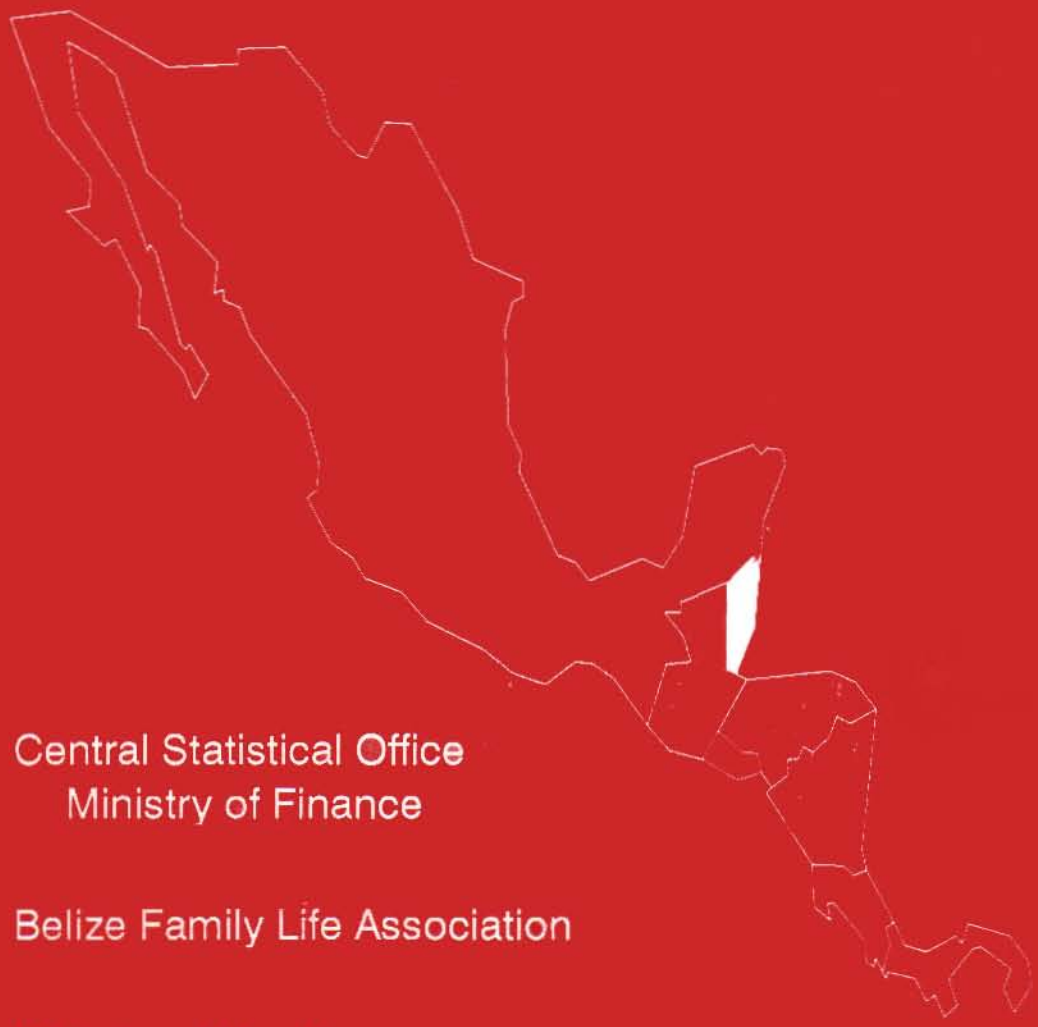
1991 Belize Family Health Survey
Final Report
May, 1992



Central Statistical Office
Ministry of Finance

Belize Family Life Association

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Division of Reproductive Health
Centers for Disease Control

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Preface

The 1991 Belize Family Health Survey was the first national sample survey designed to provide information on fertility, infant mortality, family planning, and the use of maternal and child health services in Belize. The survey was sponsored by the Belize Family Life Association (BFLA) and the Ministry of Health (MOH), in collaboration with the Breast is Best League of Belize. The implementing agency for the survey was the Central Statistical Office of the Ministry of Finance, with technical assistance from the Division of Reproductive Health, Centers for Disease Control (CDC), and funding from the United States Agency for International Development (AID). General areas covered in the survey were fertility and its determinants; attitudes towards childbearing; knowledge, use, and source of contraception, including reasons for nonuse of contraception and desire to use in the future; characteristics of women at risk of an unplanned pregnancy; use of and potential demand for surgical contraception; use of maternal and child health services; breastfeeding and weaning practices; immunization levels and the prevalence of diarrhea and acute respiratory illness among children less than 5 years of age; infant and child mortality; and knowledge of AIDS.

This report summarizes the findings of the survey. It was prepared by Richard Monteith, Paul Stupp, and Beth Macke, Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control, Atlanta, Georgia 30333, U.S.A., and Sandra Paredez, Central Statistical Office, Ministry of Finance, Belmopan, Belize.

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We would like to acknowledge all of the people who contributed to the various phases of the survey. The performance of such an investigation involves the participation of persons too numerous to mention here. There are some, however, who have played key roles in the development and implementation of the survey.

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Summary

Introduction

The 1991 Belize Family Health Survey was designed to examine fertility, child morbidity and mortality, contraceptive behavior, use of health services, and knowledge of AIDS in Belize. The survey was conducted by the Central Statistical Office (CSO) of the Ministry of Finance, with technical assistance from the Division of Reproductive Health, Centers for Disease Control. The United States Agency for International Development (AID) provided the funding for the survey. During fieldwork, which was conducted January 15 to February 19, 1991, 2,656 women 15-44 years of age were interviewed. A preliminary report was released by the Central Statistical Office in May, 1991 (Central Statistical Office et al., 1991). The Centers for Disease Control, with the assistance of the Central Statistical Office, prepared this report.

Fertility

The total fertility rate (TFR) estimated from the 1991 survey is 4.5. Differentials in fertility are in the expected direction, with the largest differentials being between urban and rural areas (almost 2 children per woman), levels of education (with a difference of nearly 3 children between the lowest and highest educational levels), and socioeconomic levels (almost 4 children between the lowest and highest levels). The highest TFR's are for women who live in low socioeconomic households (6.7), measured by the number of amenities reported to be in the household (see Appendix A), and for women of low educational attainment (6.0). The lowest TFR's are for women who live in high socioeconomic households (2.7) and working women (2.9).

Survey data show that moderately sized families are much desired in Belize. However, on average, women with children have already exceeded their preferred family size of 3.4 children. The total fertility rate is greater than the reported ideal family size. This is due to the excess fertility of older less educated women.

Knowledge and Use of Contraception

Knowledge of contraception is high in Belize, as 95 percent of women 15-44 years of age had knowledge of at least one modern method. However, there was a wide variation in knowledge of individual methods. The best known methods were oral contraceptives, female sterilization, and injectables, while the least known methods included diaphragms, withdrawal, and the Billings method. Rural women, women of low educational attainment, and women whose ethnic group is either Maya or Ketchi were the least familiar with contraceptive methods.

Forty-seven percent of married women or women living in consensual unions (referred to as "married women" in this report) were found to be using contraceptive methods at the time of the survey. The most prevalent method used by married women in Belize is female sterilization, which accounts for 40 percent of all contraceptive use. The second and third most prevalent methods are oral contraceptives and injectables.

Urban areas of the country have the highest contraceptive prevalence rate with 55 percent of married women reporting current use compared to 33 percent of married women living in rural areas. As age and number of living children of the respondents increase, so does the prevalence of contraceptive use. By the time married women are 30 years of age or older and/or have two or more children, more than 50 percent are using some form of contra-

ception. The use of reversible methods declines with an increase in age and number of living children as an increasing percentage of women rely on sterilization. Female sterilization accounts for 76 percent of total use among women aged 40-44.

Use of contraceptive methods was found to be directly associated with educational attainment and socioeconomic status. Differences in contraceptive prevalence were also seen according to ethnic group and principal language spoken in the household. Creole women reported the highest prevalence (53 percent) while the Maya/Ketchi reported the lowest prevalence (25 percent). The highest prevalence was also reported by married women living in households where English is the principal language (62 percent), while the lowest prevalence was reported by married women who live in households where Maya is the principal language (10 percent).

Two thirds of the married women who were using contraception at the time of the survey reported that they were using to limit their family size. By the time women are 25-29 years of age or have three living children, over half want to limit their childbearing. Interestingly, half of the users of rhythm, the Billings method, vaginal methods, and condoms were using these methods to limit family size.

The median age and mean number of living children at the time of a woman's first contraceptive use was 27.9 years of age and 3.8 living children.

Source of Contraception

The most important suppliers of contraceptives (excluding withdrawal and natural methods) in Belize in 1991 were the Ministry of Health (41 percent), pharmacies (31 percent), private clinics and hospitals (13 percent), and the Belize Family Life Association (BFLA), the International Planned Parenthood Federation affiliate in Belize (11 percent). The Ministry of Health was the principal source of sterilization in the country, while pharmacies were the major suppliers of oral contraceptives and condoms. The BFLA was the principal source for users of injectables, and private clinics/-hospitals were the principal suppliers of IUD's.

Reasons for Nonuse of Contraception and Desire to Use in the Future

The most important reasons for not using contraception were reasons related to pregnancy, fecundity, and lack of sexual activity, which were given by 59 percent of married nonusers. The major reasons for nonuse not related to pregnancy and sexual activity were fear of side effects from the use of contraception (9 percent), dislike of contraception (8 percent), and lack of knowledge of contraceptive methods (8 percent). Less than one percent of nonusers stated they were not using because of religious reasons.

Fifty-four percent of fecund nonusers want to use a method of contraception in the future. The proportion wanting to use in the future was highest among nonusers living in urban areas, among nonusers less than 30 years of age, and among nonusers with fewer than four living children. Of the women who desire to use in the future, three fourths knew where to obtain contraception. The most frequently desired methods were oral contraceptives, female sterilization, and injectables. The most frequently mentioned sources of contraception included pharmacies, government facilities, and the BFLA.

Risk of an Unplanned Pregnancy

The survey data indicate that certain segments of the population are at greater risk of an unplanned pregnancy than others. Women defined as at risk of an unplanned pregnancy are fecund, sexually active women, who were not pregnant at the time of the survey, did not desire to become pregnant, and were not using a method of contraception. Overall, 17 per-

cent of all women aged 15-44 are at risk of an unplanned pregnancy, or "in need of family planning services." Fifty-four percent of the women at risk live in urban areas. Slightly more than 88 percent are married or live in a consensual union, 78 percent have a primary school education or less, two thirds have three or more children, and 57 percent are under the age of 30. Thus, the survey data indicate that the family planning program of Belize should be oriented toward young, high parity, married, and less educated women who live in both urban and rural areas.

Surgical Contraception

Female sterilization is the most prevalent method of contraception in Belize, accounting for 40 percent of all contraceptive use. The average age at sterilization is 29.7 years, and 71 percent of sterilized women have four or more living children. Tubal ligation is the first method of contraception for 38 percent of sterilized women and for 58 percent of sterilized women living in rural areas. Ninety-three percent of sterilized women expressed satisfaction with their decision to have the operation, with satisfaction being somewhat lower (85 percent) for women who were 15-24 years old when they were sterilized. Among fecund married women who did not want any more children, 38 percent said they were interested in sterilization.

Use of Maternal and Child Health Services

Married women who had one or more live births during the five years prior to the survey interview were asked which maternal and child health services they had received. Ninety-five percent of the women reported that they received prenatal care while pregnant, but only 40 percent reported receiving a postpartum checkup. Interestingly, only 58 percent of the women took their newborns for a checkup. Only 34 percent of the women used all three services. Conversely, only 2 percent of the women did not use any of the MCH services.

More than three fourths of deliveries took place in either a government or private hospital. Eight percent of the hospital deliveries were Cesarean. Overall, 21 percent of the children were delivered at home, with 40 percent of rural women and 46 percent of the Maya and Ketchi reporting home deliveries. Sixty percent of all deliveries were attended by a nurse midwife while an additional 17 percent were attended by physicians. One fifth of the deliveries were attended by a traditional birth attendant.

Breastfeeding and Weaning Practices

Overall, 90 percent of children under 24 months of age were reported to have ever been breastfed. the mean duration of breastfeeding is 12 months. The main reasons for never breastfeeding is the infant's refusal to suckle (44 percent) and the mother's inability to nurse (18 percent). Only 24 percent of infants were breastfed exclusively for the first three months, and 41 percent of infants were predominantly breastfed for the first three months of life (i.e. they were given only the liquids water, sugar water, juice, and tea in addition to breastmilk).

Immunization Levels

Levels of completed primary immunization ranged from 81 percent for DPT to 89 percent for BCG. Levels are 8 percent to 10 percent higher when only children with vaccination certificates are considered. Overall vaccination coverage in Belize for children 9 to 59 months of age is 75 percent. Only 47 percent of children are completely immunized before their first birthday. These findings indicate that, although Belize is close to achieving levels of immunization that are necessary to control the transmission of disease, children are vaccinated later than recommended.

Prevalence of Diarrhea and Its Treatment

Nearly 11 percent of children less than five years of age had a diarrheal illness during the two weeks prior to interview. Prevalence of diarrhea was highest in rural areas and among children 6 months to 23 months of age. Children living in crowded conditions, whose sanitary services were either a pit latrine or none, and whose source of drinking water was unprotected were more likely to have had diarrhea than children living in better conditions. Overall, 83 percent of children with diarrhea were reported to have been treated for their recent episode of diarrhea. Oral rehydration therapy (packets of oral rehydration salts and/or homemade salt and sugar solutions) was the primary method of treatment. Twenty-four percent of the children were treated with antibiotics, which is generally not an indicated treatment since they are not effective against viruses, the major cause of diarrhea. Forty-four percent of the mothers reported that they continued feeding their children a normal diet during their recent diarrheal illness and 29 percent substituted soft foods. Overall, only 56 percent of the mothers increased liquids.

Prevalence of Acute Respiratory Illness and Its Treatment

Forty percent of children under 5 years of age were reported to have presented symptoms associated with ARI in the two weeks prior to interview. The percentages of children with signs of Acute Respiratory Illness (ARI) were highest among those living in urban areas, children of mothers with lower educational attainment, and among children less than two years of age. Mild episodes of respiratory illness were the most prevalent form of ARI reported. Either at home or in a health facility, eighty-six percent of the children that presented ARI symptoms were treated. The most common treatment given to children included expectorants, unspecified pills and/or syrups, and aspirin. Thirty percent of the children were treated with antibiotics, an inappropriate therapy for most cases of ARI since over 90 percent of ARIs are viral in origin.

Infant and Child Mortality

Infant mortality for the period immediately before the survey is estimated to be 42 deaths for every 1000 live births. Mortality occurring to children before reaching their fifth birthday is estimated at 53 deaths per 1000 live births.

Knowledge of AIDS

Knowledge of AIDS is almost universal in Belize, as 97 percent of all women aged 15-44 reported that they have heard of AIDS. However, fewer rural women (92 percent) than urban women (99 percent) had heard of AIDS. While more than 90 percent of the women knew of the correct modes of transmitting AIDS, over 50 percent believed that AIDS can be transmitted by giving blood or by being bitten by an insect. Of the women who have heard of AIDS, one third believe that they are at some risk of getting AIDS. A higher percentage of urban women (37 percent) than rural women (25 percent) believe that they are at risk. Fifty-three percent of women in visiting partner relationships felt that they were at some risk of getting AIDS. Of the women who perceive themselves to be at either great or some risk of getting AIDS, only 2 percent were found to be currently using condoms.

1. Introduction

Belize is one of the countries in Latin America that was not included in the World Fertility Survey, the Contraceptive Prevalence Survey project, or the Demographic and Health Survey program during the 1970's and 1980's. As a result, data on contraceptive prevalence and the use of maternal and child health services in Belize has been limited. The 1991 Family Health Survey was designed to provide health professionals and international donors with data to assess infant and child mortality, fertility, and the use of family planning and health services in Belize.

The objectives of the 1991 Family Health Survey were to:

- obtain national fertility estimates;
- estimate levels of infant and child mortality;
- estimate the percentage of mothers who breastfed their last child and duration of breastfeeding;
- determine levels of knowledge and current use of contraceptives for a variety of social and demographic background variables and to determine the source where users obtain the methods they use;
- determine reasons for nonuse of contraception and estimate the percentage of women who are at risk of an unplanned pregnancy and, thus, in need of family planning services; and
- examine the use of maternal and child health services and immunization levels for children less than 5 years of age and to examine the prevalence and treatment of diarrhea and acute respiratory infections among these children.

Ethnicity in Belize

Although small in size, Belize is rather unique within Central America because of its ethnic diversity. Formerly British Honduras, Belize obtained its independence from Great Britain in 1981. It has a current population just under 200,000 people and is comprised of four major ethnic groups: Creoles, Mestizos, Garifuna, and Maya/Ketchi. The Creoles are of mixed African and European ancestry. The Mestizos, primarily a mixture of Spanish settlers and Native Americans (Grant, 1976:16), have immigrated to Belize over the past two centuries. A large number of Mestizos have also immigrated to Belize during the past twenty years as a result of civil conflicts in neighboring Central American countries (McCommon, 1989:93-94; Everitt, 1984). The earlier Mestizo immigrants have become well integrated into the economy and occupy a class position similar to that of the Creoles. The Mestizos who came to Belize within the past 20 years are primarily agricultural workers or unskilled laborers.

The Garifuna, or Black Carib, are a mixture of African and Carib Indians. They started out in St. Vincent but were transported forcibly by the British in 1796 to Roatan, an island off the coast of Belize (Kerns, 1985:19). From there, the Garifuna settled in both Honduras and Belize. Today the Garifuna of Belize live in towns and are primarily involved in fishing and teaching.

The various native American groups which we will refer to interchangeably as Mayas or Maya/Ketchi have been on Belizean soil the longest—as early as 1500 B.C. The Maya were devastated by conflicts and diseases brought to the New World by Spanish explorers in the 16th century and more recently by British logcutters several hundred years later

(Bolland, 1977 :17-24). Today, the term "Maya" actually refers to several groups of Indians. One is the Mopan Maya, some of whom migrated from Guatemala, and the Ketchi Indians who also migrated from Guatemala. Currently, the Maya/Ketchis live mostly in the rural areas of Belize and are involved in farming. The Maya/Ketchis marry primarily within their own communities (Dobson, 1973:252-255), as do the Mestizos.

The official language of Belize is English, which is taught in all public schools. However, each ethnic group speaks its own native language. The Creoles speak Creole, the Garifuna speak Garifuna, the Mestizos speak Spanish, and the Maya/Ketchi speak Maya/-Ketchi. The Maya/Ketchis and the Mestizos are less likely than the Creoles and Garifuna to speak English and Creole, the two principal languages of commerce in the country.

2. Methodology

The 1991 Belize Family Health Survey was an area probability survey with two stages of selection. The sampling frame for the survey was the quick count of all households in the country conducted in 1990 by the Central Statistical Office in preparation for the 1991 census. Two strata, or domains, were sampled independently: urban areas and rural areas. In the first stage of selection for the urban domain, a systematic sample with a random start was used to select enumeration districts in the domain with probability of selection proportional to the number of households in each district. In the second stage of selection, households were chosen systematically using a constant sampling interval (4.2350) across all of the selected enumeration districts. The enumeration districts selected for the rural domain were the same as those that had been selected earlier for the 1990 Belize Household Expenditure Survey. The second stage selection of rural households was conducted the same way it was for the urban domain but used a constant sampling interval of 2.1363. In order to have a self-weighting geographic sample, 3,106 urban households and 1,871 rural households were selected for a total of 4,977 households.

Because the Central Statistical Office was involved in other projects, namely an on-going Household Expenditure Survey and preparations for the national census scheduled to begin in May 1991, the time allocated for implementing and completing this survey was extremely limited. Thus, pretesting of the questionnaire and training of supervisors and interviewers were completed in just 10 days. Normally, for a survey of this magnitude and complexity, two weeks are set aside for training and three months for field work. Originally, only three weeks were allocated for fieldwork, but after the second week of fieldwork it was extended to five weeks. The accelerated schedule for fieldwork essentially eliminated the possibility of providing feedback to field supervisors and interviewers on inconsistencies and omissions found in questionnaires at the data entry point. Consequently, extensive editing of the survey data set was required following fieldwork.

Only one woman aged 15-44 per household was selected for interview. Each respondent's probability of selection was inversely proportional to the number of eligible women in the household. Thus, weighting factors were applied to compensate for this unequal probability of selection. In the tables presented in this report, proportions and means are based on the weighted number of cases, but the unweighted numbers are shown.

Fieldwork was conducted from January 15 to February 19, 1991. Of the 4,977 households selected, 4,566 households were visited (Table 2-1). Overall, 8 percent of households could not be located, and 7 percent of the households were found to be vacant. Less than 3 percent of the households refused to be interviewed. Fifty-five percent of sample households included at least one woman aged 15-44. The bottom panel of Table 2-1 shows that complete interviews were obtained in 94 percent of the households that had an eligible respondent, for a total of 2,656 interviews. Interview completion rates did not vary by residence.

Characteristics of Currently Married Respondents

Table 2-2 summarizes the characteristics of the 1,672 currently married respondents aged 15-44, by ethnic group. In this and subsequent tables, language refers to the language usually spoken in the household. The linguistic diversity of the ethnic groups is important and varies on a homogeneity-diversity continuum

with the Creoles and Mestizos being the most homogenous and the Garifuna and the Maya/Ketchi being the most diverse. For example, Creoles primarily speak Creole in their households and Mestizos speak Spanish. In contrast, almost an equal percentage of Garifunas and Maya/Ketchis speak the language native to their ethnic group or another language. While Creole is the second most spoken language of the Garifunas, Spanish is the second most spoken language of the Maya/Ketchi. Since most health services in Belize are provided by English or Creole speakers, Mestizos and the Maya/Ketchi may have the greatest difficulty in obtaining health care. If language is a factor, then the Garifuna and the Creoles may be similar in terms of their use of health services as should the Mestizos and the Maya/Ketchi.

Area of residence can also be a factor in obtaining health services. The tropical terrain and lack of roads, especially all-weather roads, in rural areas may act as obstacles to rural women in obtaining health care. The majority of the Maya/Ketchi (79 percent) live in the rural areas of Belize. Almost half (45 percent) of the Mestizos live in rural areas. Eighty-three percent of the Creoles and nearly three fourths of the Garifuna live in urban areas. If residence is a barrier to obtaining health care in Belize, then this would affect the Maya/Ketchi the most and the Mestizo population to a somewhat lesser extent.

The Creole are the most educated of all the ethnic groups, with 88 percent having had more than eight years of formal education. They are followed by the Garifuna, of which 85 percent have achieved eight or more years of education. In contrast, only 48 percent of the Mestizos and 38 percent of the Maya/Ketchi reported having eight or more years of education. Since education is positively correlated with the utilization of maternal and child health services, the Mestizos and the Maya/Ketchis again may be at the greatest disadvantage in terms of health care utilization. Figure 2-1 gives the distribution of women by educational level and age. It can be seen that younger women tend to have higher levels of educational attainment.

Thirty-one percent of the Mestizos and nearly 10 percent of the Maya/Ketchi reported that they were born outside of Belize. The survey did not determine their legal status in Belize or how recently they had immigrated. Guatemala and El Salvador were the principal countries of birth among the Mestizos who were born outside of Belize, while Guatemala and Mexico were the principal countries of birth among the Maya/Ketchi.

Two to three times as many of the Creole and Garifuna women who were interviewed reported that they have jobs for which they are paid in cash or in kind compared to Mestizos and the Maya/Ketchi.

The majority of Mestizos and Garifuna and 54 percent of the Maya/Ketchi reported that they were Catholic. In contrast, more than six out of ten Creoles stated that they were Protestant.

