

ZIMBABWE FURTHER ANALYSIS

Contraceptive Use Dynamics in Zimbabwe: Discontinuation, Switching, and Failure



**Demographic and Health Surveys
Macro International Inc.**

Zimbabwe Further Analysis

Contraceptive Use Dynamics in Zimbabwe: Discontinuation, Switching, and Failure

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This report summarizes the findings of one of five further analysis projects for the 1994 Zimbabwe Demographic and Health Survey (ZDHS). Macro International Inc. coordinated and provided technical assistance for the further analysis project. Funding was provided by the U.S. Agency for International Development (USAID).

The ZDHS further analysis is part of the worldwide Demographic and Health Survey (DHS) programme, which is designed to collect data on fertility, family planning, and maternal and child health. Additional information about the Zimbabwe further analysis project may be obtained from the Central Statistical Office, P.O. Box 8063, Causeway, Harare, Zimbabwe (Telephone: 706-681, Fax: 708-854). Additional information about the DHS programme may be obtained by writing to: DHS, Macro International Inc., 11785 Beltsville Drive, Calverton, MD 20705 (Telephone 301-572-0200 and Fax 301-572-0999).

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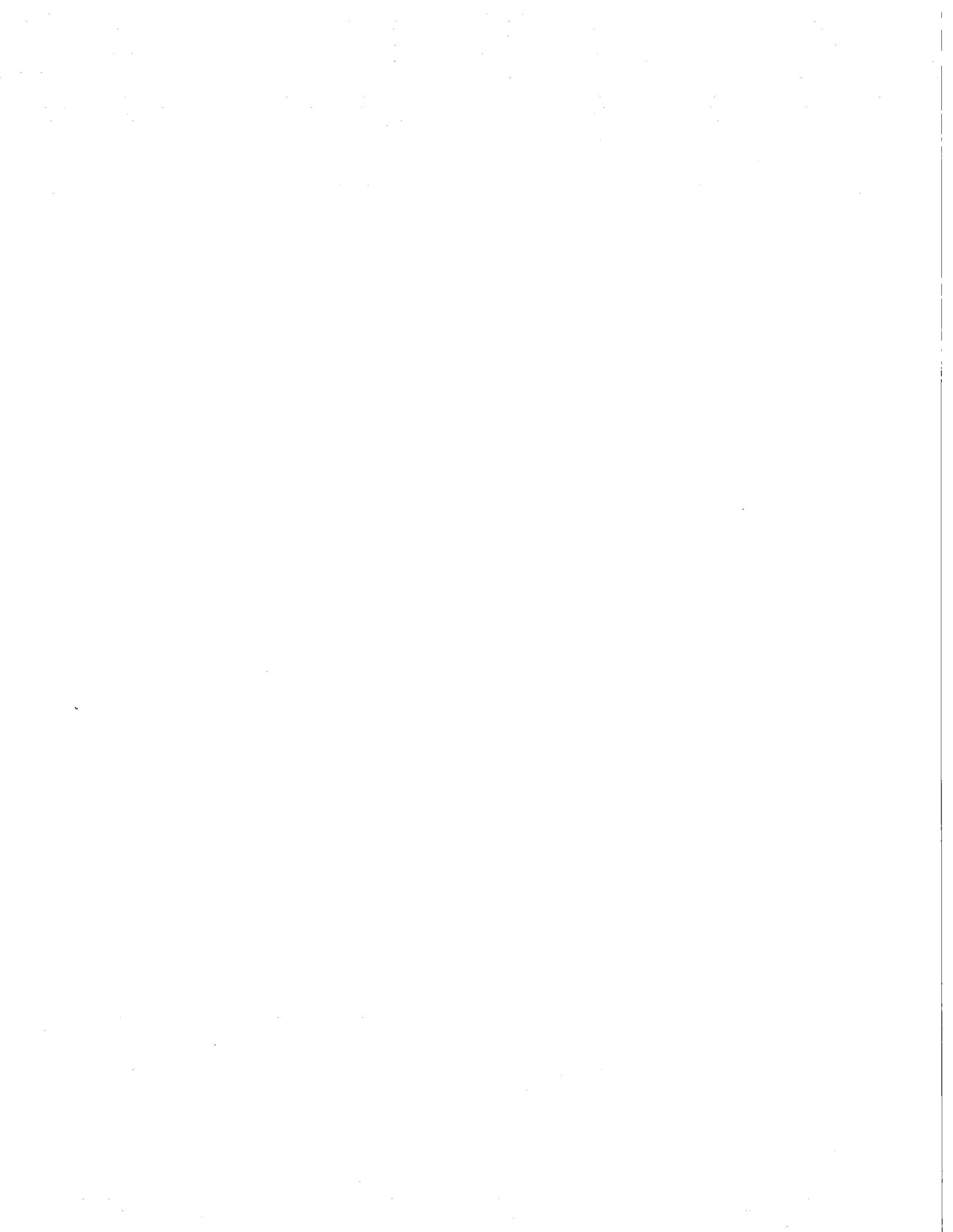
Preface

One of the important contributions that has evolved from the 1994 Zimbabwe Demographic and Health Survey (ZDHS) is the extensive further analysis of the data to inform health and family planning programme evaluation and policy development. USAID/Zimbabwe envisaged the potential for such further analysis in their funding of a series of small analysis and data utilization projects undertaken by Macro International in collaboration with various individuals and institutions in Zimbabwe. The present paper represents one of the significant "fruits" of that investment.

This paper presents the findings of the first of a two-part analysis entitled *Contraceptive Use Dynamics in Zimbabwe*. It is intended to provide a useful description of the patterns of contraceptive discontinuation, contraceptive failure, reasons for discontinuation, and factors related to these "behaviours." The second part will be published shortly and will focus on the relationship between contraceptive initiation following birth of a child and other postpartum behaviours including breastfeeding, abstinence, and amenorrhoea.

Our gratitude is extended to the Zimbabwe National Family Planning Council (ZNFPC) and the JSI/SEATS project who encouraged the involvement of Mr. William Sambisa in this study. A special thanks is extended to Dr. Siân Curtis who guided the study from its inception to its conclusion. The analysis in this paper was conducted during the Anglophone Contraceptive Use Dynamics Seminar held at DHS headquarters in Calverton, Maryland in October 1995. Eight participants from five countries attended this seminar which was coordinated by Dr. Siân Curtis. Funding for the participation of Mr. William Sambisa was provided by USAID/Zimbabwe.

Martin Vaessen
Project Director



Summary

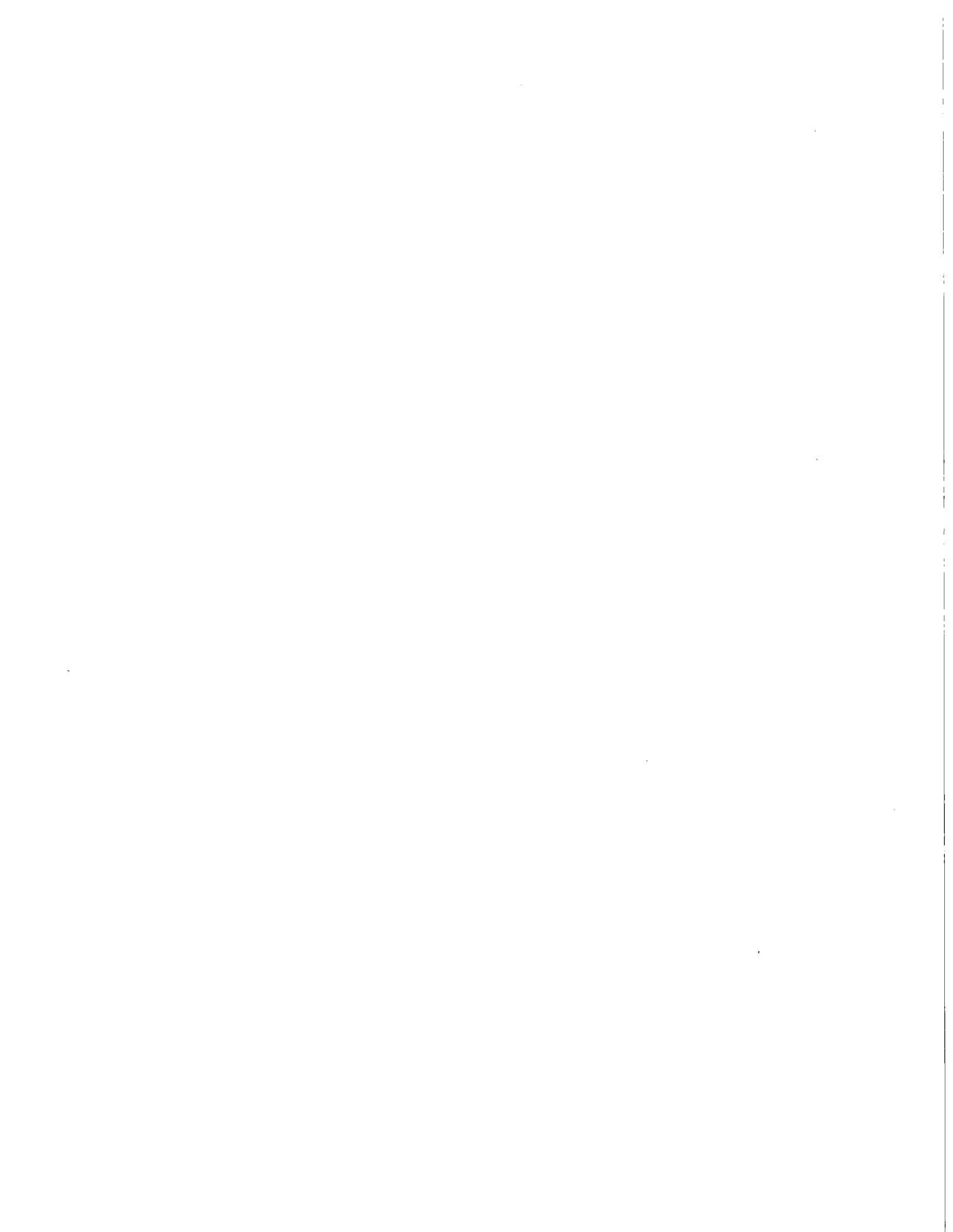
This paper examines contraceptive discontinuation, reasons for discontinuation, method switching, and contraceptive failure in Zimbabwe. Five-year retrospective contraceptive histories collected in the monthly calendar of events in the 1994 Zimbabwe Demographic and Health Survey (ZDHS) are used for the analysis. Method-specific 12-month discontinuation rates range from 15 percent for the pill and injectables to 44 percent for condoms. Method-related reasons, such as health concerns, cost, availability, inconvenience of use, desire for a more effective method, and partner's approval, are the main reason for first-year discontinuation of the pill and condom. Side effects are the main reason for discontinuing use of injectables while contraceptive failure is the main reason for discontinuing traditional methods.

