure we are making the most accurate comparisons possible (i.e., not showing higher rates of unintended pregnancy because women in higher-fertility countries are more likely to be pregnant at the time of survey than women in lower-fertility countries), we have eliminated current pregnancies from our analysis. However, as noted by Cleland and Ali (2004), it is likely that some rationalization is occurring after the birth, and an unknown proportion of pregnancies that are now reported as having been wanted were actually unwanted at the time of conception. To complicate the matter further, we do not have information on the wantedness status of pregnancies that did not end in a live birth. Certainly those that were intentionally aborted were unwanted, but outside of the European and Eurasian countries in the study we do not know how many non-live births were induced abortions. Because of these factors (ex post facto rationalization of live births and the lack of data on the wantedness status of non-live births), we are almost certainly underestimating levels of unintended pregnancy.

Discussion and Conclusions

This paper provides estimates of both the impact of contraceptive failure and changes that could be seen in its absence across 17 low- and middle-income countries. Though we cannot show causal linkages, results indicate that in the absence of contraceptive failure, the prevalence of unintended births could be cut by almost 50 percent, and non-live births (including induced abortions) would

decrease by up to 40 percent. In the countries with induced abortion data, we find that between one third and two thirds of induced abortions could be prevented if contraceptive failure were eliminated.

The impact that contraceptive failure has on unintended pregnancy and abortion is dependent on two factors: contraceptive use, including the prevalence of use by method and failure rates by method; and levels of unintended pregnancy and abortion. Colombia has the highest CPR of any country in this study, and the primary method is female sterilization, which has (in Colombia) a failure rate of zero. Failure rates for other modern methods are relatively high: Colombia boasts the highest pill and IUD failure rates of any country studied, and higher any-modern-method failure rates than any country other than Armenia and Azerbaijan. These rates, in combination with the fact that over half of all live births in Colombia are unintended, arguably make Colombia the country with the greatest demonstrable impact of contraceptive failure on unintended pregnancy: mistimed and unwanted pregnancies could be decreased by over 10 percentage points, and unintended pregnancies cut nearly in half, all by eliminating contraceptive failure. On the other hand, in the African countries included in the study, failure was the cause of only between 6 and 20 percent of unintended pregnancies. This is not because the contraceptive failure rates are dramatically lower in these countries, but mostly because the contraceptive prevalence rate is lower and thus the proportion of all pregnancies that were the result of contraceptive failure is lower, particularly in Kenya, Malawi, and Tanzania. In all of these countries, however, contraceptive prevalence appears to be rising substantially. If current trends in contraceptive prevalence continue without a concurrent decrease in contraceptive failure, the impact of contraceptive failure on unintended pregnancies and abortions will continue to increase as well.

Previous research has shown that contraceptive failure is strongly associated with younger ages and higher parities (Bradley et al. 2009; Curtis and Blanc 1997). But even after controlling for other factors, the strongest predictor of contraceptive failure is the contraceptive method chosen. Our findings also show strong differences in the probability of experiencing failure rates by contraceptive method. Across countries, the (unweighted) average failures rate for long-acting and permanent methods ranges from 0.0 percent for female sterilization to 1.1 percent for IUDs; for short-term modern methods the range is from 2.1 percent for injectables to 5.3 percent for female condoms; and for traditional methods, the range is from 10.4 percent for withdrawal to 13.1 percent for traditional methods other than withdrawal and periodic abstinence. These differences in failure rates clearly impact rates of unintended pregnancy and abortion. Figure 2 shows the percent distribution of unintended pregnancies resulting from contraceptive failure by contraceptive method failed. In 11 of 17 countries studied, over half of these failures were from traditional methods; in 4 countries over 75% were traditional methods. Even among unwanted pregnancies, which presumably occurred to women who wanted no more children, between 6 and 90 percent of unwanted pregnancies that resulted from failure were from short-term modern methods, and between 10 and 92 percent were from traditional methods (not shown). Only 0-25 percent were among long-term or permanent methods. This result demonstrates both the low failure rates of long-acting and permanent methods, and the substantial consequences of using methods that are unsuitable for meeting reproductive intentions. Women who had unwanted births presumably wanted no more children at all, and therefore should be using long-acting or permanent methods of

contraception to meet their reproductive intentions. The fact that such substantial portions of women are relying on traditional or short-term modern methods suggests that family planning programs are not fully meeting the needs of these women.