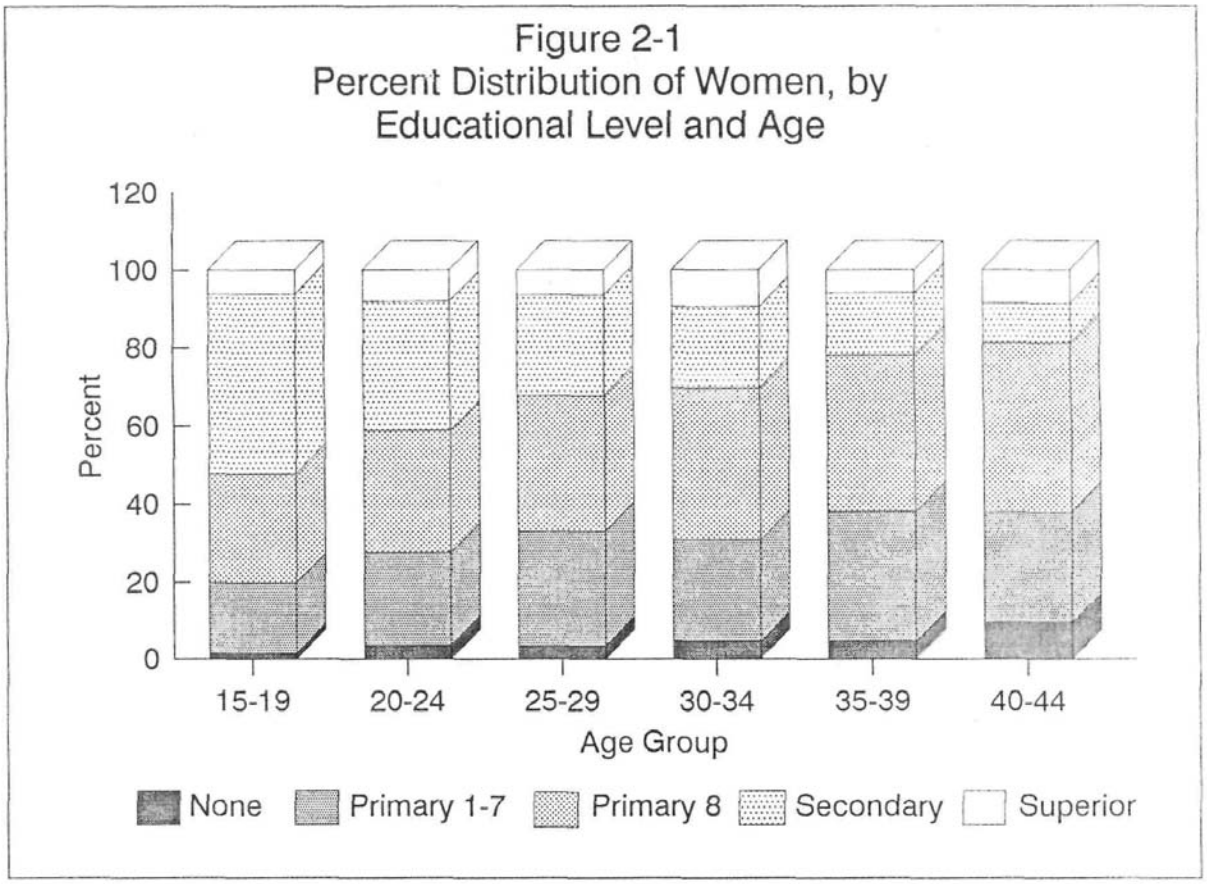


Figure 2-1
Percent Distribution of Women, by
Educational Level and Age
120
100
80
60
40
20
0
Percent
15-19
20-24
25-29
30-34
35-39
40-44
Age Group
None
Primary 1-7
Primary 8
Secondary
Superior

DMSTU12

Table 2-1

Belize: Interview Status, by Residence
1991 Family Health Survey
(Percent Distribution)

Interview Status	Total	Residence	
		Urban	Rural
Household Selection			
Eligible respondent identified	55.4	57.4	52.0
No eligible respondent	23.5	23.2	24.0
Household not located/visited	8.0	7.8	8.4
Vacant household	7.3	4.9	11.4
Refusal	2.6	3.3	1.4
Resident not home	1.5	1.4	1.7
Other	1.5	1.9	1.0
Total	100.0	100.0	100.0
No. of Households	(4,977)	(3,106)	(1,871)
Individual Selection			
Completed interview	94.0	93.6	94.8
Individual refusal	2.8	2.7	2.9
Respondent not home	0.8	0.6	1.3
Other	2.3	3.1	0.9
Total	100.0	100.0	100.0
No. of Possible Respondents	(2,824)	(1,841)	(983)
No. of Complete Interviews	(2,656)	(1,724)	(932)

NOTE: Totals in this and subsequent tables may not equal 100 percent due to rounding.

Table 2-2

Belize: Percent Distribution of Characteristics
of Currently Married Women Aged 15-44, by Ethnic Group

	Ethnic Group			
Selected Characteristics	Creole	Mestizo	Garifuna	Maya/ Ketchi
Household Language				
English	8.1	2.9	4.2	3.5
Creole	88.1	11.3	46.4	7.5
Spanish	3.8	85.8	3.6	41.0
Garifuna	0.0	0.0	45.8	2.0
Mayan	0.0	0.0	0.0	46.0
Rural Residence				
Yes	16.9	45.5	26.2	79.5
No	83.1	54.5	73.8	20.5
Age				
15-24	25.7	28.1	26.2	37.0
25-34	47.4	43.5	47.6	37.0
35-44	26.9	28.3	26.2	29.0
Immigrant				
Yes	1.7	31.1	7.7	9.5
No	98.3	68.9	92.3	90.5
Currently Working				
Yes	36.9	15.4	35.3	11.0
No	63.1	84.6	64.7	89.0
Roman Catholic				
Yes	38.2	65.0	85.1	54.0
No	61.8	35.0	14.9	46.0
Total	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(N=474)	(N=890)	(N=137)	(N-171)

3. Fertility

This chapter is concerned with describing levels, trends, and differentials in fertility in Belize. The first section presents estimates of fertility for the five years before the 1991 survey. Age-specific fertility rates are presented for different population subgroups. The second section presents estimates of marital fertility in the five years before the survey, based on the reporting of ever-married women. The third section deals with retrospective fertility, describing the cumulative childbearing experience of women during their lifetimes. The fourth section deals with the timing of marriage and duration of breastfeeding, which are the two major non-contraceptive determinants of fertility. The other major determinant of fertility, use of contraception, is dealt with at length in Chapter 5. The fifth section of this chapter deals with the planning status of the last pregnancy, current pregnancy intentions, and desire for more children.

3.1 Levels and Differentials

For each woman interviewed in the 1991 survey, dates of up to 14 live births were recorded. This information can be used to calculate age-specific fertility rates for periods of time prior to the survey. Table 3-1 shows the number of births, classified by age of the mother at each birth, woman-years of exposure, and age-specific fertility rates (ASFRs) for the period February, 1986 - January, 1991. The estimated Total Fertility Rate (TFR) is 4.5, which can be interpreted as the average number of children that would be born to a woman over her lifetime if she experienced the age-specific rates for this five year period.

Table 3-2 shows differentials in the ASFRs and TFR by residence (urban/rural), level of education, number of household (HH) amenities (see Appendix A), ethnicity, religion, and economic activity of the mother. Differentials by residence and education are seen in Figures 3-1 and 3-2. Differentials are in the expected direction, with the largest differentials between urban and rural areas (almost 2 children per woman), by level of education (with a difference of 2.8 children between lowest and highest education levels), and by number of household amenities (with a difference of 4 children). There are also sizable differentials between ethnic groups (3.6 children per woman for Creoles, 4.8 for Mestizos, and 5.4 for "Other" which includes the Garifuna on the coast and the Maya/Ketchi in the interior). The highest TFR's are for women reporting no education (6.0), and for women living in households with fewer than 3 amenities (6.7). The lowest TFR's are for women with secondary or higher levels of education (3.2), women who live in households with at least 8 of 10 selected amenities (2.7), and for women who were working at the time of the survey (2.9).

According to Table 3-2, the modal age group of childbearing is at ages 20 to 24. This is true for virtually all subgroups of women, and is consistent with early marriage patterns, usually before ages 22 or 23, and the initiation of contraception by married women only after having several children in the first three to five years of marriage. The only exceptions to this general pattern are women working outside the home, for whom the modal age group of childbearing is at ages 25 to 29. This indicates greater delays than typical in age at marriage for these women.

3.2 Marital Fertility

Since most childbearing in Belize takes place within marriage or consensual unions, it is useful to consider fertility for married women only. As used here, the term marriage includes women in legal and consensual unions. Since the survey provides information on the

date of first union for women who have ever been in a union, it is straightforward to calculate marital fertility rates by duration since first union. Table 3-3 shows the number of births and woman-years of exposure classified by duration since first union, and duration-specific marital fertility rates for the period from February 1986 to January 1991. It also shows a total marital fertility rate (TMFR) of 5.5, which represents the average number of children that would be born to a group of women who were married and who over their lifetimes experienced the duration-specific fertility rates shown in Table 3-3.

Some caveats should be noted regarding the denominators used to calculate these duration-specific rates. The denominators are not adjusted to take into account the effects of divorce, widowhood, or separation. The rates are therefore based on the assumption that all ever-married women stay married throughout their reproductive ages, which makes the rates lower than if divorce, widowhood, and separation were taken into account. Since only women under age 45 were interviewed, the only women contributing exposure at the later marriage durations were those who married very young. The rates at the later durations are therefore higher than would be the case if older post-menopausal women had also been included in the denominators for the duration-specific rates. The inclusion of divorced, widowed, and separated women and the exclusion of post-menopausal women in the denominators are to some extent off-setting factors in the calculation of these marital fertility rates.

Table 3-4 shows differentials in marital fertility for the same regional and socioeconomic variables as is shown for all women in Table 3-2. The differentials are very similar to those already noted for overall fertility, with the greatest differentials being between urban and rural areas, low and high socioeconomic levels, and between working and non-working women. The similarity of the direction and size of the differentials for total fertility and total marital fertility among all these different groups of women indicates that fertility differentials are due primarily to differentials in the control of fertility within marriage. The fertility-reducing effect of young women delaying marriage until after menarche is fairly uniform for the various population subgroups.

It is noteworthy that fertility within marriage starts very high, with 35.3 percent of all childbearing taking place within the first five years after union; thereafter childbearing consistently drops off as duration since the first union increases. Table 3-4 also shows that those groups of women with a lower TMFR initiate childbearing at somewhat lower levels of fertility and that their fertility declines more rapidly with the passage of time than is the case for the higher TMFR groups. For example, urban marital fertility is 81 percent of rural marital fertility during the first ten years after the first union but later drops to 47 percent and is 28 percent of the rural levels at successive durations of 10-14 and 15-19 years, respectively. This indicates greater control of fertility after childbearing has begun by the lower TMFR groups.

3.3 Retrospective Fertility

The previous sections have described recent fertility in the five years before the 1991 survey. This section reports on total cumulative fertility to women over their lifetime. Table 3-5 shows the average number of children born per woman, by age at the time of the survey, for various background characteristics of the women. In general, it illustrates that the differentials seen for recent fertility for the 1986-1991 period (see Table 3-2) coincide with differentials in retrospective fertility for actual cohorts of women. Women 40 to 44, who have essentially completed their childbearing, all experienced considerably higher fertility than is reflected in the period total fertility rates estimated for 1986-1991. This indicates that fertility has been declining for women in all educational and socioeconomic subgroups,

as well as for women in different regions of the country. Figure 3-3 shows cumulative fertility by age for the different ethnic groups

Table 3-6 provides a more detailed look at retrospective fertility for women interviewed in the 1991 survey by showing the percent distribution of number of children ever born, categorized by age at time of the survey. The upper panel gives figures for all women, while the lower panel gives figures for women currently in a union. Overall, 33.5 percent of women had not begun childbearing at the time of the survey, whereas only 7.7 percent of women currently in a union had not. Among women 40 to 44, 56 percent of all women and 58 percent of those in a union have had six or more children.

3.4 Nuptiality

Age at marriage and duration of breastfeeding are two demographic variables that can potentially play a significant role in reducing overall fertility levels independent of the effects of conscious fertility control. Each of these variables acts by reducing the proportion of the time from menarche to menopause, approximately ages 15 to 49, that a woman may become pregnant. If female sexual activity is confined primarily to marriage, marrying later shortens a woman's effective reproductive age span so that she is likely to have fewer births. It also slows the rate of population growth by increasing the mean age of childbearing, which increases the doubling time of a population. Breastfeeding for longer periods of time lengthens the time after each birth before ovulation and menstruation resume. The extent of increase in the postpartum anovulatory period due to breastfeeding depends on the frequency and intensity of breastfeeding and the child's age when supplementary foods are introduced.

Table 3-7 and Figure 3-4 give the percent distribution of women by marital status, for selected socioeconomic and demographic variables. Although few women (22 percent) enter unions during the teenage years, two thirds (68 percent) of women 20 to 24 years old have entered a union. The overall proportion single (i.e., never married) is less for women living in rural areas, for those with lower educational levels, for the Mestizos and Maya/Ketchi and for those reporting no religion. Since marriage is nearly universal in Belize, this is primarily a function of variations in the age at marriage for these subgroups of the population. Consensual unions, as opposed to formal marriages, are most common for the Garifuna (31 percent) and visiting relationships for the Creoles (10 percent). Widowhood is rare, except for women 40 and over. Only 2.4 percent of women are divorced or separated, with somewhat higher proportions among women in urban areas (3.1 percent) and those who work (4.2 percent).

Table 3-8 shows the percent of women whose first union was before selected ages, according to current age at time of the survey. For those aged 25 and above, there has been little change in the age of entry into marriage, except the proportion marrying before age 18 has declined slightly from 34.5 to 30.7 percent. The median age at marriage is almost constant for these cohorts of women, varying between 19.9 and 21.0 years.

Table 3-9 shows the median age at first union and the singulate mean age at marriage (SMAM). The median is calculated as a life table median for all women ages 15-44, in which never married women contribute exposure at ages up to the age at which they were interviewed. Notably, there were 134 ever-married women (5 percent) for whom the date of first union was not reported, and these women are excluded from the calculations. The SMAM is a period estimate of the average number of years of single life lived by those who eventually marry and has been included here because it is not affected by the non-reporting of date of first union. From this table it is clear that there is greater marital delay by urban women, more educated women,

upper socioeconomic status women, the Creoles and Garifuna, and women who work.

3.5 Breastfeeding

Table 3-10 shows estimates of the mean duration of breastfeeding. These means have been calculated from current status data on the proportion of live births in the past five years still being breastfed, classified by current age in months. Retrospective information on the age at which a child is weaned is typically inaccurate and can result in biased estimates of the duration of breastfeeding (Trussel et al, 1992). Current status data are therefore used for these estimates. The overall mean is 11.7 months. There is considerably lengthier breastfeeding by women in rural areas (4.7 months more than urban areas), but the differentials by other characteristics are not as pronounced, but larger differentials are associated with less education, lower socioeconomic status, and ethnic group. In all cases, fertility is actually lower among those groups of women who breastfeed for shorter durations, indicating that conscious use of family planning has more than compensated for the potential contraceptive effect of more prolonged breastfeeding.

3.6 Fertility Preferences

Insight into the fertility desires of a population is important for predicting future fertility. In this section, planning status of last pregnancy, current pregnancy intentions, and desire for more children are examined.

Planning Status of Last Pregnancy

All married women aged 15-44 who had been pregnant at least once during the last five years (including those that were currently pregnant) were asked two questions about the planning status of their last pregnancy: "When you became pregnant the last time, did you want to become pregnant?" If not, "Was it that you wanted no more children, or that you just wanted to wait longer before another pregnancy?" Based on the answers to these questions, each woman's last pregnancy was classified as either "planned," "mistimed," "unwanted," or "unknown." Planned pregnancies were defined as those that were desired; mistimed as those that were desired but at some time in the future; and unwanted as those that were not desired, even at a future time. Using this scheme, the mistimed and unwanted pregnancies can be combined as an estimate of unplanned pregnancies. It should be noted that women may rationalize the number of children they have, and consequently, be reluctant to state that a given pregnancy was unwanted. Thus, the data shown on unwanted pregnancies probably represents a minimum value.

Based on these classifications, less than two thirds (64 percent) of the respondents' most recent pregnancies were reported as planned, 19 percent as mistimed, and 13 percent as unwanted (Table 3-11). Three percent of the pregnancies could not be classified. Thus, 32 percent of recent pregnancies were unplanned.

The proportion of pregnancies that were reported to have been planned did not vary appreciably by place of residence. For women who reported that their last pregnancy was unplanned, a higher proportion of women in each domain said their pregnancies were mistimed rather than unwanted.

In general, the proportion of recent pregnancies that were planned was inversely associated with age and number of living children. With one exception, over 60 percent of women in each ethnic group reported that their last pregnancy was planned; the exception was the Garifuna, who reported that only 48 percent of their recent pregnancies were planned.

Unwanted pregnancies increased with both age and number of living children. On the other hand, the percentage of pregnancies that were reported as mistimed decreased with age, indicating spacing failures at earlier ages.

There were no clear patterns of mistimed and unwanted pregnancies according to educational level or ethnicity of the respondents. Better educated women reported a lower level of unwanted pregnancies, probably due in part to their lower parity on the average.

Current Pregnancy Intentions

Table 3-12 shows current pregnancy intentions of married women aged 15-44. Overall, 71 percent stated that they did not desire a pregnancy at the time of the survey, while 14 percent desired to become pregnant at that time. Nearly 12 percent of the women were currently pregnant. A higher proportion of women living in rural areas reported that they were currently pregnant than women living in urban areas. However, a higher proportion of urban women than rural women stated that they currently desired to become pregnant, reflecting, in part, their lower parity. As expected, the proportion of women currently pregnant or desiring a pregnancy decreases with age and number of living children. It is evident that married women with no children have strong pressures to have a child; nearly 80 percent are pregnant or desire a pregnancy. With respect to ethnicity, the Garifuna and Creoles were the most likely to report that they did not desire a pregnancy. It is noteworthy that only 4 percent of the Garifuna reported that they were currently pregnant. Nearly 12 percent of the Maya/Ketchi women were undecided about their pregnancy intentions, indicating that the decision to become pregnant may not entirely be theirs to make.

Desire for More Children

Another factor related to future fertility is the proportion of women who want no more children. All fecund married women who had at least one living child were asked if they wanted more children (Table 3-13). Overall, 49 percent of the women said that they did not want any more children: 46 percent in rural areas compared to 51 percent in urban areas. It should be noted that urban women want to terminate childbearing earlier in life and at lower parities than rural women. As one would expect, the proportion of women who did not want more children increased with age and family size (Figure 3-5). The bottom panel of Table 3-13 shows that Creoles were the least likely of the different ethnic groups to want more children.

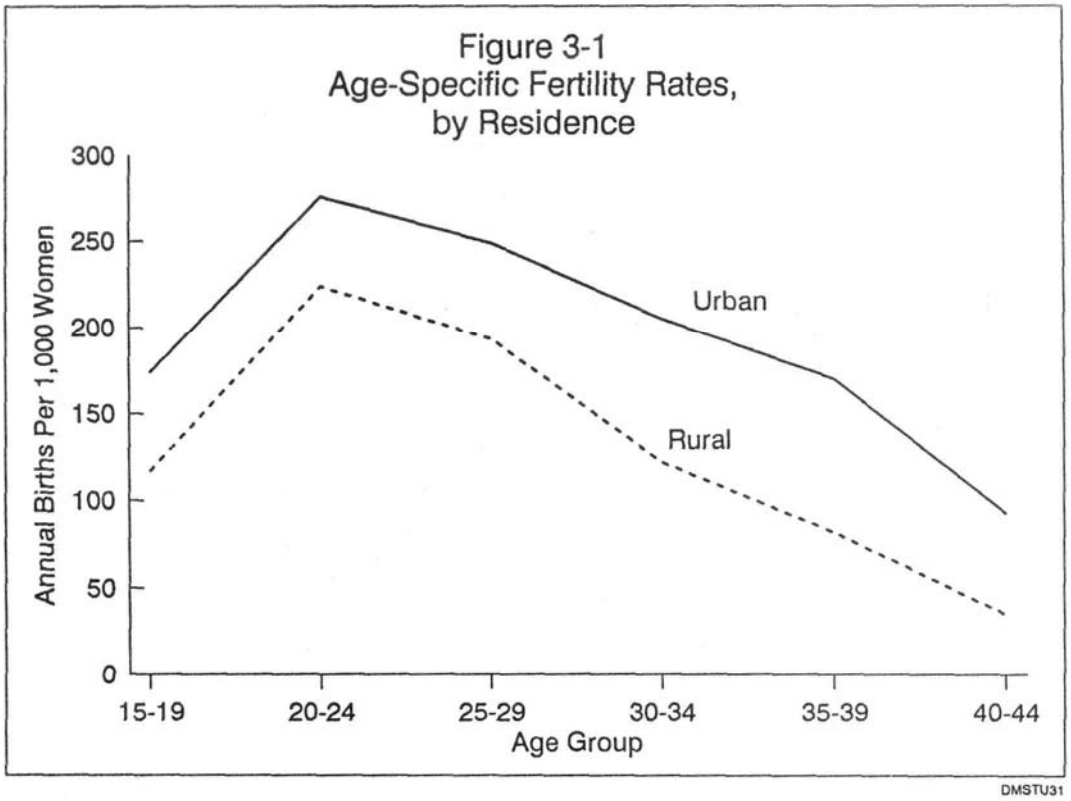


Figure 3-1
Age-Specific Fertility Rates,
by Residence
Annual Births Per 1,000 Women
300
250
200
150
100
50
0
Urban
Rural
15-19
20-24
25-29
30-34
35-39
40-44
Age Group
DMSTU31

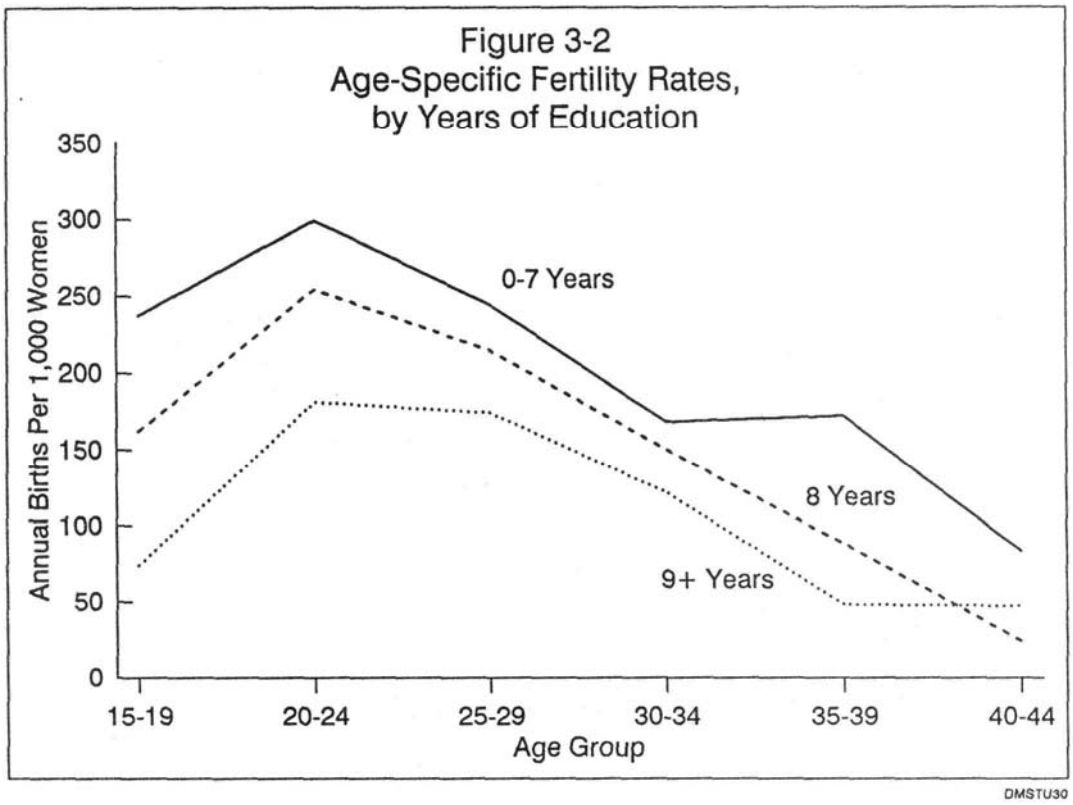


Figure 3-2
Age-Specific Fertility Rates,
by Years of Education
Annual Births Per 1,000 Women
350
300
250
200
150
100
50
0
0-7 Years
8 Years
9+ Years
15-19
20-24
25-29
30-34
35-39
40-44
Age Group
DMSTU30

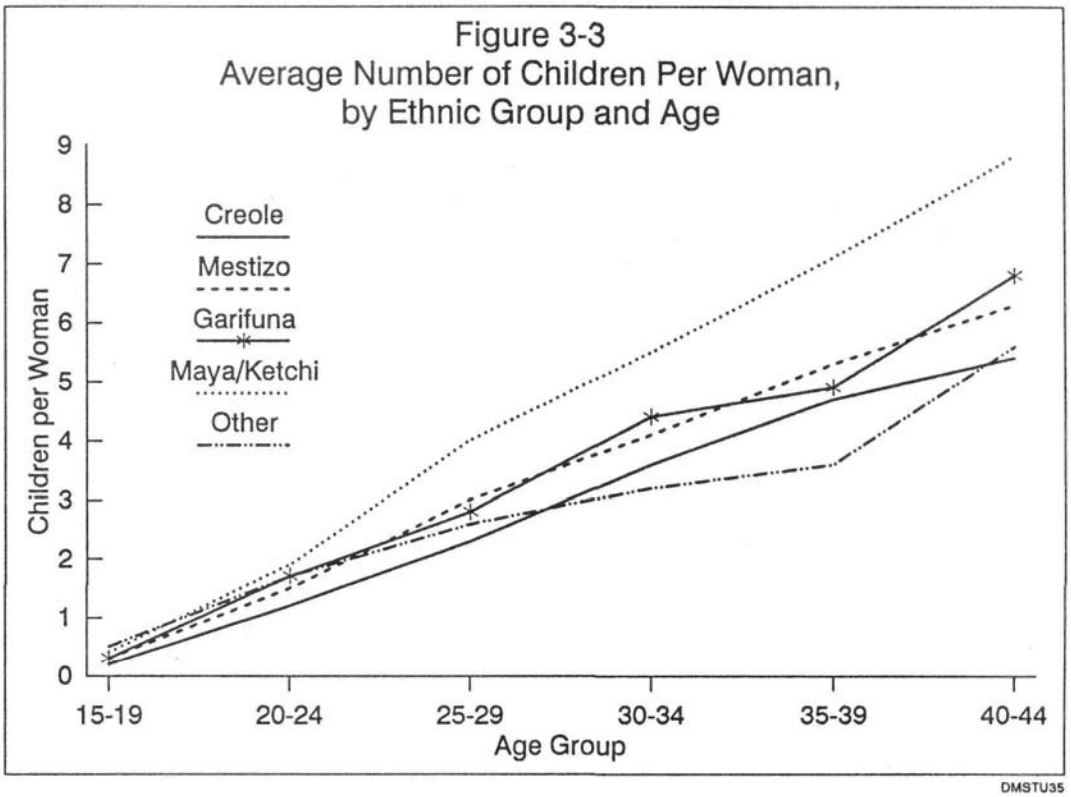


Figure 3-3
Average Number of Children Per Woman,
by Ethnic Group and Age
Children per Woman
0
1
2
3
4
5
6
7
8
9
Creole
Mestizo
Garifuna
Maya/Ketchi
Other
15-19
20-24
25-29
30-34
35-39
40-44
Age Group
DMSTU35