Women who use the pill for limiting rather than for spacing childbearing experience lower pill discontinuation rates at both 12 and 24 months of use. In the first year of use, this is largely due to a much higher rate of discontinuation to get pregnant among spacers than among limiters. However, spacers also experience higher 12-month discontinuation rates for side effects and method-related reasons than do limiters. Rural pill users experience higher discontinuation rates than urban pill users. This differential is related to higher discontinuation for every reason except desire for pregnancy among rural than among urban users. Differentials in pill discontinuation rates by other background characteristics are modest and are not statistically significant.

Most women who discontinue use within a year are either no longer in need of contraception or switch to another method. The 12-month rate of abandoning use while in need of contraception ranges from 2 percent for traditional methods to 6 percent for the pill and condom. For every method except the pill, the rate of switching to another method within a year is higher than the rate of abandoning use. Only 2 percent of pill users switch to another method within a year. Spacers and rural pill users are more likely to abandon use within a year compared to limiters and urban pill users. Although the total 12-month discontinuation rate does not vary much by education, educated women are less likely to abandon use and more likely not to be in need of contraception after discontinuation than their less educated counterparts.

The 12-month contraceptive failure rate is significantly higher for traditional methods than for modern methods and ranges from 2 percent for injectables to 11 percent for traditional methods. The 12-month pill failure rate is 3 percent and does not vary significantly by the background characteristics examined.

Compared with other countries, the level of pill discontinuation is relatively low in Zimbabwe. The 12-month pill discontinuation rate for side effects is particularly low at only 2 percent compared with over 12 percent in most other countries in which similar analyses have been conducted. The reasons for the low discontinuation rates are not yet clear but could be related to satisfaction with the pill as a method, convenience of use, good counselling on side effects, lack of alternative methods, unwillingness to try new and less familiar methods, or poor quality of the reporting of discontinuations. Failure rates for all methods are also relatively low in Zimbabwe. Again, the reasons for this are unclear but could be related to high quality use, good counselling on correct use of methods, poor quality of the reporting of contraceptive failures, or early post-partum initiation of methods resulting in redundant protection and reduced risk of contraceptive failure.



Introduction

Zimbabwe is recognized as one of the first countries in sub-Saharan Africa to experience widespread use of modern contraceptives. The use of modern methods of family planning has increased by 56 percent over the last decade, from 27 percent of married women in 1984 (ZNFPC and WPAS, 1985) to 42 percent in 1994 (CSO and MI, 1995). Much is known about the factors that affect current contraceptive behaviour in Zimbabwe but very little is known about the factors that affect continuation of contraceptive use. Yet, as more and more women in Zimbabwe try modern contraceptives, contraceptive discontinuation and its causes become increasingly relevant for programme guidance. High discontinuation rates may indicate discontent with a method or with family planning services, although continuation with a specific method does not necessarily imply satisfaction, especially if alternative methods are not available. Similarly, high failure rates may suggest that counseling on correct use of methods is inadequate. In addition, variations in discontinuation behaviour between users of different methods or between different types of users are likely to be of considerable interest to programme managers.

The inadequacy in research pertaining to contraceptive use dynamics in Zimbabwe is largely explained by the dearth of relevant data on contraceptive discontinuation. The 1984 Zimbabwe Reproductive Health Survey (ZRHS) and the 1988 Zimbabwe Demographic and Health Survey (ZDHS) collected information on the knowledge of, attitude towards, and practice of contraceptive methods, but did not collect the longitudinal information on recent contraceptive use which is necessary to study duration of use, reasons for discontinuation, and to calculate failure rates. However, the 1994 ZDHS did collect this information and provides a unique opportunity to study contraceptive discontinuation in the Zimbabwean context. Since so little is known about contraceptive use dynamics in Zimbabwe, the aim of this analysis is to obtain an initial overview of discontinuation behaviour. Therefore, the analysis is primarily descriptive and focuses on levels of and differentials in discontinuation of different methods, reasons for discontinuation, behaviour immediately after discontinuation, and contraceptive failure.

Background

Family planning services have been in existence in Zimbabwe since 1953. The establishment of the Family Planning Association (FPA) in 1965 consolidated the delivery of the previously uncoordinated family planning services into a single organization. Initially, family planning service delivery in Zimbabwe was largely clinic-based. Government family planning services were integrated into the maternal and child health service delivery at hospitals and clinics and only medical doctors were allowed to prescribe contraceptives. In 1976, the Ministry of Health granted permission for field educators to resupply pills and condoms as a strategy for improving client access to family planning. The field educators then became "pill agents" who form the basis of the current community-based distribution (CBD) system.

In 1985, the Child Spacing and Family Planning Council (CSFC) was renamed the Zimbabwe National Family Planning Council (ZNFPC) with a mandate to systematically promote family planning through the provision of information and services to all sectors of the community. The ZNFPC is also responsible for the procurement of contraceptives for the public sector facilities. The ZNFPC, through its network of 34 clinics and its CBD system, is one of the major providers of contraceptives in the country. The pill, condom, injectables, IUD, and vaginal methods are provided by ZNFPC through its service delivery points. Female and male sterilization are provided at only two health facilities, one in Harare and another in Bulawayo. The CBD system is often regarded as the "backbone" of the ZNFPC programme and is the principal outreach mechanism for family planning service delivery, serving 30 percent of the rural areas. Twenty-two percent of pill users and 14 percent of condom users report obtaining their most recent supplies from a CBD worker (CSO and MI, 1995). As part of their duties, CBD workers inform and educate communities on the benefits of family planning, motivate clients

to use family planning, initiate clients who want to use oral contraceptives, resupply established clients with the pill and condoms in their homes, and refer clients wanting to use other nonsupply methods to local clinics. Government clinics are the other major source of contraceptive methods. In total, 85 percent of all modern contraceptive users obtain their current method from the public sector (CSO and MI, 1995).

The contraceptive method mix in Zimbabwe is dominated by the pill. According to the 1994 ZDHS, among currently married women who report current use of contraception, over two-thirds (69 percent) use the pill compared with 7 percent who use injectables, 5 percent who use condoms, and 5 percent who have been sterilized. All other modern methods are used by 3 percent of contraceptive users (CSO and MI, 1995). The dominance of the pill is related to several factors. Originally, the ZNFPC programme focused on just two methods, the pill and condoms; therefore, the pill was established early on in programme activities. Women in rural areas are also attracted to the pill since their options are often limited to those provided by the CBD workers (the pill or condoms). Due to this historical and practical bias towards the pill in the family planning programme, the donor community has tended to focus on the provision of pills, although it has encouraged diversification of the method mix.

However, both the IUD and injectables do not have a good reputation in Zimbabwe. Depo-Provera was introduced to the Zimbabwe family planning programme in the 1960s and was the most popular modern method in the 1970s. Due to high demand, some CBD workers (then field educators) were trained to provide it. However, unconfirmed reports began to circulate that injectables were being given to women without their knowledge or consent, especially after abortion or delivery. Other concerns were raised about the long-term effects of Depo-Provera and the fact that the drug was manufactured in the United States but not approved for use there. In 1981, Depo-Provera was withdrawn from general use in public institutions, although it was allowed to be given to severely physically or mentally disabled women, women with gynaecological conditions treated by Depo-Provera (e.g. carcinoma of the endometrium and kidneys), and women over the age of 35 with five or more children, and it continued to be available in the private sector.

Service providers in Zimbabwe have tended to be reluctant to provide the IUD because of concerns over pelvic inflammatory disease and increased risk of transmission of sexually transmitted diseases and sterility associated with IUD use. These concerns have been transmitted to clients which have made them skeptical about the method. The risk of infertility that has been considered a side effect of both the IUD and injectables causes particular concern among Zimbabwean women because of the importance attached to childbearing, and probably contributes substantially to the unpopularity of these two methods. The importance attached to childbearing in the society also means that sterilization is seen as drastic and somewhat offensive.

The main thrust of the ZNFPC programme is now aimed at broadening the method mix with emphasis on long-term and permanent methods. In order to achieve this aim, in 1992 the ZNFPC reintroduced injectables and introduced implants (Norplant) at three ZNFPC facilities (the three central hospitals), and at a few private providers in Harare and Bulawayo on a trial basis while awaiting approval from the Drugs Control Council of Zimbabwe. Norplant has recently been approved by the Drugs Control Council and its use may now become more widespread. IUDs are being offered by the ZNFPC programme but the myths and misconceptions about the method continue to undermine its acceptance. ZNFPC has introduced an IUD/GTI (genital tract infection) initiative to address negative attitudes towards the IUD among service providers, and has also introduced an on-the-job IUD training programme to increase the number of providers able to provide IUDs.

Data and Methods

The 1994 ZDHS was undertaken by the Central Statistical Office (CSO) with technical assistance from Macro International Inc. through the Demographic and Health Survey (DHS) programme funded by the U.S. Agency for International Development (USAID). The main objective of the 1994 ZDHS was to provide up-to-date information on fertility levels, nuptiality, sexual activity, fertility preferences, awareness and use of family planning methods, breastfeeding practices, nutritional status of mothers and young children, early childhood mortality, maternal mortality, maternal and child health, and awareness and behaviour regarding AIDS and other sexually transmitted diseases.