Though this study has focused on the impact of contraceptive failure, there are clearly other issues related to contraceptive use that impact unintended pregnancy and abortion. We know from previous research that failure is far from the only reason couples stop using contraception. Up to 37 percent of women stop using short-term modern methods in the first year due to health concerns and side effects, which is the most common reason for discontinuing a short-term modern method in most countries – much more common than failure (Bradley et al. 2009). These discontinuations also have considerable impact: up to 39 percent of women who discontinued a modern method became pregnant within 6 months, excluding those who became pregnant while using the method (Blanc et al. 1999). Additionally, large proportions of women who discontinue modern methods due to health concerns and side effects switch to less effective methods (Bradley et al. 2009), which leads directly to increased probabilities of contraceptive failure and resulting unintended pregnancies and abortions.

To reduce the impact of contraceptive failure on unintended pregnancy and abortion, changes in family planning programs are necessary. Decreased reliance on traditional methods is clearly needed, particularly to reduce abortions in the European and Eurasian countries studied. More emphasis is needed on choosing contraceptive methods that will help women meet their reproductive intentions. For families who want no (more) children, long-acting and permanent methods should be made available. And though evidence on the ability of counseling programs to improve contraceptive use is limited, the range of failure rates are evidence that family planning programs can improve contraceptive failure rates: in Zimbabwe, where contraceptive pills have long been promoted, pill discontinuation rates are some of the lowest in the world and pill failure rates rival those of long-acting methods.

Unintended pregnancies and abortions have grave consequences for women, families, and nations. Improvements in family planning programs are needed, and can clearly limit the impact of contraceptive failure on unintended pregnancy and abortion. But consistently high rates of contraceptive failure and discontinuation demonstrate a gap that is beyond the reach of the family planning programs in most low- and middle-income countries. Consistently high failure and discontinuation rates, despite decades of work to improve education and counseling on existing methods, point to the need for improved methods of contraception. Women and families are being forced into a difficult calculus between subjecting themselves to the side effects from modern methods that they clearly feel are intolerable, and the risks of pregnancy from traditional methods that in many countries are still widely used. Further investments in family planning are needed to develop and disseminate modern methods that are effective, easy to use consistently and correctly, and cause fewer side effects and health concerns than the hormonal products currently available.

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Table 1: Characteristics of sample, all DHS surveys with complete calendar data 2002-2008

	Eligibility for women's interview	Number of interviewed women 15-49 (weighted)	Contraceptive prevalence rate, married women 15-49
Sub-Saharan Africa			
Kenya 2003	All women 15-49	8,195	39.3
Malawi 2004	All women 15-49	11,698	32.5
Tanzania 2004-05	All women 15-49	10,329	26.4
Zimbabwe 2005-06	All women 15-49	8,907	60.2
Asia			
Bangladesh 2004	Ever-married women 10-49	11,290	58.5
India 2005-06	All women 15-49	124,385	56.3
Indonesia 2007	Ever-married women 15-49	32,895	61.4
Philippines 2003	All women 15-49	13,633	48.9
Middle East			
Egypt 2008	Ever-married women 15-49	16,527	60.3
Jordan 2007	Ever-married women 15-49	10,876	57.1
Europe & Eurasia			
Armenia 2005	All women 15-49	6,566	53.1
Azerbaijan 2006	All women 15-49	8,444	51.1
Moldova 2005	All women 15-49	7,440	67.8
Turkey 2003	Ever-married women 15-49	8,075	71.0
Ukraine 2007	All women 15-49	6,841	66.7
Latin America and the Caribbean			
Colombia 2005	All women 13-49	38,355	78.2
Dominican Republic 2002	All women 15-49	23,384	69.8