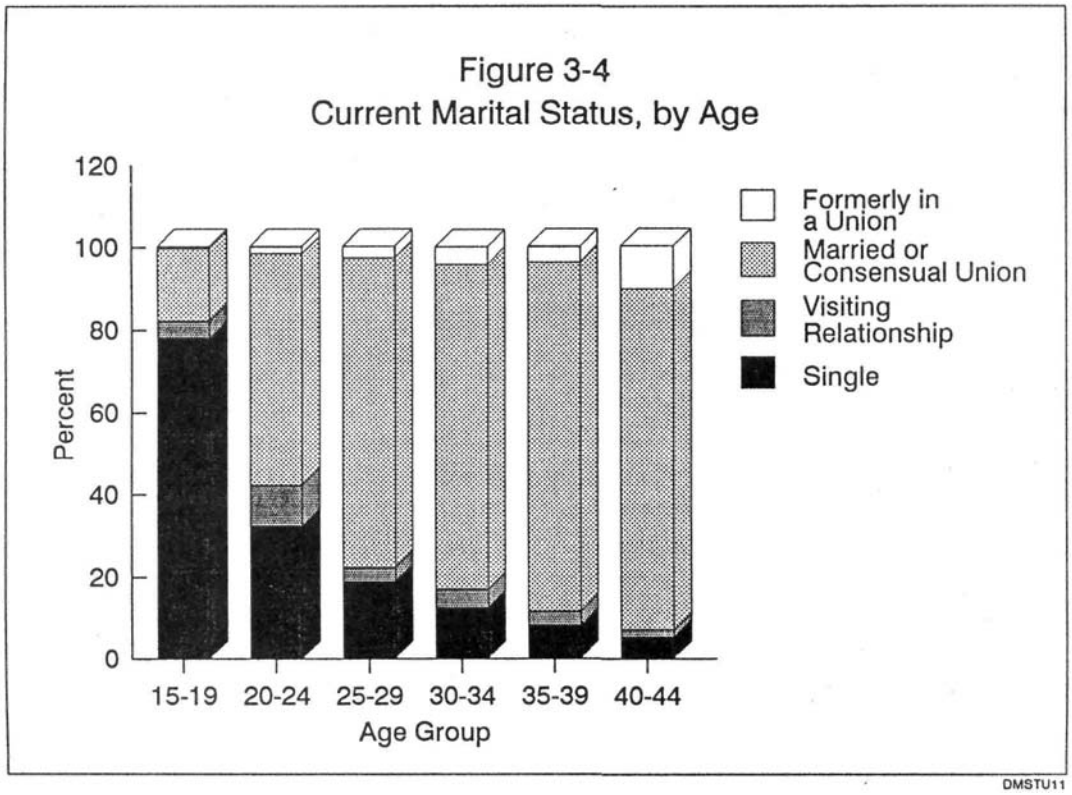


Figure 3-4
Current Marital Status, by Age
Percent
0
20
40
60
80
100
120
Formerly in a Union
Married or Consensual Union
Visiting Relationship
Single
15-19
20-24
25-29
30-34
35-39
40-44
Age Group
DMSTU11

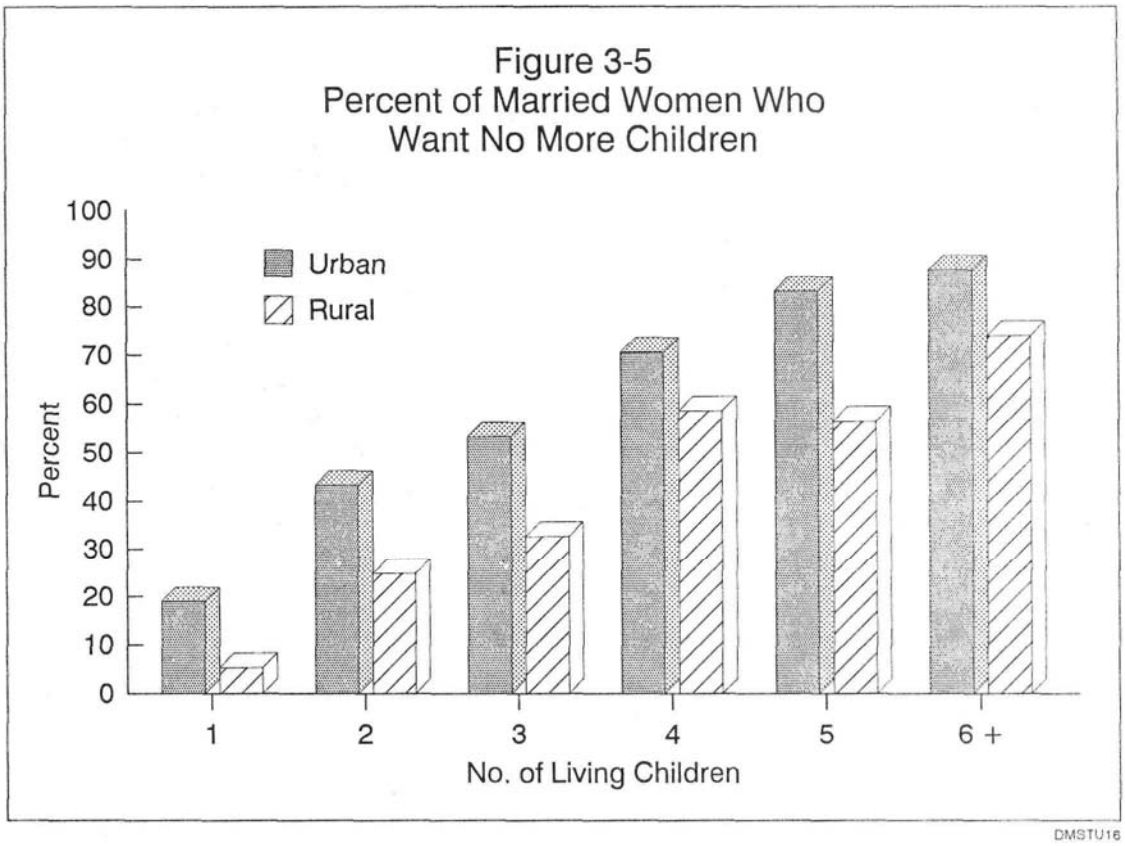


Figure 3-5
Percent of Married Women Who
Want No More Children
100
90
80
70
60
50
40
30
20
10
0
Percent
Urban
Rural
1
2
3
4
5
6 +
No. of Living Children
DMSTU16

Table 3-1

Belize: Number of Births, Woman-Years of Exposure,
and Age-Specific Fertility Rates, 1986-1990[1]
1991 Family Health Survey

Age Group	Births	Exposure[2]	Age-Specific Fertility Rate[3]
15-19	601	4382	137
20-24	863	3594	240
25-29	667	3153	212
30-34	340	2285	149
35-39	201	1806	111
40-44	39	769	51
Total Fertility Rate			4.50 [4]

[1]February 1986 - January 1991.

[2]31 women were excluded from the fertility analysis because they had undated births which could have occurred before or after February 1986.

[3]Age-Specific Fertility Rates are the annual number of births per each 1000 women in that age group during a year.

[4]The Total Fertility Rate is the average number of births a group of women would have during their reproductive ages, 15-44, if they were to experience the age-specific fertility rates that were in effect in a given period.

Table 3-2

Belize: Age-Specific Fertility Rates and
Total Fertility Rate, by Selected Characteristics
1991 Family Health Survey

Selected Characteristics	Age-Specific Fertility Rates 15-19	20-24	25-29	30-34	35-39	40-44	TFR	No. Women
Total	137	240	212	149	111	51	4.5	(2625)
Residence								
Urban	117	224	193	122	82	35	3.9	(1710)
Rural	174	276	249	205	170	93	5.8	(915)
Education-years								
0-7	237	299	244	168	172	83	6.0	(811)
8	162	254	214	150	88	24	4.5	(907)
9+	74	181	174	122	48	47	3.2	(907)
No. Household Amenities								
0-2	226	319	297	236	172	80	6.7	(707)
3-7	125	36	197	142	108	60	4.3	(1296)
8-10	68	168	149	76	66	21	2.7	(623)
Ethnicity								
Creole	109	204	177	115	85	25	3.6	(888)
Mestizo	137	259	223	151	115	70	4.8	(1150)
Other[1]	191	261	242	191	140	49	5.4	(588)
Religion								
Protestant	158	231	202	120	106	26	4.2	(1021)
Catholic	120	245	213	160	122	68	4.6	(1450)
Work Status								
Not Working	160	276	233	179	140	59	5.2	(1862)
Working	81	167	168	91	50	31	2.9	(763)

[1]Includes Garifuna, Maya/Ketchi Indians, Asians, and those of European Ancestry.

Table 3-3

Belize: Duration-Specific Marital Fertility
Rates for the Period 1986-1991
1991 Family Health Survey

Duration[1] Since 1st Union	Number of Births	Women-Years of Exposure	Duration-Specific Marital Fertility Rates
0-4	1066	2754	387
5-9	598	2381	251
10-14	388	2044	190
15-24	179	1491	120
20-24	75	801	94
25-29	6	115	52
Total Marital Fertility Rate			5.5
N=1788			

Women are excluded if their date of first union could not be determined or if they reported a birth without giving the birth date and it could not be determined that the birth was prior to January 1986.

[1]Duration is in years since first union, whether it was a marriage or consensual union.

Table 3-4

Belize: Duration-Specific Marital Fertility Rates and Total Marital Fertility Rate for 1986-1991, by Selected Characteristics
1991 Family Health Survey

	Years Since First Union							
Selected Characteristics	0-4	5-9	10-14	15-19	20-24	25-29	Total Marital Fertility Rate	No. Women
Total[1]	387	251	190	120	94	52	5.5	(1788)
Residence								
Urban	360	232	134	60	86	0	4.4	(1127)
Rural	442	288	284	218	109	99	7.2	(661)
Mother's Education (in years)								
0-7	408	291	257	172	157	74	6.8	(630)
8	400	250	181	98	42	34	5.0	(663)
9+	352	201	101	56	74	0	3.9	(495)
No. of HH Amenities								
0-2	490	333	314	230	103	57	7.6	(530)
3-7	377	251	161	95	106	76	5.3	(874)
8-10	286	152	84	44	62	0	3.1	(384)
Ethnicity[2]								
Creole	346	211	134	58	86	145	4.9	(517)
Mestizo	394	253	213	125	101	36	5.6	(849)
Other	429	300	209	185	85	45	6.3	(421)
Religion								
Protestant	403	228	172	105	78	47	5.2	(665)
Catholic	376	262	195	130	106	61	5.7	(1003)
Work Status[3]								
Not Working	418	272	223	152	112	59	6.2	(1309)
Working	301	205	98	40	45	0	3.4	(477)

[1]Women are excluded if their date of first union could not be determined or if they reported a birth without giving the birth date and it could not be determined that the birth was prior to January 1986.

[2]Excludes 1 woman for whom ethnicity was not reported.

[3]Excludes 2 women for whom work status was not reported.

Table 3-5

Belize: Average Number of Children per Women,
by Age and Selected Characteristics
1991 Family Health Survey

	Age at Survey						
Selected Characteristics	15-19	20-24	25-29	30-34	35-39	40-44	Total
Residence							
Urban	0.2	1.3	2.4	3.5	4.5	5.5	2.3
Rural	0.4	1.7	3.5	5.1	6.6	7.6	3.1
Respondent's Education							
None	0.9	2.8	3.8	5.3	5.9	7.7	4.7
Inc. Primary	0.6	2.0	3.6	4.8	6.1	7.1	3.6
Complete Primary	0.3	1.5	2.8	4.1	5.2	6.1	2.9
Secondary	0.1	1.1	2.0	3.3	4.2	4.8	1.4
Post-Secondary	0.0	0.4	1.4	2.3	3.0	2.9	1.3
No. Household Amenities							
0-2	0.4	2.2	4.0	5.8	6.7	8.0	3.5
3-7	0.3	1.3	2.7	3.8	4.9	6.4	2.5
8-10	0.1	0.9	1.7	2.7	4.2	4.5	1.9
Ethnicity[1]							
Creole	0.2	1.2	2.3	3.6	4.7	5.4	2.1
Mestizo	0.3	1.5	3.0	4.1	5.3	6.3	2.8
Garifuna	0.3	1.7	2.8	4.4	4.9	6.8	2.6
Maya/Ketchi	0.4	1.9	4.0	5.5	7.1	8.8	3.6
Other	0.5	1.7	2.6	3.2	3.6	5.6	2.9
Religion							
None	0.7	1.7	3.9	5.5	4.5	4.9	3.1
Protestant	0.3	1.5	2.7	3.8	5.1	6.0	2.5
Catholic	0.2	1.4	2.7	4.0	5.3	6.3	2.6
Other	0.2	0.8	3.3	4.5	2.0	6.0	1.9
Work Status[2]							
Not Working	0.3	1.8	3.1	4.6	5.8	6.8	2.8
Working	0.2	0.8	2.1	3.0	3.9	4.6	2.0
Total	0.3	1.5	2.8	4.0	5.2	6.1	2.6
No. of Cases	(526)	(549)	(593)	(483)	(280)	(225)	(2656)

[1]Excludes 1 case for which ethnicity was not reported.

[2]Excludes 2 cases for which work status was not reported.

Table 3-6

Belize: Percent Distribution of All Women and Women
Currently in Union, by Age and Number of Children Ever Born
1991 Family Health Survey

All Women

	Age at Survey						
Number of Children	15-19	20-24	25-29	30-34	35-39	40-44	Total
0	81.5	34.6	15.1	9.1	3.5	2.9	33.5
1	12.3	23.4	15.5	8.7	3.3	3.8	13.0
2	4.8	18.5	18.9	10.2	10.8	7.3	11.9
3	1.2	12.4	17.7	17.6	13.0	7.3	10.8
4	0.2	8.2	12.9	12.7	13.0	13.6	8.6
5	0.0	2.4	8.7	15.3	14.4	9.3	6.7
6	0.0	0.4	5.5	11.3	9.5	16.2	5.2
7	0.0	0.1	3.5	6.0	10.0	10.1	3.5
8	0.0	0.0	1.6	4.7	8.9	6.1	2.4
9	0.0	0.0	0.4	2.2	7.1	6.4	1.7
10+	0.0	0.0	0.3	2.4	6.5	17.1	2.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases	(526)	(549)	(593)	(483)	(280)	(225)	(2656)
Average No. of Children	0.3	1.4	2.8	4.0	5.2	6.1	2.6

Women Currently in Union

	Age at Survey						
Number of Children	15-19	20-24	25-29	30-34	35-39	40-44	Total
0	27.3	14.0	7.3	3.2	1.0	1.1	7.7
1	39.5	24.1	13.5	6.5	2.6	2.1	13.2
2	26.7	25.2	18.4	11.3	10.3	7.7	16.4
3	5.2	19.9	19.7	18.7	12.5	7.3	15.7
4	1.2	12.4	16.1	14.3	12.8	14.7	13.2
5	0.0	3.5	10.7	17.3	14.1	9.1	10.0
6	0.0	0.7	7.1	11.6	10.3	16.8	7.9
7	0.0	0.2	4.7	6.0	11.5	10.1	5.4
8	0.0	0.0	1.7	5.5	10.3	5.9	3.8
9	0.0	0.0	0.4	2.8	8.0	4.9	2.5
10+	0.0	0.0	0.4	2.8	6.7	20.3	4.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases	(124)	(359)	(486)	(395)	(239)	(187)	(1790)
Average No. of Children	1.2	2.1	3.2	4.4	5.5	6.4	3.8

Table 3-7

Belize: Percent Distribution of Women 15-44 Years of Age,
by Marital Status and Selected Characteristics at Time of Survey
1991 Family Health Survey

	Marital Status								
Selected Characteristics	Single	Married	Consensual Union	Visiting Relationship	Widowed	Separated	Divorced	Total	No. of Cases
Total[1]	34.0	35.2	22.9	5.0	0.6	2.0	0.4	100.0	(2653)
Residence									
Urban	35.7	30.2	23.5	6.9	0.7	2.6	0.5	100.0	(1723)
Rural	30.7	45.2	21.7	1.1	0.5	0.7	0.2	100.0	(930)
Age									
15-19	78.0	7.2	10.3	4.2	0.0	0.3	0.0	100.0	(526)
20-24	32.2	28.0	28.0	10.1	0.0	1.7	0.0	100.0	(548)
25-29	18.9	41.4	33.6	3.4	0.7	1.8	0.3	100.0	(593)
30-34	12.5	52.3	26.3	4.5	1.1	2.7	0.5	100.0	(483)
35-39	8.1	62.1	22.5	3.5	0.3	2.4	1.1	100.0	(280)
40-44	5.3	62.6	20.2	1.8	2.9	5.9	1.5	100.0	(223)
Respondent's Education									
None	10.1	48.2	41.7	0.0	0.0	0.0	0.0	100.0	(113)
Incomplete Primary	19.4	44.2	29.9	2.3	1.2	2.8	0.2	100.0	(713)
Complete Primary	29.9	38.0	24.2	4.6	0.6	2.2	0.6	100.0	(917)
Secondary	51.3	21.2	17.0	8.7	0.3	1.5	0.2	100.0	(712)
Post-Secondary	46.0	40.6	6.9	4.0	0.4	1.1	1.1	100.0	(198)

[1]Excludes 3 cases with unreported marital status.

Table 3-7 (Continued)

Belize: Percent Distribution of Women 15-44 Years of Age,
by Marital Status and Selected Characteristics at Time of Survey
1991 Family Health Survey

	Marital Status								
Selected Characteristics	Single	Married	Consensual Union	Visiting Relationship	Widowed	Separated	Divorced	Total	No. of Cases
No. Household Amenities									
0-2	25.4	46.8	24.7	1.1	0.5	1.5	0.0	100.0	(722)
3-7	34.9	29.0	26.4	5.7	0.7	2.9	0.5	100.0	(1303)
8-10	40.6	36.2	14.1	7.5	0.5	0.6	0.4	100.0	(628)
Ethnicity									
Creole	43.0	21.9	22.2	10.0	0.7	1.7	0.7	100.0	(893)
Mestizo	29.1	45.3	21.7	1.2	0.4	2.1	0.2	100.0	(1160)
Garifuna	37.5	20.7	31.3	7.4	0.3	2.8	0.0	100.0	(228)
Maya/Ketchi	27.2	52.3	17.4	1.7	0.0	1.4	0.0	100.0	(220)
Other	17.8	40.5	32.4	3.2	2.7	2.2	1.1	100.0	(151)
Religion									
None	15.2	40.2	36.6	3.7	0.6	3.1	0.6	100.0	(128)
Protestant	35.7	38.3	35.8	7.0	0.5	2.1	0.6	100.0	(1028)
Catholic	34.3	32.5	26.9	3.8	0.7	1.7	0.2	100.0	(1466)
Other	34.8	41.3	15.2	2.2	0.0	6.5	0.0	100.0	(31)
Work Status									
Not Working	30.6	37.2	26.4	3.8	0.5	1.3	0.2	100.0	(1886)
Working	42.0	30.7	14.4	7.8	0.8	3.5	0.7	100.0	(765)

[2]Excludes 1 case with unreported ethnicity.

[3]Excludes 2 cases with unreported work status.

Table 3-8

Belize: Percent of Women Aged 15-44 Whose First Union was Before Selected Ages and Median Age at First Union, According to Age at Survey
1991 Family Health Survey

	Age at Survey					
Age at First Union[1]	15-19	20-24	25-29	30-34	35-39	40-44
< 15	(3.8) [3]	10.2	9.7	7.9	8.9	4.5
< 18	(15.3)	26.9	30.7	33.1	34.5	25.9
< 20	(17.8)	44.4	46.7	50.5	48.8	49.5
< 22	*	(53.9)	60.6	62.8	62.9	66.5
< 25	*	(60.2)	76.0	77.3	77.6	82.1
Ever in Union	17.8	60.2	81.6	87.7	90.2	95.5
Median Age at First Union[2]	*	21.0	20.6	19.9	20.2	20.1
No. of Cases	(516)	(530)	(556)	(454)	(262)	(204)

[1]Excludes 131 cases (4.9%) of ever-married women with date of first union not reported.

[2]Median age at first union calculated as a life table median in which never-married women contribute exposure at ages up to the age at which they were interviewed.

[3]( ) indicates incomplete exposure by this cohort of women at these ages.

Table 3-9

Belize: Median Age at First Union and SMAM[1] for All Women Aged 15-44, by Selected Characteristics
1991 Family Health Survey

Selected Characteristics	Median Age at[2] First Union	SMAM	No. of Cases
Total	20.7	21.2	(2656)
Residence			
Urban	21.5	21.6	(1724)
Rural	18.9	20.4	(932)
Respondent's Education			
None	18.0	18.0	(113)
Incomplete Primary	18.3	19.5	(714)
Complete Primary	20.5	21.0	(918)
Secondary	22.2	22.6	(713)
Post-Secondary	23.7	22.0	(198)
No. Household Amenities			
0-2	18.4	19.6	(723)
3-7	20.9	21.6	(1305)
8-10	22.4	22.2	(628)
Ethnicity[3]			
Creole	22.2	21.6	(894)
Mestizo	19.8	21.1	(1164)
Garifuna	22.4	22.0	(228)
Maya/Ketchi	18.2	20.1	(220)
Religion			
Protestant	21.4	21.1	(1031)
Catholic	20.5	21.7	(1466)
Work Status[4]			
Not Working	19.7	20.6	(1888)
Working	22.8	22.6	(766)

[1]Singulate Mean Age at Marriage (SMAM) is a period estimate of the average number of years of single life lived by those who eventually marry in a cohort that at successive ages exhibited the same proportions single as observed in a cross section of women observed at the same point in time.

[2]Excludes 131 with missing date of first union.

[3]Excludes 1 case for which ethnicity was not reported.

[4]Excludes 2 cases for which work status was not reported.

Table 3-10

Belize: Mean Duration of Breastfeeding,[1]
by Selected Characteristics
1991 Family Health Survey

Selected Characteristics	Mean Duration of Breastfeeding	Number Live Births
Total	11.7	(2275)
Residence	9.6	(1269)
Urban	14.3	(1006)
Rural		
Education (years)	12.8	(952)
0-7	11.6	(792)
8	10.3	(531)
9+		
No. Household Amenities	11.4	(915)
0-2	8.6	(1047)
3-7	8.0	(313)
8-10		
Ethnic Group	9.3	(593)
Creole	12.3	(1084)
Mestizo	13.1	(598)
Other		
Religion	11.0	(835)
Protestant	12.5	(1265)
Catholic		
Work Status	12.4	(1817)
Not Working	9.2	(458)
Working		

[1]Mean Duration of Breastfeeding is calculated from current status data on the proportion of live births in the past five years still being breastfed, classified by current age in months. Mean BFDUR = .5*S(0)+S(1)+S(2)+...+S(58)+S(59), where S(i) gives the proportion currently breastfed among children born i months before the month of the interview.

Table 3-11

Belize: Planning Status of Last Pregnancy, by Selected Characteristics:
Currently Married Women Aged 15-44
Who Had Been Pregnant During the Last Five Years
1991 Family Health Survey
(Percent Distribution)

Selected Characteristics	Planned	Unplanned		Unknown	Total	No. of Cases (Unweighted)
		Mistimed	Unwanted			
Total	64.5	19.1	13.0	3.4	100.0	(1,274)
Residence						
Urban	63.4	19.3	13.9	3.4	100.0	(711)
Rural	66.1	18.8	11.7	3.4	100.0	(563)
Age						
15-19	74.5	22.1	0.7	2.7	100.0	(108)
20-24	62.6	27.6	5.5	4.2	100.0	(320)
25-29	64.3	19.3	12.8	3.5	100.0	(392)
30-34	67.8	15.2	13.1	3.8	100.0	(270)
35-39	61.6	10.3	26.0	2.0	100.0	(117)
40-44	52.9	4.9	40.2	2.0	100.0	(67)
No. of Living Children						
0	90.8	5.3	0.0	3.9	100.0	(55)
1	79.7	15.6	0.0	4.6	100.0	(182)
2	69.7	24.6	4.5	1.1	100.0	(235)
3	62.6	26.0	8.7	2.6	100.0	(241)
4	58.2	18.1	16.9	6.8	100.0	(158)
5	53.9	21.6	20.4	4.2	100.0	(160)
6+	53.1	13.6	30.7	2.6	100.0	(243)
Years of Education						
0-7	66.3	17.0	13.9	2.7	100.0	(530)
8	60.9	19.9	15.6	3.5	100.0	(430)
9+	66.5	21.4	7.7	4.4	100.0	(314)
Ethnic Group*						
Creole	60.6	21.2	13.4	4.8	100.0	(316)
Mestizo	68.9	16.1	12.3	2.6	100.0	(647)
Garifuna	48.1	28.7	21.3	1.9	100.0	(89)
Maya/Ketchi	64.5	20.7	9.5	5.3	100.0	(146)
Other	63.4	20.7	13.4	2.4	100.0	(75)

*Excludes one case for whom ethnic group is unknown.

Table 3-12

Belize: Current Pregnancy Intention of Currently Married Women Aged 15-44,
by Selected Characteristics
1991 Family Health Survey
(Percent Distribution)

Selected Characteristics	Currently Pregnant	Desire Pregnancy	Don't Desire Pregnancy	Unknown	Total	No. of Cases Unweighted
Total	11.7	14.0	71.0	3.2	100.0	(1,790)
Residence						
Urban	9.8	15.2	73.3	1.8	100.0	(1,077)
Rural	14.8	12.2	67.5	5.5	100.0	(713)
Age						
15-19	20.3	15.7	57.6	6.4	100.0	(124)
20-24	18.7	17.1	61.2	3.0	100.0	(359)
25-29	14.6	18.9	62.9	3.6	100.0	(486)
30-34	8.8	11.5	76.0	3.7	100.0	(395)
35-39	6.1	12.5	79.5	1.9	100.0	(239)
40-44	1.0	4.9	92.3	1.7	100.0	(187)
No. of Living Children						
0	32.6	46.9	14.9	5.7	100.0	(137)
1	15.0	24.3	57.7	3.0	100.0	(234)
2	10.1	13.1	74.4	2.4	100.0	(333)
3	10.8	14.6	72.1	2.5	100.0	(319)
4	7.8	4.6	85.2	2.5	100.0	(237)
5	8.1	7.2	80.1	4.5	100.0	(198)
6+	7.6	4.0	84.8	3.6	100.0	(332)
Years of Education						
0-7	13.7	13.7	68.1	4.6	100.0	(679)
8	9.9	12.1	75.0	3.0	100.0	(645)
9+	11.3	17.5	69.8	1.5	100.0	(466)
Ethnic Group*						
Creole	10.2	13.1	75.0	1.7	100.0	(474)
Mestizo	13.1	14.3	69.7	3.0	100.0	(890)
Garifuna	4.2	16.7	78.0	1.2	100.0	(137)
Maya/Ketchi	14.5	10.5	63.5	11.5	100.0	(171)
Other	12.6	17.8	67.4	2.2	100.0	(117)
Contraceptive Use						
Currently Using	0.0	9.7	88.9	1.4	100.0	(848)
Not Using	21.9	17.9	55.4	4.9	100.0	(942)

*Excludes one case for whom ethnic group is unknown.