The 1994 ZDHS was based on a nationally representative sample of 6,128 women age 15-49 and 2,141 men age 15-54. A new feature in the 1994 ZDHS female questionnaire was the calendar which is used to collect information about recent events in the respondent's life (Appendix A). Only those events that occurred in the five calendar years preceding the year of the survey were captured (i.e., since January 1989). The calendar consists of 72 boxes on the vertical axis and four columns on the horizontal axis. The 72 boxes (each box representing one month of time) are divided into six sections (each representing one year or 12 months of time). The four horizontal columns are used to record pregnancies, live births, terminations of pregnancies, and monthly contraceptive status (column 1), reasons for discontinuation of contraception (column 2), monthly marital status (column 3), and place of residence and migration (column 4). The first two of these columns provide the data used for this analysis of contraceptive use dynamics.

The analysis of contraceptive discontinuation is segment-of-use-based rather than woman-based. A segment of use (sometimes referred to as a use interval) is defined to start at the beginning of the first calendar month in which the woman reports use of a particular method and ends in the last month of *continuous* use of that method. Individual women may contribute several segments of use to the analysis sample. The sample for this analysis includes all segments of use that began in the period 3-62 months before the survey, which yields a total sample of 3,447 segments.¹

This analysis of contraceptive discontinuation employs life table methodology because the analysis sample includes segments of contraceptive use that are still in progress at the end of the 60-month analysis period (right-censored segments). The ultimate duration of these segments is unknown and life table methodology allows the inclusion of both complete and incomplete segments of use. Life table methodology can be extended to obtain reason-specific discontinuation rates and rates for contraceptive switching and abandonment, and to assess the relative efficacy of different contraceptive methods across subgroups or populations (Moreno and Goldman, 1995). For further discussion of life table methodology, see Sinquefeld (1973), Namboodiri and Suchindram (1987), and Curtis and Hammerslough (1995).

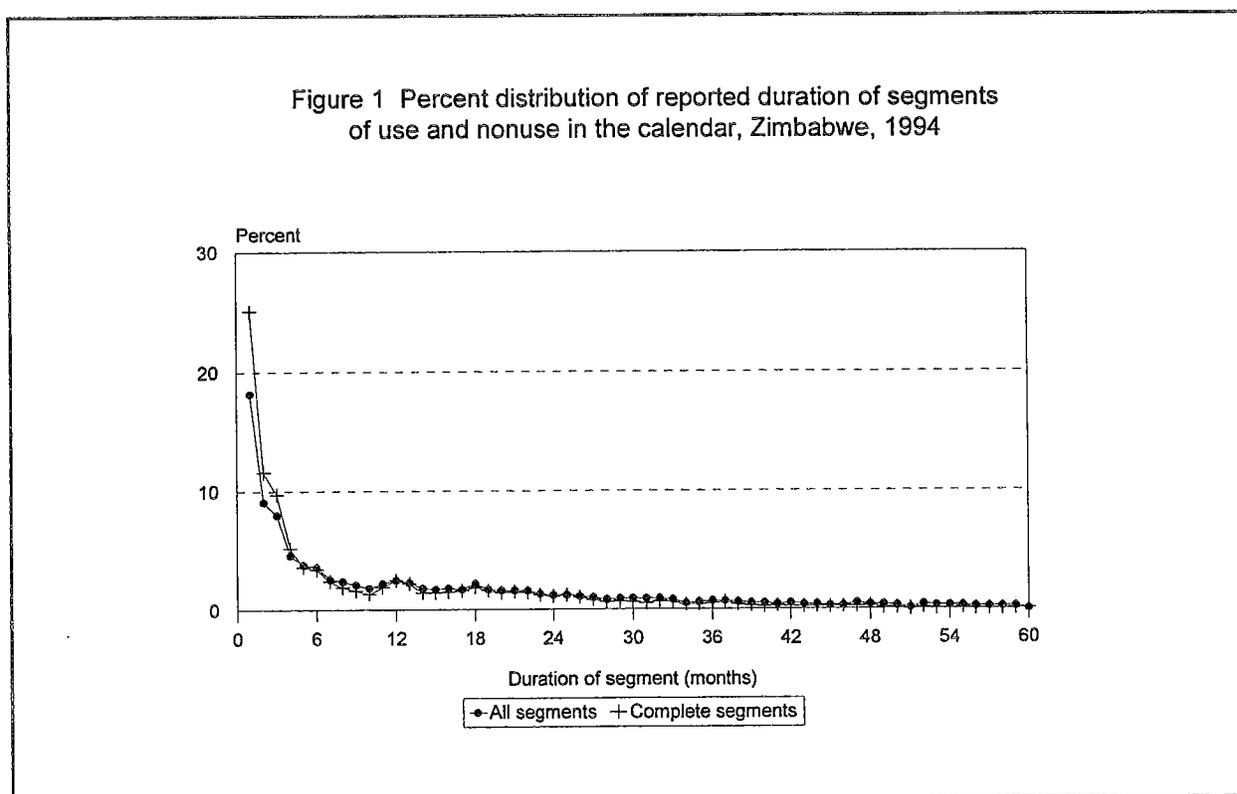
The analysis was conducted with SPSSPC using programmes that accompany the DHS Further Analysis Plan on Contraceptive Use Dynamics (Curtis and Hammerslough, 1995). In the tables that follow, life table rates are presented only if there are at least 125 months of exposure in the first month of the life table. Life table estimates based on smaller numbers are unreliable (Ali and Cleland, 1995; Curtis and Hammerslough, 1995).

¹As is standard practice in analyses of contraceptive failure, the last three months of the calendar (i.e. immediately before the survey) are ignored to allow for underreporting of first-trimester pregnancies among contraceptive users which would bias estimates of contraceptive failure rates. Segments of use that began before the 60-month analysis period but continue into it (left-censored segments) are not included because the duration of use at the start of the observation period is usually unknown. The exclusion of these segments does not bias the results of the analysis because right-censored segments (those that are still in progress at the end of the observation period) are included.

Data Quality

Information collected using the calendar is superior in quality to comparable data collected using other retrospective data collection techniques for longitudinal information (Goldman et al., 1989). Despite this advantage, data collected using the calendar are subject to many types of bias (Jejeebhoy, 1991). One type of bias that is likely to be important is recall bias since the respondent is asked to recall events which happened up to five years ago. One symptom of poor recall is heaping of events on significant dates or on prominent durations such as 6, 12, and 24 months. The phenomenon of heaping at 6, 12, and 24 months could bias the discontinuation rates at these durations.

Figure 1 shows the percent distribution of the reported duration of all segments and completed segments in the calendar.² Heaping of the duration of segments at the 12-month duration is minimal while there is no heaping at the 6-month or 24-month duration. The modest heaping at 12 months suggests that duration-heaping is unlikely to bias markedly the estimated 12-month contraceptive discontinuation rates.



Another potential problem is concealment of contraceptive failure. In many societies, women may be reluctant to admit that they experienced a contraceptive failure and may give an alternative reason for discontinuation, for example, by misreporting the failure as a wanted pregnancy. Such misclassification of unintended pregnancies will tend to bias the estimated contraceptive failure rates downward (Curtis and Hammerslough, 1995). Misclassification of unintended pregnancies as wanted pregnancies may be assessed by crosstabulating completed segments of use by reason for discontinuation and status in the month immediately following discontinuation.

² This analysis includes both segments of use and nonuse (i.e., segments in which the woman was not pregnant and not using a contraceptive method).

Table 1 indicates that a total of 386 women report becoming pregnant immediately after discontinuing contraception, and 295 (76 percent) of these pregnancies are attributed to contraceptive failure. Five users who report that they had experienced a contraceptive failure are not recorded as pregnant in the month following the failure. About 11 percent of the women who discontinue contraceptive use in order to get pregnant become pregnant the month following discontinuation and only one user who discontinued in order to get pregnant switched to another method. The calendar data also show that about 4 percent of contraceptive users who discontinue use for other reasons but do not adopt another method in the month following discontinuation become pregnant immediately after discontinuation. The percentage of users who become pregnant immediately after discontinuation does not appear to be unreasonably high, so there is no evidence from this analysis of extensive misreporting of unintended pregnancies as desired pregnancies.

Table 1 Distribution of discontinued segments of use by reason for discontinuation and status in the month immediately following discontinuation, Zimbabwe, 1994

Reason for discontinuation	Status in the month after discontinuation				Total	Percentage of exposed women who became pregnant ¹
	Pregnant	Termination	Not using a method	Using another method		
Contraceptive failure	295	0	5	0	301	98.3
Desire to get pregnant	71	0	583	1	655	10.9
Other reason	20	0	504	202	726	3.8
Total	386	0	1,092	203	1,682	26.1

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 any method of contraception).

The data quality checks presented in Figure 1 and Table 1 do not provide any evidence of serious data quality problems in the data obtained from the calendar. However, these data quality checks are limited in scope and cannot address all data quality concerns. In particular, some women who experience a contraceptive failure may conceal it by omitting the discontinuation altogether. This is particularly likely if the pregnancy resulting from the failure ended in an induced abortion which the woman may wish to conceal. The extent to which abortion underreporting will affect failure rates will depend upon the propensity of women to abort an unintended pregnancy as well as upon the magnitude of underreporting (Jejeebhoy, 1991). Unfortunately, this is extremely difficult to assess and no suitable data are available in Zimbabwe to examine this issue. Other data quality issues that cannot be investigated easily include underreporting of short intervals of use and variation in individual interpretation of contraceptive failure, particularly if the respondent knows that they used the method inconsistently or incorrectly (Curtis and Hammerslough, 1995; Jejeebhoy, 1991).

Background Characteristics

One of the objectives of this study is to ascertain the importance of user characteristics as correlates of contraceptive discontinuation behaviour. Differentials in contraceptive discontinuation and failure have a bearing on the evaluation of family planning programme efforts because the fertility impact of the programme activities will depend upon the success with which contraception is practised in different subgroups (Entwisle and Sayed, 1991). Six background characteristics of users have been identified for this analysis: age, contraceptive intent, parity, area of residence, province, and educational level.

