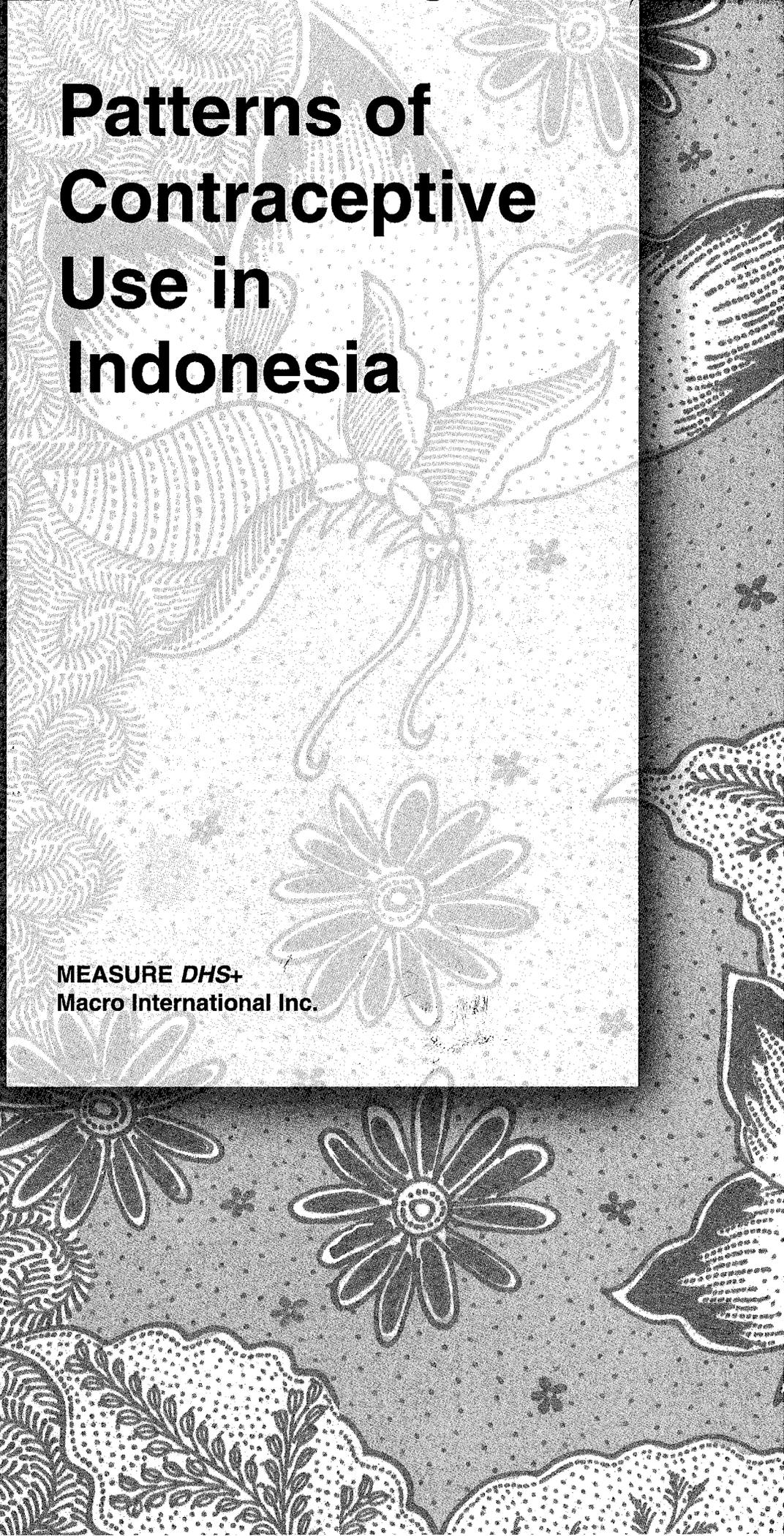




Patterns of Contraceptive Use in Indonesia

MEASURE *DHS+*
Macro International Inc.



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This report presents findings from one of three further analysis projects undertaken as part of the follow-up to the 1997 Indonesia Demographic and Health Survey (IDHS). Macro International Inc. coordinated the project and provided technical assistance. Funding was provided by the U.S. Agency for International Development (USAID).

The IDHS further analysis project is part of the MEASURE *DHS+* program which is designed to collect, analyze, and disseminate data on fertility, family planning, and maternal and child health. Additional information about the MEASURE *DHS+* program may be obtained by writing to: MEASURE *DHS+*, Macro International Inc., 11785 Beltsville Drive, Calverton, MD 20705 (Telephone 301-572-0200; Fax 301-572-0999).

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Preface

This report presents findings from one of a series of Further Analysis projects aimed at extending the use and dissemination of information from the 1997 Indonesia Demographic and Health Survey (IDHS). Further Analysis projects are designed with two principal objectives: 1) to enhance capacity in the handling and in-depth analysis of survey data, and 2) to provide an objective base for decision-making in the development and evaluation of programs and policy in health and population.

This report uses data from the calendar section of the 1997 IDHS questionnaire to investigate the patterns of contraceptive use and nonuse. The analysis is descriptive in approach and presents findings on contraceptive discontinuation and method switching, with a focus on behavior related to a woman's changing "demand" as she progresses through her childbearing years. We think that the results will provide some useful insights to those who are charged with evaluating the family planning program in Indonesia. The report expands upon a similar analysis by the same author using earlier survey data.

We are grateful to those who provided advice and assistance in the design and review of this analysis, and in the editing and production of the report, including Sri Poedjastoeti, George Bicego, Siân Curtis, Sidney Moore, and Celia Khan. We also wish to acknowledge USAID/Jakarta for their support of this and other Further Analysis projects using the 1997 IDHS data. It is this support that permits the types of collaborative study presented in this report.

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1 Introduction

The demographic impact of contraceptive use depends not only on its current prevalence but also on the duration and effectiveness of use. When desired family size declines and contraceptive prevalence rises, contraceptive effectiveness becomes an increasingly important determinant of fertility (Wang and Diamond, 1995).