Table 3-13

Belize: Percent of Currently Married Fecund Women
Aged 15-44 Who Want No More Children,
by Selected Characteristics and Residence
1991 Family Health Survey

Selected Characteristics	Total		Residence: Urban		Residence: Rural	
Total	49.0	(1,258)	51.5	(707)	45.7	(551)
Age						
15-19	15.3	(92)	22.2	(40)	10.0	(52)
20-24	37.9	(294)	43.2	(165)	30.0	(129)
25-29	42.8	(387)	42.2	(232)	43.7	(155)
30-34	58.3	(268)	58.7	(151)	57.8	(117)
35-39	69.5	(142)	75.5	(79)	62.9	(63)
40-44	83.9	(75)	84.9	(40)	82.7	(35)
No. of Living Children						
1	14.4	(219)	18.9	(147)	5.3	(72)
2	37.0	(282)	43.1	(184)	24.8	(98)
3	46.0	(247)	53.1	(153)	32.6	(94)
4	65.4	(156)	70.5	(85)	58.4	(71)
5	69.7	(135)	83.1	(66)	56.3	(69)
6+	78.4	(219)	87.6	(72)	73.9	(147)
Years of Education						
0-7	49.8	(510)	56.0	(198)	45.7	(312)
8	51.7	(418)	56.6	(222)	45.5	(196)
9+	44.2	(330)	43.9	(287)	46.1	(43)
Ethnic Group*						
Creole	53.5	(324)	55.7	(262)	43.7	(62)
Mestizo	48.9	(631)	50.9	(304)	46.8	(327)
Garifuna	44.9	(88)	47.4	(64)	**	(24)
Maya/Ketchi	45.4	(132)	**	(23)	45.3	(109)
Other	43.0	(82)	41.3	(54)	46.7	(28)

*Excludes one case for whom ethnic group is unknown.

**Less than 25 cases.

4. Attitudes Towards Childbearing

This chapter deals with a variety of attitudes and opinions related to childbearing. These include preferences about ideal family size and the interval between births, who should make decisions about using contraception, and reasons for wanting to limit family size.

4.1 Ideal Family Size

All women aged 15-44 who did not have any living children were asked, "If you could choose exactly the number of children to have in your whole life, how many would that be?" Similarly, all women with at least one living child were asked, "If you could go back to the time when you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?" The responses to these questions has been termed "ideal family size." In interpreting the responses of the women who have children, it should be remembered that women may tend to rationalize the number of children they already have and, consequently, may be reluctant to state a number that is less than their achieved family size. Less than 15 percent of the respondents gave a non-numeric response to either of the two hypothetical questions on ideal family size. Only women who gave numeric responses are included in the following discussion.

The mean ideal family size is 3.4 children for women who have living children (Table 4-1) and 2.9 children for women who do not have any living children (Table 4-2). As shown in both tables, rural women and older women prefer larger families than urban and younger women. For women with children, ideal family size increases as years of schooling decreases; for women without children there is very little difference in preferred family size across the education categories. Similarly, ideal family size does not vary appreciably by religious affiliation. With respect to ethnicity, Creoles have the smallest ideal family size while the Maya/Ketchi have the largest ideal family size.

Focusing only on women who have children, Table 4-1 shows that the actual fertility of some groups of women in Belize is greater than their stated ideal family size. Overall, women with children have already exceeded their preferred family size. Major contributors to this excess are women 35-44 years of age and women with less than eight years of schooling. It should be noted that women 30 years of age or older have already exceeded their ideal family size.

In summary, moderately sized families are much desired in Belize. A comparison of the mean ideal family size for women who do not have children with that of women who have children suggests that if women who currently do not have any children have only the number they desire, fertility will decline in Belize in the future. It should be noted that ideal family size reported by both groups is less than the total fertility rate. This discrepancy is due to the excess fertility of older less educated women.

4.2 Opinions About Childbearing

All women aged 15-44 were asked a series of questions on childbearing. The intent of these questions was to explore reasons why a woman might want to limit her family size, what the ideal interval between children should be, who should decide the number of children a couple wants to have, and who should decide the use of contraceptive methods.

Nearly two thirds of the respondents stated that both partners in a relationship should decide the number of children a couple wants to have

(Table 4-3). Twenty-one percent stated that it should be left up to the woman and 8 percent stated that the man should decide. Twice the proportion of urban women compared to rural women felt that the woman should decide. In addition, approximately 30 percent of Creole and Garifuna women felt that it was the responsibility of the woman to decide (Table 4-4). While only 4 percent of the women stated that the number of children to have should be "left up to God," 17 percent of the Maya/-Ketchi women felt this way.

Women were asked, "How many months old do you think it is best for a child to be before another child is born?" In general, the vast majority of women (95 percent) stated that two or more years is the ideal interval between children, with 60 percent stating that three or more years is an ideal interval (Table 4-5). Fourteen percent of the Maya/Ketchi did not express an opinion on the ideal interval between children.

Respondents were asked, "Who should decide whether a person should use a method of contraception?" For this question, only 49 percent stated that both the man and woman should decide together, while 31 percent stated that the woman should decide, and 8 percent the man (Table 4-6). While rural women and ever-married women were more likely to state that the decision to use contraception is the responsibility of both the man and woman, urban women and never-married women were more likely to state that the responsibility is solely that of the woman. The proportion of women who felt that the woman should decide increases as level of education increases (Table 4-7). Also, from one third to one half of women who were not legally married at the time of the survey felt that it is the woman who should decide whether contraception is used (data not shown). In contrast, only 21 percent of legally married women felt that the woman should decide. While approximately 43 percent of Creoles and Garifunas felt that the woman should decide (Table 4-8), only 17 percent of the Maya/Ketchi women, 20 percent of Mestizo women, and 20 percent of women with less than 8 years of schooling felt that the woman should decide.

Tables 4-9 and 4-10 show that nearly two thirds of all women aged 15-44 stated that financial pressures was the main reason a woman might want to limit the number of children that she has. A higher percentage of urban women (68 percent) than rural woman (60 percent) gave this reason. While approximately two thirds of Creoles, Mestizos, and Garifunas cited this reason, only 50 percent of the Maya/Ketchi felt that this was the main reason a woman might want to limit family size. However, almost one in five Maya/-Ketchi women did not give a reason for limiting children. Child care problems were cited by an additional 7 percent of the women. This reason was more important for rural women than for urban women and was particularly important for the Maya/Ketchi as 15 percent of these women gave this reason. Interestingly, the proportion of women citing child care problems did not increase with number of living children (data not shown). Other reasons given included health of the mother (7 percent), work (4 percent), health of the child (4 percent), and schooling (3 percent).

Table 4-1

Belize: Mean Perception of Ideal Family Size and Mean
Actual Number of Living Children, by Selected Characteristics:
Women Aged 15-44 Who Have Living Children
1991 Family Health Survey

Selected Characteristics	Ideal Family Size	No. of Living Children	Difference Actual-Ideal	No. of Cases* (Unweighted)
Total	3.4	3.5	+0.1	(1,729)
Residence				
Urban	3.2	3.2	0.0	(1,175)
Rural	4.0	4.1	+0.1	(554)
Age				
15-19	3.2	1.3	-1.9	(101)
20-24	3.2	2.1	-1.1	(343)
25-29	3.3	3.0	-0.3	(470)
30-34	3.4	4.0	+0.6	(397)
35-39	3.5	4.8	+1.3	(229)
40-44	3.9	5.6	+1.7	(189)
Years of Education				
0-7	3.7	4.1	+0.4	(564)
8	3.5	3.7	+0.2	(646)
9+	3.0	2.6	-0.4	(519)
Marital Status				
Ever Married	3.5	3.7	+0.2	(1,572)
Never Married	2.7	1.8	-0.9	(157)
Religion				
Protestant	3.3	3.5	+0.2	(657)
Catholic	3.5	3.5	0.0	(954)
Other	3.5	3.4	-0.1	(118)
Ethnic Group				
Creole	3.1	3.2	+0.1	(579)
Mestizo	3.5	3.7	+0.2	(765)
Garifuna	3.5	3.4	-0.1	(162)
Maya/Ketchi	4.5	4.2	-0.3	(111)
Other	3.1	3.2	+0.1	(112)

*For the purpose of calculating ideal family size, those who answered "Don't Know" or "God's Will" were omitted, for a total of 232 cases.

Table 4-2

Belize: Mean Perception of Ideal Family Size,
by Selected Characteristics: Women Aged 15-44
Who Do Not Have Any Living Children
1991 Family Health Survey

Selected Characteristics	Ideal Family Size	No. of Cases* (Unweighted)
Total	2.9	(596)
Residence		
Urban	2.7	(440)
Rural	3.3	(156)
Age		
15-19	2.9	(336)
20-24	2.9	(145)
25-29	2.7	(65)
30-44	3.0	(50)
Years of Education		
0-7	3.1	(86)
8	3.1	(157)
9+	2.8	(353)
Marital Status		
Ever Married	3.0	(135)
Never Married	2.9	(461)
Religion		
Protestant	2.7	(250)
Catholic	3.1	(320)
Other	2.8	(26)
Ethnic Group		
Creole	2.6	(271)
Mestizo	3.1	(223)
Maya/Ketchi	3.9	(27)
Other	3.2	(75)

*For the purpose of calculating the mean, those who answered "Don't Know" or "God's Will" were omitted, for a total of 98 cases.

Table 4-3

Belize: Who Should Decide the Number of Children
a Couple Wants to Have, by Residence: Women Aged 15-44
1991 Family Health Survey
(Percent Distribution)

	Residence		
Who Should Decide	Total	Urban	Rural
Both	65.9	64.9	67.7
Wife/Woman	21.0	25.3	12.4
Husband/Partner	7.8	7.2	9.0
Fate, Up to God	4.4	1.8	9.5
Other	1.0	0.8	1.3
Total	100.0	100.0	100.0
No. of Cases (Unweighted)	(2,656)	(1,724)	(932)

Table 4-4

Belize: Who Should Decide the Number of Children
a Couple Wants to Have, by Ethnic Group*: Women Aged 15-44
1991 Family Health Survey
(Percent Distribution)

	Ethnic Group					
Who Should Decide	Total	Creole	Mestizo	Garifuna	Maya/ Ketchi	Other
Both	65.9	59.3	73.9	57.6	60.3	64.9
Wife/Woman	21.0	31.9	12.5	30.7	8.4	21.1
Husband/Partner	7.8	5.7	8.5	9.6	10.5	9.2
Fate, Up to God	4.4	2.1	4.6	1.9	17.1	3.4
Other	1.0	1.0	0.6	0.3	3.8	1.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(2,656)	(894)	(1,162)	(228)	(220)	(151)

*Excludes one case for whom ethnic group is unknown.

Table 4-5

Belize: Perception of Ideal Time Interval Between Children,
by Selected Characteristics: Women Aged 15-44
(Percent Distribution)
1991 Family Health Survey

Selected Characteristics	Number of Years <2	2<3	3<4	>4	Don't Know	Total	No. of Cases (Unweighted)
Total	4.8	28.4	31.4	28.8	6.5	100.0	(2,656)
Residence							
Urban	4.7	25.7	32.5	31.5	5.5	100.0	(1,724)
Rural	5.0	33.8	29.1	23.5	8.6	100.0	(932)
Years of Education							
0-7	6.4	31.7	30.5	22.9	8.5	100.0	(827)
8	3.8	29.1	32.7	28.2	6.2	100.0	(918)
9+	4.4	25.2	31.0	34.1	5.3	100.0	(911)
Ethnic Group*							
Creole	4.9	22.5	28.4	37.3	6.8	100.0	(894)
Mestizo	4.7	31.2	33.9	23.9	6.2	100.0	(1,162)
Garifuna	4.9	31.9	30.3	30.3	2.5	100.0	(228)
Maya/Ketchi	3.5	35.5	27.9	19.2	13.9	100.0	(220)
Other	6.5	28.7	37.8	23.8	3.2	100.0	(151)
Contraceptive Use							
Currently Using	5.0	28.5	31.3	32.6	2.6	100.0	(1,001)
Not Using	4.7	28.4	31.5	26.9	8.5	100.0	(1,655)

*Excludes one case for whom ethnic group is unknown.

Table 4-6

Belize: Who Should Decide Whether a Person
Should Use a Method of Contraception,
by Residence and Marital Status: Women Aged 15-44
1991 Family Health Survey
(Percent Distribution)

		Residence		Marital Status	
Decision Maker	Total	Urban	Rural	Ever Married	Never Married
Both	48.7	44.5	57.0	52.9	41.1
Wife/Woman	30.8	38.4	15.6	28.4	35.0
Husband/Partner	8.3	6.7	11.7	9.5	6.2
Doctor/Nurse	5.4	5.7	4.7	5.1	5.9
Doesn't Believe in Contraception	0.9	0.6	1.6	1.1	0.7
Other/Don't Know	5.9	4.1	9.5	3.0	11.2
Total	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(2,656)	(1,724)	(932)	(941)	(715)

Table 4-7

Belize: Who Should Decide Whether a Person
Should Use a Method of Contraception,
by Education: Women Aged 15-44
1991 Family Health Survey
(Percent Distribution)

		Years of Education		
Decision Maker	Total	0-7	8	9+
Both	48.7	52.6	48.0	46.1
Wife/Woman	30.8	20.8	31.3	38.2
Husband/Partner	8.3	14.3	8.8	3.1
Doctor/Nurse	5.4	2.6	4.6	8.3
Doesn't Believe in Contraception	0.9	1.6	0.7	0.7
Other/Don't Know	5.9	8.1	6.7	3.6
Total	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(2,656)	(827)	(918)	(911)

Table 4-8

Belize: Who Should Decide Whether a Person
Should Use a Method of Contraception,
by Ethnic Group: Women Aged 15-44
1991 Family Health Survey
(Percent Distribution)

		Ethnic Group				
Decision Maker	Total	Creole	Mestizo	Garifuna	Maya/ Ketchi	Other
Both	48.7	38.9	59.8	36.2	44.6	48.7
Wife/Woman	30.8	43.4	20.5	42.1	17.4	31.3
Husband/Partner	8.3	6.0	9.2	8.1	13.6	9.7
Doctor/Nurse	5.4	7.5	3.7	6.5	4.2	4.9
Doesn't Believe in Contraception	0.9	0.5	1.0	1.2	2.4	0.5
Other/Don't Know	5.9	3.7	5.8	5.9	17.8	4.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(2,656)	(894)	(1,162)	(228)	(220)	(151)

Table 4-9

Belize: Percent Distribution of Reasons a Woman May Wish to Limit the Number of Children She Has, by Residence
1991 Family Health Survey

		Residence	
Reasons	Total	Urban	Rural
Financial	65.4	68.2	59.8
Child Care Problems	7.2	6.0	9.5
Health of Mother	6.5	5.9	7.6
Work Related	4.3	5.1	2.6
Health of Child	3.7	2.4	6.2
Schooling	3.5	4.3	1.8
Other	1.3	1.4	1.1
Don't Know	8.2	6.7	11.4
Total	100.0	100.0	100.0
No. of Cases (Unweighted)	(2,656)	(1,724)	(932)

Table 4-10

Belize: Percent Distribution of Reasons a Woman May Wish to Limit the Number of Children She Has, by Ethnic Group*
1991 Family Health Survey

		Ethnic Group				
Reasons	Total	Creole	Mestizo	Garifuna	Maya/ Ketchi	Other
Financial	65.4	64.6	68.3	64.7	49.8	70.8
Child Care Problems	7.2	6.3	7.0	6.5	15.0	4.3
Health of Mother	6.5	6.8	5.9	8.4	5.9	7.0
Work Related	4.3	3.5	3.5	3.4	6.3	2.7
Health of Child	3.7	5.4	3.3	6.5	2.8	3.2
Schooling	3.5	5.3	2.8	3.4	0.0	2.2
Other	1.3	1.4	1.1	0.9	1.4	2.2
Don't Know	8.2	6.6	8.1	6.2	18.8	7.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(2,656)	(894)	(1,162)	(228)	(220)	(151)

*Excludes one case for whom ethnic group is unknown.

5. Knowledge, Use, and Source of Contraception

This chapter covers a wide range of topics concerning contraceptive methods: knowledge of contraceptive methods, knowledge of the fertile period, current contraceptive use, source of contraception, and reasons for non-use of contraception and desire to use in the future.

5.1 Knowledge of Contraceptive Methods

All women aged 15-44 were asked if they had ever heard of various contraceptive methods. The findings of the survey show that knowledge of contraception in Belize is very high, as 95 percent of women 15-44 years of age have knowledge of at least one modern method of contraception (excludes diaphragms, rhythm, Billings, and withdrawal). Knowledge of at least one method was slightly higher in urban areas (97 percent) than in rural areas (92 percent) and ranged from 86 percent among women with no formal education to 100 percent among women with a post-secondary education. Knowledge of at least one modern method also varied according to ethnic group: Almost 100 percent of the Garifuna had knowledge of at least one modern method while only 88 percent of the Maya/Ketchi possessed this level of knowledge.

There was wide variation in knowledge of individual methods (Table 5-1, Figure 5-1). For all women aged 15-44 the most widely known methods of contraception were oral contraceptives (93 percent), female sterilization (88 percent), injectables (86 percent), and condoms (82 percent). The least well known methods included vaginal creams, jellies, and foam (40 percent), the diaphragm (39 percent), withdrawal (35 percent), and the Billings method (16 percent). Table 5-1 also shows that, with the exception of the Billings method, rural women are less familiar with the individual contraceptive methods than urban women.

Knowledge of contraception was directly associated with the educational attainment of the respondents (Table 5-2). For example, while over 90 percent of women with a post-secondary education knew of oral contraceptives, female sterilization, injectables, condoms, IUDs, and the rhythm method, knowledge of these same methods among women with no formal education varied from 29 percent to 77 percent.

Table 5-3 shows that knowledge of contraceptive methods is relatively high for all ethnic groups except the Maya/Ketchi. Although the Maya/Ketchi have less knowledge of individual methods, from 70 percent to 82 percent reported knowledge of the more effective methods such as oral contraceptives, female sterilization, and injectables. In households where Maya is the principal language spoken, knowledge of individual methods was found to be relatively low (Table 5-4). Among women living in households where Maya is the princepal language, there is not one method that at least two thirds of these women have heard of. At present, most of the family planning literature that is available in Belize is printed only in English and very few publications exist in Spanish and none in indigenous or other local languages. These findings indicate the need to develop educational materials specifically for those who do not speak English.

5.2 Knowledge of the Fertile Period

A basic understanding of the ovulatory cycle and an awareness of the fertile period is important for practicing certain family planning methods, such as rhythm, the Billings method, and withdrawal. As noted earlier, 53 percent of all women aged 15-44 said that they had knowledge of the rhythm method, while only 35 percent and 16 percent, respectively, stated that they had knowledge of withdrawal and the

Billings method, respectively. According to the findings of this survey, although only 5 percent of users practice periodic abstinence, rhythm or Billings is the fourth most used method in Belize.

All respondents were asked, "During a woman's menstrual cycle, when is it most likely that she will become pregnant?" Only 23 percent of all respondents correctly identified the middle of the cycle as the time a woman is most likely to get pregnant (Table 5-5). A higher percentage (36 percent) of ever-users of rhythm, the Billings method, or withdrawal had correct knowledge of when a woman is most likely to get pregnant during her menstrual cycle. Among all respondents, urban women, women with nine or more years of schooling, women aged 40-44, and Creoles were the most likely to possess correct knowledge of the safe period. The same differentials exist among ever-users of natural methods and withdrawal, except that Garifunas rather than Creoles were the most likely to possess correct knowledge of the safe period.

The biological aspects of reproduction are taught in secondary schools in Belize but other aspects of sex education are not part of the curriculum. Churches and young adult clubs sometimes address these issues, but their audiences are limited and their treatment of the subject matter is superficial. Rarely is sex education dealt with in the home. Thus, it is not surprising that less than a quarter of the respondents know when a woman would most likely get pregnant during the menstrual cycle.

5.3 Current Contraceptive Use

This section covers contraceptive use according to sociodemographic variables typically associated with use: marital status, residence, age, number of living children, education, socioeconomic status (measured by number of amenities found in the household), and work status. In addition, use is examined by ethnic group, principal language spoken in the household, and religion. With the exception of the first table (Table 5-6), the results presented here focus on the level of use found among women currently married or living in consensual unions who are 15-44 years of age. In the text and tables that follow, these women are referred to collectively as "married women."

Overall, one third of all women aged 15-44 were found to be using contraceptive methods at the time of the survey (Table 5-6). The prevalence of contraceptive use varied from 49 percent among women in a visiting partner relationship to 7 percent among never married women (a visiting partner relationship is defined as two individuals who do not live in the same house but have a sexual relationship in which one partner visits the other on a more or less regular basis). Forty-seven percent of married women reported using a method. The two most prevalent methods used by ever-married women are female sterilization and oral contraceptives, while the most prevalent method used by women with a visiting partner and never-married women is oral contraceptives.

As shown in Table 5-7, urban areas of the country have a much higher contraceptive prevalence rate with 55 percent of married women reporting current use, compared to 33 percent of married women living in rural areas. As in neighboring countries, the most prevalent method used by married women in Belize is female sterilization, which accounts for 40 percent of all contraceptive use (Figure 5-2). The second most prevalent method is oral contraceptives, accounting for 32 percent of overall use, followed by injectables, which account for an additional 9 percent of total use. Thus, three methods, all with very high effecttiveness, account for 81 percent of overall use. Use of the remaining methods shown in Table 5-7 and Figure 5-3 is relatively low.

Table 5-8 shows that as age increases so does the prevalence of contraceptive use. Use is lowest for married women 15-19 (26 percent),

but increases to 37 percent among those 20-24 years old. By the time married women are 30 years of age or older, more than 50 percent are using some form of contraception. Oral contraceptives are the most used method among married women 15-29 years of age, but after age 30 the most prevalent method is female sterilization. An illustration of the increasing prevalence of female sterilization as women age is that this method accounts for only 7 percent of total use among married women 20-24 years of age, compared with 46 percent among women 30-34, and 76 percent among women 40-44.

There was one married woman in the age group 15-19 who reported having a tubal ligation. She is a 19 year old woman who has four living children. She reported that the ideal number of children to have is four and that she is satisfied with the operation.

Table 5-9 and Figure 5-3 show the relationship between use and number of living children. Because of the high correlation between age and number of children, these results show a similar pattern to that presented in the previous table. Overall, contraceptive use is relatively low among married women with no living children (14 percent) but increases rapidly to 34 percent after women have their first child and to over 50 percent after the second child. Female sterilization is the most used method after the third child, while oral contraceptives, injectables, and natural family planning (rhythm and the Billings method) are important for women with one to three children. In general, the use of reversible methods declines in importance with an increase in number of living children, from a high of 80 percent among currently using women with two children to 41 percent among current users with 6 or more living children, as an increasing percentage of women rely on sterilization.

The one married woman with no living children who has had a tubal ligation has never been pregnant. She is currently 41 years of age and was sterilized when she was 27. She reported that she was satisfied with having had the operation.

As expected, use of contraceptive methods was also found to be directly associated with educational attainment (Table 5-10, Figure 5-4). This is due in part to the greater use of reversible methods, especially oral contraceptives, as the level of education increases. For example, women with a post-secondary education were 6 times more likely to use oral contraceptives than women with no formal education.

Contraceptive use also increases with the reported number of household amenities (a surrogate of socioeconomic status, Table 5-11). Prevalence of use in the highest category (8 to 10 amenities) is twice that found in the lowest category (0 to 2 amenities). The differential is primarily explained by the greater use of oral contraceptives and female sterilization among women living in households with the highest number of household amenities.

Whether or not a woman is in the labor force is an important factor associated with the use of contraception, as shown in Table 5-12. Almost two thirds of working married women were found to be using contraception compared with 42 percent of nonworking women. Use of oral contraceptives varied according to work status, as two times as many working women were found to be using this method than nonworking women. Similarly, working women were more likely to report sterilization as their method than nonworking women.

Differences in contraceptive prevalence are also seen according to ethnic group (Table 5-13, Figure 5-5) and principal language spoken in the household (Table 5-14). Creole women reported the highest prevalence (53 percent) while the Maya/Ketchi women reported the lowest prevalence (25 percent). Although there was very little difference in the use of surgical contraception by Creoles,

Mestizos, and Garifunas (about 20 percent), approximately two times as many Creoles reported using oral contraceptives as Garifunas and Mestizos. According to principal language spoken in the household, the highest prevalence of contraceptive use was reported by married women living in households where English is the principal language (Table 5-14). Conversely, the lowest prevalence was reported by married women who live in households where Maya is the principal language (10 percent). However, this prevalence is twice the level found in this same ethnic group in Guatemala (Ministerio de Salud Pública y Asistencia Social, 1989). Other groups speaking Creole, Garifuna, and Spanish range from 54 to 43 percent prevalence.

As Table 5-15 shows, very little difference in the use of contraception exists between Protestants and Catholics. Interestingly, about the same percentage of Protestants and Catholics reported using each method, including natural family planning.

Contraceptive prevalence by residence is shown in Figure 5-6. The differences in contraceptive prevalence according to residence persist despite controlling for age, years of education, number of household amenities, number of living children, and work status (Table 5-16). For example, use is higher in urban areas than in rural areas for all age groups. Urban married women aged 15-19 were 4 times as likely to report current use than their rural counterparts. Similarly, use is higher for all education groups in urban areas relative to rural areas. It should be noted that similar patterns of use exist among women with 9 or more years of formal education, regardless of residence. For both urban and rural areas, use increases as number of living children increases. However, use levels off to about 35 percent in rural areas after the second child is born compared to over 60 percent among urban mothers. Nearly 1.7 times as many nonworking urban women reported current use than nonworking rural women. However, no significant difference is found to exist among working women in both strata.