Age of the respondent refers to the age of the women at the time the segment of use began. The contraceptive discontinuation rate is expected to decrease with age because of increasing motivation to space and limit family size as age increases, and also because of decreasing risk of contraceptive failure associated with declining fecundability. Contraceptive intent reflects the intentions (spacing or limiting) of the respondent during the segment of contraceptive use.³ Limiters are expected to discontinue less frequently than spacers because they are expected to be more highly motivated to avoid births. Parity refers to the number of births a woman had experienced by the start of the segment of contraceptive use. Parity is closely related to both age and contraceptive intent, and contraceptive discontinuation is expected to decline as parity increases.

Urban-rural differences are of practical relevance because access and availability problems in rural areas may reduce continuation of certain methods. Overall, only 2 percent of respondents mentioned availability and access as their main reason for discontinuation (CSO and MI, 1995), but problems of this nature may act synergistically with other reasons to discourage persistent use (Ali and Cleland, 1995). Provincial differentials in contraceptive discontinuation behaviour are of direct programme relevance because the family planning programme operates at the provincial level. Education has consistently been shown to affect many types of demographic behaviour, including contraceptive behaviour, and therefore, is of obvious interest in this analysis. Both education and area of residence are measured at the time of the survey.

As background to the analysis of contraceptive discontinuation, Table 2 presents the distribution of currently married women by contraceptive method currently used, according to the selected background characteristics of respondents. Contraceptive prevalence in Zimbabwe is 48 percent. As already discussed, pill use dominates the modern method mix in Zimbabwe. The prevalence of the pill is 33 percent, followed by injectables (3 percent), and the condom (2 percent). Six percent of married women are using traditional methods of contraception (periodic abstinence, withdrawal, and other folkloric methods). There is an increase in contraceptive use with age for injectables and traditional methods, while pill and condom use peaks at age 25-34. Contraceptive use is higher among limiters (52 percent) than among spacers (45 percent) and a higher proportion of limiters than spacers are using injectables (5 versus 2 percent). Women residing in urban areas are more likely to use contraception than women residing in rural areas, but rural women are more likely than urban women to use traditional methods. Provincial contraceptive prevalence levels range from less than 40 percent in Manicaland, Matebeleland North, and Matebeleland South to 58 percent in the Midlands and 62 percent in Harare. Use of traditional methods is particularly high in the Midlands. Contraceptive prevalence increases from 33 percent among women with no education to 46 percent among women with primary education and 58 percent among women with at least secondary education. However, women with primary education are more likely than other women to use injectables and traditional methods.

³ Contraceptive intention at the time of the segment of use is inferred by whether the next birth after the segment of use was reported as wanted (then or later) or unwanted. If the segment of use was not followed by a birth, intention is inferred by whether or not the woman reported that she wanted another child at the time of the survey.

Table 2 Percentage distribution of currently married women by contraceptive method currently used, according to selected background characteristics, and the number of segments of use in the five years prior to the survey, Zimbabwe, 1994

Background characteristic	Pill	Condom	Injectables	Traditional methods	Other modern methods	All methods
Age						
Under 25	38.6	2.2	1.5	2.3	0.5	45.2
25-34	38.9	2.7	3.5	6.5	3.4	55.0
35-49	21.7	1.9	4.2	8.5	6.5	42.8
Contraceptive Intent						
Spacer	35.2	2.2	1.9	5.1	0.9	45.2
Limiter	30.1	2.4	5.0	7.2	7.6	52.2
Parity						
0-1	29.0	2.0	1.0	1.2	1.1	34.2
2	47.7	2.4	2.2	2.9	3.0	58.2
3	37.6	2.2	3.5	6.2	4.1	53.5
4 or more	28.6	2.5	4.7	9.8	5.1	50.7
Area of residence						
Urban	42.0	2.9	3.6	3.7	5.4	57.6
Rural	29.4	2.1	3.0	6.9	2.9	44.2
Province						
Manicaland	21.4	3.4	0.8	8.3	1.9	35.9
Mashonaland Central	36.5	1.8	1.5	6.1	2.6	48.5
Mashonaland East	37.1	2.3	4.2	4.9	3.7	52.3
Mashonaland West	39.6	1.8	2.8	4.5	0.5	49.1
Matabeleland North	21.4	2.0	3.0	5.1	2.1	33.6
Matabeleland South	20.5	1.1	2.8	4.4	5.0	33.9
Midlands	34.5	3.2	4.8	11.5	4.2	58.2
Masvingo	28.0	1.1	5.2	4.4	3.3	42.0
Harare	45.7	2.8	3.6	3.9	5.6	61.6
Bulawayo	30.6	1.4	2.8	3.1	10.1	47.9
Education						
None	22.4	1.2	0.6	6.9	1.6	32.8
Primary	29.4	2.1	4.1	7.5	3.2	46.4
Secondary or more	43.8	3.0	2.8	3.0	5.0	57.5
Total	33.1	2.3	3.2	6.0	3.6	48.1
Number of current users	1,254	87	120	226	136	1,823
Number of censored segments	1,216	129	108	205	107	1,765
Total number of segments	2,397	299	133	497	121	3,447

Contraceptive Discontinuation

Table 3 shows the cumulative discontinuation rate⁴ at 12-months and 24-months duration of use and the median duration of use by method. The 12-month discontinuation rate for both the pill and injectables is low (15 percent) but the median duration of use of injectables is longer than the median duration of pill use. The ZNFPC reintroduced injectables in 1992 as a long-term method so they are probably more likely to be adopted by highly motivated users. The highest discontinuation rates are observed for condoms: 44 percent of segments of condom use end within 12 months of initiating use, and 62 percent end within 24 months. The 12-month discontinuation rate of 28 percent for traditional methods is nearly twice as high as that for hormonal methods. Overall, about 19 percent of contraceptive users in Zimbabwe discontinue use within a year. There is only a very small difference between all methods and all reversible methods in the total 12-month and 24-month discontinuation rates. This is because female and male sterilization are not widely used in Zimbabwe so their use has little effect on the discontinuation rate for all methods combined.

Table 3 Life table discontinuation rates and median duration of use by method, Zimbabwe, 1994

Method	12-month discontinuation rate (percent)	24-month discontinuation rate (percent)	Median duration of use (months)	Number of segments of use
Pill	15.4	43.2	27.6	2,397
Condom	43.9	62.1	16.3	299
Injectables	15.0	32.0	>53.0 ¹	133
Traditional methods	28.2	67.0	18.8	497
All methods (including sterilization)	19.3	46.6	25.6	3,447
All reversible methods	19.7	47.5	25.2	3,381

¹ It is not possible to estimate the exact median duration of injectable use from this sample because 108 of the 133 segments are censored and fewer than half of the segments had been discontinued by 53 months duration.

Life table discontinuation rates and median durations of use for the pill by background characteristics of respondents are presented in Table 4. In the first year of use, women age 25-34 have the lowest discontinuation rate compared with women in other age groups; however, by the end of the second year of use, discontinuation rates decline with age and older women (35-49) have the longest median duration of use. There is a statistically significant difference in the discontinuation rates of limiters and spacers. As expected, limiters are much less likely to discontinue pill use than spacers resulting in a much longer median duration of use among limiters. Compared with higher parity women, pill users with fewer than two births have the highest discontinuation rates at both 12 and 24 months of use. There is little difference between the 12-month discontinuation rates at higher parities, but there is a slight decline in the 24-month discontinuation rates as parity increases. Discontinuation rates at both durations are higher in rural areas than in urban areas and the differences in the rates are statistically significant. Provincial 12-month discontinuation rates range from 9 percent in Harare to 20 percent in Manicaland, while 24-month discontinuation rates range from 30 percent in Harare to 53 percent in Manicaland. There are no marked differentials in the 12-months discontinuation rates by educational attainment, while the 24-month discontinuation rates show that women with primary education are slightly more likely to discontinue pill use than their counterparts. This weak educational differential in pill discontinuation is in marked contrast to the strong educational differential in current pill use observed in Table 2.

⁴ The percentage of users who discontinue use within a specified duration of use (e.g., 12 or 24 months).

Table 4 Life table discontinuation rates and median duration of use for the pill by background characteristics, Zimbabwe, 1994

Background characteristic	12-month discontinuation rate (percent)	24-month discontinuation rate (percent)	Median duration of use (months)	Number of segments of use
Age				
Under 25	16.3	49.4	24.2	1,248
25-34	13.6	37.4	31.3	922
35-49	17.5	33.4	33.7	227
Contraceptive Intent¹				
Spacer	15.6	48.4	24.5	1,704
Limitier	9.5	23.1	45.2	649
Parity				
0-1	19.5	54.7	22.0	744
2	13.4	41.1	29.3	513
3	13.9	37.4	30.7	335
4 or more	13.5	36.9	32.4	805
Area of residence				
Urban	12.0	34.9	31.8	758
Rural	16.9	46.9	25.4	1,640
Province				
Manicaland	20.2	52.9	22.8	240
Mashonaland Central	15.3	46.6	27.8	220
Mashonaland East	16.8	46.5	25.3	270
Mashonaland West	13.3	40.1	29.8	307
Matabeleland North	*	*	*	122
Matabeleland South	*	*	*	84
Midlands	15.3	47.8	25.5	361
Masvingo	14.8	42.8	26.5	257
Harare	9.0	30.0	33.7	414
Bulawayo	*	*	*	123
Education				
None	15.8	42.5	28.2	263
Primary	15.8	45.0	26.2	1,161
Secondary or more	14.8	41.0	29.0	974
Total	15.4	43.2	27.6	2,397

¹ Excludes 45 missing cases

Note: An asterisk indicates that a figure is based on less than 125 woman-months of exposure in the first month of the life table and has been suppressed.

