Extended Abstract

Introduction

As contraceptive practice in a society become more widespread, the avoidance of unintended pregnancies becomes less dependent on rates of initial adoption and more dependent on the ability and willingness of couples to use methods with maximum effectiveness, to use them persistently and to switch quickly to alternative methods as and when the need arises. Thus the study of use-dynamics, and its relevance to an understanding of the ability of couples to achieve their reproductive intentions, has steadily grown in importance over the past 50 years, in line with the rise of contraceptive practice in developing regions.[1-5] In most low and middle income countries the pill is the most commonly used reversible method of contraception. Yet typically about 30% of women abandon the method within 12 months for reasons that imply dissatisfaction or health concerns with the methods. The main purpose of this paper is to examine what happens after pill discontinuation and to seek explanations of individual and country-level variations in the post-discontinuation behavior.

Data & Methods

DHS calendar data for 18 developing countries are used in the analysis: The geographical distribution of countries is: Latin America 8, Asia 4, North African and Near East 4, sub-Saharan Africa 2. In most of these countries, the pill is the most commonly used reversible method, the main exceptions being Egypt, Jordan and Turkey where IUD use is more common. These 18 calendars yielded a total of 11,708 pill episodes that had stopped for reasons that implied dissatisfaction, mainly side-effects and health concerns.

Exploratory analysis showed that most women who switch to another method before becoming pregnant do so within 3 months. Accordingly it was decided to focus attention on the following outcomes at 3 months: method-specific switching; pregnancy; still at risk (i.e. non-use but not pregnant). Multiple-decrement life-table analysis was applied to estimate outcomes. Among possible household and individual predictors of

switching within three months, exploratory work showed that only the woman's education and desire for another child (as measured by a comparison of living children and desired children at time of discontinuation) were important. Adjusted effects of these two factors were estimated by Cox proportional hazard models for competing risks.[6-7] Finally, we attempted to explain the large inter-country differences in method-switching by national measure of method-skewness (i.e. the extent to which contraceptive use is dominated by one or two methods) and by the program efforts scores derived from the work of John Ross and colleagues. Specifically, the method-availability component was modified to exclude the pill and abortion.

Results

In this sample of 18 countries, the percentage of pill episodes that were stopped within 12 months for reasons implying dissatisfaction ranged from 7% in Zimbabwe to 47% in Bolivia with a median of 28% (Table 1). The percentage of women switching to another reversible modern method within 3 months ranged from 15% in Dominican Republic to 60% in Indonesia with a mean of 35% for all 18 countries (Table 2). In 12 countries, injectables were the most common choice. Very few switched to another brand of the pill. Switching to a traditional method ranged from less than 5% in Egypt, Indonesia, and Zimbabwe to over 30% in Bolivia, Morocco, Paraguay, Turkey and Vietnam, with a mean of 19%. Switching to permanent methods, was rare in most countries, except in some Latin American countries, notably Guatemala.

In only two countries was women's education found to be significantly associated with a lower probability of pill discontinuation and in a further two countries it was associated with a higher probability (Fig 1a). In contrast, education emerged as a significant positive predictor of switching in 13 of the 18 study countries (Fig 2a). Fertility motivation was less strongly associated with either discontinuation and switching than education, being a significant positive predictor of switching in 5 countries (Fig 1b & 2b).

Explication of national differences in switching is not yet complete but preliminary results, surprisingly, show no effect of method skewness. However,

significant relationships have been found with overall progam effort score and some of its components.

Conclusions & Discussion

Interventions to enhance continuation of contraceptive use through, for instance, more intensive counselling, have proved largely ineffective.[8] It appears to be inevitable that a large minority of women will abandon their chosen reversible contraceptive method rather soon after adoption, for a complex set of physiological and psychological reason that are poorly understood. Oral contraceptives, injectables. and condoms - all methods that require no provider-involvement in stopping - are particularly prone to early discontinuation. The willingness and ability of women to switch promptly to an alternative method is thus a crucial but neglected element of effective fertility regulation.

One of the main values of this paper is to document the scale of the problem of inadequate switching following discontinuation of oral contraceptives for reasons that imply dissatisfaction with the method. In the 18 study countries, on average, 35% of women switched to another modern, effective method within 3 months, though national estimates ranged widely from 18% to 57%. The majority switched to a less effective traditional method, were still exposed to risk of pregnancy or had already become pregnant. These results highlight the need for family planning programs in low- and middle-income countries to pay more serious attention to the topic of method-switching.