The study of contraceptive use dynamics typically encompasses the following topics: prevalence structure of the population, contraceptive discontinuation, contraceptive switching behavior, and contraceptive failure. Contraceptive discontinuation, switching, and failure become increasingly important phenomena as populations reach relatively high levels of contraceptive use, as is the case for Indonesia. The focus then moves from encouraging couples to adopt contraception to encouraging them to maintain use, to providing them with a range of options to suit their changing contraceptive needs. Informed policy decisions need to take into account the prevailing reasons for contraceptive discontinuation.

Relatively few analyses of contraceptive use dynamics exist for developing countries. However, as more and more countries reach high prevalence levels, such analyses are becoming increasingly important for family planning policymakers. One reason for the lack of such studies is that the required data are not often available. The calendar section of the DHS core questionnaire is specifically designed to meet this data need. However, the calendar data place greater demands on the analyst since the techniques needed to make full use of these data are unfamiliar to many researchers.

The principal aim of this report is to provide a more complete picture of Indonesia's contraceptive use dynamics than what was offered in the first country report (CBS et al., 1998), and to provide an assessment of changes in certain key indicators since the last IDHS survey in 1994. The report builds upon an earlier study of contraception undertaken using the 1994 IDHS (Fathonah, 1996).

Family Planning Program and Policy

The family planning program in Indonesia has evolved in stages over the past three decades. In 1969, the national family planning program was first introduced in the six provinces of the Java-Bali region. Five years later, the program was expanded to a second region, Outer Java-Bali I, which consists of 10 provinces. Finally, in 1979, the program was expanded to the remaining provinces (11 provinces), Outer Java-Bali II.

The evaluation of the family planning program in Indonesia has been conducted through the decennial population censuses and several national surveys: the 1976 World Fertility Survey (WFS), 1987 National Indonesia Contraceptive Prevalence Survey (NICPS), 1991 Indonesia Demographic and Health Survey (IDHS), 1994 IDHS, and 1997 IDHS.

Current Levels and Trends in Contraceptive Prevalence

The 1997 Indonesia Demographic and Health Survey showed that the contraceptive prevalence has reached 57 percent (currently married women age 15-49). The most popular methods are injectables (21 percent), contraceptive pills (15 percent), and IUDs (8 percent). Other modern methods, such as implants, condoms, and intravaginal methods are not widely used, while use of traditional methods such as periodic abstinence, withdrawal, herbs, and massage is also uncommon (together 3 percent).

Table 1 shows that Indonesia has experienced considerable increase in contraceptive use from 48 percent in 1987 to 57 percent in 1997. Modern methods account for all of this increase. Among modern methods, recent trends show a shift in the method mix away from the IUD and toward contraceptive injections.

Table 1 Percentage of currently married women 15-49 using modern contraceptive methods and percentage using traditional methods, Indonesia 1987-1997

Survey	Modern methods	Traditional methods	Total
1987 Indonesia Contraceptive Prevalence Survey	44.0	3.7	47.7
1991 Indonesia Demographic and Health Survey	47.1	2.6	49.7
1994 Indonesia Demographic and Health Survey	52.1	2.7	54.7
1997 Indonesia Demographic and Health Survey	54.7	2.7	57.4

2 Data and Methodology

Data

This analysis focuses principally on data from the 1997 Indonesia Demographic and Health Survey. The 1997 IDHS was a collaboration between the State Ministry of Population/National Family Planning Coordinating Board, the Indonesian Central Bureau of Statistics, the Ministry of Health, and Macro International Inc. The survey was part of the international Demographic and Health Survey program, which has carried out surveys in 59 developing countries in Asia, Africa, and Latin America.

The 1997 IDHS was carried out between September and December 1997. The sample was drawn from the annual National Socio-economic Survey (SUSENAS), which was conducted in 1994. As in the 1994 IDHS, selection of the 1997 IDHS sample was done using a three-stage procedure. The first stage was to systematically select enumeration areas within urban and rural domains of each province. The second stage was to select a segment or group of segments from each enumeration area with a probability proportional to the number of household in the segment. Finally, 25 households were selected systematically within each segment.

The number of households successfully interviewed in the 1997 IDHS was 34,255 (99 percent of the total number of selected households). The number of women interviewed was 28,810 ever-married women aged 15-19 years, in all provinces.

Three questionnaires were used in the 1997 IDHS: the Household Questionnaires, the Women's Questionnaire, and the Household Expenditure Questionnaire. The Household Questionnaire and the Women's Questionnaire were adopted from the DHS Model A Questionnaire, which is designed for use in high contraceptive prevalence countries. The Women's Questionnaire was divided into 10 sections: 1) respondent's background, 2) birth history, 3) knowledge and practice of family planning, 4) maternal care and breastfeeding, 5) immunization and health of children under 5 years, 6) marriage, 7) fertility preferences, 8) husband's background and respondent's employment, 9) knowledge of AIDS, and 10) maternal mortality. In addition, the IDHS collected information using a calendar format. These calendar data include the patterns of contraceptive use (by method type), reasons for discontinuation of contraceptive use, marital status, and breastfeeding status.

The calendar supplements the interview questionnaire in several ways. It provides a framework for resolving inconsistencies in birth dates, breastfeeding durations, and segments of contraceptive use or nonuse. The DHS calendar provides a box for every month in the 72 months (6 years) before the start of the survey. The calendar makes it possible to identify precisely the timing of events in relation to one another, for example, contraceptive use and age of women.

In this analysis, only columns 1 (contraceptive use) and 2 (reasons for contraceptive discontinuation) are used. Since the calendar provides month-by-month information, it is possible to determine segments of use and nonuse of contraception. A *segment of use* is defined as an uninterrupted period of use of an individual contraceptive method reported in the calendar. A *segment of nonuse* is an uninterrupted period in which the woman is not pregnant and is not using a contraceptive method. The 1997 IDHS calendar covered a period of 72 months prior to the survey. For the purpose of this analysis, only a period of 60 months will be covered. Left-truncated observations—defined as observations that start before the 60-month period covered by the analysis and continue into it—are not included so as to avoid overestimating discontinuation rates. The period 3 months prior to the survey is also excluded from observation, which avoids the problem of unrecognized early pregnancies.