Contraceptive Discontinuation by Reason for Discontinuation

From a policy viewpoint, it is important to understand why users discontinue use of a particular method of contraception since policies required to address discontinuation for one reason are likely to differ from those required to address discontinuation for other reasons. Further, determining the reasons why different groups of

users terminate use of different contraceptives provides policymakers with relevant information on the advantages and disadvantages of the different methods. Life table methodology provides a framework which facilitates the analysis of contraceptive discontinuation by reason through the construction of multiple-decrement life tables (MDLT). In the following analysis, MDLTs are constructed with five modes of decrement corresponding to the following mutually exclusive and exhaustive categories of reasons for discontinuation: failure, desire to get pregnant, side effects, other method-related reasons (partner disapproval, health concerns, availability, want a more effective method, inconvenient to use, and cost) and other reasons (infrequent sex, separated/widowed, fatalistic, don't know, subfecund, and other). The MDLT yields reason-specific discontinuation rates that are affected by the competing risks of discontinuation for other reasons. These rates are usually referred to as net discontinuation rates (Jejeebhoy, 1991; Trussell and Kost, 1987; Curtis and Hammerslough, 1995) and reflect the actual experience of the sample of women under study.

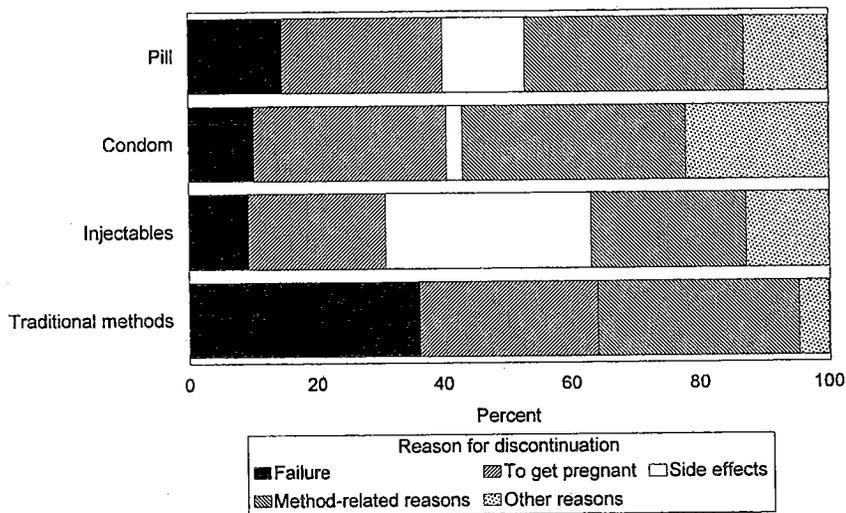
Net 12-month discontinuation rates by reason for discontinuation and method are shown in Table 5. Figure 2 shows the percent decomposition of the 12-month discontinuation rate by reason for discontinuation for each method which illustrates the relative importance of each reason across methods. It is clear from Table 5 that the highest pill discontinuation rate is for method-related reasons (5 percent) followed by "desire to get pregnant" (4 percent). Within the method-related reason category, the most frequently reported reason for pill discontinuation is health concerns (CSO and MI, 1995). The 12-month discontinuation rates for the pill for each other reason are all around 2 percent.

Table 5 Life table 12-month discontinuation rates by reason for discontinuation by method, Zimbabwe, 1994

Method	Reason for discontinuation					Total
	Failure	Desire to get pregnant	Side effects	Method related reasons	Other reasons	
Pill	2.3	3.9	2.0	5.3	2.0	15.4
Condom	4.5	13.3	1.1	15.3	9.7	43.9
Injectables	1.4	3.2	4.8	3.6	1.9	15.0
Traditional methods	10.2	7.8	0.0	8.8	1.3	28.2
All methods (including sterilization)	3.5	5.1	1.7	6.5	2.5	19.3
All reversible methods	3.6	5.2	1.7	6.6	2.6	19.7

Condom users present by far the highest 12-month discontinuation rate compared with users of other methods. This high discontinuation rate is due to high discontinuation for method-related reasons (15 percent), high discontinuation to get pregnant (13 percent), and high discontinuation for other reasons (10 percent). The probability of discontinuing use within the first year of use due to side effects is relatively high among injectables users (5 percent) compared with users of other methods. The net rate of discontinuation due to failure of the method ranges from 1 percent for injectables to 10 percent for traditional methods. Failure is the main reason for discontinuation of traditional methods followed by method-related reasons (Figure 2). Desire for a more effective method is frequently cited as a reason for discontinuation of traditional methods (CSO and MI, 1995).

Figure 2 Percent decomposition of 12-month discontinuation rates by reason for discontinuation, according to method, Zimbabwe, 1994



The 12-month reason-specific discontinuation rates for the pill by background characteristics are presented in Table 6. In general, the differentials in the rates are relatively small, and therefore, should be interpreted cautiously. The percentage of users who discontinue pill use because of method failure decreases as age of the respondent increases. Younger women (under 25) are more likely than older women to discontinue in order to get pregnant while pill users age 35-49 years are more likely than younger users to discontinue due to method-related reasons, other reasons, and to a lesser extent, side effects. Method-related reasons are the main cause of pill discontinuation among both spacers and limiters (Figure 3). As expected, the discontinuation rate due to desire to get pregnant is virtually zero among limiters compared with 4 percent among spacers. Limiters also experience a lower discontinuation rate due to side effects than spacers. Among users with fewer than two live births, the main reason for pill discontinuation is to get pregnant, followed by method-related reasons. At higher parities, the main reason for pill discontinuation is method-related reasons, particularly among women with four or more live births (Figure 3).

Rural users experience slightly higher discontinuation rates than urban users for every reason except desire for pregnancy for which the rate is identical in the two groups. The largest difference is between the discontinuation rates for method-related reasons: 6 percent among rural users compared with 3 percent among urban users. The relatively high 12-month pill discontinuation rate observed in Manicaland is due to their relatively high discontinuation rate due to desire for pregnancy (6 percent), side effects (4 percent), and method-related reasons (6 percent). However, the discontinuation rate for method-related reasons is higher in the Midlands (7 percent) and in Masvingo (9 percent). Harare experiences relatively low discontinuation rates for each reason but particularly for method-related reasons (2 percent) and failure (0 percent). However, the provincial reason-specific discontinuation rates should be interpreted cautiously because they are based on relatively small amounts of exposure and are subject to large sampling errors.

Table 6 Life table discontinuation rates for pill by reason for discontinuation and background characteristics, Zimbabwe, 1994

Background characteristic	Reason for discontinuation					Total
	Failure	Desire to get pregnant	Side effects	Method related reasons	Other reasons	
Age						
Under 25	2.8	5.1	1.8	5.0	1.7	16.3
25-34	2.0	2.7	2.0	5.2	1.7	13.6
35-49	0.9	2.1	2.9	7.1	4.5	17.5
Contraceptive Intent						
Spacer	1.8	4.3	2.4	5.5	1.6	15.6
Limiter	1.1	0.4	0.8	4.2	3.0	9.5
Parity						
0-1	3.4	7.2	1.9	4.8	2.2	19.5
2	2.0	3.0	2.4	4.8	1.2	13.4
3	2.6	2.7	2.3	4.1	2.3	13.9
4 or more	1.3	2.0	1.6	6.5	2.1	13.5
Area of residence						
Urban	1.9	3.9	1.1	3.3	1.9	12.0
Rural	2.5	3.9	2.4	6.2	2.0	16.9
Province						
Manicaland	2.9	6.2	3.6	6.1	1.3	20.2
Mashonaland Central	2.3	3.5	2.3	4.2	3.0	15.3
Mashonaland East	2.2	3.9	3.3	4.9	2.5	16.8
Mashonaland West	3.2	2.8	1.8	3.7	1.9	13.3
Matabeleland North	*	*	*	*	*	*
Matabeleland South	*	*	*	*	*	*
Midlands	2.1	4.0	1.0	6.8	1.4	15.3
Masvingo	2.5	2.3	0.4	9.1	0.5	14.8
Harare	0.0	3.4	1.3	1.5	2.8	9.0
Bulawayo	*	*	*	*	*	*
Education						
None	2.3	3.3	2.6	4.6	2.9	15.8
Primary	2.0	3.8	1.6	6.6	1.7	15.8
Secondary or more	2.5	4.2	2.2	3.8	2.0	14.8
Total	2.3	3.9	2.0	5.3	2.0	15.4

Note: An asterisk indicates that a figure is based on less than 125 woman-months of exposure in the first month of the life table and has been suppressed.

Method-related reasons are the main reasons for discontinuing pill use among women with no education and primary education, while users with at least secondary education mention a desire to get pregnant as the main reason for discontinuing the method (Figure 4).