Figure 1: Contraceptive method mix all contraceptive users 15-49

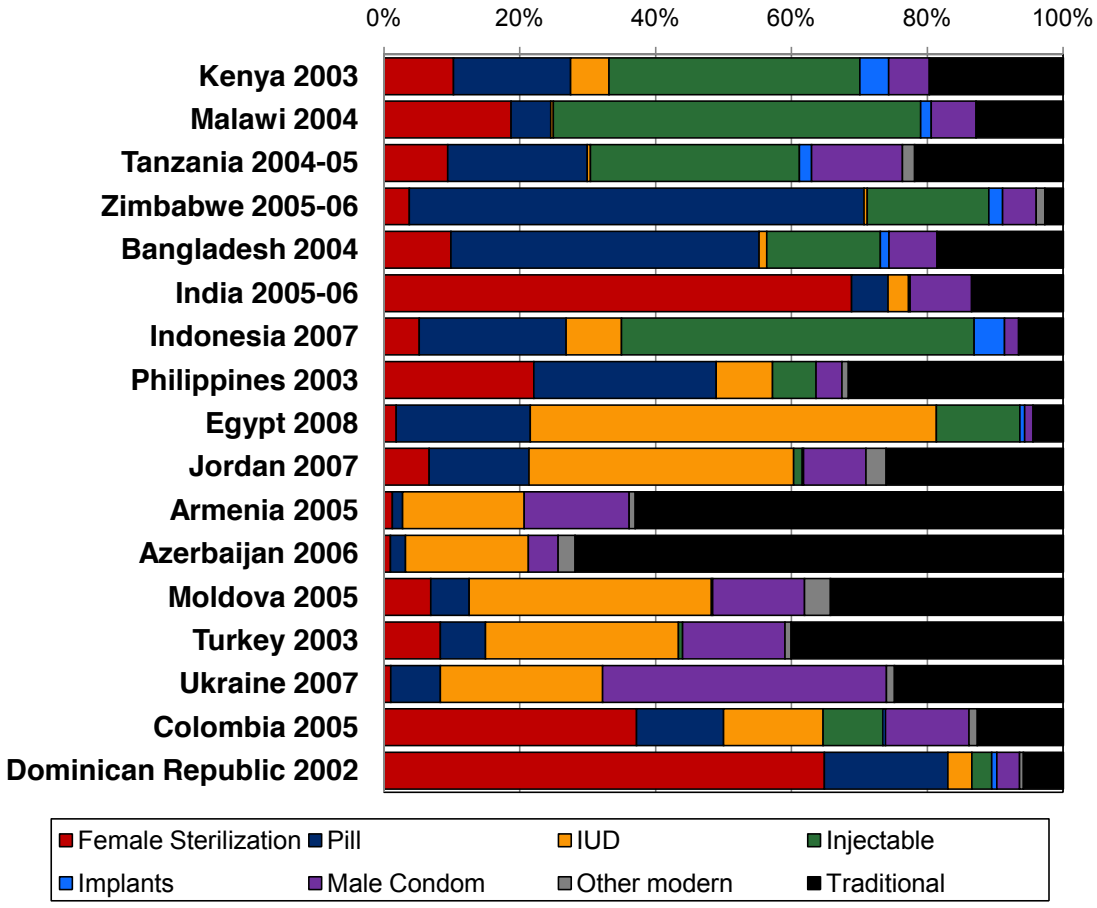

Table 2: First year contraceptive failure rates by contraceptive method, DHS surveys 2002-2008

Failure rate

	Modern methods									Traditional methods				
	Pill	IUD	Injectables	Implant	Male condom	Female Sterilization	Male Sterilization	Other modern	Any modern method (1)	Periodic Abstinence	Withdrawal	Other traditional	Any traditional method (1)	Any method (1)
Sub-Saharan Africa														
Kenya 2003	4.0	-	1.0	-	3.7	-	-	-	2.3	15.4	-	-	15.1	5.5
Malawi 2004	6.8	-	1.4	-	2.5	0.0	-	-	1.9	-	10.1	13.4	10.5	3.4
Tanzania 2004-05	3.9	-	0.9	-	1.8	-	-	-	2.2	5.8	10.6	10.7	9.1	3.9
Zimbabwe 2005-06	2.2	-	1.5	-	3.6	-	-	-	2.1	-	6.0	-	4.5	2.2
Asia														
Bangladesh 2004	3.9	-	0.4	-	6.4	-	-	-	3.5	10.7	8.3	-	9.8	4.5
India 2005-06	2.6	1.0	5.1	-	3.4	0.2	0.0	-	1.7	7.7	6.9	3.6	7.4	3.2
Indonesia 2007	3.1	0.6	0.7	0.1	4.8	0.0	-	-	1.5	5.4	3.0	1.1	3.7	1.6
Philippines 2003	3.7	0.6	1.3	-	7.7	0.0	-	-	3.4	12.5	17.2	-	15.4	7.8
Middle East														
Egypt 2008	6.2	0.9	0.9	1.6	8.2	-	-	-	2.5	-	-	6.1	6.5	2.9
Jordan 2007	5.9	0.8	1.4	-	9.4	0.0	-	5.6	4.3	20.5	12.6	-	14.7	7.1
Europe & Eurasia														
Armenia 2005	-	0.6	-	-	6.9	-	-	-	5.6	28.4	20.9	18.8	21.6	15.9
Azerbaijan 2006	-	0.9	-	-	9.7	-	-	5.6	6.1	13.8	18.6	-	18.1	14.4
Moldova 2005	5.1	1.3	-	-	5.0	-	-	4.7	3.5	11.4	12.9	-	12.5	6.6
Turkey 2003	5.5	1.5	3.2	-	5.7	0.0	-	17.1	5.2	19.7	13.1	-	13.4	8.6
Ukraine 2007	2.4	0.5	-	-	3.0	-	-	-	2.4	8.4	8.1	-	7.9	4.1
Latin America and the Caribbean														
Colombia 2005	6.6	2.5	5.0	-	4.8	0.0	0.9	13.9	5.0	17.5	15.7	18.4	16.6	7.2
Dominican Republic 2002	6.9	2.0	4.6	-	2.9	0.0	-	7.6	4.7	18.7	12.7	6.7	13.1	6.1