CAL2SPSS, a package of SPSS programs developed in the DHS-III program, was applied to create a data file using the *segment* (use or nonuse) as the unit of analysis. The variables created include woman's sample weight, contraceptive method used in the segment (including no method), reason for discontinuing use (not applicable for segments of nonuse), woman's reproductive status in the month immediately prior to initiation of the segment, number of births the woman had following the segment, and the date of the first month of the segment as a century-month code (CMC). A total of 16,152 segments were extracted from the 1997 IDHS.

Data Quality

All retrospectively reported data, including calendar data, are subject to various types of error. Recall errors due to memory lapses, duration heaping, and event omission (both deliberate and accidental) are common problems and can bias the results of even the most careful analysis. One test for event omission is to compare the estimates drawn from the calendar with estimates drawn from an external source. Since the period covered by the 1997 IDHS calendar data overlaps with the period covered by the 1994 IDHS calendar data, the current status data on contraceptive use from the earlier survey can be compared with the calendar data in the later survey for the corresponding time period.

Table 2 is derived to detect omission of segments of contraceptive use through comparison of the calendar data with current status data from another source (external consistency check). The 1997 IDHS sample was restricted to exclude women under the age of 18 at the time of the 1997 IDHS survey because these women would have been under 15 years of age at the time of the 1994 IDHS survey. The 1997 IDHS sample in Table 2 therefore corresponds approximately to women age 15-46 at the time of the 1994 IDHS survey.

Table 2 indicates that the contraceptive prevalence rates estimated from the 1997 IDHS calendar data are slightly lower than those obtained from the 1994 IDHS current status data, but the difference is small and both estimates are subject to sampling errors.

Figure 1 shows that reports on durations are heaped at 6, 12, and 24 months. This is especially true for the uncensored segments, although the level of heaping is not large enough to adversely affect estimation of discontinuation rates.

Table 2 Percentage of currently married women using a method of contraception in 1994, based on calendar data from the 1997 IDHS and current status data from the 1994 IDHS

Method	1997 IDHS calendar data for women age 15-46 in 1994	1994 IDHS current status data for women age 15-49
No method	49.1	45.1
Pill	14.5	17.1
IUD	9.5	10.3
Injectables	15.9	15.2
Implants	5.0	4.9
Condom/Vaginal methods	0.4	0.9
Female sterilization	2.7	3.1
Male sterilization	0.4	0.7
Periodic abstinence	1.2	1.1
Herbs	0.6	U
Massage	0.0	U
Withdrawal	0.7	0.8
Other	0.1	0.8

Note: The 1997 IDHS estimates are based on calendar data (see text for adjustments to the data); the 1994 IDHS estimates are based on current status data.

U = Unknown; data not available

Figure 1
Distribution of Reported Duration of Segments of Use and Nonuse in the 1997 IDHS Calendar, Indonesia 1997

Percent

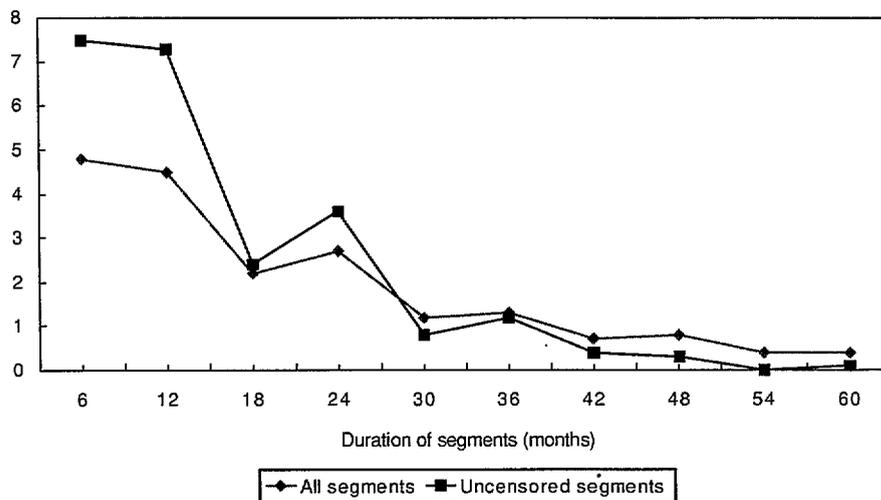


Table 3 shows the distribution of discontinued segments of use by reason for discontinuation and exposure status in the month following discontinuation, and is used to detect evidence of over-reporting of contraceptive failure as a reason for discontinuation. The table shows that nearly all discontinued segments that were reported as due to contraceptive failure were indeed followed by a reported pregnancy. On the other hand, when a woman stops use because she wants to become pregnant, a period of nonuse of contraception is expected, which is the observed pattern; only 6 percent of these segments are followed immediately by pregnancy and the remainder are not using a method. Of the 918 discontinued segments that are followed by a pregnancy, 777 (85 percent) were reported due to contraceptive failure, which suggests that contraceptive failure is not grossly overreported.

Reason for discontinuation	Status in the month after discontinuation				Total	Percentage of exposed women who became pregnant ¹
	Pregnant	Termination	Not using method	Using another method		
Contraceptive failure	777	3	1	1	782	99.5
Desire to get pregnant	113	0	1,642	2	1,757	6.4
Other reason	28	0	1,101	2,417	3,546	2.5
Total	918	3	2,744	2,420	6,085	25.1

¹ Exposed women are users who were not using another method of contraception in the month following discontinuation of their original method (i.e., the denominator for the percentage includes women who became pregnant, who experienced a termination, or who were not using another method of contraception).