Figure 3 Percent decomposition of 12-month pill discontinuation rates by reason for discontinuation, according to selected demographic characteristics, Zimbabwe, 1994

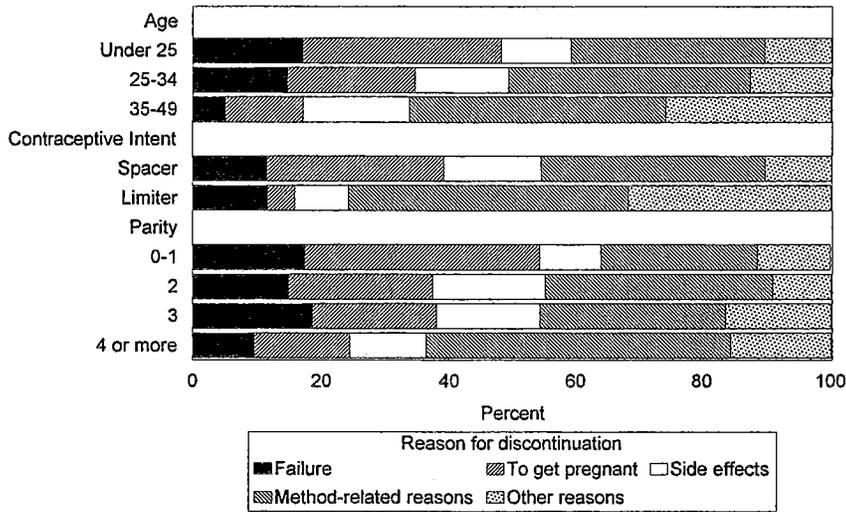
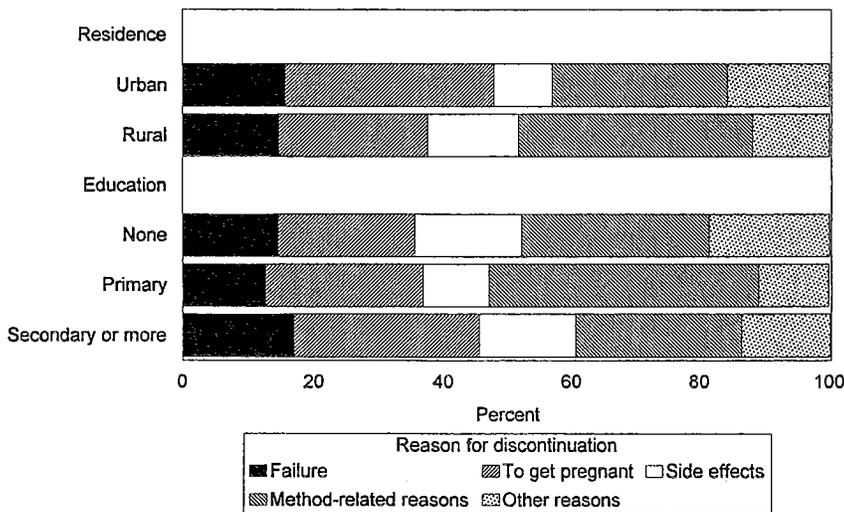


Figure 4 Percent decomposition of 12-month pill discontinuation rates by reason for discontinuation, according to residence and education, Zimbabwe, 1994



Contraceptive Switching Behaviour

The significance of contraceptive discontinuation for the welfare of individual women and its impact on fertility levels will depend on whether women discontinue all contraceptive use following discontinuation of a particular method, thus exposing themselves to the risk of an unwanted pregnancy, or whether they switch to another method. High rates of method switching among contraceptive users may indicate exposure to an array of contraceptive options and that women are taking advantage of the opportunity to use different methods as their needs and preferences change. Thus high rates of switching may reflect successful family planning programmes. Women may also switch methods when they face difficulties obtaining new supplies of the method they are using or when a formerly inaccessible method becomes available. In this case, high rates of method switching could reflect erratic availability or difficulties in obtaining and continuing use of the preferred methods. In addition, fears about possible side effects of modern methods may lead some women to use them sporadically and switch methods frequently. Frequent abandonment of method use—whether temporary or permanent—may indicate that women have difficulty maintaining continual use and leave themselves exposed to the risk of an unintended pregnancy. On the other hand, women may stop use when they do not need contraception and resume use when they do. Method switching has been one of the least studied contraceptive behaviours and the full programmatic implications of method switching are still unknown (Kost, 1993). The analysis of switching behaviour presented in this section will, therefore, be of general interest to the family planning community within Zimbabwe and to analysts interested in cross-country comparisons.

Multiple-decrement life tables are used in this analysis of contraceptive switching behaviour. The definition of switching behaviour used here is based on the status of the user in the month immediately following discontinuation in conjunction with the information on the reason for discontinuation. Switching behaviour is classified into one of the following categories:

- *No longer needs contraception*—users who discontinue due to failure, desire to get pregnant, infecundity or menopause, separation or widowhood, and infrequent sex;
- *Switched method*—users who discontinue for any other reason but start using another method in the following month; and
- *Abandoned use*—users who discontinue for any other reason but are not using a method or become pregnant in the month following discontinuation.

The focus of this analysis is mainly on the behaviour of users who discontinue use but still need contraception (i.e., those who switch or abandon use).

Table 7 shows the life table 12-month discontinuation rates by status after discontinuation and method and Figure 5 illustrates the relative importance of each status across methods. For all methods except the pill, the rate of switching to another method is higher than the rate of abandoning use. Only 2 percent of pill users switch methods in the first year of use while 6 percent abandon use. The 12-month rate of abandoning use is higher for the pill and condom (6 percent) than for injectables (3 percent) and traditional methods (2 percent). The switching rate is particularly high among condom users (10 percent). About 8 percent of pill users express no need for contraception after discontinuation.

Table 7 Life table 12-month discontinuation rates by status after discontinuation and method, Zimbabwe, 1994

Method	Status after discontinuation			Total
	No need for contraception ¹	Switched to another method	Abandoned use	
Pill	7.6	2.0	5.8	15.4
Condom	27.4	10.4	6.2	43.9
Injectables	6.5	5.4	3.0	15.0
Traditional methods	19.1	6.9	2.2	28.2
All methods (including sterilization)	10.6	3.6	5.1	19.3
All reversible methods	10.8	3.7	5.2	19.7

¹ Discontinuation for the following reasons: contraceptive failure, desire to get pregnant, infrequent sex, subfecund, and separated/divorced.

Life table 12-month cumulative discontinuation rates for the pill by status after discontinuation and background characteristics are presented in Table 8. Figures 6 and 7 illustrate the relative breakdown of the 12-month discontinuation rate by status after discontinuation across subgroups. The proportion of users who abandon use of the pill and do not switch to another method increases from 6 percent among users under age 35 to 8 percent among users age 35-49. However, older users are also more likely than younger users to switch methods. Spacers are more likely to abandon use than limiters, but even limiters are more likely to abandon use than to switch methods (Figure 6). Only 3 percent of limiters switch methods within a year.

A higher proportion of pill users in rural areas abandon use after pill discontinuation (7 percent) than urban users (3 percent). Only about 2 percent of both rural and urban users switch to another method within a year. The rate of abandoning use ranges from 3 percent in Harare to over 7 percent in Mashonaland Central, while the rate of switching ranges from less than 1 percent in Mashonaland Central, Mashonaland West, and Harare to 3 percent in Manicaland, Midlands, and Masvingo.

Although total discontinuation rates and reason-specific discontinuation rates show little variation by education, abandonment of pill use shows a definite pattern with increasing educational attainment of women. Women with no education are more likely to abandon use after discontinuation than women with primary and secondary education, while the proportion with no need for contraception increases with educational attainment. Figure 7 clearly illustrates these patterns. In all the subgroups examined, including the most educated and limiters, the majority of pill users who discontinue use but still need contraception will abandon use. This finding suggests that most users lack knowledge about alternative methods or that the availability of alternative methods is limited.

Contraceptive Failure

Contraceptive discontinuation due to method failure is of particular interest because it results directly in unwanted pregnancy. High levels of contraceptive failure may indicate that women have inadequate information on the correct use of methods. Further, information on the effectiveness of different methods is useful in counselling couples on method choice. The analysis of reason-specific discontinuation rates earlier in

this report presents net failure rates; however, these rates are not appropriate for comparing failure rates across methods, populations, or subgroups of the population because they are affected by discontinuation rates for other reasons. Therefore, the analysis presented in this section will examine gross failure rates obtained from an associated single-decrement life table (ASDLT) in which all discontinuations for reasons other than failure are treated as censored observations. Gross failure rates are more appropriate for comparing failure rates across methods or subgroups because they represent the underlying rate of failure of the method and are independent of the discontinuation rates for other reasons (Moreno and Goldman, 1995; Curtis and Hammerslough, 1995).

Several definitions of contraceptive failure have been used in the literature (Trussell and Kost, 1987; Jejeebhoy, 1991). In the ZDHS, contraceptive failure is defined as any discontinuation that the respondent reports to be due to pregnancy while using the method. This definition of failure includes all pregnancies that occurred while the respondent considered herself to be using the method regardless of whether the method was being used correctly or consistently at the time pregnancy occurred. This definition corresponds to the use-failure definition most commonly cited in the literature. Use-failure rates represent the failure rates under the prevailing conditions of use and are usually the most appropriate for programme purposes.

Table 9 shows the 12-month gross failure rates and their 95-percent confidence intervals for each method. Failure rates are lowest for injectables (2 percent) and the pill (3 percent), slightly higher for condoms (6 percent) and highest for traditional methods (11 percent). The 12-month gross failure rates of both the pill and injectables are significantly lower than the corresponding failure rate of traditional methods, but the differences between the failure rates of the three modern methods are not statistically significant. This is partly due to the wide confidence interval associated with the condom failure rate which, in turn, is due to the small number of cases on which the condom failure rate is based.

Figure 5 Percent decomposition of 12-month discontinuation rates by status after discontinuation, according to method, Zimbabwe, 1994

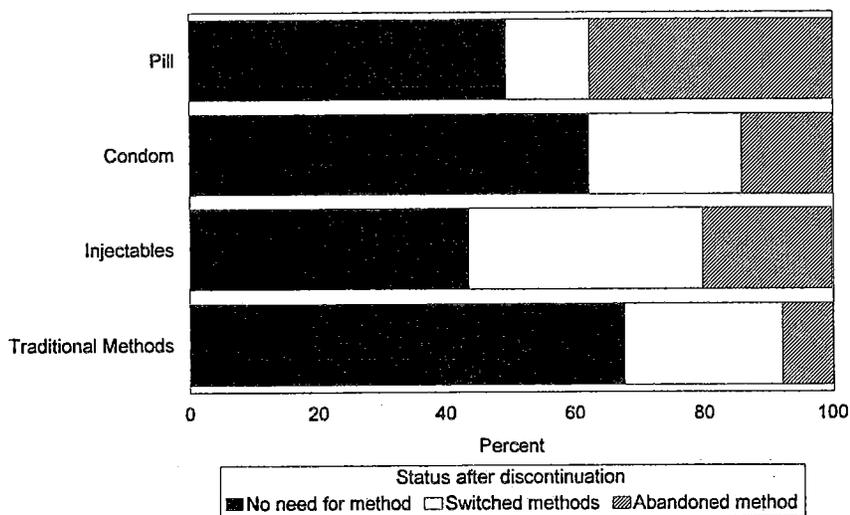


Table 8 Life table 12-month discontinuation rates for the pill by status after discontinuation and background characteristics, Zimbabwe, 1994