In general, the positive association between contraceptive use and education is maintained when age, number of living children, number of household amenities, and work status are controlled, as shown in Table 5-17 and Figures 5-7 and 5-8. That is, women with higher levels of education are more likely to use contraception than women with lower levels of education. For certain groups with 9 or more years of formal education, contraceptive use reaches impressively high levels. This is true for women with 2 to 5 living children and women living in households with 8 to 10 amenities. It should be noted that contraceptive use among women with 8 years of schooling is similar in some instances to that of women with 9 or more years of schooling, i.e., among women 35-44 years of age, women with 6 or more children, women with 8-10 household amenities, and working women.

Earlier in this report, planning status of last pregnancy was discussed. Table 5-18 shows contraceptive use according to this variable. A higher percentage of married women aged 15-44 whose last pregnancy within five years of interview was unwanted were using a contraceptive method than married women who reported that their last pregnancy was either mistimed or planned. Of those women with an unwanted pregnancy who reported contraceptive use, 47 percent were using sterilization as their current method and an additional 39 percent were either using oral contraceptives or injectables. Thus, overall, 86 percent of women whose last pregnancy was unwanted and who were using contraception were using the most effective methods. Nonusers of contraception following an unwanted birth tend to be older and of higher parity, which suggests that they may have always had difficulty in regulating their fertility. For women who reported that their last pregnancy was planned or mistimed and were using contraception, 72

percent and 88 percent, respectively, were using reversible methods.

Reasons for Currently Using Contraception

All current users of contraception were asked whether they were using in order to space or to limit births. Two thirds of contracepting married women aged 15-44 responded that they were using contraception to limit childbearing while the remaining one third stated that they wanted to space their pregnancies (Table 5-19). There were no differences in reasons for using between urban and rural areas. However, as expected, the percentage of current users wanting to limit childbearing increases with age and number of living children of the respondent: by the time these women are 25-29 years of age and/or have three living children, over half want to limit their childbearing. It is noteworthy that 45 percent of current users of the rhythm/Billings methods, vaginal methods, and withdrawal (collapsed into "other") and 50 percent of condom users were using to limit childbearing. Finally, with the data presented in Table 5-19, a profile is given of the women who are using contraception to space their pregnancies. As expected, these women tend to be young (15-24 years of age), have attained a higher level of education, and have fewer than two living children.

Characteristics at First Contraceptive Use

The time at which a woman begins to use contraception in her reproductive years is an important factor in how much her fertility will be reduced by using contraception. A woman who begins at a later age or after having many children will probably avert fewer unintended births than a woman who begins at a younger age and with fewer children.

Table 5-20 shows that mean age and mean number of living children of ever-users of contraception at the time of first contraceptive use is 27.9 years of age and 3.8 living children. Mean age is 27.3 years for urban women and 29.9 years for among rural women. The largest age differential is between Protestants (22.6 years) and Catholics (28.6 years). There is an inverse relationship with education and number of household amenities. With respect to ethnicity, the Creoles stand out as having a relatively young age at first use (25 years).

There is considerable variation in number of living children at first use according to each of the background variables shown in the table and is in the same direction as mean age. Mestizos have twice as many children (5.0) as Creoles (2.5) at first use, and Catholics have 4.5 children on the average compared with 3.0 for Protestants. With few exceptions, approximately one half of users did not initiate contraception until they had 3 children.

An analysis of the number of living children that ever-married women had at the time of first contraceptive use according to their current age reveals that younger cohorts of women are initiating contraceptive use earlier than older cohorts did. As Table 5-21 shows, only 8 to 9 percent of women who are currently 35-44 years of age began using contraception before their first child compared to 19 to 21 percent of women currently aged 15-24. In general, as the current age of the respondents decreases, the proportion initiating contraception at lower parities increases.

Contraceptive Prevalence in the Region

The data appearing in Table 5-22 place contraceptive prevalence in Belize in a geographic perspective by comparing the 1991 results with recent survey results from other countries in the region. Contraceptive prevalence in Costa Rica (69 percent) is the highest of any of the countries, while Guatemala (23 percent) has the lowest prevalence of the countries recently surveyed in the region. Belize's prevalence is essentially the same as that of El Salvador. With the exception of Costa Rica, Jamaica,

and Trinidad and Tobago, the most prevalent method in each of the countries is female sterilization. With the exception of Mexico, the second most used method in the region is oral contraceptives. In Honduras, there is no difference in prevalence between female sterilization and oral contraceptives. Compared to other countries in the region, Belize is third, along with Mexico, with regard to the use of female sterilization and also third with regard to the use of oral contraceptives.

5.4 Source of Contraception

As shown in Table 5-23 and Figure 5-9, the most important sources of contraception in Belize in 1991 were Government health facilities (Ministry of Health) and pharmacies. The percentage of users that rely upon the Ministry of Health and private clinics did not vary appreciably by area of residence. In contrast, 1.6 times more urban users rely on pharmacies as their source of contraception than women living in rural areas. On the other hand, a higher proportion of rural than urban users rely on the Belize Family Life Association (BFLA), the International Planned Parenthood Federation (IPPF) affiliate in Belize, despite the fact that the BFLA offices are located in urban areas. A possible explanation for this is that the urban locations of the BFLA provide a sense of anonymity for rural women. Another possible explanation is that rural women elect to go to BFLA clinics because they are certain that they will receive the information and services they are seeking.

Educational attainment appears to be an important determinant of where users obtain their method (Table 5-24). In general, women with higher educational attainment tend to use pharmacies and the BFLA as their sources of contraception while women with lower educational attainment tend to rely on government health facilities. Use of private clinics does not vary appreciably by educational attainment.

Although use of government health facilities did not vary much by ethnicity, use of the other sources of contraception did (Table 5-25). A higher proportion of Garifuna (30.1 percent) rely upon the BFLA for contraceptives than any other ethnic group. Similarly, a higher proportion of Creoles rely on pharmacies. Maya/Ketchi and Mestizos had higher proportions relying on private clinics as their source of contraception than did other ethnic groups.

An analysis of source of contraception by method (Table 5-26) shows that the Ministry of Health is the principal source of female sterilization in the country (87 percent). Only a small percentage of users of temporary methods rely upon the Ministry of Health as their source of contraceptives. With respect to oral contraceptives and condoms, pharmacies are by far the major supplier of these methods (66 percent and 79 percent, respectively). The BFLA is the principal supplier of injectables and is second in importance with respect to oral contraceptives. IUDs are primarily inserted in private clinics (52 percent), followed by the Ministry of Health (24 percent), and the BFLA (19 percent). About 4 percent each of users of oral contraceptives and injectables obtain their supplies outside of Belize.

It should be noted that the Ministry of Health has no definite family planning policy. Occasionally, the hospital may receive contraceptives from donor agencies and distribute them. If a woman attending a clinic is perceived to be in need of family planning by the nurse or physician then she might be referred to the BFLA. Private doctors who perform sterilizations almost always use government facilities to do the operation. However, all of this depends on the medical attendants' initiative more than government rules. Thus, an unknown percentage of tubal ligations reported to be performed at government facilities were undoubtedly performed by private physicians. Officially, the Ministry of Health does not supply contraceptives.

5.5 Reasons for Nonuse of Contraception and Desire to Use in the Future

In the 1991 Family Health Survey, nonusers were asked the reasons why they were not currently using contraception. This section covers the reasons given by the respondents and the relationship between the characteristics of nonusers and desire to use contraception in the future. Also, for women who want to use a method, the preferred source and method are discussed.

Reasons for Nonuse

Of married women aged 15-44 not using contraception at the time of the survey, 59 percent were not using any method for reasons related to pregnancy, subfecundity, or lack of sexual activity (Table 5-27). This includes 7 percent who were postpartum or breastfeeding. The other 41 percent of nonusers who gave "other reasons" for not using contraception may be considered potential candidates for adopting contraception. This percentage represents an estimated 4,230 married women aged 15-44. However, it should be noted that a sizeable proportion of the 59 percent of nonusers who are not immediate candidates for use (47 percent, or approximately 2,860 women) are potential high priority target women following their current pregnancy and/or postpartum period.

Among women who gave "other reasons," the major reasons for nonuse were fear of side effects (9 percent), "doesn't like or want contraception" (8 percent), and lack of knowledge of methods (8 percent). Less than one percent of women stated they were not using because of religious reasons.

Examining reasons for nonuse by education, we observe in Table 5-28 that the proportion of women reporting a reason for nonuse related to pregnancy, subfecundity, or lack of sexual activity increases as the formal education of the women increases. Thus, the proportion of women who could be considered potential candidates for family planning at the time of the survey is inversely related to the level of education. Among lower educated women, major reasons for nonuse included lack of knowledge of methods, fear of side effects, and "doesn't like or want contraception."

Reasons for nonuse also varied by number of living children (data not shown). As expected, women of lower parities were not using princepally because of reasons related to pregnancy. As parity increased, so did the proportion of women giving "other reasons" for their nonuse of contraception. Thus, the proportion of women who could be considered candidates for family planning at the time of the survey is directly related to number of living children. The principal reasons for nonuse among higher parity women were the same as those reported by lower educated women.

Reasons Discontinued the Use of Contraception

Former users of contraception were asked why they discontinued the use of their most recent method. Overall, 40 percent of the married nonusers had previously used a contraceptive method. The principal methods used by these women were oral contraceptives (56 percent), injectables (14 percent), and condoms (9 percent). Almost one third of the women stated that their desire to become pregnant led them to discontinue use, while an additional 29 percent discontinued because they had or feared side effects from their method (Table 5-29). The proportion citing side effects was highest among former users of oral contraceptives and injectables. Thirty-one percent of former users of condoms stated that they discontinued the use of condoms because they "didn't like or want to use" this method. Similarly, an additional 12 percent of former users of condoms stated that the method was not effective.

Desire to Use Contraception in the Future

Slightly greater than half (54 percent) of fecund nonusers said that they desired to use a method of contraception in the future (Table 5-30). The proportion wanting to use in the future was highest among nonusers living in urban areas, among nonusers less than 30 years of age, among nonusers with fewer than four living children, among nonusers with nine or more years of schooling, and among nonusers who are Creole or Garifuna.

The right-hand panel of Table 5-30 shows that three quarters of nonusers who desire to use a method have knowledge of a source of contraception. Rural women, women 15-19 years of age, women with no living children, women with lower educational attainment, and the Maya/Ketchi were the least likely to know of a source of contraception.

The top panel of Table 5-31 shows the methods of choice mentioned by nonusers desiring to use a method. The most frequently desired methods were oral contraceptives, female sterilization, and injectables. Oral contraceptives, female sterilization, and injectables were the methods of choice among urban nonusers, while injectables, female sterilization, and oral contraceptives were the methods of choice among rural nonusers, in that order.

Pharmacies were cited as a potential source by 31 percent of nonusers and were a commonly mentioned source by urban nonusers. Government health facilities were cited as a potential source by more than a quarter of nonusers, and were the principal source mentioned by nonusers living in rural areas. Overall, the BFLA was the third most mentioned source, followed by private clinics.

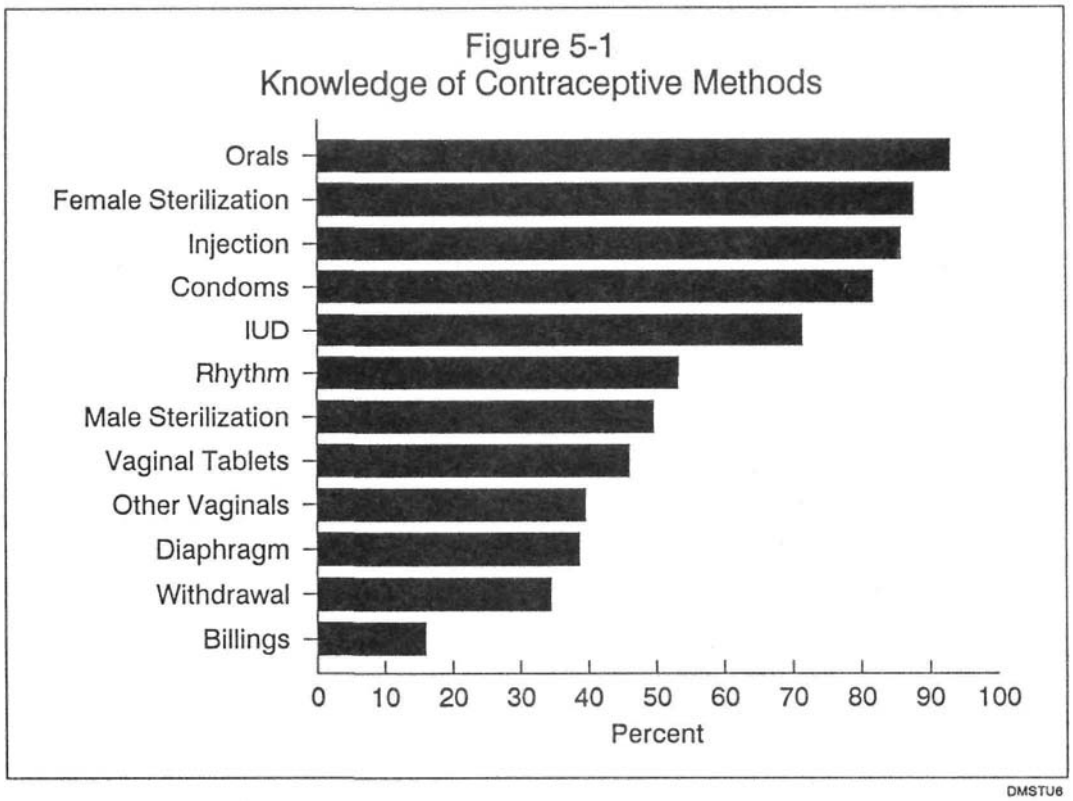


Figure 5-1
Knowledge of Contraceptive Methods
Orals
Female Sterilization
Injection
Condoms
IUD
Rhythm
Male Sterilization
Vaginal Tablets
Other Vaginals
Diaphragm
Withdrawal
Billings
0 10 20 30 40 50 60 70 80 90 100
Percent
DMSTU6

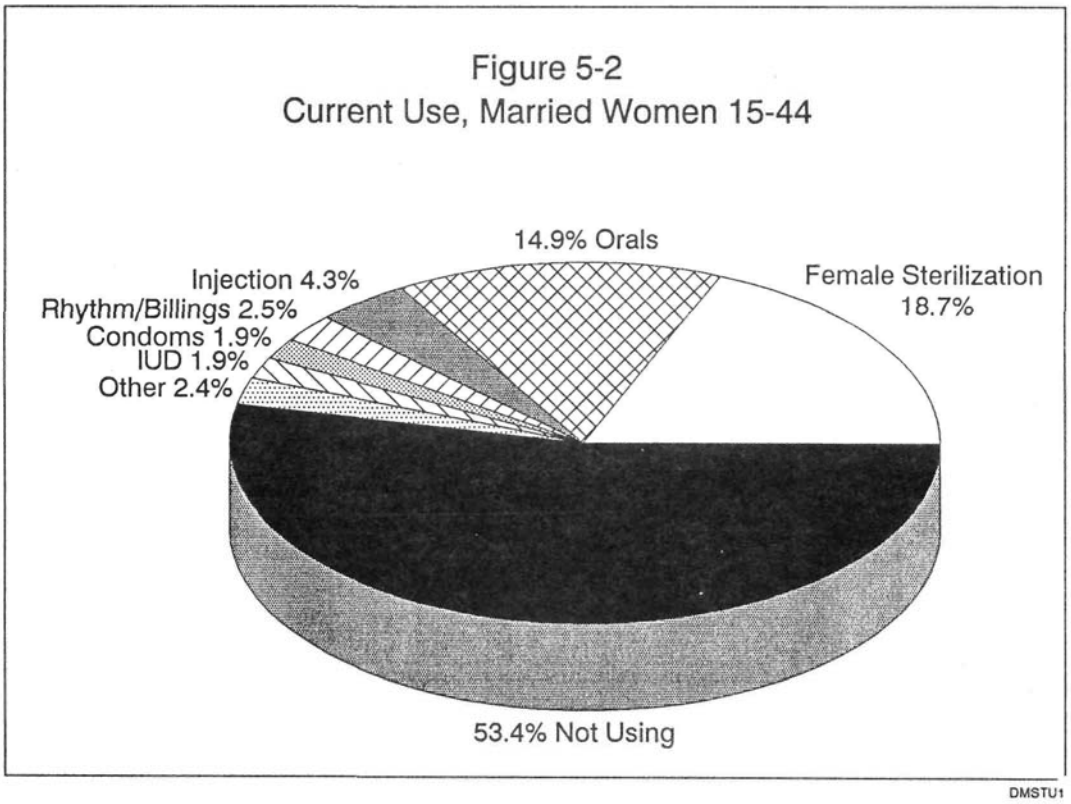


Figure 5-2
Current Use, Married Women 15-44
14.9% Orals
Injection 4.3%
Rhythm/Billings 2.5%
Condoms 1.9%
IUD 1.9%
Other 2.4%
Female Sterilization
18.7%
53.4% Not Using
DMSTU1

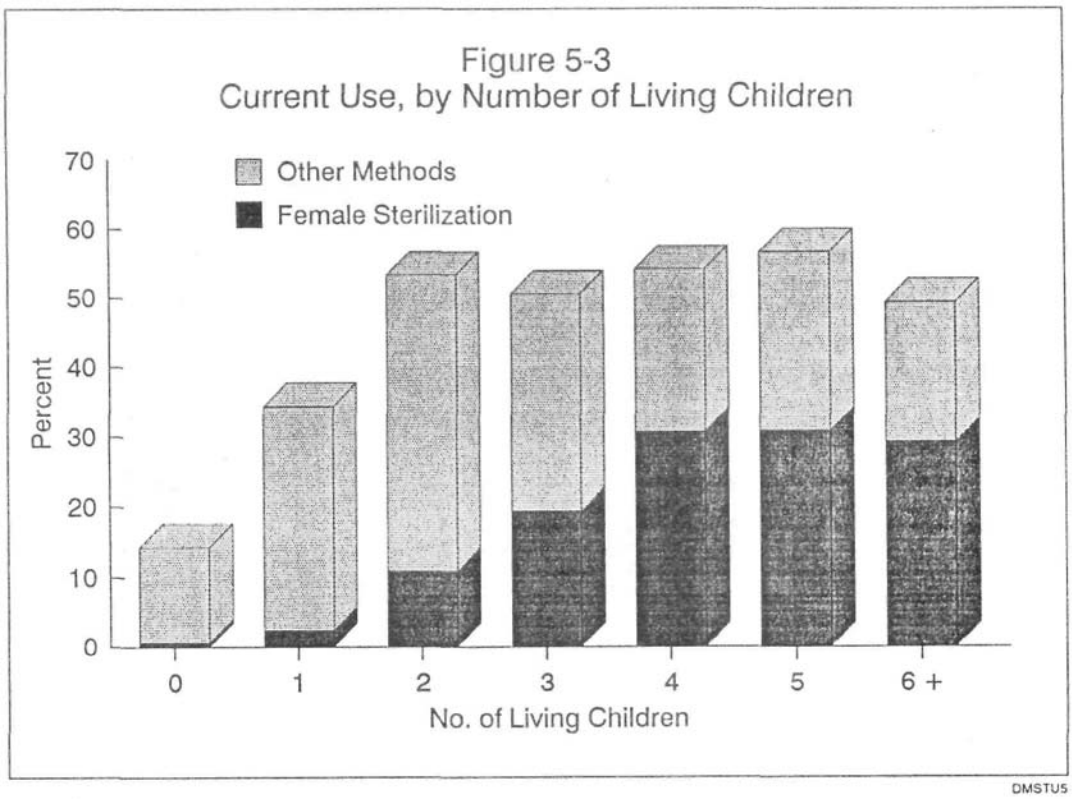


Figure 5-3
Current Use, by Number of Living Children
Other Methods
Female Sterilization
Percent
70
60
50
40
30
20
10
0
0
1
2
3
4
5
6 +
No. of Living Children
DMSTU5

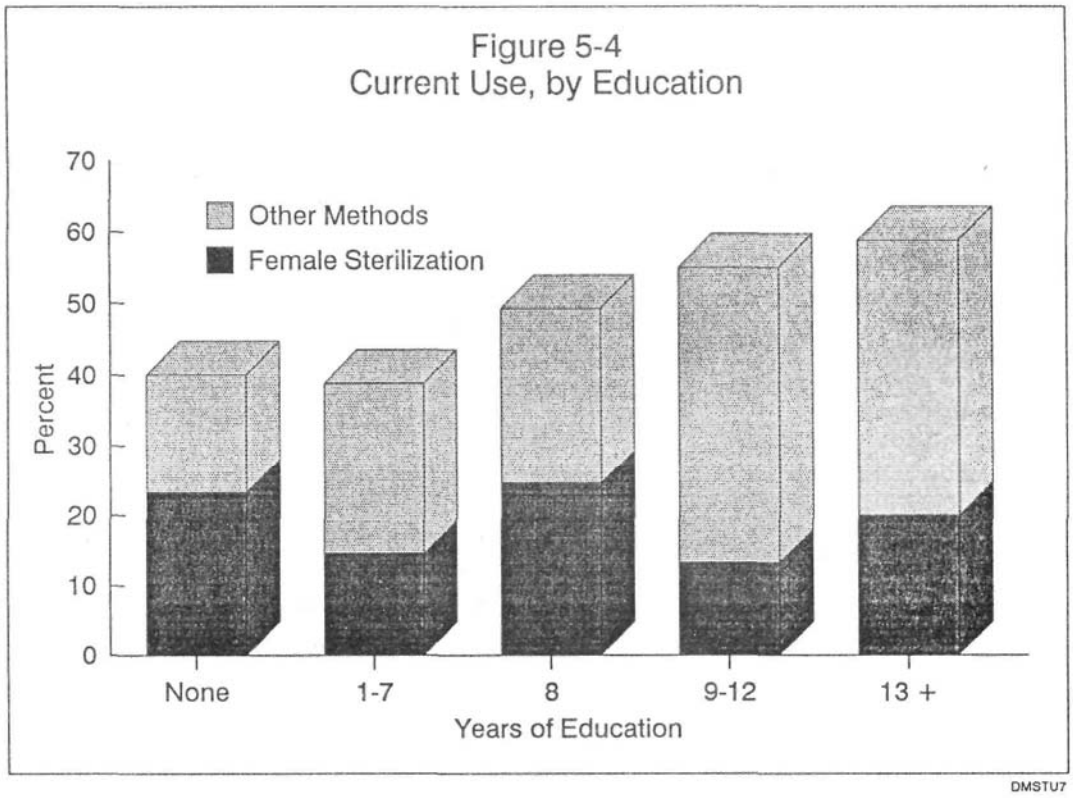


Figure 5-4
Current Use, by Education
Other Methods
Female Sterilization
Percent
70
60
50
40
30
20
10
0
None
1-7
8
9-12
13 +
Years of Education
DMSTU7

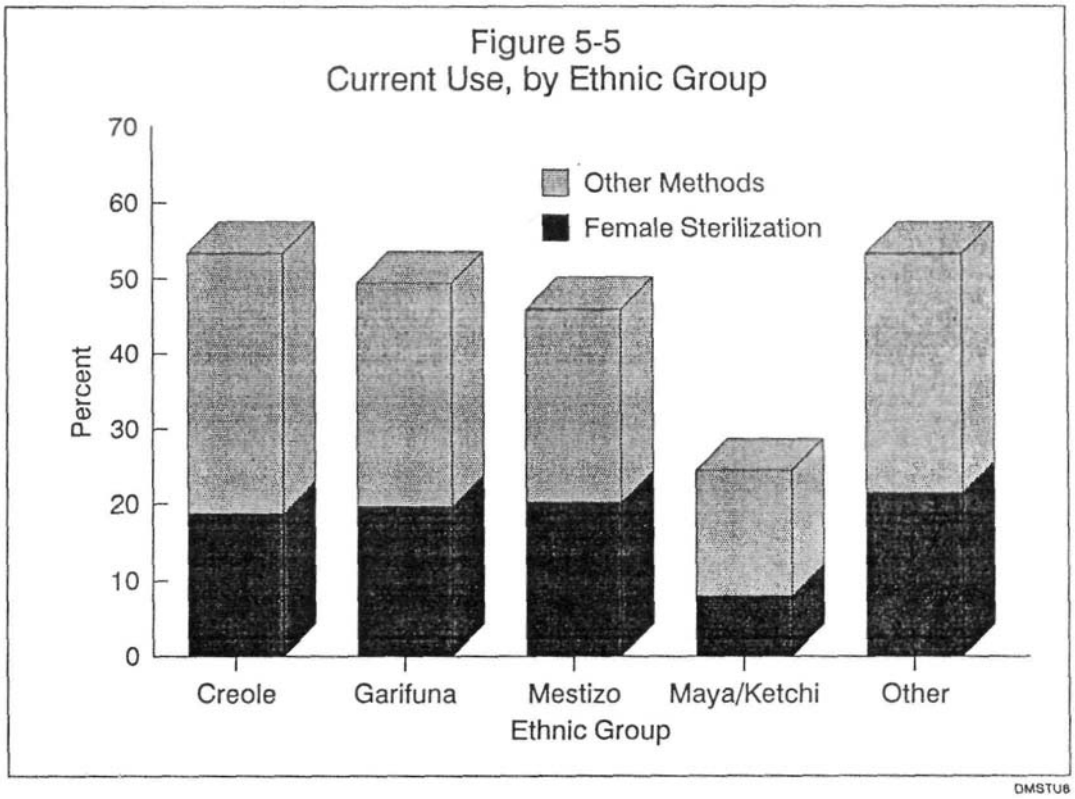


Figure 5-5
Current Use, by Ethnic Group
Other Methods
Female Sterilization
Percent
70
60
50
40
30
20
10
0
Creole
Garifuna
Mestizo
Maya/Ketchi
Other
Ethnic Group
DMSTU8