Methodology

Understanding the dynamics of contraceptive use is greatly enhanced by analysis of contraceptive discontinuation rates, discontinuation rates by reason for discontinuation, contraceptive method switching rates, and contraceptive failure rates. Estimates of these indicators are best obtained by the application of life table techniques, which allow for the inclusion of censored segments of contraceptive use in the estimation procedures. Life table rates are duration specific so they show how the rates of discontinuation and failure change with duration of use. Life tables were originally developed to study mortality and length of life, but they can be adapted to study a range of problems involving the interval between two events, including contraceptive discontinuation. The basic idea of the life table as applied to contraceptive discontinuation is that the duration of use is broken down into monthly intervals. The number of discontinuations and the number of woman-months of exposure are tabulated for each interval, and the probabilities of discontinuing use at each duration are calculated.

Three types of life tables will be used in this analysis, i.e., single-decrement life tables, multiple-decrement life tables, and associated single-decrement life tables. Single-decrement life tables are employed to calculate the method-specific discontinuation rates. An extension of this life table is used when rates are required for different types of discontinuation, for example, by reason for discontinuation or by status after discontinuation. This type of life table is known as the multiple-decrement life table (MDLT). The MDLT generates net discontinuation rates or rates of discontinuation for each reason in the presence of other competing reasons for discontinuation. The associated single-decrement life table is also employed to generate the failure rate of contraceptive methods. This procedure assumes women will only discontinue use of a method if they fail while using it, thereby eliminating the influence of other reasons for contraceptive discontinuation. The failure rates generated are known as gross failure rates and overcome the problem of distorted comparison of net failure rates in situations where levels of discontinuation for reasons other than method failure vary. For further discussion of life tables, see Namboodiri and Suchindran (1987).

Background Variables

Background variables were selected on the basis of their known association with the use of contraception, and include:

- Residence: Urban, Rural
- Region: Java-Bali, Outer Java-Bali I, Outer Java-Bali II
- Education: None/some primary, Primary completed, Secondary +
- Age of women: 15-19, 20-29, 30-39, 40-49
- Contraceptive intent: Spacer, Limiter

The choice of background variables raises a problem in that the segments of use cover a five-year period prior to the survey, but some of the background variables are measured at the time of the survey. Therefore, the current value of the variable may not be applicable at the time of the reported contraceptive behavior. For instance, the first three variables above were measured at the time of the survey in 1997. While these variables were not expected to have changed for most women in the five-year period prior to the survey, interregional migration or urbanization may have occurred for some women. The last two variables overcome this problem, as they are adjusted to reflect the situation at the start of the segment of use.

Contraceptive intent for segments occurring during a closed birth interval is based on whether the next live birth after the segment was reported as wanted or not wanted. For segments of use in an open birth, reported (current) intention is used to define contraceptive intention. The classification of each background variable is limited to a maximum of four categories, so as to maintain adequate numbers for life table analysis.

Table 4 shows the distribution of segments of use by contraceptive method. To maintain adequate numbers of events for statistical analysis, only the four most commonly used methods (pills, IUD, injectables, and implants) are examined in the life table analysis.

	Pill	IUD	Injectables	Implants	Condom/ vaginal methods	Sterili- zation	Traditional methods	Total
Number of segments of contraceptive use	4,496	1,264	7,361	1,795	208	256	767	16,152

Table 5 presents the percent distribution of use segments by contraceptive method, according to background characteristics. Injectables are especially favored by the youngest women, spacers (as opposed to limiters), and women in Java-Bali. Pill use tends to be more common among spacers as well, but has a higher rate of use outside of Java-Bali. As expected, IUDs are favored in urban areas, among women in Java-Bali, among the more educated, older women, and among limiters (as opposed to spacers). Implants are popular in rural areas, among women who have little or no education, and among women who want to limit births, but are less popular in Outer Java-Bali II. As expected sterilization use increases with age.

Table 5 Percent distribution of use segments by contraceptive method, according to selected background characteristics, Indonesia 1997

Background characteristic	Pill	IUD	Injectables	Implants	Condom/vaginal methods	Sterilization	Traditional method	Total	Number of segments of use
Residence									
Urban	31.1	10.5	42.6	2.7	3.5	2.0	7.6	100.0	4,864
Rural	32.2	5.8	45.3	10.9	0.6	1.6	3.5	100.0	11,373
Region									
Java-Bali	28.8	8.5	46.7	8.6	1.6	1.7	4.1	100.0	10,236
Outer Java-Bali I	37.2	5.0	40.4	9.0	1.2	2.1	5.3	100.0	4,158
Outer Java-Bali II	36.9	5.3	41.3	6.2	1.6	1.5	7.3	100.0	1,842
Education									
None/some primary	32.2	5.4	42.3	14.6	0.6	1.9	2.8	100.0	4,652
Primary completed	33.8	5.1	46.9	9.0	0.4	1.7	3.1	100.0	5,431
Secondary +	29.8	10.4	44.0	3.3	3.1	1.6	7.7	100.0	6,151
Age									
15-19	35.0	4.4	49.5	7.7	0.5	0.0	3.0	100.0	4,406
20-29	31.1	7.7	44.9	8.5	1.6	1.3	4.9	100.0	8,263
30-39	29.3	9.9	37.8	9.4	2.5	4.8	6.3	100.0	3,303
40-49	33.2	8.0	31.3	9.2	2.7	5.3	10.3	100.0	262
Contraceptive intent									
Spacer	34.1	5.8	46.9	7.3	1.3	0.0	4.7	100.0	10,027
Limitier	28.1	9.7	40.6	10.2	1.8	4.7	5.0	100.0	6,012
Total	31.8	7.2	44.5	8.4	1.5	1.7	4.7	100.0	16,237

3 Results and Discussion

Contraceptive Discontinuation

The analysis of contraceptive discontinuation is important because it can inform initiatives to improve service delivery. For example, the rate at which women discontinue use of a method due to experiencing side effects may indicate that counseling needs improvement and that information about the method needs to be communicated more effectively (Datey et al., 1995; Petta et al., 1994; Amatya et al., 1994). Lowering of this rate would thus be a sign of program success in improving the quality of services.