Number of episodes of contraceptive use

	Modern methods									Traditional methods				
	Pill	IUD	Injectables	Implant	Male condom	Female Sterilization	Male Sterilization	Other modern	Any modern method (1)	Periodic Abstinence	Withdrawal	Other traditional	Any traditional method (1)	Any method (1)
Sub-Saharan Africa														
Kenya 2003	963	106	1,257	84	332	79	-	4	2,825	736	89	80	904	3,730
Malawi 2004	481	10	3,198	48	502	347	3	1	4,589	87	506	312	904	5,493
Tanzania 2004-05	1,276	21	1,468	40	658	100	1	115	3,679	368	605	231	1,204	4,883
Zimbabwe 2005-06	3,838	17	934	75	426	54	2	126	5,472	21	136	40	196	5,668
Asia														
Bangladesh 2004	5,277	111	1,793	90	1,345	93	18	-	8,727	972	700	75	1,747	10,474
India 2005-06	5,904	2,359	174	0	7,395	11,166	216	29	27,244	6,727	3,156	340	10,224	37,467
Indonesia 2007	5,667	737	11,620	725	504	299	11	40	19,601	456	732	128	1,316	20,918
Philippines 2003	1,977	312	659	2	361	276	4	125	3,716	822	1,303	77	2,202	5,918
Middle East														
Egypt 2008	2,936	5,021	1,654	128	128	68	-	8	9,942	65	40	994	1,099	11,041
Jordan 2007	2,153	2,702	191	16	1,038	142	-	1,411	7,653	774	2,079	6	2,860	10,513
Europe & Eurasia														
Armenia 2005	82	308	1	-	431	6	-	74	901	180	1,276	148	1,604	2,505
Azerbaijan 2006	135	381	3	-	181	10	-	204	913	218	1,856	14	2,088	3,001
Moldova 2005	434	963	7	1	871	111	2	702	3,090	222	1,353	46	1,621	4,711
Turkey 2003	928	1,371	170	-	1,333	221	3	478	4,503	144	3,060	38	3,242	7,744
Ukraine 2007	372	579	4	-	1,717	16	-	76	2,764	387	743	70	1,200	3,964
Latin America and the Caribbean														
Colombia 2005	6,979	3,149	5,036	89	6,299	3,114	270	1,302	26,238	2,395	3,445	410	6,249	32,487
Dominican Republic 2002	6,781	733	1,150	144	1,129	2,527	15	517	12,996	854	1,031	701	2,585	15,581

(1) Includes methods not shown separately in table.
Failure rates not shown if <125 episodes of use

Table 3: Percent distribution of all live births/pregnancies in the five years preceding the survey by wantedness status/birth outcome, DHS surveys 2002-2008