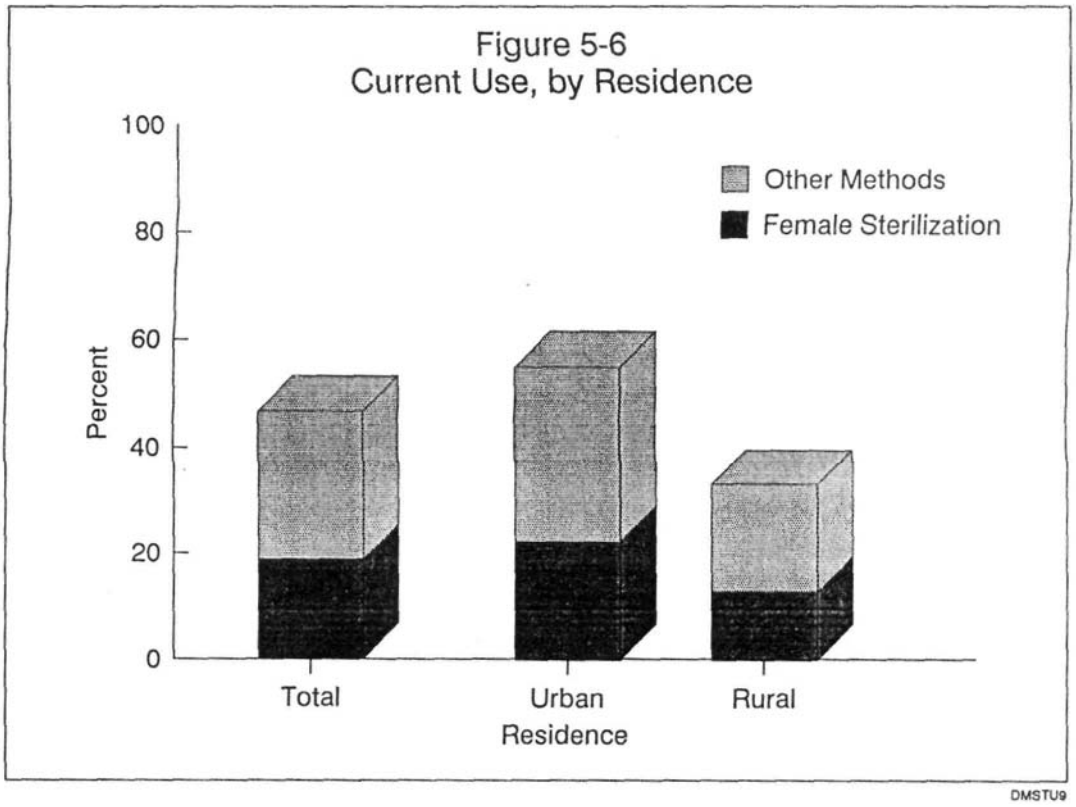


Figure 5-6
Current Use, by Residence
Other Methods
Female Sterilization
Percent
100
80
60
40
20
0
Total
Urban
Rural
Residence
DMSTU9

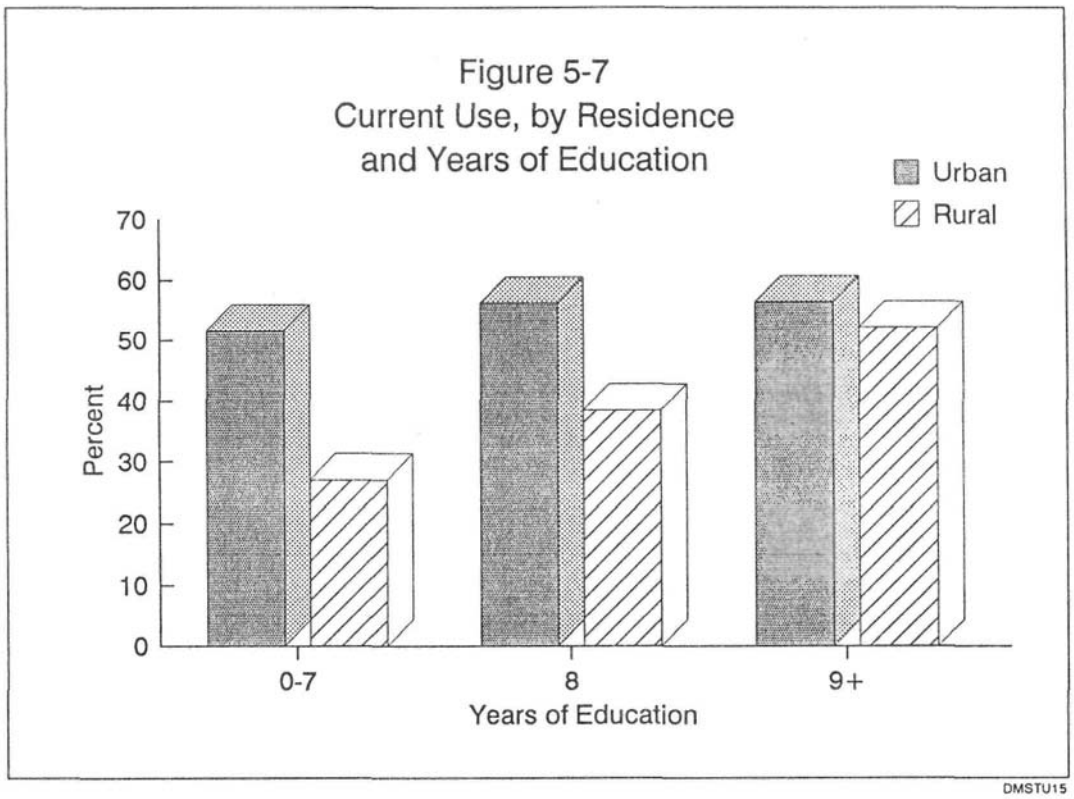


Figure 5-7
Current Use, by Residence
and Years of Education
Urban
Rural
Percent
70
60
50
40
30
20
10
0
0-7
8
9+
Years of Education
DMSTU15

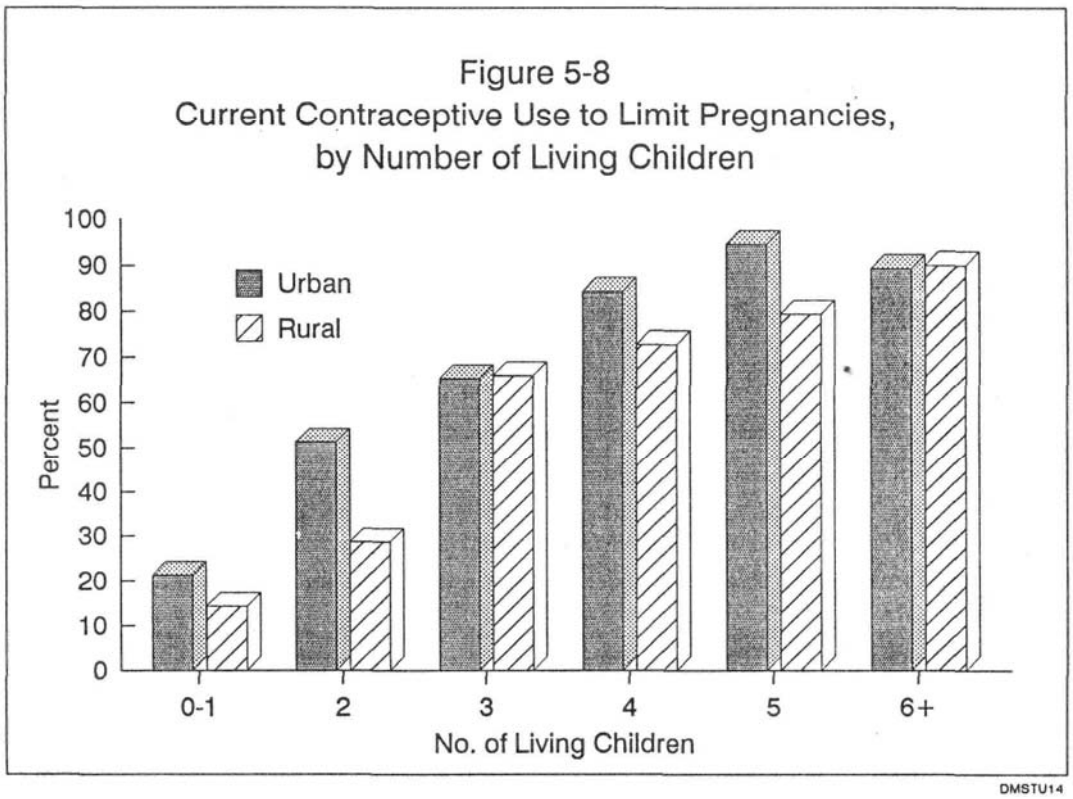
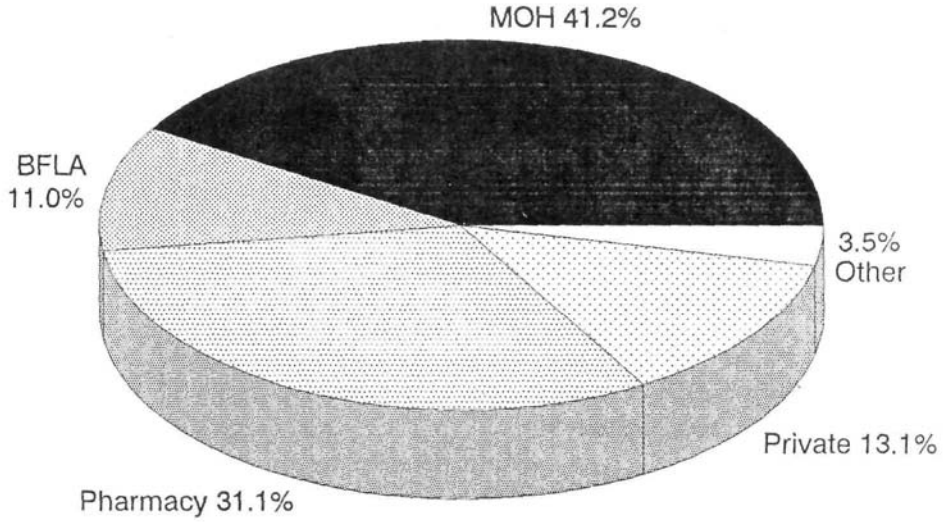


Figure 5-8
Current Contraceptive Use to Limit Pregnancies,
by Number of Living Children
Urban
Rural
Percent
100
90
80
70
60
50
40
30
20
10
0
0-1
2
3
4
5
6+
No. of Living Children
DMSTU14

Figure 5-9
Source of Contraception for Methods
Requiring Resupply or Surgical Intervention



DMSTU2

Table 5-1

Belize: Percentage of All Women Aged 15-44
With Knowledge of Contraceptive Methods,
by Method and Years of Education
1991 Family Health Survey

		Years of Education				
Contraceptive Method	Total	None	1-7	8	9-12	13+
Orals	93.1	77.0	88.5	93.0	97.7	100.0
Female Sterilization	87.7	74.8	79.5	88.2	92.8	100.0
Injection	85.8	69.1	82.9	87.3	86.9	93.1
Condoms	81.7	48.9	63.2	84.4	94.7	98.2
IUD	71.4	42.5	60.1	71.6	79.1	92.7
Rhythm	53.3	29.5	36.6	50.1	64.7	92.0
Male Sterilization	49.7	39.6	44.4	45.1	53.2	79.7
Vaginal Tablets	46.1	25.2	31.7	42.4	57.5	78.6
Other Vaginal Methods*	39.6	17.3	23.0	35.2	51.9	79.3
Diaphragm	38.7	23.7	20.8	29.5	56.2	79.7
Withdrawal	34.5	18.0	24.3	29.3	42.0	72.8
Billings	16.0	9.3	10.3	13.8	17.7	42.7
No. of Cases (Unweighted)	(2,656)	(113)	(714)	(918)	(713)	(198)

*Includes creams, jellies, and foam.

Table 5-2

Belize: Percentage of All Women Aged 15-44
With Knowledge of Contraceptive Methods,
by Method and Ethnic Group
1991 Family Health Survey

		Ethnic Group				
Contraceptive Method	Total	Creole	Mestizo	Garifuna	Maya/ Ketchi	Other*
Orals	93.1	95.7	91.8	97.8	81.9	96.2
Female Sterilization	87.7	91.6	85.8	96.3	70.0	89.7
Injection	85.8	85.3	86.4	92.5	78.0	83.2
Condoms	81.7	94.1	74.9	94.1	49.8	82.2
IUD	71.4	79.5	65.5	87.9	45.6	76.8
Rhythm	53.3	59.9	50.8	55.1	30.0	62.2
Male Sterilization	49.7	50.2	49.9	48.9	38.0	63.2
Vaginal Tablets	46.1	59.0	36.9	57.0	24.0	50.8
Other Vaginal Methods**	39.6	51.4	31.2	47.4	17.8	49.7
Diaphragm	38.7	48.4	30.4	51.7	18.8	49.2
Withdrawal	34.5	41.7	29.5	39.3	15.7	48.7
Billings	16.0	17.9	14.4	16.4	11.9	22.2
No. of Cases*** (Unweighted)	(2,656)	(894)	(1,162)	(228)	(220)	(151)

*Primarily includes East Indians, Asians, and those of European Ancestry.

**Includes creams, jellies, and foam.

***Excludes one case for whom ethnic group is unknown.

Table 5-3

Belize: Percentage of All Women Aged 15-44 With Knowledge of Contraceptive Methods, by Method and Language Spoken in Household
1991 Family Health Survey

	Language						
Contraceptive Method	Total	English	Spanish	Creole	Garifuna	Maya	Other
Orals	93.1	98.3	91.1	96.8	96.3	63.4	75.0
Female Sterilization	87.7	93.9	84.1	92.5	98.1	56.1	57.5
Injection	85.8	87.0	86.5	86.2	95.6	64.2	65.0
Condoms	81.7	95.2	71.1	93.6	97.5	25.2	50.0
IUD	71.4	82.7	63.9	80.1	85.6	20.3	50.0
Rhythm	53.3	74.0	48.5	59.2	46.3	15.5	32.5
Male Sterilization	49.7	68.8	50.2	48.1	51.9	26.0	45.0
Vaginal Tablets	46.1	63.6	35.2	56.3	55.6	13.0	25.0
Other Vaginal Methods*	39.6	63.6	28.6	48.7	47.5	12.2	20.0
Diaphragm	38.7	67.5	28.7	44.7	58.1	12.2	20.0
Withdrawal	34.5	58.9	28.0	40.0	33.7	8.1	12.5
Billings	16.0	18.6	16.1	16.6	16.9	5.7	5.0
No. of Cases** (Unweighted)	(2,656)	(172)	(1,130)	(1,110)	(117)	(93)	(33)

*Includes creams, jellies, and foam.
**Excludes one case for whom language spoken in household is unknown.

Table 5-4

Belize: Percent of All Women Aged 15-44 and Women
Who Have Ever Used Rhythm, Billings, or Withdrawal
With Correct Knowledge of When During the Menstrual Cycle
a Woman is Most Likely to Get Pregnant
1991 Family Health Survey

Selected Characteristics	All Respondents		Ever Users of Rhythm, Billings or Withdrawal	
Total	23.1	(2,656)	36.3	(347)
Residence				
Urban	25.2	(1,724)	39.9	(261)
Rural	19.0	(932)	23.2	(86)
Age				
15-24	19.7	(1,075)	32.2	(84)
25-29	22.1	(593)	32.2	(93)
30-34	28.7	(483)	44.7	(91)
35-39	24.9	(280)	19.0	(48)
40-44	31.6	(225)	57.7	(31)
Marital Status				
Ever Married	23.4	(1,941)	36.5	(296)
Never Married	22.7	(715)	35.7	(51)
Years of Education				
0-7	15.8	(827)	28.7	(66)
8	16.5	(918)	20.5	(103)
9+	35.0	(911)	47.3	(178)
Ethnic Group*				
Creole	28.2	(894)	31.0	(134)
Mestizo	21.3	(1,162)	36.7	(137)
Garifuna	20.4	(228)	50.0	(35)
Other	16.9	(371)	40.8	(41)
Contraceptive Use				
Currently Using	25.1	(1,001)	34.3	(226)
Not Using	22.1	(1,655)	39.5	(121)

*Excludes one case for whom ethnic group is unknown.

Table 5-5

Belize: Percentage of All Women Aged 15-44 With Knowledge of Contraceptive Methods, by Method and Residence
1991 Family Health Survey

		Residence	
Contraceptive Method	Total	Urban	Rural
Orals	93.1	95.4	88.7
Female Sterilization	87.7	90.2	82.9
Injection	85.8	86.1	85.3
Condoms	81.7	90.1	65.1
IUD	71.4	75.3	63.6
Rhythm	53.3	58.4	43.2
Male Sterilization	49.7	57.2	46.6
Vaginal Tablets	46.1	53.5	31.5
Other Vaginal Methods*	39.6	45.0	28.9
Diaphragm	38.7	42.9	30.3
Withdrawal	34.5	37.6	28.4
Billings	16.0	16.1	15.9
No. of Cases (Unweighted)	(2,656)	(1,724)	(932)

*Includes creams, jellies, and foam.

Table 5-6

Belize: Percent Distribution of All Women Aged 15-44
Currently Using Contraceptives, by Method and Marital Status
1991 Family Health Survey

		Marital Status			
Current Use and Method	Total	Married/ In Union	Sep./Div./ Widowed	Visiting Partner	Never Married
Currently Using	33.5	46.7	31.0	49.5	6.6
Female Sterilization	12.3	18.7	16.2	3.8	1.0
Orals	12.0	14.9	9.2	31.7	3.8
Injection	2.9	4.3	2.6	3.2	0.1
Rhythm/Billings	1.8	2.5	0.0	2.1	0.7
Condoms	1.7	1.9	2.6	3.8	0.8
IUD	1.3	1.9	0.0	2.7	0.2
Other	1.6	2.4	0.4	2.0	0.1
Not Currently Using	66.5	53.3	69.0	50.5	93.4
Total	100.0	100.0	100.0	100.0	100.0
No. of Cases* (Unweighted)	(2,656)	(1,790)	(151)	(117)	(598)

*Excludes 4 cases for whom marital status is unknown.

Table 5-7

Belize: Percent Distribution of Currently Married Women
Aged 15-44 Currently Using Contraceptives,
by Method and Residence
1991 Family Health Survey

		Residence	
Current Use and Method	Total	Urban	Rural
Currently Using	46.7	55.1	33.2
Female Sterilization	18.7	22.4	12.9
Orals	14.9	18.0	10.0
Injection	4.3	4.3	4.3
Rhythm/Billings	2.5	2.9	1.9
Condoms	1.9	2.5	1.1
IUD	1.9	2.1	1.7
Other	2.4	2.9	1.6
Not Currently Using	53.3	44.9	66.8
Total	100.0	100.0	100.0
No. of Cases (Unweighted)	(1,790)	(1,077)	(713)

Table 5-8

Belize: Percent Distribution of Currently Married Women Aged 15-44
Currently Using Contraceptives, by Method and Age
1991 Family Health Survey

	Age						
Contraceptive Method	Total	15-19	20-24	25-29	30-34	35-39	40-44
Currently Using	46.7	26.2	36.9	45.6	53.6	54.8	56.3
Female Sterilization	18.7	0.6	2.8	11.1	24.5	33.3	43.0
Orals	14.9	12.8	20.6	18.4	16.2	9.3	5.2
Injection	4.3	7.0	4.9	6.2	3.2	2.9	1.4
Rhythm/Billings	2.5	1.7	1.6	2.6	4.2	2.6	1.7
Condoms	1.9	0.6	2.3	2.1	1.9	2.6	1.4
IUD	1.9	1.7	1.6	3.0	1.4	2.9	0.3
Other	2.4	1.7	3.0	2.3	2.3	1.3	3.1
Not Currently Using	53.3	73.8	63.1	54.4	46.4	45.2	43.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(1,790)	(124)	(359)	(486)	(395)	(239)	(187)

Table 5-9

Belize: Percent Distribution of Currently Married Women Aged 15-44
Currently Using Contraceptives, by Method and Number of Living Children
1991 Family Health Survey

		No. of Living Children						
Current Use and Method	Total	0	1	2	3	4	5	6+
Currently Using	46.7	14.3	34.3	53.3	50.5	54.1	56.6	49.3
Female Sterilization	18.7	0.6	2.3	10.9	19.3	30.7	30.8	29.2
Orals	14.9	8.0	19.0	25.1	15.7	14.1	12.7	7.1
Injection	4.3	0.0	4.7	5.6	5.0	2.1	5.9	4.7
Rhythm/Billings	2.5	2.9	2.0	2.9	3.3	2.8	1.8	2.0
Condoms	1.9	1.2	1.7	2.7	1.7	2.8	1.4	1.8
IUD	1.9	1.1	1.0	4.3	2.5	0.7	2.7	0.9
Other	2.4	0.6	3.7	1.9	3.0	0.7	1.4	3.6
Not Currently Using	53.3	85.7	65.7	46.7	49.5	45.9	43.4	50.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(1,790)	(137)	(234)	(333)	(319)	(237)	(198)	(332)

Table 5-10

Belize: Percent Distribution of Currently Married Women Aged 15-44
Currently Using Contraceptives, by Method and Years of Education
1991 Family Health Survey

		Years of Education				
Current Use and Method	Total	None	1-7	8	9-12	13+
Currently Using	46.7	40.0	38.8	49.2	55.0	58.8
Female Sterilization	18.7	23.2	14.5	24.5	13.2	19.9
Orals	14.9	4.0	12.7	10.8	26.1	25.9
Injection	4.3	4.0	4.3	5.3	3.1	2.3
Rhythm/Billings	2.5	1.6	1.9	2.0	5.0	2.3
Condoms	1.9	0.0	1.3	2.4	3.1	0.8
IUD	1.9	0.8	1.3	2.0	2.9	3.0
Other	2.4	6.4	2.0	2.0	1.7	4.6
Not Currently Using	53.3	60.0	61.2	50.8	45.0	41.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(1,790)	(104)	(575)	(645)	(358)	(108)

Table 5-11

Belize: Percent Distribution of Currently Married Women Aged 15-44
Currently Using Contraceptives, by Method and
Number of Household Amenities
1991 Family Health Survey

		No. of Household Amenities		
Current Use and Method	Total	0-2	3-7	8-10
Currently Using	46.7	29.7	50.2	62.5
Female Sterilization	18.7	11.1	22.1	21.9
Orals	14.9	8.3	14.5	24.7
Injection	4.3	4.3	5.5	1.7
Rhythm/Billings	2.5	1.8	2.6	3.4
Condoms	1.9	1.2	1.5	3.8
IUD	1.9	1.1	1.9	3.2
Other	2.4	2.0	1.9	3.8
Not Currently Using	53.3	70.3	49.8	37.5
Total	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(1,790)	(574)	(846)	(370)

Table 5-12

Belize: Percent Distribution of Currently Married Women
Aged 15-44 Currently Using Contraceptives,
by Method and Work Status
1991 Family Health Survey

		Work Status	
Current Use and Method	Total	Not Working	Working
Currently Using	46.7	41.9	62.4
Female Sterilization	18.7	16.9	24.8
Orals	14.9	12.1	23.8
Injection	4.3	4.4	4.0
Rhythm/Billings	2.5	2.5	2.6
Condoms	1.9	1.7	2.8
IUD	1.9	1.4	3.6
Other	2.4	2.8	0.8
Not Currently Using	53.3	58.1	37.6
Total	100.0	100.0	100.0
No. of Cases (Unweighted)*	(1,790)	(1,374)	(414)

*Excludes 2 cases for whom work status is not known.

Table 5-13

Belize: Percent Distribution of Currently Married Women Aged 15-44
Currently Using Contraceptives,
by Method and Ethnic Group
1991 Family Health Survey

		Ethnic Group				
Current Use and Method	Total	Creole	Garifuna	Mestizo	Maya/ Ketchi	Other
Currently Using	46.7	53.3	49.4	46.0	24.5	53.3
Female Sterilization	18.7	18.8	19.6	20.2	8.0	21.5
Orals	14.9	21.0	10.1	13.0	9.0	18.5
Injection	4.3	4.0	7.7	4.5	3.0	1.5
Rhythm/Billings	2.5	2.8	3.0	2.7	0.5	3.0
Condoms	1.9	2.6	3.6	1.3	1.0	3.7
IUD	1.9	2.1	3.6	1.8	2.0	0.7
Other	2.4	2.1	1.8	2.6	1.0	4.4
Not Currently Using	53.3	46.7	50.6	54.0	75.5	46.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases* (Unweighted)	(1,790)	(474)	(137)	(890)	(171)	(117)

*Excludes one case for whom ethnic group is unknown.

Table 5-14

Belize: Percent Distribution of Currently Married Women Aged 15-44
Currently Using Contraceptives, by Method and Language Spoken In Household
1991 Family Health Survey

	Language Spoken in Household						
Current Use and Method	Total	English	Creole	Garifuna	Spanish	Maya	Other
Currently Using	46.7	61.8	54.4	43.2	42.8	10.1	25.0
Female Sterilization	18.7	24.5	21.0	17.3	17.8	4.3	6.3
Orals	14.9	23.6	19.1	8.6	12.6	2.9	0.0
Injection	4.3	2.7	3.8	8.6	4.6	2.9	3.1
Rhythm/Billings	2.5	2.7	2.8	3.7	2.4	0.0	3.1
Condoms	1.9	0.9	3.0	1.2	1.1	0.0	12.5
IUD	1.9	0.0	2.8	2.5	1.7	0.0	0.0
Other	2.4	7.3	1.8	1.2	2.6	0.0	0.0
Not Currently Using	53.3	38.2	45.6	56.8	57.2	89.9	75.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases* (Unweighted)	(1,790)	(97)	(648)	(69)	(884)	(63)	(28)

*Excludes one case for whom language spoken at home is unknown.