The summary measures of the contraceptive discontinuation used in this chapter are life table 12-month and 24-month discontinuation rates—which represent the percentage of users who discontinue use of a method within 12 months and 24 months, respectively—and median duration of use. The life table median is defined as the duration by which half of the users have discontinued use. The median duration of use is presented in Table 6 for different methods, along with 12-month and 24-month discontinuation rates. Differentials in discontinuation patterns by parity progression are presented in Table 7. With increasing parity, women are expected to shift from using predominantly short-term spacing methods to long-term or permanent limiting methods.

Table 6 shows that the 12-month discontinuation rate (all methods, including sterilization) is 24 percent, while the 24-month discontinuation rate is 38 percent. This represents a small improvement since the 1994 IDHS when these two rates were 26 and 40 percent, respectively.

Contraceptive method	12-month discontinuation rate	24-month discontinuation rate	Median duration of use	Number of segments of use
Pill	33.8	47.5	25.2	4,496
IUD	12.4	22.2	36.0+	1,264
Injectables	22.6	39.5	34.5	7,361
Implant	2.6	6.5	36.0+	1,795
Condom/vaginal methods	40.0	57.0	19.1	208
Traditional method	28.5	45.7	26.9	767
Sterilization	-	-	-	256
All methods (including sterilization)	23.8	37.6	36.0+	16,152
All reversible methods	24.2	38.3	36.0+	15,896

The highest discontinuation rates occur for condom and vaginal method use. Half of the condom/vaginal segments end within 19 months of use. On the other hand, the discontinuation rates for implants and the IUD are very low, with median duration of use more than 36 months. The most commonly used method, injectables, has a fairly low discontinuation rate and a fairly high median duration of use (35 months). Contraceptive pills and traditional methods both show high 24-month discontinuation rates (46 to 48 percent).

The overall median duration of use is more than 36 months. This finding is consistent with low discontinuation rates among three popular methods: injectables, IUDs, and implants.

Table 7 confirms the expected, that women with 0 parity tend to discontinue much earlier than those who have already had a child. About 4 in 5 women with no children stop using their method of contraception before 12 months. This compares with about 1 in 4 women at parity 1, 1 in 5 women at parity 2, and 1 in 7 women at parity 3 or above. This pattern of increasing continuity of use with increasing parity, for both 12-month and 24-month periods, is demonstrated for all contraceptive methods. As a result, it can be seen that the most effective, continuous use of contraceptive methods occurs among high-parity women using IUDs and implants (aside from sterilizations), and the poorest continuity of use occurs among nulliparous women using condoms, vaginal methods, or traditional methods.

Somewhat disconcerting is the poor continuity of pill use even at high parities, when it is expected that women are highly motivated. This suggests that other factors, such as inadequate counseling and follow-up of users, may in part be to blame. Another possibility is that the reference period for the 1997 IDHS was characterized by switching from pill to other effective methods. This issue is explored in a later section.

Table 7 Life table 12-month and 24-month discontinuation rates by parity and method, Indonesia 1997

12-month discontinuation rates (%)				
Contraceptive method	Parity			
	0	1	2	3+
Pill	81.2	36.2	27.1	23.3
IUD	*	22.8	10.0	6.4
Injectables	63.7	25.2	19.7	19.3
Implants	*	3.6	2.2	2.3
Condom/vaginal method	96.0	66.4	25.3	11.1
Traditional methods	91.8	39.3	23.7	12.4
Sterilization	*	*	*	*
All methods (includes sterilization)	79.1	27.9	19.5	16.3
All methods (excludes sterilization)	79.1	28.0	19.6	17.0
24-month discontinuation rates (%)				
Pill	89.8	53.8	37.7	36.8
IUD	*	32.7	21.5	14.7
Injectables	91.8	46.7	33.2	34.9
Implants	*	10.3	4.5	5.4
Condom/vaginal methods	97.9	92.2	32.6	29.9
Traditional methods	97.5	62.4	44.0	26.1
Sterilization	*	*	*	*
All methods (includes sterilization)	91.2	46.3	31.0	27.7
All methods (excludes sterilization)	91.2	46.4	31.3	28.8
Number of segment of use	461	4,926	4,016	6,516
Note: An asterisk indicates too few cases to calculate a statistically reliable estimate.				

The 12-month and 24-month discontinuation rates for the pill, IUD, and injectables by background characteristics are presented in Tables 8, 9, and 10, respectively. The results indicate that differentials in discontinuation rates are small and unremarkable across most background characteristics. However, among pill and injectable users, women with more education tend to exhibit higher rates of contraceptive discontinuation than less educated women. As expected, older women and those who want to cease childbearing altogether tend to have longer durations of contraceptive use (lower discontinuation) than younger women and those who wish to merely space their next child. Also, injectable discontinuation is higher outside than within Java-Bali.

Table 8 Life table discontinuation rates and median duration of use for the pill by background characteristics, Indonesia 1997

Background characteristic	12-month discontinuation rate	24-month discontinuation rate	Median duration of use	Number of segments of use
Residence				
Urban	36.4	52.3	23.0	1,615
Rural	33.4	46.7	25.8	3,816
Region				
Java-Bali	35.2	48.5	24.6	1,261
Outer Java-Bali I	32.9	47.3	26.2	2,337
Outer Java-Bali II	33.3	49.5	24.2	1,833
Education				
None/some primary	27.8	42.3	29.3	1,533
Primary completed	34.4	48.8	24.7	1,575
Secondary +	39.6	52.8	21.4	2,323
Age				
15-29	46.7	61.4	15.0	1,409
20-29	31.4	46.8	25.3	2,829
30-39	23.9	34.8	36.0+	1,099
40-49	*	*	*	94
Contraceptive intent				
Spacer	40.1	56.1	19.8	3,575
Limitier	21.1	30.6	36.0+	1,797
Total	34.3	48.3	24.8	5,372

Note: an asterisk indicates too few cases to calculate a statistically reliable estimate.