Background characteristic	Status after discontinuation			Total
	No need for contraception ¹	Switched to another method	Abandoned use	
Age				
Under 25	9.3	1.5	5.5	16.3
25-34	5.6	2.3	5.7	13.6
35-49	5.9	4.0	7.7	17.5
Contraceptive Intent				
Spacer	7.4	1.8	6.5	15.6
Limiter	3.4	2.7	3.4	9.5
Parity				
0-1	12.5	1.1	5.9	19.5
2	5.7	2.3	5.4	13.4
3	7.0	2.5	4.5	13.9
4 or more	4.6	2.5	6.5	13.5
Area of residence				
Urban	7.0	1.6	3.4	12.0
Rural	7.8	2.2	6.9	16.9
Province				
Manicaland	10.4	3.1	6.7	20.2
Mashonaland Central	7.5	0.4	7.4	15.3
Mashonaland East	8.2	2.1	6.5	16.8
Mashonaland West	7.4	0.4	5.5	13.3
Matabeleland North	*	*	*	*
Matabeleland South	*	*	*	*
Midlands	7.2	3.1	5.0	15.3
Masvingo	5.3	3.2	6.3	14.8
Harare	5.3	0.9	2.9	9.0
Bulawayo	*	*	*	*
Education				
None	6.5	0.6	8.6	15.8
Primary	7.2	2.4	6.2	15.8
Secondary or more	8.4	1.9	4.4	14.8
Total	7.6	2.0	5.8	15.4

¹ Discontinuation for the following reasons: contraceptive failure, desire to get pregnant, infrequent sex, subfecund, and separated/divorced.

Note: An asterisk indicates that a figure is based on less than 125 woman-months of exposure in the first month of the life table and has been suppressed.

Figure 6 Percent decomposition of 12-month pill discontinuation rates by status after discontinuation, according to selected demographic characteristics, Zimbabwe, 1994

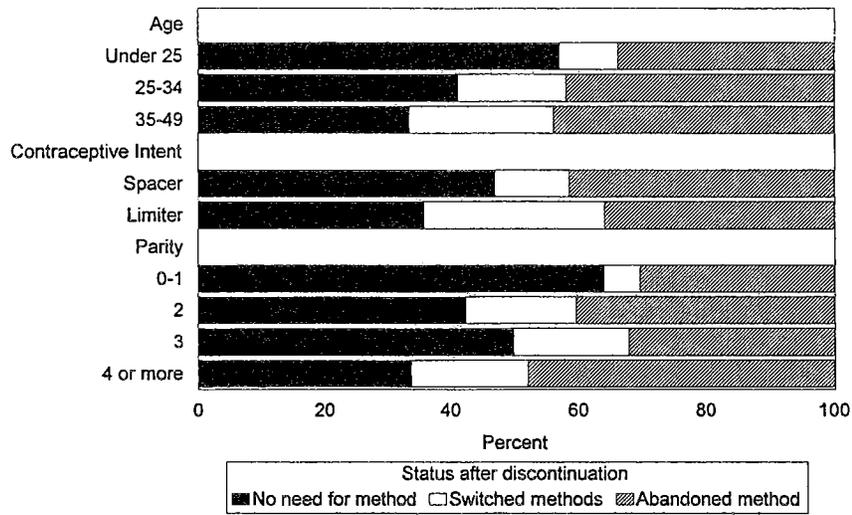


Figure 7 Percent decomposition of 12-month pill discontinuation rates by status after discontinuation, according to residence and education, Zimbabwe, 1994

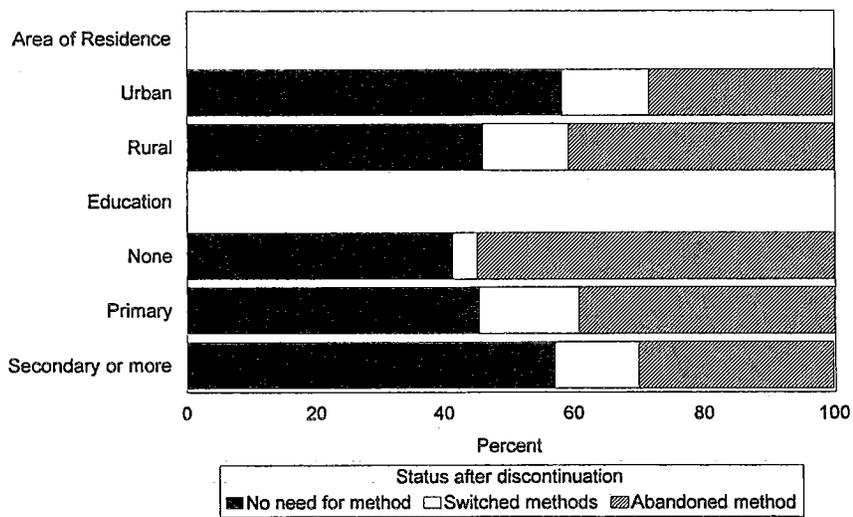


Table 9 Life table 12-month gross failure rates and 95-percent confidence intervals by method, Zimbabwe, 1994

Method	Failure rate (percent)	95-percent confidence interval	
		Lower bound	Upper bound
Pill	2.5	1.7	3.2
Condom	6.1	2.6	9.7
Injectables	1.5	0.0	3.8
Traditional methods	11.4	8.1	14.7
All methods (including sterilization)	3.9	3.1	4.7
All reversible methods	4.0	3.2	4.8

Table 10 displays the 12-month gross pill failure rates and their 95-percent confidence intervals by selected background characteristics. Although failure rates decline with age and are higher among spacers than among limiters, these differentials are not statistically significant. Likewise, the modest variation in the 12-month failure rate by area of residence, province, and education are not significant. Differentials in failure rates tend to be most pronounced for methods which have a large potential for user error (e.g., traditional methods). There is some scope for user error with pills in that users can forget to take them, but the lack of differentials in pill failure rates suggests that the quality of pill use in Zimbabwe is uniformly high across the subgroups examined.

Summary and Conclusions

The analysis presented in this report provides some useful insights into contraceptive discontinuation behaviour in Zimbabwe. The highest discontinuation rates are observed among condom users with 44 percent of them discontinuing within a year of starting to use the method. Over 25 percent of condom users discontinue within a year because they no longer need contraception (Table 7) suggesting that condoms are often used during periods of temporary contraceptive need. Over 15 percent of condom users discontinue within a year due to some problem with the method, while 10 percent of all condom users switched to another method within a year. This suggests that condoms are not perceived as desirable for long-term use by many users.

The pill is by far the most widely used method in Zimbabwe. Overall, 15 percent of pill users discontinue use within a year. Compared with other countries, this discontinuation rate is very low (Table 11). Among the countries presented in Table 11, Zimbabwe has by far the lowest 12-month pill discontinuation rate: less than half that of Indonesia which has the second lowest rate (33 percent). The 12-month discontinuation rate due to side effects is particularly low in Zimbabwe at 2 percent compared with over 12 percent in every other country except Indonesia. By 24 months, the discontinuation rate in Zimbabwe is still relatively low but is closer to that observed in other countries; the rate for Zimbabwe is 44 percent compared with, for example, 47 percent in Indonesia and 56 percent in the Philippines (Fathonah, 1996; Perez and Tabije, 1996).

Table 10 Life table 12-month gross failure rates and 95-percent confidence intervals for the pill by selected background characteristics, Zimbabwe, 1994

Background characteristic	Failure rate (percent)	95-percent confidence interval	
		Lower bound	Upper bound
Age			
Under 25	3.0	2.0	4.0
25-34	2.1	1.1	3.1
35-49	1.0	0.0	2.6
Contraceptive Intent			
Spacer	2.0	1.2	2.8
Limiters	1.1	0.2	2.1
Parity			
0-1	3.7	2.1	5.3
2	2.1	0.7	3.5
3	2.8	0.8	4.8
4 or more	1.5	0.5	2.5
Area of residence			
Urban	2.0	0.8	3.1
Rural	2.7	1.7	3.7
Province			
Manicaland	3.1	0.7	5.4
Mashonaland Central	2.5	0.1	4.9
Mashonaland East	2.4	0.4	4.3
Mashonaland West	3.3	1.1	5.5
Matabeleland North	*	*	*
Matabeleland South	*	*	*
Midlands	2.4	0.6	4.2
Masvingo	2.7	0.3	5.1
Harare	0.0	0.0	0.0
Bulawayo	*	*	*
Education			
None	2.6	0.4	4.8
Primary	2.2	1.2	3.2
Secondary or more	2.7	1.5	3.9
Total	2.5	1.7	3.2

Note: An asterisk indicates that a figure is based on less than 125 woman-months of exposure in the first month of the life table and has been suppressed.

It is not possible to determine from this analysis why the pill discontinuation rates are low in Zimbabwe. It is possible that women in Zimbabwe report pill discontinuation differently from women in other countries, for example, by omitting short breaks from pill use, but this is unlikely to explain all of the difference and there are several other plausible explanations. The pill is very widely established in Zimbabwe and it may be that women are comfortable with the method and find it easy and convenient to use. The CBD workers are believed to be highly motivated and the distribution of pills to women in their homes makes the method very accessible. The lack of discontinuation for side effects, which contrasts with the pattern seen in most other countries, may suggest that women have been adequately informed about side effects and are not concerned enough about them to

discontinue use. It is also possible that there has been less adverse publicity about the possible side effects of the pill in Zimbabwe than in some of the other countries presented in Table 11, which may make women in Zimbabwe less likely to attribute minor health problems they experience to the pill. Yet another possible explanation is that the historical focus of the family programme on the pill has left women with few other contraceptive options, either because other methods are not as widely or as easily available, or because women are much less comfortable with recently introduced methods such as implants and injectables and feel reluctant to try them. Pill users are much more likely to abandon use after discontinuation than to switch to another method which may indicate that lack of other contraceptive options is a factor in low pill discontinuation. If this is the case, pill discontinuation rates may rise as other methods become established due to increased method-switching.