Table 5-15

Belize: Percent Distribution of Currently Married Women
Aged 15-44 Currently Using Contraceptives,
by Method and Religion
1991 Family Health Survey

		Religion		
Current Use and Method	Total	Protestant	Catholic	Other*
Currently Using	46.7	49.6	45.9	37.5
Female Sterilization	18.7	18.3	19.2	17.1
Orals	14.9	17.4	14.2	7.2
Injection	4.3	4.1	4.3	5.3
Rhythm/Billings	2.5	2.8	2.6	0.7
Condoms	1.9	2.4	1.5	2.6
IUD	1.9	1.7	2.1	2.0
Other	2.4	2.9	2.0	2.6
Not Currently Using	53.3	50.4	54.1	62.5
Total	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(1,790)	(655)	(1,010)	(125)

*Primarily includes those who profess not to practice any religion.

Table 5-16

Belize: Percentage of Currently Married Women
Aged 15-44 Currently Using Contraception,
by Selected Characteristics and Residence
1991 Family Health Survey

Selected Characteristics	Total		Residence: Urban		Residence: Rural	
Total	46.7	(1,790)	55.1	(1,077)	33.2	(713)
Age						
15-19	26.2	(124)	47.2	(53)	11.0	(71)
20-24	36.9	(359)	42.0	(207)	28.9	(152)
25-29	45.6	(486)	50.6	(297)	36.8	(189)
30-34	53.6	(395)	62.6	(248)	38.1	(147)
35-39	54.8	(239)	64.9	(150)	38.8	(89)
40-44	56.1	(187)	62.7	(122)	43.0	(65)
Years of Education						
0-7	38.2	(679)	51.6	(297)	27.0	(382)
8	49.2	(645)	56.2	(371)	38.5	(274)
9+	55.9	(466)	56.4	(409)	52.2	(57)
No. of Household Amenities						
0-2	29.7	(574)	36.8	(91)	28.4	(483)
3-7	50.2	(846)	53.6	(634)	40.4	(212)
8-10	62.5	(370)	61.7	(352)	**	(18)
No. of Living Children						
0	14.3	(137)	20.0	(92)	3.3	(45)
1	34.3	(234)	38.9	(154)	25.5	(80)
2	53.3	(333)	61.2	(223)	35.9	(110)
3	50.5	(319)	58.9	(202)	33.9	(117)
4	54.1	(237)	63.5	(149)	35.1	(88)
5	56.6	(198)	65.5	(118)	41.5	(80)
6+	49.3	(332)	63.3	(139)	38.9	(193)
Work Status*						
Not Working	41.9	(1,374)	51.3	(730)	30.6	(644)
Working	62.4	(414)	62.9	(347)	59.7	(67)

*Excludes two cases for whom work status is unknown.

**Less than 25 cases.

Table 5-17

Belize: Percentage of Currently Married Women Aged 15-44
Currently Using Contraception, by Selected Characteristics and Years of Education
1991 Family Health Survey

Selected Characteristics	Total		Years of Education					
			0-7		8		9+	
Total	46.7	(1,790)	38.2	(679)	49.2	(645)	55.9	(466)
Age								
15-19	26.2	(124)	20.4	(72)	31.3	(34)	**	(18)
20-24	36.9	(359)	32.3	(133)	31.9	(117)	47.7	(109)
25-29	45.6	(486)	35.9	(186)	45.1	(165)	58.9	(135)
30-34	53.6	(395)	43.5	(124)	55.6	(156)	61.9	(115)
35-39	54.8	(239)	44.3	(89)	63.5	(96)	57.8	(54)
40-44	56.3	(187)	52.6	(75)	58.2	(77)	60.0	(35)
No. of Living Children								
0	14.3	(137)	8.6	(40)	9.6	(44)	23.1	(53)
1	34.3	(234)	25.3	(64)	32.7	(74)	42.0	(96)
2	53.3	(333)	36.8	(115)	54.8	(109)	71.3	(109)
3	50.5	(319)	39.1	(120)	51.2	(108)	64.7	(91)
4	54.1	(237)	41.3	(83)	56.3	(104)	67.7	(50)
5	56.6	(198)	47.8	(83)	60.0	(79)	68.3	(36)
6+	49.3	(332)	45.3	(174)	54.1	(127)	52.4	(31)
No. Household Amenities								
0-2	29.7	(574)	27.8	(369)	31.0	(190)	**	(15)
3-7	50.2	(846)	48.5	(270)	54.3	(347)	46.0	(229)
8-10	62.5	(370)	52.5	(40)	61.2	(108)	65.3	(222)
Work Status*								
Not Working	41.9	(1,374)	35.7	(615)	45.1	(523)	51.4	(236)
Working	62.4	(414)	61.5	(63)	65.6	(121)	60.7	(230)

*Excludes two cases for whom work status is unknown.

**Less than 25 cases.

NOTE: Figures in parentheses are unweighted numbers of cases.

Table 5-18

Belize: Percent Distribution of Currently Married Women Aged 15-44
Who Had a Pregnancy in the Last 5 Years
and Who Are Currently Using Contraceptives,
by Method and Planning Status of Last Pregnancy
1991 Family Health Survey

		Planning Status			
Current Use and Method	Total	Planned	Mistimed	Unwanted	Unknown
Currently Using	42.3	40.3	43.9	50.0	43.1
Female Sterilization	11.4	11.1	5.3	23.7	5.9
Orals	16.9	16.5	21.0	11.9	19.6
Injection	5.8	5.3	6.3	7.7	5.9
Rhythm/Billings	2.1	2.1	2.1	1.5	3.9
Condoms	1.7	1.7	2.1	2.1	0.0
IUD	1.9	2.1	2.1	0.5	3.9
Other	2.5	1.5	5.0	2.6	3.9
Not Currently Using	57.7	59.7	56.1	50.0	56.9
Total	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(1,274)	(839)	(238)	(154)	(43)

Table 5-19

Belize: Percent Distribution of Reasons for Currently Using Contraception, by Selected Characteristics: Currently Married Women Aged 15-44
1991 Family Health Survey

Selected Characteristics	Pregnancies	Limit Pregnancies	Total	No. of Cases (Unweighted)
Total	33.2	66.8	100.0	(846)*
Residence				
Urban	32.9	67.1	100.0	(596)
Rural	34.2	65.8	100.0	(250)
Age				
15-19	82.2	17.8	100.0	(37)
20-24	71.5	28.5	100.0	(137)
25-29	46.9	53.1	100.0	(222)
30-34	23.7	76.3	100.0	(213)
35-39	4.1	95.9	100.0	(131)
40-44	5.6	94.4	100.0	(106)
No. of Living Children				
0	**	**	100.0	(20)
1	81.4	18.6	100.0	(84)
2	53.5	46.5	100.0	(182)
3	34.6	65.4	100.0	(158)
4	18.3	81.7	100.0	(128)
5	9.6	90.4	100.0	(109)
6+	10.4	89.6	100.0	(165)
Years of Education				
None	26.0	74.0	100.0	(39)
1-7	32.7	67.3	100.0	(219)
8	25.6	74.4	100.0	(321)
9-12	46.3	53.7	100.0	(203)
13+	39.5	60.5	100.0	(64)
Current Method				
Female Sterilization	0.0	100.0	100.0	(324)
Orals	56.8	43.2	100.0	(285)
Injection	55.9	44.1	100.0	(80)
Rhythm/Billings	54.5	45.5	100.0	(50)
Condoms	50.0	50.0	100.0	(32)
IUD	52.4	47.6	100.0	(38)
Other	55.1	44.9	100.0	(37)
Ethnic Group				
Creole	33.0	67.0	100.0	(262)
Mestizo	33.1	66.9	100.0	(412)
Garifuna	37.3	62.7	100.0	(70)
Maya/Ketchi	30.6	69.4	100.0	(42)
Other	32.4	67.6	100.0	(60)

*Excludes 2 cases for whom reason for using is unknown.
**Less than 25 cases.

Table 5-20

Belize: Mean Age and Mean Number of Children at Time of First Contraceptive Use: Ever-Users of Contraception
1991 Family Health Survey

Selected Characteristics	Mean No. Children	Mean Age	No. of Cases (Unweighted)
Residence			
Urban	3.5	27.3	(1,104)
Rural	4.7	29.9	(401)
Years of Education			
None	6.6	30.0	(55)
1-7	5.6	31.4	(364)
8	3.5	27.9	(545)
9-12	2.1	25.0	(407)
13+	4.1	26.5	(134)
No. Household Amenities			
0-2	5.8	29.0	(296)
3-7	3.3	27.8	(796)
8-10	3.4	27.4	(413)
Ethnic Group*			
Creole	2.5	25.0	(558)
Mestizo	5.0	29.6	(640)
Garifuna	3.1	30.2	(128)
Maya/Ketchi	3.7	29.1	(73)
Religion**			
Protestant	3.0	22.6	(599)
Catholic	4.5	28.6	(813)
Total	3.8	27.9	(1,505)

*Excludes those whose ethnic group was classified as "other."

**Excludes those whose religion was classified as "other."

Table 5-21

Belize: Percent Distribution of Ever-Married Women
Aged 15-44, by Number of Living Children
at Time of First Contraceptive Use, According to Actual Age
1991 Family Health Survey

Actual Age	No. of Children at First Use					Never Used	Total	No. of Cases* (Unweighted)
	0	1	2	3	4+			
Total	14.4	17.1	12.8	8.2	15.0	32.5	100.0	(1,905)
15-19	21.0	16.0	7.2	1.1	0.5	54.1	100.0	(127)
20-24	19.0	17.5	11.5	6.9	2.8	42.2	100.0	(376)
25-29	16.7	18.3	14.1	9.5	11.2	30.2	100.0	(515)
30-34	12.4	18.7	13.9	10.9	18.1	25.9	100.0	(429)
35-39	8.3	14.7	16.2	9.2	27.2	24.5	100.0	(249)
40-44	8.7	14.7	10.6	6.9	30.9	28.1	100.0	(209)

*Excludes 36 cases for whom number of children at first use is unknown.

Table 5-22

Percent Distribution of Currently Married Women Aged 15-44
Currently Using Contraceptives, by Method:
Mexico, Central America, Caribbean, and Panama

Current Use and Method	Costa Rica (1986)	Panama (1984)	Jamaica* (1989)	Mexico* (1987)	Trinidad/ Tobago (1987)	El Salvador (1988)	Belize (1991)	Honduras (1987)	Guatemala (1987)
Currently Using	69.5	58.2	54.6	52.7	52.7	47.1	46.7	40.6	23.2
Female Sterilization	14.4	2.8	13.6	18.6	8.2	29.6	18.7	12.6	10.3
Orals	20.7	11.8	19.5	9.7	14.0	7.6	14.9	13.4	3.9
IUD	8.0	6.0	1.5	10.2	4.4	2.0	1.9	4.3	1.8
Condoms	13.4	1.6	8.6	1.9	11.8	2.4	1.9	1.8	1.2
Rhythm/Billings	8.1	2.3	1.0	8.0	2.6	2.4	2.5	3.5	2.8
Other Methods	4.9	3.7	10.4	4.3	11.7	3.1	6.7	4.9	3.2
Not Currently Using	30.5	41.8	45.4	47.3	47.3	52.9	53.3	59.4	76.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of Cases (Unweighted)	(1,914)	(5,222)	(6,112)	(5,447)	(4,359)	(2,276)	(1,788)	(6,093)	(3,377)

*Married women 15-49 years of age.

Table 5-23

Belize: Source of Contraception, by Residence,
for Current Users of Contraception:
Currently Married Women Aged 15-44
1991 Family Health Survey
(Percent Distribution)

		Residence	
Source of Contraception	Total	Urban	Rural
Government Facilities	38.2	37.3	40.6
BFLA	10.3	9.3	13.0
Pharmacy	29.0	32.4	19.9
Private Facilities	12.7	12.4	13.4
Self/Partner	4.6	3.7	6.9
Outside of Belize	1.7	1.2	2.9
Other/Unknown	3.6	3.7	3.3
Total	100.0	100.0	100.0
No. of Cases* (Unweighted)	(846)	(598)	(248)

*Excludes 2 cases for whom source of contraception is unknown.

Table 5-24

Belize: Source of Contraception, by Years of Education,
for Current Users of Contraception:
Currently Married Women Aged 15-44
1991 Family Health Survey
(Percent Distribution)

		Years of Education		
Source of Contraception	Total	0-7	8	9+
Government Facilities	38.2	43.0	45.7	23.8
BFLA	10.3	3.8	11.9	15.0
Pharmacy	29.0	25.6	21.3	42.0
Private Facilities	12.7	13.3	13.3	11.4
Self/Partner	4.6	7.0	3.6	3.3
Outside of Belize	1.7	2.2	2.1	0.7
Other/Unknown	3.6	5.1	2.1	3.9
Total	100.0	100.0	100.0	100.0
No. of Cases* (Unweighted)	(846)	(258)	(319)	(269)

*Excludes 2 cases for whom source of contraception is unknown.

Table 5-25

Belize: Source of Contraception, by Ethnic Group,
for Current Users of Contraception:
Currently Married Women Aged 15-44
1991 Family Health Survey
(Percent Distribution)

		Ethnic Group				
Source of Contraception	Total	Creole	Mestizo	Garifuna	Maya/ Ketchi	Other
Government Facilities	38.2	34.6	41.2	34.9	38.8	36.1
BFLA	10.3	15.9	3.8	30.1	14.3	5.6
Pharmacy	29.0	36.9	25.9	15.7	20.4	37.5
Private Facilities	12.7	6.1	17.8	8.4	18.4	6.9
Self/Partner	4.6	2.9	5.7	0.0	4.1	9.7
Outside of Belize	1.7	0.7	1.8	3.6	2.0	2.8
Other/Unknown	3.6	2.9	3.8	7.2	2.0	1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases* (Unweighted)	(846)	(262)	(411)	(70)	(42)	(61)

*Excludes 2 cases for whom source of contraception is unknown.

Table 5-26

Belize: Source of Contraception for Methods
Requiring Resupply or Surgical Intervention,
for Current Users of Contraception:
Currently Married Women Aged 15-44
1991 Family Health Survey
(Percent Distribution)

	Method					
Source of Contraception	Total	Female Sterilization	Orals	Injection	IUD	Condom
Government Facilities	41.2	86.9	4.7	6.5	23.8	2.4
BFLA	11.0	0.0	17.7	33.3	19.0	9.5
Pharmacy	31.1	0.0	66.1	22.6	4.8	78.6
Private Facilities	13.1	11.9	6.2	31.2	52.4	0.0
Outside of Belize	1.8	0.0	3.7	4.3	0.0	0.0
Other/Unknown	1.7	1.2	1.5	2.1	0.0	7.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases* (Unweighted)	(780)	(322)	(285)	(80)	(38)	(32)

*Excludes 2 cases for whom source of contraception is unknown.

Table 5-27

Belize: Percent Distribution of Reasons for
Not Currently Using Contraceptives, by Residence:
Currently Married Women Aged 15-44
1991 Family Health Survey

		Residence	
Reasons for Nonuse	Total	Urban	Rural
Reasons Related to Pregnancy, Fecundity, and Sexual Activity	58.7	64.5	52.6
Currently Pregnant	20.8	21.4	20.2
Desires Pregnancy	13.9	15.9	11.9
Not Sexually Active	8.7	9.9	7.4
Menopause/Subfecund	8.2	11.0	5.2
Postpartum/Breastfeeding	7.1	6.3	7.9
Other Reasons	41.3	35.5	47.4
Had or Fears Side Effects	9.0	6.7	11.5
Doesn't Like/Want	7.9	8.2	7.6
Lacks Knowledge of Methods	7.7	4.7	11.0
Health Reasons	1.8	2.2	1.4
Lacks Money	1.3	1.2	1.4
Spouse Opposes	1.2	1.5	0.9
Embarrassed to Use	1.1	0.5	1.8
Religious Reasons	0.9	0.7	1.3
Advanced Age	0.9	0.5	1.3
Other	4.4	5.7	3.1
Unknown	4.9	3.8	6.1
Total	100.0	100.0	100.0
No. of Cases (Unweighted)	(942)	(479)	(463)

Table 5-28

Belize: Percent Distribution of Reasons for
Not Currently Using Contraceptives, by Years of Education:
Currently Married Women Aged 15-44
1991 Family Health Survey

		Years of Education		
Reasons for Nonuse	Total	0-7	8	9+
Reasons Related to Pregnancy, Fecundity, and Sexual Activity	58.7	53.1	60.8	67.3
Currently Pregnant	20.8	19.9	19.0	25.6
Desires Pregnancy	13.9	11.9	14.0	18.2
Not Sexually Active	8.7	8.2	8.3	10.3
Menopause/Subfecund	8.2	5.9	10.5	9.5
Postpartum/Breastfeeding	7.1	7.2	9.0	3.7
Other Reasons	41.3	46.9	39.2	32.7
Had or Fears Side Effects	9.0	9.6	9.7	6.6
Doesn't Like/Want	7.9	6.8	6.5	12.4
Lacks Knowledge of Methods	7.7	14.1	3.7	0.8
Health Reasons	1.8	1.8	2.5	0.8
Lacks Money	1.3	1.9	1.0	0.4
Spouse Opposes	1.2	1.4	1.0	1.2
Embarrassed to Use	1.1	1.4	1.0	0.8
Religious Reasons	0.9	1.8	0.3	0.4
Advanced Age	0.9	0.4	1.0	1.7
Other	4.4	3.9	5.5	3.7
Unknown	4.9	3.9	7.0	3.7
Total	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(942)	(421)	(324)	(97)

Table 5-29

Belize: Percent Distribution of Reasons Stopped Using Contraception,
by Last Method Used: Currently Married Women Aged 15-44
Who Had Used Contraception in the Past
But Are Not Currently Using
1991 Family Health Survey

		Last Method Used		
Reason Stopped Using Contraception	Total	Orals	Injection	Condoms
Desires Pregnancy	32.9	32.5	29.7	33.3
Had or Fears Side Effects	29.4	38.0	35.9	2.4
Doesn't Like or Want to Use	9.2	4.7	10.9	30.9
Method Not Effective	6.4	3.5	4.7	11.9
Health or Medical Reasons	4.2	3.1	3.1	4.8
Not Sexually Active	3.9	5.0	1.64	2.4
Lack of Money	2.6	2.3	.7	4.8
Far Distance Source	1.7	2.7	0.0	0.0
Other	7.2	7.0	6.3	4.8
Unknown	2.2	0.8	3.1	4.8
Total	100.0	100.0	100.0	100.0
No. of Cases* (Unweighted)	(367)**	(203)	(56)	(32)

*Excludes one case for whom reason stopped using is unknown.

**Total includes 76 users of other methods.

Table 5-30

Belize: Percent of Nonusers Who Desire to Use a Method in the Future and Knowledge of Availability, by Selected Characteristics: Currently Married Women Aged 15-44
1991 Family Health Survey

Selected Characteristics	Percent Who Desire to Use Contraceptives		Percent of Those Who Desire to Use Who Know Where to Obtain Method	
Total	54.4	(859)*	75.5	(458)
Residence				
Urban	62.2	(426)	81.0	(266)
Rural	46.7	(433)	68.0	(192)
Age				
15-19	65.3	(87)	60.2	(50)
20-24	62.0	(215)	73.0	(130)
25-29	66.2	(247)	80.6	(160)
30-34	45.6	(165)	83.1	(76)
35-44	30.2	(145)	77.4	(42)
No. of Living Children				
0	62.0	(104)	64.7	(59)
1	60.5	(142)	82.6	(82)
2	58.0	(137)	69.2	(77)
3	58.6	(147)	77.9	(84)
4	42.2	(98)	77.5	(43)
5	52.9	(82)	80.0	(43)
6+	45.0	(149)	76.9	(70)
Years of Education				
0-7	48.2	(389)	65.1	(180)
8	51.8	(291)	76.1	(152)
9+	72.1	(179)	89.9	(126)
Ethnic Group				
Creole	60.4	(189)	83.8	(117)
Mestizo	53.7	(448)	73.6	(238)
Garifuna	63.4	(54)	88.9	(30)
Maya/Ketchi	43.0	(116)	51.7	(45)
Other	53.5	(51)	80.7	(28)

*Excludes 38 cases for whom desire to use in the future is unknown and 45 cases who are menopausal or subfecund.

Table 5-31

Belize: Percent Distribution of Nonusers Who Desire
to Use a Method in the Future, by Method of Choice and
Source Where Method Would be Obtained, by Residence:
Currently Married Women Aged 15-44
1991 Belize Family Health Survey

		Residence	
Method of Choice	Total	Urban	Rural
Orals	24.5	30.9	16.0
Female Sterilization	24.2	26.6	20.9
Injection	19.1	16.2	22.9
IUD	4.2	3.4	5.3
Rhythm/Billings	3.3	3.4	3.3
Vaginal Methods	2.8	3.7	1.6
Condoms	2.8	3.4	2.0
Other	1.2	0.3	2.5
Unknown	17.9	12.2	25.4
Total	100.0	100.0	100.0
No. of Cases (Unweighted)	(458)	(266)	(192)
Source Where Method Would be Obtained*			
Government Facilities	25.8	16.7	40.4
BFLA	22.1	23.5	19.9
Pharmacy	30.9	36.0	22.9
Private Facilities	17.7	21.2	12.0
Other	3.5	2.7	4.8
Total	100.0	100.0	100.0
No. of Cases** (Unweighted)	(351)	(217)	(134)

*Excludes women who do not know a source of contraception.

**Excludes one case for whom source is unknown.

6. Women in Need of Family Planning Services

Of the married, fecund women who stated that they did not currently desire a pregnancy, 49 percent were using a contraceptive method at the time of the survey (Table 6-1). Oral contraceptives was the most prevalent method followed by injectables and the rhythm/Billings methods. Use of contraception varied by place of residence, with use highest in urban areas (57 percent) and lowest in rural areas (36 percent). The differential is primarily explained by the use of oral contraceptives as nearly twice as many urban women were using this method as rural women.

Forty percent of married, fecund women who stated that they had all of the children that they wanted were using some form of contraception (Table 6-2). The distribution of methods currently being used by these women and patterns of use according to residence were the same as for women who did not desire a pregnancy.

The survey data indicate that certain segments of the population are at greater risk of an unplanned pregnancy than others. A woman was characterized at risk of an unplanned pregnancy or "in need of family planning services" if she was not currently pregnant, stated that she did not desire to become pregnant, and she was not using a method of contraception for reasons not related to pregnancy, subfecundity, or sexual inactivity (it was assumed that all fecund, married women were sexually active). Thus, women defined as at risk of an unplanned pregnancy are fecund sexually active women, who were not pregnant at the time of interview, did not desire to become pregnant, and were not using a method of contraception.

The estimated percentage of women at risk of an unplanned pregnancy using this definition varied by the characteristics of the women, as shown in Table 6-3. Overall, 17 percent of all women aged 15-44 were found to be at risk of an unplanned pregnancy. This represents an estimated 6,130 women 15-44 years of age in Belize. The percentage of women at risk is greater among rural women (23 percent) than among urban women (14 percent) and the proportion at risk is highest among married women (including women living in consensual unions). One out of every four married women (26 percent) are at risk of an unplanned pregnancy (Figure 6-1). In general, the risk of an unplanned pregnancy increases with number of living children and is inversely related to years of education with the exception of women 15-19 years old. Need of services in each age group ranges from 19 to 23 percent. The proportion at risk is greatest for Maya/Ketchi women and lowest for Creole women. The urban-rural differential is greatest for Mestizo women.

The percentages in Table 6-3 indicate the segments of the population in which the risk of an unplanned pregnancy is greatest. In order to derive program goals, the women defined at risk of an unplanned pregnancy, i.e., the numerators in Table 6-3, have been distributed across categories of women, as shown in Table 6-4. Slightly greater than half (54 percent) of the women at risk live in urban areas. Fully 88 percent are married or live in a consensual union, approximately evenly split between urban and rural areas. Almost half (48 percent) are Mestizos, 78 percent have a primary school education or less, nearly two thirds have three or more children, and 57 percent are under the age of 30, reflecting the distribution of these characteristics in the population. The data indicate that the family planning program of Belize should be oriented toward lower educated married women who live in both urban and rural areas.

Overall, 42 percent of women at risk of an unplanned pregnancy stated that they have ever used contraception, and 52 percent expressed a desire to use contraception sometime in the future (Table 6-5). Thus, as a group, these women have some experience with the use of contraception and about half are motivated to control their fertility. Desire to use contraception in the future is highest among urban women, single women, younger women, women with fewer than four children, and better educated women. Among the principal ethnic groups, interest in future use of contraception is highest for Garifuna and Creole women.