Table 9 Life table discontinuation rates and median duration of use for the IUD by background characteristics, Indonesia 1997

Background characteristic	12-month discontinuation rate	24-month discontinuation rate	Median duration of use	Number of segments of use
Residence				
Urban	13.5	19.5	36.0+	524
Rural	12.0	24.6	36.0+	646
Region				
Java-Bali	12.3	20.1	36.0+	612
Outer Java-Bali I	14.7	30.1	36.0+	310
Outer Java-Bali II	11.2	21.1	36.0+	248
Education				
None/some primary	6.6	20.9	36.0+	229
Primary completed	12.9	24.2	36.0+	226
Secondary +	15.1	22.1	36.0+	715
Age				
15-19	18.1	26.6	36.0+	199
20-29	15.1	26.3	36.0+	659
30-39	4.6	13.3	36.0+	296
40-49	*	*	*	16
Contraceptive intent				
Spacer	15.8	27.1	36.0+	604
Limitier	9.0	17.3	36.0+	558
Total	12.7	22.4	36.0+	1,173

Note: an asterisk indicates too few cases to calculate a statistically reliable estimate.

Table 10 Life table discontinuation rates and median duration of use for injectables by background characteristics, Indonesia 1997

Background characteristic	12-month discontinuation rate	24-month discontinuation rate	Median duration of use	Number of segments of use
Residence				
Urban	24.8	41.4	30.6	2,080
Rural	22.9	40.4	33.9	4,767
Region				
Java-Bali	20.1	36.6	36.0+	2,175
Outer Java-Bali I	29.6	47.9	25.5	2,461
Outer Java-Bali II	30.4	50.1	24.0	2,211
Education				
None/some primary	21.3	36.5	36.0+	1,795
Primary completed	20.0	37.8	36.0+	1,921
Secondary +	28.1	46.3	26.1	3,131
Age				
15-19	29.4	51.4	23.6	1,820
20-29	21.4	37.8	35.7	3,649
30-39	18.9	46.3	36.0+	1,292
40-49	*	*	*	86
Contraceptive intent				
Spacer	25.4	45.3	27.7	4,440
Limiter	17.2	29.0	36.0+	2,330
Total	23.4	40.7	33.4	7,225

Note: An asterisk indicates too few cases to calculate a statistically reliable estimate.

Reasons for Contraceptive Discontinuation

Analysis of the reasons for discontinuation offers valuable insights into the advantages and disadvantages of the different methods. An assessment of the circumstances and perceptions surrounding discontinuations can provide a basis for improving the quality of service and enhance our understanding of contraceptive use dynamics in the population. In this analysis, discontinuation rates are calculated at different durations of use and are broken down by reason for discontinuation. The reasons are classified into five mutually exclusive and exhaustive categories: contraceptive failure, desire to get pregnant, side effects/health concerns, method-related reason (includes inconvenient to use, cost, husband disapproved, want more effective method, and poor access/availability), and other reasons.

Method-specific discontinuation rates for each reason were obtained using multiple-decrement life tables. In the multiple-decrement life table, the reason-specific rates are calculated by dividing the number of discontinuations for a particular reason at each duration by the exposure at that duration obtained from the single-decrement life table. Hence, the five reason-specific discontinuation rates add up to the total discontinuation rate at each duration.

Table 11 shows the 12-month discontinuation rates by reason for discontinuation and contraceptive method. For all methods, side effects/health concerns are the most reported reason for discontinuation in the first year (10 percent). Six percent of women discontinue because they want to get pregnant, and about 4 percent stop because of a method-related reason. Contraceptive failure accounts for 3 percent and other reasons for 2 percent of discontinuations.

Table 11 Life table 12-month discontinuation rates by reason for discontinuation and contraceptive method, Indonesia 1997

Contraceptive method	Reason for discontinuation					Total
	Contra- ceptive failure	Desire to get pregnant	Side effects/ health concerns	Method- related reason ¹	Other reason	
Pill	4.1	10.4	11.5	4.8	2.9	33.8
IUD	1.5	1.2	7.9	0.6	1.3	12.4
Injectables	1.5	4.4	12.0	3.2	1.5	22.6
Implant	0.1	0.1	2.0	0.0	0.3	2.6
Condom/vaginal methods	7.1	10.0	0.8	19.0	3.0	40.0
Traditional methods	10.9	7.6	0.4	8.3	1.3	28.5
All methods (including sterilization)	2.7	5.9	9.7	3.7	1.8	23.8
All reversible methods	2.8	6.0	9.9	3.7	1.8	24.2

¹ Includes inconvenient to use, cost, husband disapproved, want more effective method, poor access/availability.

The reasons for discontinuation vary by contraceptive method. In the first year of use, side effects/health concerns are the principal reason for discontinuing the four methods most commonly used in Indonesia (pill, IUD, injectables, and implants). Method-related reasons are the main reason for discontinuing condoms/vaginals and, as expected, contraceptive failure is the main reason for discontinuing traditional methods. The high rate of method-related discontinuation for condoms is largely due to inconvenience of use (CBS et al., 1998: Table 7.2).

It should be noted that nearly one-third of all pill discontinuations are due to women's desire to get pregnant. The pill and condoms appear to be methods used by women to delay pregnancy for the short term. Table 12 presents the 12-month discontinuation rates for the pill by reason for discontinuation and background characteristics. These findings are consistent with the previous table, and show that spacing intent yields higher rates of pill discontinuation. Desire to get pregnant is the predominant reason for pill discontinuation among the youngest women and those who are spacers. However, spacers are more likely than limiters to cite every specific reason for discontinuation (including contraceptive failure), suggesting that spacers are rationalizing their incomplete commitment to contraception. This may be reflected indirectly in the higher percentage of the youngest women who cite contraceptive failure as a reason for discontinuation. As a caveat to this conclusion, it should be mentioned that the higher failure rate for the pill among younger women may also reflect their higher fecundity. Generally, reasons for pill discontinuation do not vary much by geographic region or by urban-rural residence. An exception is the higher percentage of pill discontinuations associated with a desire to become pregnant in Java-Bali. Less educated women appear less likely than more educated women to report side effects/health concerns as a reason for discontinuing the pill.