In the majority of countries, woman's education was found to be a very strong predictor of early switching following pill discontinuation. Conversely education was rather weakly related to discontinuation. Thus switching behaviour is one major reason why contraceptive prevalence is nearly always higher among better than less well educated women, even after adjustment for confounding factors. The reasons for the strong link between education and switching must be speculative but it is likely to reflect greater familiarity with alternative methods and perhaps alternative services among the better educated.

References

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Table 1: Cause-specific 12 month discontinuation probabilities (per 100 episodes), by country

Country	Episodes	All reasons	Failure	Want a child	Dissatisfied	No Need
Bangladesh	5,064	46.1	5.4	11.0	27.5	10.4
Bolivia	464	57.6	7.0	6.4	46.9	6.9
Brazil	2,608	44.3	6.4	6.9	18.9	20.3
Colombia	1,487	45.6	9.6	10.2	28.7	5.2
Dominican Republic	1,849	57.5	10.3	15.2	32.1	15.8
Egypt	2,597	48.2	8.0	10.0	28.0	11.9
Guatemala	357	46.4	3.4	11.0	31.2	8.5
Indonesia	4,941	31.8	5.0	9.3	15.2	6.3
Jordan	1,146	55.9	13.5	14.9	35.4	5.6
Kenya	754	42.6	5.8	6.6	30.0	6.2
Morocco	6,019	40.7	5.0	11.9	11.9	18.7
Nicaragua	2,564	47.2	7.9	11.2	26.8	10.7
Paraguay	1,193	56.8	4.5	10.9	36.3	18.2
Peru	2,738	55.0	6.0	5.4	44.4	7.9
Philippines	1,941	38.6	4.6	4.7	23.8	10.7
Turkey	663	56.8	9.9	7.6	30.3	23.9
Viet Nam	502	36.4	7.0	8.9	20.3	5.3
Zimbabwe	1,762	14.3	2.0	3.7	6.9	2.3
Median	**1806**	**46.3**	**6.2**	**9.7**	**28.4**	**9.5**

Table 2 : Pill switching: Status at thee month after discontinuation of pill because of dissatisfaction per 100discontinuations

	No of episodes	At risk	Became pregnant	Switched to				Total
				Pill	Other Modern	Traditional	Sterilization	
Bangladesh	1,709	24.4	7.9	0.5	48.1	18.6	0.4	100
Bolivia	266	28.1	10.7	3.1	26.8	30.8	0.5	100
Brazil	757	35.0	14.4	3.5	21.1	19.6	6.5	100
Colombia	597	21.6	19.5	0.3	34.1	18.6	6.0	100
Dominican Republic	671	38.6	31.0	0.3	15.0	13.5	1.7	100
Egypt	789	29.8	17.0	1.0	50.9	1.2	0.2	100
Guatemala	172	39.3	14.8	0.0	33.0	5.2	7.7	100
Indonesia	975	32.6	4.4	0.0	60.0	2.6	0.4	100
Jordan	486	25.0	14.5	0.1	35.6	24.5	0.5	100
Kenya	315	44.9	14.7	0.0	34.7	5.3	0.5	100
Morocco	957	21.1	8.2	1.3	38.0	30.3	1.2	100
Nicaragua	826	34.7	15.5	0.4	35.6	7.4	6.4	100
Paraguay	509	20.0	9.4	6.2	31.7	32.2	0.5	100
Peru	1,384	21.8	10.2	1.1	49.1	15.7	2.2	100
Philippines	582	39.3	16.9	1.5	23.3	18.7	0.4	100
Turkey	243	19.2	10.9	0.0	27.9	40.9	1.0	100
Viet Nam	145	11.0	11.2	0.0	42.7	30.6	4.6	100
Zimbabwe	323	44.4	15.8	0.3	34.9	4.1	0.5	100
Median	**590**	**29.0**	**14.5**	**0.4**	**34.8**	**18.6**	**0.8**	100

Moderns: pill

Figure 1a: Country specific effects of women's level of education on contraceptive pill discontinuation at 12 months because of dissatisfaction