	Live births						All birth outcomes	
	Wanted	Mistimed	Unwanted	Total live births		Unintended (1)	Non-live birth	Total pregnancies (excluding current pregnancy)
	%	%	%	%	n	%	%	n
Sub-Saharan Africa								
Kenya 2003	55.8	24.4	19.8	100.0	6,082	44.2	5.4	6,431
Malawi 2004	60.4	19.9	19.7	100.0	10,761	39.6	5.1	11,338
Tanzania 2004-05	77.7	17.2	5.0	100.0	8,716	22.3	9.0	9,573
Zimbabwe 2005-06	67.2	20.0	12.8	100.0	5,220	32.8	6.9	5,608
Asia								
Bangladesh 2004	71.5	14.9	13.6	100.0	6,993	28.5	13.6	8,099
India 2005-06	79.6	9.4	11.0	100.0	56,377	20.4	11.6	63,803
Indonesia 2007	80.1	12.3	7.5	100.0	16,405	19.9	8.8	17,998
Philippines 2003	54.8	24.1	21.1	100.0	6,914	45.2	10.4	7,715
Middle East								
Egypt 2008	86.2	4.8	9.1	100.0	10,583	13.8	11.7	11,981
Jordan 2007	73.9	14.7	11.4	100.0	9,858	26.1	15.2	11,624
Europe & Eurasia								
Armenia 2005	84.1	9.5	6.4	100.0	1,491	15.9	52.1	3,110
Azerbaijan 2006	82.9	9.2	7.9	100.0	2,280	17.1	51.7	4,720
Moldova 2005	79.7	11.2	9.1	100.0	1,589	20.3	45.1	2,895
Turkey 2003	66.8	12.9	20.3	100.0	4,122	33.2	22.4	5,315
Ukraine 2007	86.2	7.5	6.3	100.0	1,168	13.8	33.5	1,756
Latin America and the Caribbean								
Colombia 2005	46.5	26.3	27.1	100.0	13,779	53.5	17.1	16,628
Dominican Republic 2002	57.2	29.6	13.2	100.0	10,772	42.8	16.2	12,851

In this and all subsequent tables, pregnancies with missing wantedness status are not included.

(1) Unintended refers to unwanted or mistimed pregnancies.

Table 4: Percentage of all births in the five years preceding the survey that were the result of a contraceptive failure by wantedness status/birth outcome, DHS surveys 2002-2008

	Live births								All birth outcomes			
	Wanted		Mistimed		Unwanted		Unintended		Non-live birth		Total	
	%	n	%	n	%	n	%	n	%	n	%	n
Sub-Saharan Africa												
Kenya 2003	2.2	3,392	12.3	1,487	13.4	1,204	12.8	2,690	8.0	349	6.9	6,431
Malawi 2004	0.9	6,502	7.7	2,141	3.6	2,118	5.6	4,259	3.2	577	2.8	11,338
Tanzania 2004-05	1.1	6,775	12.1	1,503	10.1	438	11.7	1,941	5.4	857	3.6	9,573
Zimbabwe 2005-06	3.9	3,509	22.0	1,043	17.9	668	20.4	1,711	8.6	388	9.2	5,608
Asia												
Bangladesh 2004	1.2	5,000	33.5	1,043	33.2	951	33.4	1,993	21.6	1,105	11.9	8,099
India 2005-06	1.1	44,880	9.7	5,302	11.2	6,195	10.5	11,497	9.1	7,426	3.7	63,803
Indonesia 2007	2.2	13,148	19.2	2,022	23.2	1,236	20.7	3,257	9.5	1,593	6.2	17,998
Philippines 2003	6.1	3,791	17.5	1,666	18.4	1,458	17.9	3,123	13.2	801	11.6	7,715
Middle East												
Egypt 2008	2.4	9,121	25.8	504	24.8	959	25.1	1,462	10.2	1,398	6.1	11,981
Jordan 2007	3.0	7,287	35.7	1,449	35.3	1,123	35.5	2,572	15.2	1,766	12.1	11,624
Europe & Eurasia												
Armenia 2005	2.7	1,253	44.7	142	51.7	96	47.5	238	44.1	1,619	27.7	3,110
Azerbaijan 2006	4.6	1,890	18.2	211	21.3	179	19.6	390	33.6	2,440	20.8	4,720
Moldova 2005	6.9	1,267	43.8	178	44.0	145	43.9	323	41.2	1,305	26.5	2,895
Turkey 2003	4.0	2,753	58.5	532	54.2	836	55.9	1,369	45.2	1,193	26.6	5,315
Ukraine 2007	6.3	1,007	57.5	88	49.3	73	53.7	161	47.5	588	24.4	1,756
Latin America and the Caribbean												
Colombia 2005	9.8	6,410	40.4	3,631	43.0	3,739	41.7	7,369	32.2	2,849	27.8	16,628
Dominican Republic 2002	4.1	6,167	21.4	3,186	18.4	1,420	20.5	4,605	16.8	2,079	12.0	12,851

Table 5: Percentage of live births in the five years preceding the survey, total and as a result of contraceptive failure, that were mistimed, unwanted, or unintended, DHS surveys 2002-2008