Table 12 Life table 12-month discontinuation rates for the pill by reason for discontinuation and background characteristics, Indonesia 1997

Background contraceptive method	Reason for discontinuation					Total
	Contra- ceptive failure	Desire to get pregnant	Side effects/ health concerns	Method- related reason ¹	Other reason	
Residence						
Urban	3.8	10.5	11.9	6.3	3.9	36.4
Rural	4.2	10.2	11.1	4.7	2.6	33.0
Region						
Java-Bali	4.4	12.3	10.8	4.8	2.9	35.2
Outer Java-Bali I	3.7	8.8	12.0	5.1	3.3	32.1
Outer Java-Bali II	3.9	7.8	12.2	7.0	2.5	33.3
Education						
None/some primary	3.3	7.9	5.7	3.8	2.1	27.8
Primary completed	5.1	12.8	10.4	3.6	2.4	34.4
Secondary +	3.8	10.8	12.7	8.0	4.3	39.7
Age						
15-19	5.1	19.5	13.5	5.6	2.9	46.7
20-29	3.7	9.0	11.7	4.5	2.5	31.4
30-39	4.1	2.8	6.8	6.2	3.9	23.4
40-49	*	*	*	*	*	*
Contraceptive intent						
Spacer	4.7	15.3	12.1	5.1	2.9	40.1
Limitier	3.4	0.4	10.1	4.1	2.9	21.2
Total	4.1	10.4	11.5	4.8	2.9	33.8

Note: An asterisk indicates too few cases to calculate a statistically reliable estimate.

¹ Includes inconvenient to use, cost, husband disapproved, want more effective method, poor access/availability.

Tables 13 and 14 present the 12-month discontinuation rates by reason for discontinuation and background characteristics for the IUD and injectables, respectively. As with pill discontinuation, discontinuation of the IUD and injectables due to side effects/health concerns rises with increasing education and generally falls with increasing age. IUD discontinuations due to contraceptive failure are, like the pill, higher among younger women; however, this is not true regarding discontinuation of injectables.

Table 13 Life table 12-month discontinuation rates for the IUD by reason for discontinuation and background characteristics, Indonesia 1997

Background characteristic	Reason for discontinuation					Total
	Contra- ceptive failure	Desire to get pregnant	Side effects/ health concerns	Method- related reason ¹	Other reason	
Residence						
Urban	0.7	2.5	8.8	0.7	0.8	13.5
Rural	2.0	0.7	7.2	0.8	1.6	12.0
Region						
Java-Bali	1.2	1.6	8.5	0.3	0.8	12.3
Outer Java-Bali I	2.4	2.2	8.0	2.4	2.9	18.0
Outer Java-Bali II	2.0	0.8	5.6	0.5	2.3	11.2
Education						
None/some primary	0.4	0.3	3.2	0.1	2.6	6.6
Primary completed	0.2	1.4	11.1	0.1	0.0	12.9
Secondary +	2.5	2.0	8.4	0.9	1.3	15.1
Age						
15-19	2.6	3.9	7.1	1.4	3.2	18.1
20-29	1.6	1.5	10.4	0.5	1.1	15.1
30-39	0.6	0.1	2.9	0.3	0.6	4.5
40-49	*	*	*	*	*	*
Contraceptive intent						
Spacer	2.2	2.3	9.3	1.0	1.0	15.8
Limitier	0.7	0.1	6.6	0.1	1.6	9.1
Total	1.4	1.5	7.9	0.6	1.3	12.7
Note: An asterisk indicates too few cases to calculate a statistically reliable estimate.						
¹ Includes inconvenient to use, cost husband disapproved, want more effective method, access/availability.						

Table 14 Life table 12-month discontinuation rates for injectables by reason for discontinuation and background characteristics, Indonesia 1997

Background characteristic	Reason for discontinuation					Total
	Contra- ceptive failure	Desire to get pregnant	Side effects/ health concerns	Method- related reason ¹	Other reason	
Residence						
Urban	1.6	3.8	14.9	2.0	2.5	24.7
Rural	1.5	4.5	10.9	4.2	1.7	22.9
Region						
Java-Bali	1.4	3.6	10.5	2.7	1.9	20.1
Outer Java-Bali I	1.8	5.8	14.8	5.2	2.0	29.6
Outer Java-Bali II	1.8	5.3	15.2	5.8	2.3	30.4
Education						
None/some primary	2.4	3.5	9.2	3.8	2.4	21.3
Primary completed	0.7	3.5	10.5	4.0	1.1	20.0
Secondary +	1.6	5.7	15.4	3.1	2.4	28.1
Age						
15-19	1.0	6.3	14.1	4.5	3.5	29.4
20-29	1.8	4.2	11.1	3.0	1.3	21.4
30-39	1.5	2.0	10.7	3.7	1.0	18.9
40-49	*	*	*	*	*	*
Contraceptive intent						
Spacer	1.5	6.4	12.7	3.6	2.4	25.6
Limiter	1.5	0.4	10.4	3.0	1.2	17.2
Total	1.5	4.3	12.1	3.2	2.1	23.3

Note: An asterisk indicates too few cases to calculate a statistically reliable estimate.
¹ Includes inconvenient to use, cost, husband disapproved, want more effective method, poor access/availability.

Contraceptive Switching Behavior

While knowledge of the reasons for discontinuation of each method is useful in and of itself, information on contraceptive switching behavior is of special interest. Contraceptive switching behavior is analyzed by examining the user's new contraceptive use status in the month immediately following discontinuation in conjunction with information on the reason for discontinuation. In particular, the significance of contraceptive discontinuation for both fertility levels and individual women depends on switching behavior. If a woman discontinues use of a method because she experiences side effects and does not start using another method of contraception immediately, she is exposed to the risk of an unwanted pregnancy. From a programmatic perspective, the fact that the woman did not switch to another method may suggest that family planning services are not successfully meeting her needs. On the other hand, if the woman switches to another method immediately, the fertility implications are much less serious, although there may be an increased risk of unwanted pregnancy if her new method has a higher failure rate than her original method (Fathonah, 1996).