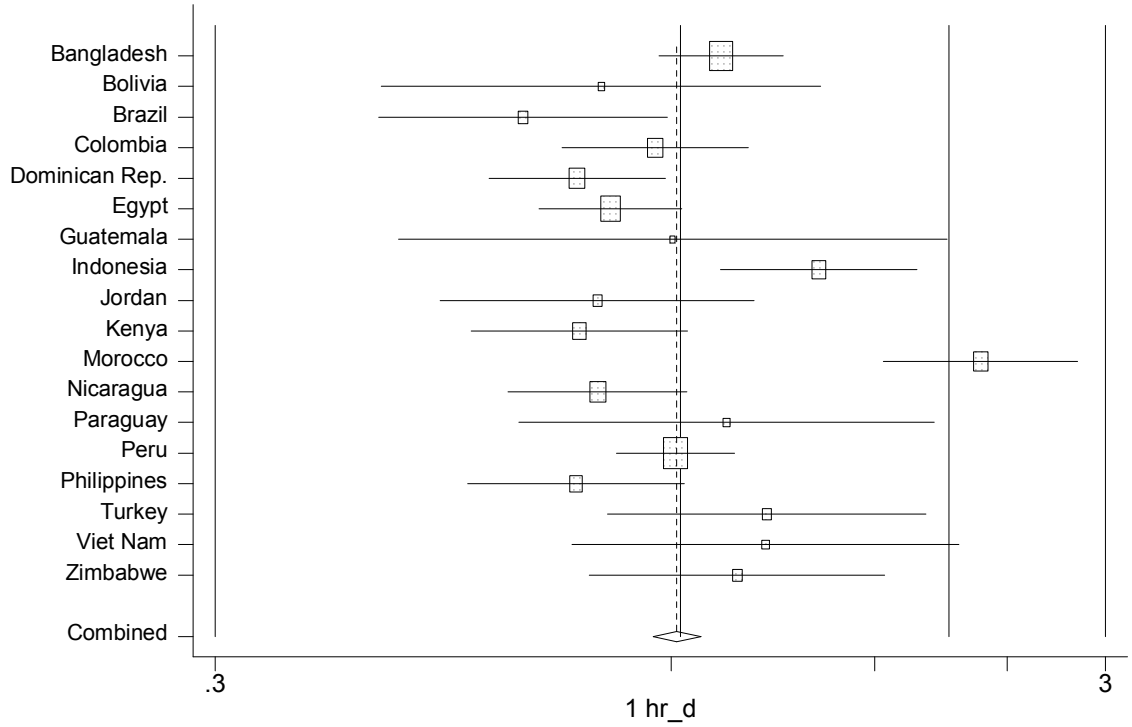

Figure 1b: Country specific effects of women's desire for a child on contraceptive pill discontinuation at 12 months because of dissatisfaction