Table 11 Twelve-month pill discontinuation rates by reason for selected countries, Demographic and Health Surveys, 1990-1994

Country and year	Reason for discontinuation					Total
	Contraceptive failure	Desire to get pregnant	Side effects	Method related reasons	Other reasons	
Sub-Saharan Africa						
Zimbabwe, 1994	2.3	3.9	2.0	5.3	2.0	15.4
Asia/Near East/North Africa						
Bangladesh, 1993-94	1.7	7.3	22.5	7.3	5.8	44.6
Indonesia, 1994	4.4	10.8	5.6	9.7	2.0	32.5
Philippines, 1993	5.8	7.6	12.7	13.0 ^a		39.2
Turkey, 1993	6.7	5.9	23.0	5.3	14.7	55.6
Latin America/Caribbean						
Northeast Brazil, 1991	7.1	6.7	20.4	5.9	12.0	52.1
Colombia, 1990	5.8	9.2	15.3	6.2	7.6	45.2
Dominican Republic, 1991	6.3	14.7	17.3	12.0	13.0	63.7
Paraguay, 1990	2.7	6.9	23.2	13.5	13.5	59.7
Peru, 1991-92	4.1	5.8	22.2	12.5	11.2	56.3

^a Includes method-related reasons and other reasons combined into a single "other" category.

Sources: Mitra and Al-Sabir (1996); Fathonah (1996); Perez and Tabije (1996); Enünlü and Doğan (1996); Ferraz (1994); Ordóñez (1994); Polanco (1994); Melián (1994); and Padilla (1994).

Injectables have recently been reintroduced in Zimbabwe and have been promoted as a long-term method. The 12-month discontinuation rate of this method is comparable with that of the pill, but the 24-month discontinuation rate is lower than that of the pill resulting in a much longer median duration of use. This finding suggests that women are using injectables for relatively long periods of time. However, there is no evidence of substantial switching from pills to injectables, at least within the first year of pill use, and very few women are using injectables (there are only 133 segments of injectable use in the sample used here). In addition, the 12-month discontinuation rate for injectables due to side effects is higher than that of any other method, although at 5 percent it is still relatively low.

As expected, the failure rate of the traditional methods is significantly higher than the failure rate of any of the modern methods; contraceptive failure is the main reason for discontinuation of traditional methods, followed by method-related reasons, particularly the desire for a more effective method. However, at 11 percent, the failure rate of traditional methods in Zimbabwe is at the lower end of the range of values observed in other countries (Moreno and Goldman, 1995) and most women who discontinue use of traditional methods switch to another method if they still need contraception.

Twelve-month pill failure rates typically seem to fall in the 5-10 percent range, although failure rates of 3 percent have been reported in Indonesia and Thailand (Moreno and Goldman, 1995). Therefore, the 12-month pill failure rate in Zimbabwe is also relatively low compared with most other countries. This low failure rate appears to suggest that most women in Zimbabwe use the pill correctly and consistently. The lack of differentials observed in pill failure rates, and the fact that in the 1994 ZDHS 80 percent of pill users had taken their pills in the correct order and 96 percent had taken a pill less than two days before the interview (CSO and MI, 1995) would seem to support this finding. However, as discussed earlier, the quality of data is always a concern in the analysis of contraceptive failure, and omission or misreporting of contraceptive failures cannot be ruled out.

Another factor that may contribute to the relatively low 12-month pill failure rate in Zimbabwe is that pills are often supplied to women postpartum resulting in an overlap between amenorrhoea, breastfeeding, and pill use (Boohene and Dow, 1987; Adamchak and Mbizvo, 1990). An overlap between pill use and postpartum infecundity will result in a downward bias in pill failure rates (Curtis, 1996). Curtis (1996) demonstrates that the bias in the 12-month failure rate due to overlap between pill use and postpartum amenorrhoea is generally small. However, Curtis (1996) also states that the resumption of menstruation may not be a good indicator of the resumption of exposure to the risk of pregnancy among pill users, because the combined pill induces bleeding at the end of the 21-day pill cycle which is likely to be interpreted as the resumption of menstruation. If the woman is still breastfeeding, the risk of conception may remain low for some time after the pill-induced resumption of menstruation, and the bias in the pill failure rate estimated by Curtis (1996) is likely to be an underestimate of the true bias. Given the relatively long durations of breastfeeding and the early postpartum initiation of contraceptive use in Zimbabwe, an overlap between pill use and postpartum infecundity may partly explain the low 12-month pill failure rate.

Given the overall low level of pill discontinuation, differentials in pill discontinuation tend to be relatively small. However, as expected, women who are using the pill to prevent future births have significantly lower discontinuation rates than women who are using it to space births. Rural pill users also experience significantly higher pill discontinuation rates than urban users; they are also more likely than urban women to abandon contraceptive use after discontinuation. The higher discontinuation rates among rural users apply for all reasons examined except desire for pregnancy. Educated users are equally likely to discontinue as uneducated users, but educated users are much less likely to abandon use after discontinuation than uneducated users. The higher rates of abandoning use among rural and uneducated women suggests that these women, in particular, have difficulty finding alternative contraceptive methods if they experience problems using the pill. However, it is unclear from this analysis whether this is due to limited availability or to lack of knowledge regarding alternative methods.

In summary, this analysis has provided some useful and interesting insights into contraceptive discontinuation in Zimbabwe. In general, contraceptive discontinuation rates are relatively low but the reasons for this are not yet clear. Hopefully, this research will be of interest to people in the field of family planning in Zimbabwe and will stimulate further analyses on this topic.

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Appendix A. Monthly Calendar of Events in the 1994 ZDHS

INSTRUCTIONS: ONLY ONE CODE SHOULD APPEAR IN ANY BOX. FOR COLUMNS 1, 3, AND 4 ALL MONTHS SHOULD BE FILLED IN.

INFORMATION TO BE CODED FOR EACH COLUMN

COL.1: Births, Pregnancies, Contraceptive Use

B BIRTHS
P PREGNANCIES
T TERMINATIONS

0 NO METHOD
1 PILL
2 IUD
3 INJECTIONS
4 IMPLANTS
5 DIAPHRAGM/FOAM/JELLY
6 CONDOM
7 FEMALE STERILIZATION
8 MALE STERILIZATION
9 SAFE PERIOD
A WITHDRAWAL
X OTHER

(SPECIFY)

COL.2: Discontinuation of Contraceptive Use

0 INFREQUENT SEX/HUSBAND AWAY
1 BECAME PREGNANT WHILE USING
2 WANTED TO BECOME PREGNANT
3 HUSBAND DISAPPROVED
4 WANTED MORE EFFECTIVE METHOD
5 HEALTH CONCERNS
6 SIDE EFFECTS
7 LACK OF ACCESS/TOO FAR
8 COST TOO MUCH
9 INCONVENIENT TO USE
F FATALISTIC
A DIFFICULT TO GET PREGNANT/MENOPAUSE
D MARITAL DISSOLUTION/SEPARATION
X OTHER

(SPECIFY)

Z DON'T KNOW

COL.3: Marriage/Union

X IN UNION (MARRIED)
0 NOT IN UNION

COL.4: Moves and Types of Communities

X CHANGE OF COMMUNITY
1 MAIN TOWN
2 OTHER URBAN AREA
3 RURAL AREA

		1	2	3	4		
12 DEC	01					01	DEC
11 NOV	02					02	NOV
10 OCT	03					03	OCT
09 SEP	04					04	SEP
1 08 AUG	05					05	AUG 1
9 07 JUL	06					06	JUL 9
9 06 JUN	07					07	JUN 9
4 05 MAY	08					08	MAY 4
04 APR	09					09	APR
03 MAR	10					10	MAR
02 FEB	11					11	FEB
01 JAN	12					12	JAN

12 DEC	13					13	DEC
11 NOV	14					14	NOV
10 OCT	15					15	OCT
09 SEP	16					16	SEP
1 08 AUG	17					17	AUG 1
9 07 JUL	18					18	JUL 9
9 06 JUN	19					19	JUN 9
3 05 MAY	20					20	MAY 3
04 APR	21					21	APR
03 MAR	22					22	MAR
02 FEB	23					23	FEB
01 JAN	24					24	JAN

12 DEC	25					25	DEC
11 NOV	26					26	NOV
10 OCT	27					27	OCT
09 SEP	28					28	SEP
1 08 AUG	29					29	AUG 1
9 07 JUL	30					30	JUL 9
9 06 JUN	31					31	JUN 9
2 05 MAY	32					32	MAY 2
04 APR	33					33	APR
03 MAR	34					34	MAR
02 FEB	35					35	FEB
01 JAN	36					36	JAN

12 DEC	37					37	DEC
11 NOV	38					38	NOV
10 OCT	39					39	OCT
09 SEP	40					40	SEP
1 08 AUG	41					41	AUG 1
9 07 JUL	42					42	JUL 9
9 06 JUN	43					43	JUN 9
1 05 MAY	44					44	MAY 1
04 APR	45					45	APR
03 MAR	46					46	MAR
02 FEB	47					47	FEB
01 JAN	48					48	JAN

12 DEC	49					49	DEC
11 NOV	50					50	NOV
10 OCT	51					51	OCT
09 SEP	52					52	SEP
1 08 AUG	53					53	AUG 1
9 07 JUL	54					54	JUL 9
9 06 JUN	55					55	JUN 9
0 05 MAY	56					56	MAY 0
04 APR	57					57	APR
03 MAR	58					58	MAR
02 FEB	59					59	FEB
01 JAN	60					60	JAN

12 DEC	61					61	DEC
11 NOV	62					62	NOV
10 OCT	63					63	OCT
09 SEP	64					64	SEP
1 08 AUG	65					65	AUG 1
9 07 JUL	66					66	JUL 9
8 06 JUN	67					67	JUN 8
9 05 MAY	68					68	MAY 9
04 APR	69					69	APR
03 MAR	70					70	MAR
02 FEB	71					71	FEB
01 JAN	72					72	JAN