	Percentage of live births that were mistimed		Percentage of live births that were unwanted		Percentage of live births that were unintended		
	All	Resulting from contraceptive failure	All	Resulting from contraceptive failure	All	Resulting from contraceptive failure	Number of live births
Sub-Saharan Africa							
Kenya 2003	24.4	3.0	19.8	2.7	44.2	5.7	6,082
Malawi 2004	19.9	1.5	19.7	0.7	39.6	2.2	10,761
Tanzania 2004-05	17.2	2.1	5.0	0.5	22.3	2.6	8,716
Zimbabwe 2005-06	20.0	4.4	12.8	2.3	32.8	6.7	5,220
Asia							
Bangladesh 2004	14.9	5.0	13.6	4.5	28.5	9.5	6,993
India 2005-06	9.4	0.9	11.0	1.2	20.4	2.1	56,377
Indonesia 2007	12.3	2.4	7.5	1.8	19.9	4.1	16,405
Philippines 2003	24.1	4.2	21.1	3.9	45.2	8.1	6,914
Middle East							
Egypt 2008	4.8	1.2	9.1	2.2	13.8	3.5	10,583
Jordan 2007	14.7	5.2	11.4	4.0	26.1	9.3	9,858
Europe & Eurasia							
Armenia 2005	9.5	4.3	6.4	3.3	15.9	7.6	1,491
Azerbaijan 2006	9.2	1.7	7.9	1.7	17.1	3.4	2,280
Moldova 2005	11.2	4.9	9.1	4.0	20.3	8.9	1,589
Turkey 2003	12.9	7.6	20.3	11.0	33.2	18.6	4,122
Ukraine 2007	7.5	4.3	6.3	3.1	13.8	7.4	1,168
Latin America and the Caribbean							
Colombia 2005	26.3	10.7	27.1	11.7	53.5	22.3	13,779
Dominican Republic 2002	29.6	6.3	13.2	2.4	42.8	8.7	10,772

Table 6: Percentage of all completed pregnancies in the five years preceding the survey that ended in a non-live birth, and that ended in a non-live birth of < 6 months gestation, with and without contraceptive failure, DHS surveys 2002-2008

	Percentage of completed pregnancies that ended in a non-live birth		Percentage of completed pregnancies that ended in a non-live birth of <6 months gestation		
	All	Resulting from contraceptive failure	All	Resulting from contraceptive failure	Number of pregnancies*
Sub-Saharan Africa					
Kenya 2003	5.4	0.4	3.8	0.3	6,431
Malawi 2004	5.1	0.2	3.2	0.1	11,338
Tanzania 2004-05	9.0	0.5	6.6	0.4	9,573
Zimbabwe 2005-06	6.9	0.6	5.7	0.5	5,608
Asia					
Bangladesh 2004	13.6	3.0	9.8	2.6	8,099
India 2005-06	11.6	1.1	9.5	1.0	63,803
Indonesia 2007	8.8	0.8	7.6	0.7	17,998
Philippines 2003	10.4	1.4	9.1	1.2	7,715
Middle East					
Egypt 2008	11.7	1.2	10.7	1.1	11,981
Jordan 2007	15.2	2.3	14.3	2.3	11,624
Europe & Eurasia					
Armenia 2005	52.1	23.0	51.6	23.0	3,110
Azerbaijan 2006	51.7	17.4	50.6	17.3	4,720
Moldova 2005	45.1	18.6	44.2	18.4	2,895
Turkey 2003	22.4	10.1	21.4	10.0	5,315
Ukraine 2007	33.5	15.9	32.8	15.7	1,756
Latin America and the Caribbean					
Colombia 2005	17.1	5.5	16.3	5.3	16,628
Dominican Republic 2002	16.2	2.7	14.9	2.6	12,851

* For the percentage of completed pregnancies that ended in a non-live birth of <6 months gestation, the denominator excludes cases where it could not be determined if the duration of gestation was <6 months as the pregnancy started prior to the calendar. 139 cases are excluded in Egypt, 23 cases in India, 13 in Kenya and 1 in Malawi (all weighted).

Table 7: Percentage of completed pregnancies that ended in induced abortion in the five years preceding the survey, total and resulting from contraceptive failure, women 15-49, DHS surveys with abortion data 2003-2007

	Percentage of completed pregnancies that ended in induced abortion		Number of completed pregnancies
	All	Resulting from contraceptive failure	
Europe & Eurasia			
Armenia 2005	45.6	22.0	3,110
Azerbaijan 2006	45.9	16.7	4,720
Moldova 2005	34.8	16.5	2,895
Turkey 2003	11.2	7.5	5,315
Ukraine 2007	26.8	14.8	1,756

Figure 2: Percent distribution of unintended pregnancies resulting from failure by method failed