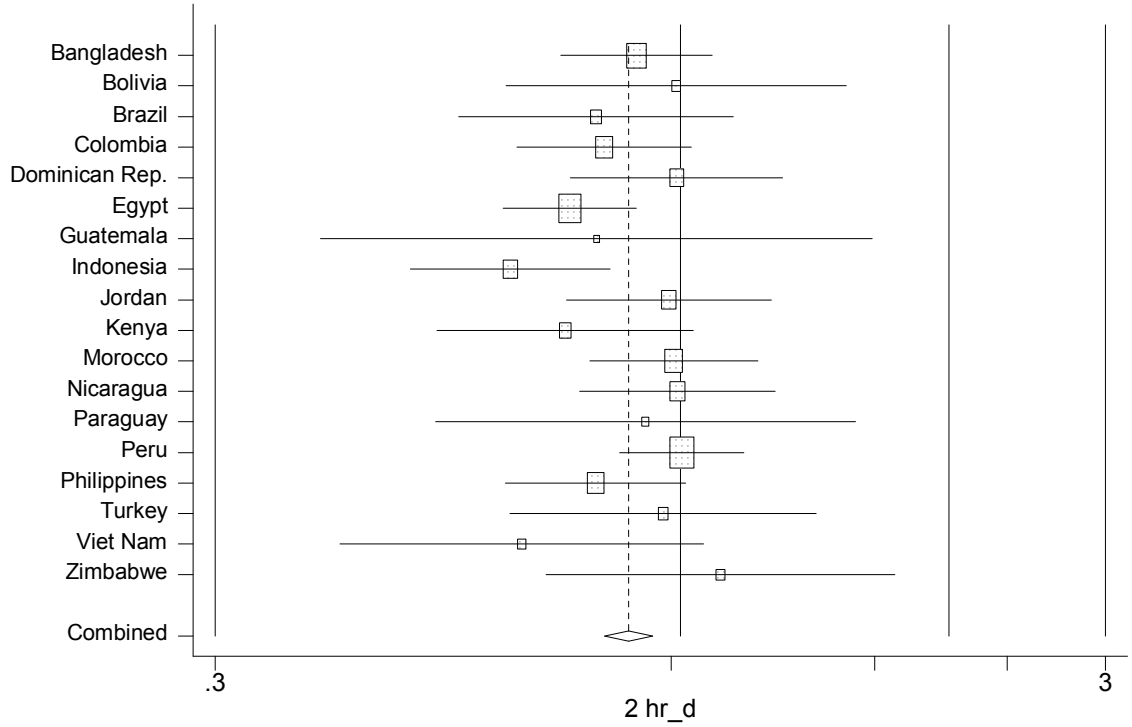

Figure 2a: Country specific effects of women's level of education on switching from contraceptive within 3 month to any contraceptive method following discontinuation because of dissatisfaction

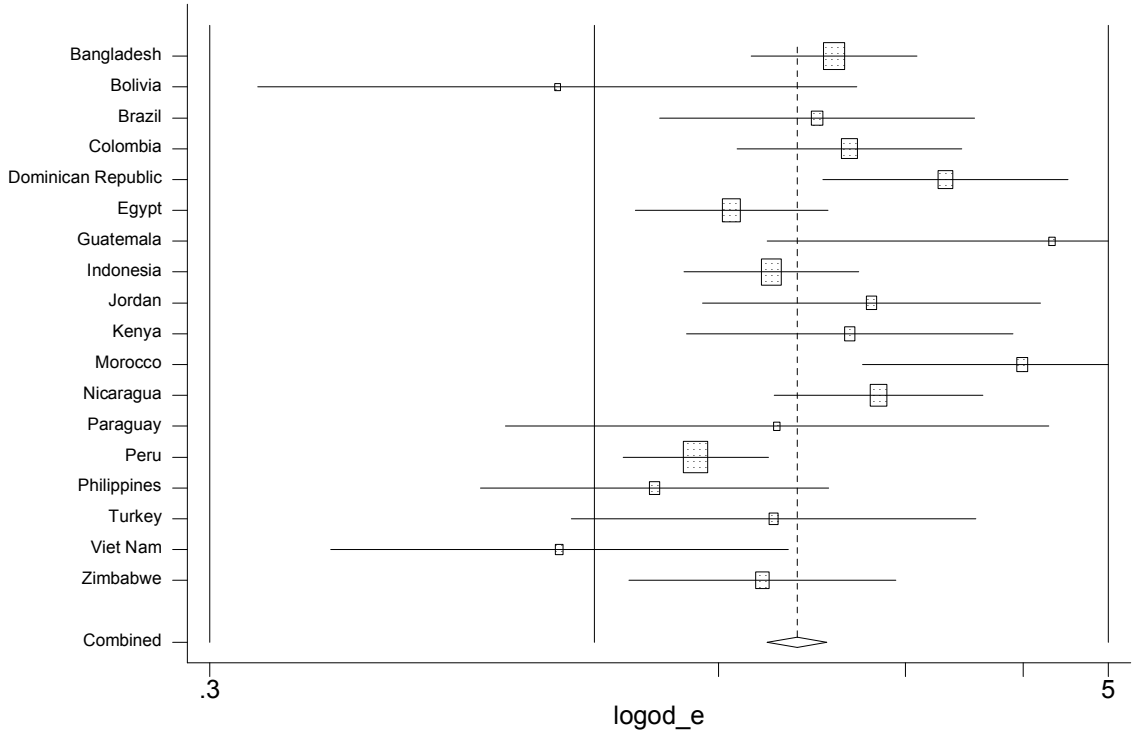

Figure 2b: Country specific effects of women's desire for a child on switching from contraceptive within 3 month to any contraceptive method following discontinuation because of dissatisfaction