Table 15 shows the 12-month cumulative switching rates. The new contraceptive status is classified into four categories, and a multiple-decrement life table is employed to obtain the rates of switching to a defined status within 12 months of initiating use. Attention should be focused on the behavior of users who discontinue use but still have a need for contraception.

Contraceptive method	Status after discontinuation			Total (d)	Proportion of method switching (e)=b/(b+c) Switching Rate
	Need for contraception ²				
	No need for contraception ¹ (a)	Switched to another method (b)	Abandoned use (c)		
Pill	16.1	11.9	5.8	33.8	67.2
IUD	2.7	6.9	2.8	12.4	71.1
Injectables	6.5	11.7	4.5	22.7	72.2
Implant	0.3	1.3	1.0	2.6	56.5
Condom/vaginal methods	17.2	14.5	8.3	40.0	63.6
Traditional methods	19.0	8.7	0.8	28.5	91.6
All methods (including sterilization)	9.4	10.2	4.3	23.8	70.3
All reversible methods	9.5	10.3	4.3	24.2	70.5

¹ Discontinuation for the following reasons: contraceptive failure, desire to get pregnant, infrequent sex, menopause, and marital dissolution.
² Based on the woman's contraceptive status in the month immediately after discontinuation.

For all methods combined, among women who discontinued use but remained in need of contraception, 71 percent switched to another method (switching rate). This represents a small improvement from the 1994 IDHS result of 62 percent. Much of the improvement in the switching rate is explained by the behavior of pill users. In the 1994 survey, only 50 percent of women who discontinued the pill switched immediately to another method, compared with 67 percent in the 1997 survey.

The switching rate varies little by contraceptive method, except that when women discontinue a traditional method, they adopt another (presumably better) method 92 percent of the time. This is an improvement from 78 percent in the 1994 IDHS. Consistent with earlier findings in this report, the proportion of women who are not in need of contraception following a discontinuation—largely due to pregnancy or a desire to become pregnant—is much higher for discontinuations of the pill, condoms/vaginal methods, and traditional methods, than for other methods.

Switching rates by contraceptive intent are shown in Table 16 for the pill, IUD, and injectables. After an IUD discontinuation, a woman's decision to immediately adopt another method is affected by her intention to have another child. Limiters are 22 percent more likely than spacers to switch right after an IUD discontinuation. This relationship is much less pronounced regarding pill discontinuation, and virtually nonexistent for discontinuations of injectables. The same pattern was observed in the 1994 IDHS.

Table 16 Switching rate for the pill, the IUD, and injectables by contraceptive intent, Indonesia 1997

Contraceptive intent	Switching rate ¹		
	Pill	IUD	Injectables
Contraceptive intent			
Spacer	65.6	64.9	71.9
Limitier	70.7	79.0	72.7
Total Switching Rate	67.2	71.1	72.2
Relative Switching Rate (Limiters/Spacers)	1.08	1.22	1.01
¹ The percentage of women in need of contraception following a discontinuation who immediately adopt another method. See Table 15 for illustration.			

References

Amatya, R., H. Akhter, J. McMahan, N. Williamson, D. Gates, and Y. Ahmed. 1994. The effect of husband counseling on NORPLANT® contraceptive acceptability in Bangladesh. *Contraception* 50:263-273.

Central Bureau of Statistics (CBS) [Indonesia] and National Family Planning Coordinating Board (NFPCB) and Ministry of Health (MOH) and Macro International Inc. (MI). 1995. *National Indonesia Contraceptive Prevalence Survey 1987*. Columbia, Maryland: CBS and MI.

Central Bureau of Statistics (CBS) [Indonesia] and National Family Planning Coordinating Board (NFPCB) and Ministry of Health (MOH) and Macro International Inc. (MI). 1992. *Indonesia Demographic and Health Survey 1991*. Columbia, Maryland: CBS and MI.

Central Bureau of Statistics (CBS) [Indonesia] and State Ministry of Population/National Family Planning Coordinating Board (NFPCB) and Ministry of Health (MOH) and Macro International Inc. (MI). 1995. *Indonesia Demographic and Health Survey 1994*. Calverton, Maryland: CBS and MI.

Central Bureau of Statistics (CBS) [Indonesia] and State Ministry of Population/National Family Planning Coordinating Board (NFPCB) and Ministry of Health (MOH) and Macro International Inc. (MI). 1998. *Indonesia Demographic and Health Survey 1997*. Calverton, Maryland: CBS and MI.

Curtis, Siân L. and Charles R. Hammerslough. 1995. *Model further analysis plan: Contraceptive use dynamics*. Demographic and Health Surveys. Calverton, Maryland: Macro International Inc.

Curtis, Siân L. and Ann K. Blanc. 1997. *Determinants of contraceptive failure, switching, and discontinuation: An analysis of DHS contraceptive histories*. DHS Analytical Reports Number 6. Demographic and Health Surveys. Calverton, Maryland: Macro International Inc.

Datey, S., L. N. Gaur, and B. N. Saxena. 1995. Vaginal bleeding patterns of women using different contraceptive methods (implants, injectables, IUDs, oral pills) - an Indian experience. *Contraception* 51:155-165.

Fathonah, Siti. 1996. *Contraceptive use dynamics in Indonesia*. DHS Working Paper Number 20. Demographic and Health Surveys. Calverton, Maryland: Macro International Inc.

Namboodiri, Krishna and C.M. Suchindran. 1987. *Life table techniques and their applications*. Orlando, Florida: Academic Press Inc.

Petta, Carlos Alberto, Ramesh Amatya, Gaston Farr, and I-Cheng Chi. 1994. An analysis of the personal reasons for discontinuing IUD use. *Contraception* 50:339-347.

Wang, Duolao and Ian Diamond. 1995. The impact on fertility of contraceptive failure in China in the 1980s. *Journal of Biosocial Science* 27:277-284.