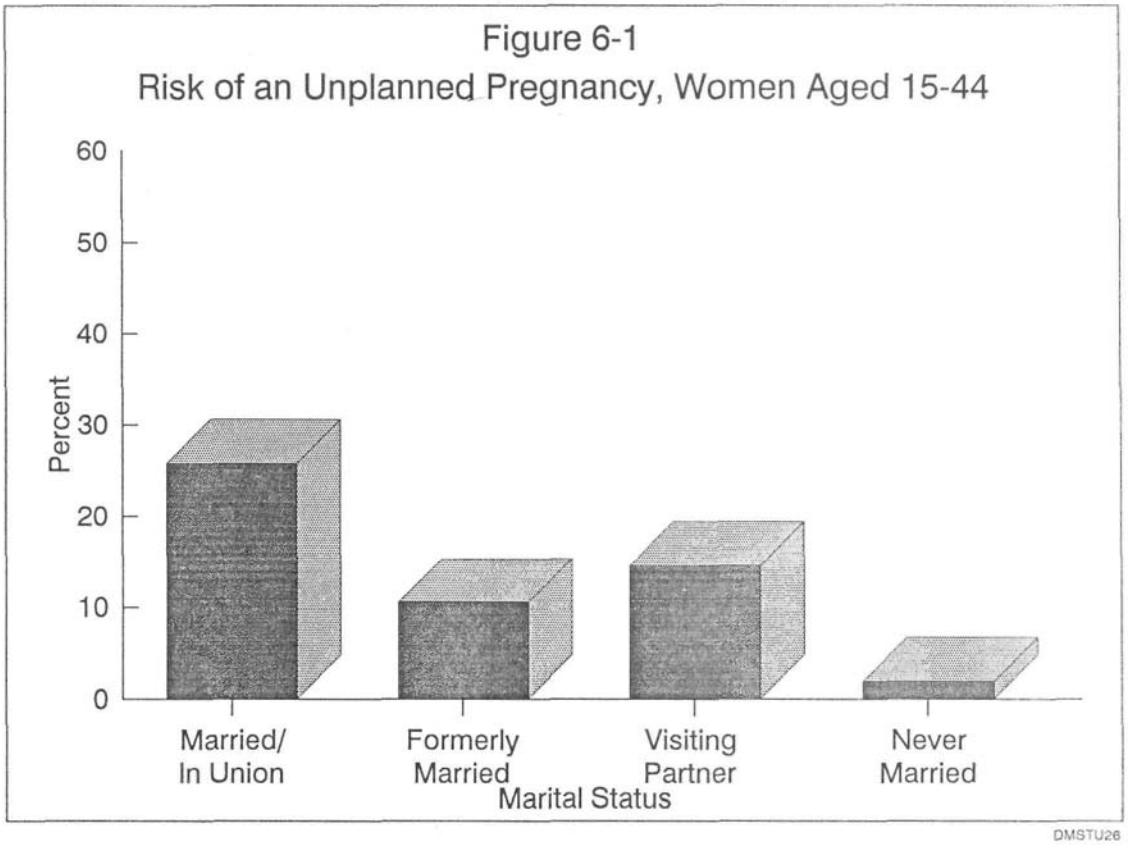


Figure 6-1
Risk of an Unplanned Pregnancy, Women Aged 15-44
Percent
60
50
40
30
20
10
0
Married/
In Union
Formerly
Married
Visiting
Partner
Never
Married
Marital Status
DMSTU26

Table 6-1

Belize: Percent Distribution of Currently Married
Fecund Women Aged 15-44 Not Desiring a Pregnancy
Who Are Using Contraceptives, by Method and Residence
1991 Family Health Survey

		Residence	
Current Use and Method	Total	Urban	Rural
Currently Using	48.7	57.5	35.8
Orals	25.8	31.3	17.9
Injection	7.7	8.4	6.6
Rhythm/Billings	4.1	4.3	3.6
Condoms	3.3	4.2	2.0
IUD	3.4	3.9	2.7
Other	4.4	5.4	2.9
Not Currently Using	51.3	42.5	64.2
Total	100.0	100.0	100.0
No. of Cases* (Unweighted)	(900)	(525)	(375)

*Excludes sterilized women and women who said they were either subfecund or menopausal.

Table 6-2

Belize: Percent Distribution of Currently Married
Fecund Women Aged 15-44 Wanting No More Children
Who Are Currently Using Contraceptives,
by Method and Residence

		Residence	
Current Use and Method	Total	Urban	Rural
Currently Using	40.2	47.5	29.2
Orals	21.1	29.6	12.7
Injection	6.7	7.5	5.5
Rhythm/Billings	3.4	3.9	2.7
Condoms	2.7	2.9	2.4
IUD	2.5	2.5	2.4
Other	3.8	4.1	3.4
Not Currently Using	59.8	52.5	70.8
Total	100.0	100.0	100.0
No. of Cases (Unweighted)	(597)	(355)	(242)

Table 6-3

Belize: Percentage of Women Aged 15-44 Who Are In Need of
Family Planning Services, by Selected Characteristics and Residence
1991 Belize Family Health Survey

Selected Characteristics	Total		Residence			
			Urban		Rural	
Total	16.9	(2,656)	13.7	(1,724)	23.2	3(932)
Marital Status*						
Married/In Union	25.7	(1,790)	20.5	(1,077)	34.0	(713)
Sep./Div./Widowed	10.5	(151)	12.2	(125)	2.5	(26)
Visiting Partner	14.5	(117)	13.4	(106)	**	(11)
Single	1.9	(598)	2.8	(416)	0.0	(182)
Age						
15-19	8.0	(526)	6.5	(335)	10.9	(191)
20-24	18.7	(549)	17.1	(344)	21.7	(205)
25-29	19.1	(593)	16.9	(383)	23.7	(210)
30-34	19.1	(483)	12.6	(322)	32.8	(161)
35-39	23.3	(280)	17.1	(184)	34.6	(96)
40-44	23.2	(225)	17.8	(156)	36.7	(69)
No. of Living Children						
0	2.0	(694)	2.3	(479)	1.3	(215)
1	21.8	(353)	19.2	(257)	29.2	(96)
2	21.1	(402)	17.2	(277)	30.7	(125)
3	23.2	(359)	20.8	(237)	28.7	(122)
4	27.9	(265)	22.4	(173)	40.0	(92)
5	21.5	(216)	19.7	(133)	24.7	(83)
6+	36.8	(367)	20.7	(168)	39.9	(199)
Years of Education						
None	23.0	(113)	15.4	(49)	29.7	(64)
1-7	24.4	(714)	19.4	(331)	28.9	(383)
8	18.1	(918)	16.4	(543)	20.8	(375)
9-12	10.7	(713)	10.5	(626)	12.0	(87)
13+	6.9	(198)	7.2	(175)	**	(23)
Ethnic Group*						
Creole	12.6	(894)	12.6	(757)	12.8	(137)
Mestizo	18.7	(1,162)	13.2	(640)	25.9	(522)
Garifuna	18.0	(228)	18.2	(169)	17.2	(59)
Maya/Ketchi	25.4	(220)	19.7	(50)	27.1	(170)
Other	16.8	(151)	16.4	(108)	17.7	(43)

*Excludes one case for whom ethnic group is unknown.

**Less than 25 cases.

Table 6-4

Belize: Percent Distribution of Women Aged 15-44
Who Are In Need of Family Planning Services,
by Selected Characteristics and Residence
1991 Belize Family Health Survey

			Residence	
Selected Characteristics	Total		Urban	Rural
Total	100.0	(491)	54.2	45.8
Marital Status				
Married/In Union	88.4		43.4	45.0
Sep./Div./Widowed	3.8		3.7	0.2
Visiting Partner	4.3		3.7	0.6
Single	3.5		3.5	0.0
Age				
15-19	12.6		6.5	6.0
20-24	22.7		13.8	8.9
25-29	21.6		12.9	8.7
30-34	16.7		7.5	9.2
35-39	13.7		6.5	7.1
40-44	12.7		7.0	5.7
No. of Living Children				
0	4.0		3.2	0.8
1	17.5		11.5	6.0
2	15.9		9.2	6.7
3	15.4		9.5	5.9
4	14.3		7.9	6.4
5	8.4		5.1	3.3
6+	24.5		7.8	16.7
Years of Education				
None	5.1		1.6	3.5
1-7	36.7		14.0	22.7
8	36.4		19.9	16.5
9-12	18.8		15.9	2.9
13+	3.0		2.9	0.2
Ethnic Group				
Creole	26.4		22.6	3.8
Mestizo	47.9		19.2	28.6
Garifuna	9.2		6.8	2.4
Maya/Ketchi	11.6		2.1	9.5
Other	4.9		3.5	1.4

Table 6-5

Belize: Women Aged 15-44 Who Are In Need of Family Planning Services:
Percentage Who Have Ever Used Contraception and
Percentage Who Desire to Use Contraception in the Future,
by Selected Characteristics
1991 Belize Family Health Survey

Selected Characteristics	Ever Used Contraception	Desire to Use Contraception	No. of Cases (Unweighted)
Total	41.7	51.7	(491)
Residence			
Urban	51.9	56.9	(259)
Rural	29.5	45.5	(232)
Marital Status			
Ever Married	41.4	50.2	(460)
Single/Visiting Partner	44.9	69.4	(31)
Age			
15-19	38.0	65.8	(55)
20-24	32.9	68.5	(115)
25-29	43.4	67.7	(121)
30-34	43.8	40.0	(94)
35-39	50.0	32.6	(57)
40-44	46.3	16.3	(49)
No. of Living Children			
0-1	34.1	65.2	(97)
2	33.0	60.0	(82)
3	45.4	56.7	(84)
4	51.1	36.7	(73)
5	45.3	50.9	(50)
6+	44.8	40.3	(105)
Years of Education			
0-7	33.1	47.1	(204)
8	43.2	49.3	(180)
9+	55.5	64.2	(107)
Ethnic Group			
Creole	48.2	59.0	(127)
Mestizo	37.2	49.2	(236)
Garifuna	39.7	65.5	(42)
Maya/Ketchi	31.5	43.8	(62)
Other	**	**	(24)

**Less than 25 cases.

7. Use of and Potential Demand for Surgical Contraception

As discussed earlier in this report, female sterilization is the most prevalent method of contraception in Belize, accounting for 40 percent of all contraceptive use. Because of the importance of female sterilization in controlling unwanted pregnancies in Belize, this chapter provides additional data on sterilization and the demand for this procedure. Specifically, this chapter discusses the characteristics of women with tubal ligations, post-operative regret, interest in sterilization among women who want to limit their family size, reasons for lack of interest in sterilization, and reasons for failure to follow through among interested and informed women.

7.1 Profile of Sterilized Women

The top panel of Table 7-1 shows that a somewhat disproportionate number of sterilized women live in urban areas. Seventy-four percent of all sterilized women in Belize live in urban areas, although urban women represent only 61 percent of the total married survey population. As in most countries, surgical contraception services are more accessible in urban areas. With regard to education, sterilized women with 8 years of education are over-represented, while those with 1 to 7 years and 9 to 12 years of schooling are under-represented. However, women from higher socioeconomic households, measured by number of household amenities, appear to be over-represented, while women from the lowest socioeconomic households appear to be under-represented.

According to the Ministry of Health, most of the female sterilizations performed in Belize are interval sterilizations. Fifty-five percent of the sterilized women were in their twenties when they were sterilized. The average age of sterilized women was 29.7 when they were sterilized and 35.3 at the time of the survey compared with a mean age of 29.7 years in the survey population. Seventy-one percent of the sterilized women have four or more living children compared with only 44 percent of the married survey population. When we compare mean number of living children, we see that sterilized women have had 1.3 more children on average (4.9) than all married respondents (3.6). This finding suggests that women in Belize who seek sterilization tend to be self-selected because of their relatively high fertility. As shown in the bottom panel of Table 7-1, 53 percent have been sterilized since 1986, in the five years prior to the survey.

7.2 Use of Contraception Before Sterilization

Overall, tubal ligation was the first method of contraception to be used by 38 percent of sterilized women (Table 7-2). For women living in urban areas, this proportion is only 31 percent, but it is 58 percent for women living in rural areas (Figure 7-1). The probability that female sterilization was the first method ever used is inversely associated with educational attainment and number of household amenities. Nearly two thirds of sterilized Garifuna women reported that their first and only method of contraception was female sterilization. In contrast, only 26 percent of sterilized Creole women reported female sterilization as their first method.

7.3 Satisfaction with the Decision

All married women aged 15-44 who had a tubal ligation were asked if they were satisfied with having the operation. As shown in table 7-3, 93 percent expressed satisfaction with their decision to have the operation. Women who were 15-24 years of age when they were

sterilized reported the lowest level of satisfaction (85 percent) with the procedure. Satisfaction was 91 percent or higher for 21 of the 25 sociodemographic subgroups shown in the table.

7.4 Demand for Sterilization

All fecund married women who had at least one living child were asked if they wanted any more children. Overall, 49 percent said they did not want any more children (Table 7-4). The proportion not wanting any more children increases with age and number of living children. Almost half (46 percent) of women with 2 children and more than two thirds with 4 or more children do not want any more children. Women with 8 or fewer years of formal education were more likely to state that they did not want more children compared to women of higher educational attainment. However, as noted earlier, higher educated women tend to be younger and of lower parity.

All fecund women who did not want any more children were asked whether they were interested in having a tubal ligation. In addition, women who reported that they wanted more children were asked if they would be interested in having a tubal ligation after they had their desired number of children. As shown in Table 7-5, about the same percentage (38 percent) of each group said they were or would be interested in sterilization, indicating that interest in sterilization in Belize will probably not wane in the near future. For both groups, a higher percentage of urban women expressed interest in sterilization than rural women. While interest in sterilization among women wanting more children was inversely associated with age and number of living children, there were no clear trends associated with these variables among women wanting no more children. Interest in sterilization among women wanting more children was directly associated with educational attainment, while among women wanting no more children only those with less than an 8th grade education expressed relatively strong interest. Interest also varied among the two groups with respect to ethnicity, with Mestizos showing the greatest interest among those not wanting more children and the Garifunas expressing the greatest interest among those wanting more children.

Of the women in each group that were interested in sterilization, approximately three out of four had knowledge of a source of sterilization (data not shown). Knowledge of where to obtain sterilization did not vary appreciably between urban and rural areas. Approximately 75 percent of each group cited the Ministry of Health as a source of sterilization, while the remainder cited private clinics or hospitals.

All women who said that they did not want any more children, were interested in sterilization, and knew a source of sterilization were asked why they had not sought surgical contraception. Overall, 23 percent said they feared the operation or its side effects (Table 7-6). An additional 14 percent stated that they considered themselves too young for the operation, 12 percent stated that they lacked information about the operation, and 11 percent stated that they lacked the money to obtain the operation. While urban women were more likely to consider themselves too young for the operation, rural woman were more likely to state that they lacked money to obtain the operation. Overall, 9 percent of the women cited health or medical reasons for never being sterilized. Nearly three times as many urban women as rural women cited this reason.

Finally, women who did not want more children and said they were not interested in surgical contraception, and women who stated that they would not be interested in surgical contraception after having all of the children they want, were asked why they were not interested (Table 7-7). Overall, 50 percent of these women stated that they feared the operation or its side effects as their reason, while an additional 10 percent said they just didn't like sterilization. About 7 percent stated that they

preferred to use other methods to regulate their fertility, while an additional 6 percent considered themselves too young. Religious reasons and spousal opposition accounted for only three percent each of the reasons given. Women with 8 years or less of schooling were more likely to state that they feared the operation than women with nine or more years of schooling. Preference to use other methods to regulate fertility was directly associated with educational attainment.

In summary, many of the reasons for never being sterilized or for not being interested in sterilization could be addressed through a vigorous and effective educational program. The data presented in this section suggest that some women in Belize are misinformed about the safety and efficacy of tubal ligation. This finding indicates that educational programs may be needed to dispel adverse rumors about this method.

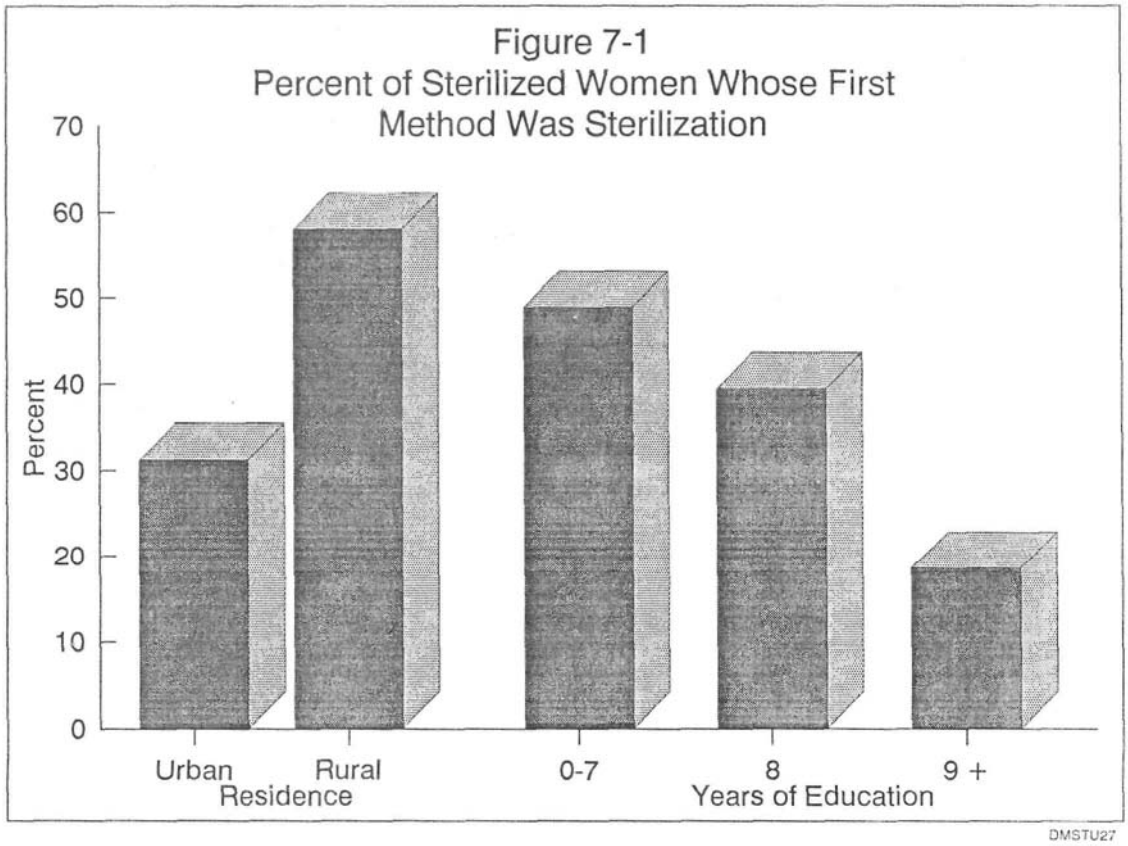


Figure 7-1
Percent of Sterilized Women Whose First Method Was Sterilization
Percent
70
60
50
40
30
20
10
0
Urban
Rural
Residence
0-7
8
9 +
Years of Education
DMSTU27

Table 7-1

Belize: Demographic Profile of Currently Married Women Aged 15-44
Using Female Sterilization and All Currently Married Respondents
1991 Family Health Survey

Selected Characteristics	Percent Distribution At: Time of Sterilization	Time of Survey	Currently Married Survey Population
Total	100.0	100.0	100.0
	(324)	(324)	(1,790)
Residence			
Urban	-	73.6	61.5
Rural	-	26.4	38.5
Age*			
15-19	1.3	0.2	7.9
20-24	13.9	3.0	19.8
25-29	40.7	14.6	24.6
30-34	23.2	26.2	20.0
35-39	16.4	25.7	14.4
40-44	4.5	30.4	13.2
Mean Age	29.7	35.3	29.7
No. of Living Children			
0	-	0.2	8.1
1	-	1.7	13.9
2	-	10.1	17.3
3	-	17.3	16.7
4	-	21.5	13.1
5	-	16.8	10.2
6+	-	32.3	20.7
Mean No. of Living Children	-	4.9	3.6
Years of Education			
None	-	7.2	5.8
1-7	-	25.2	32.5
8	-	47.7	36.4
9-12	-	13.6	19.3
13+	-	6.4	6.1
No. Household Amenities			
0-2	-	18.0	30.5
3-7	-	56.3	47.6
8-10	-	25.7	21.9

*Excludes 7 cases for whom age and year of sterilization is unknown.

Table 7-1 (Continued)

Belize: Demographic Profile of Currently Married Women Aged 15-44
Using Female Sterilization and All Currently Married Respondents
1991 Family Health Survey

Selected Characteristics	Percent Distribution At:		Currently Married Survey Population
	Time of Sterilization	Time of Survey	
Year of Sterilization*			
Before 1980	16.8	-	-
1980-1981	8.1	-	-
1982-1983	7.9	-	-
1984-1985	14.1	-	-
1986-1987	15.3	-	-
1988-1989	22.5	-	-
1990-1991 (Jan.-Feb.)	15.3	-	-

*Excludes 7 cases for whom age and year of sterilization is unknown.

Table 7-2

Belize: Percentage of Married Women Aged 15-44
With Surgical Contraception Whose First Method
of Contraception Was Tubal Ligation,
by Selected Characteristics
1991 Family Health Survey

Selected Characteristics	Percentage	No. of Cases (Unweighted)
Total	38.3	(324)
Residence		
Urban	31.2	(234)
Rural	57.9	(90)
Age		
15-29	50.0	(65)
30-34	34.0	(97)
35-39	35.6	(79)
40-44	37.4	(83)
Years of Education		
0-7	48.9	(103)
8	39.4	(154)
9+	18.5	(67)
No. Household Amenities		
0-2	61.4	(60)
3-7	41.2	(186)
8-10	15.4	(78)
No. of Living Children		
0-2	38.8	(45)
3	47.1	(58)
4	29.9	(70)
5	32.3	(56)
6+	42.0	(95)
Ethnic Group		
Creole	25.7	(86)
Mestizo	38.5	(172)
Garifuna	63.6	(28)
Other	48.9	(38)
Years of Sterilization		
Before 1980	38.2	(46)
1980-1983	40.0	(50)
1984-1987	42.0	(100)
1988-1991 (Jan.-Feb.)	34.6	(128)

Table 7-3

Belize: Percentage of Sterilized Women Who Reported Satisfaction
With Surgical Contraception, by Selected Characteristics:
Currently Married Women Aged 15-44 Who Are Sterilized
1991 Family Health Survey

Selected Characteristics	Percent Satisfied	No. of Cases (Unweighted)
Total	93.1	(324)
Residence		
Urban	92.9	(234)
Rural	93.5	(90)
Age at Time of Sterilization		
15-24	85.0	(52)
25-29	93.8	(129)
30-34	96.7	(76)
35-44	95.2	(60)
Years of Education		
0-7	92.4	(103)
8	93.8	(154)
9+	92.6	(67)
No. Household Amenities		
0-2	87.7	(60)
3-7	92.1	(186)
8-10	99.0	(78)
No. of Living Children		
0-2	91.8	(45)
3	87.1	(58)
4	96.5	(70)
5	94.1	(56)
6+	93.9	(95)
Ethnic Group		
Creole	97.3	(86)
Mestizo	91.7	(172)
Garifuna	90.9	(28)
Other	91.1	(38)

Table 7-4

Belize: Percentage of Currently Married Fecund Women
Aged 15-44 Who Want No More Children,
by Selected Characteristics
1991 Family Health Survey

Selected Characteristics	Percentage	No. of Cases (Unweighted)*
Total	49.0	(1,258)
Residence		
Urban	51.5	(707)
Rural	45.7	(551)
Age		
15-19	15.3	(92)
20-24	37.9	(294)
25-29	42.8	(387)
30-34	58.3	(268)
35-39	69.5	(142)
40-44	83.9	(75)
No. of Living Children		
1	14.4	(219)
2	37.0	(282)
3	46.0	(247)
4	65.4	(156)
5	69.7	(135)
6+	78.4	(219)
Years of Education		
None	53.1	(72)
1-7	49.3	(438)
8	51.7	(418)
9-12	45.2	(260)
13+	40.7	(70)
Ethnic Group**		
Creole	53.5	(324)
Mestizo	48.9	(186)
Garifuna	44.9	(88)
Maya/Ketchi	45.4	(132)
Other	43.0	(82)

*Excludes 2 cases for whom desire to have more children is unknown.

**Excludes one case for whom ethnic group is unknown.

Table 7-5

Belize: Percentage of Currently Married Fecund Women
Aged 15-44 Who Are Interested in Sterilization,
by Current Desire to Have More Children
and Selected Characteristics
1991 Family Health Survey

Selected Characteristics	Interest of Women Who Want No More Children		Interest of Women After They Have Desired No. of Children	
Total	38.4	(597)	36.7	(661)*
Residence				
Urban	43.6	(355)	43.5	(352)
Rural	30.6	(242)	28.6	(309)
Age				
15-24	40.7	(123)	40.6	(263)
25-29	50.0	(165)	39.8	(222)
30-34	44.2	(154)	32.5	(114)
35-44	23.6	(155)	17.1	(62)
No. of Living Children				
1-2	38.0	(133)	41.1	(368)
3	45.2	(108)	37.8	(139)
4	38.7	(98)	30.2	(58)
5	39.4	(94)	23.3	(41)
6+	34.5	(164)	19.0	(55)
Years of Education				
0-7	43.2	(243)	31.8	(267)
8	34.7	(211)	38.0	(207)
9+	35.5	(143)	42.3	(187)
Ethnic Group				
Creole	31.4	(171)	36.1	(153)
Mestizo	45.4	(292)	39.7	(339)
Garifuna	34.7	(41)	48.3	(47)
Maya/Ketchi	26.1	(57)	13.3	(75)
Other	37.5	(36)	41.5	(46)

*Excludes 2 cases for whom interest in sterilization is unknown and one case for whom ethnic group is unknown.

NOTE: Figures in parentheses are unweighted numbers of cases.

Table 7-6

Belize: Percent Distribution of Reasons Never Sterilized,
by Residence: Currently Married Fecund Women Aged 15-44,
Who Want No More Children, Who Are Interested in Sterilization,
and Who Have Knowledge of Where to Obtain
Sterilization Information and/or Services
1991 Family Health Survey

		Residence	
Reasons Never Sterilized	Total	Urban	Rural
Fears Operation/Side Effects	22.7	21.9	24.3
Considers Self Too Young	13.9	17.8	5.7
Lack of Information	12.5	13.7	10.0
Lack of Money	11.1	8.2	17.1
Health or Medical Reasons	9.3	11.6	4.3
Spouse Opposes	3.7	2.7	5.7
Advanced Age	1.4	2.0	0.0
Far Distance to Source	1.4	1.4	1.4
Prefers Using Other Methods	1.4	2.0	0.0
Not Sexually Active	0.9	1.4	0.0
Doesn't Like or Want to Use	0.5	0.0	1.4
Religion	0.5	0.0	1.4
Other	15.3	12.3	21.4
Doesn't Know	5.6	4.8	7.1
Total	100.0	100.0	100.0
No. of Cases (Unweighted)	(189)	(123)	(66)

Table 7-7

Belize: Percent Distribution of Reasons Never Sterilized,
by Number of Living Children: Currently Married Fecund Women
Aged 15-44, Who Want No More Children, Who Are Interested in
Sterilization, and Who Have Knowledge of Where to Obtain
Sterilization Information and/or Services
1991 Family Health Survey

		No. of Living Children				
Reasons Never Sterilized	Total	1-2	3	4	5	6+
Fears Operation/Side Effects	22.7	10.2	15.4	23.1	31.0	33.3
Considers Self Too Young	13.9	34.7	20.5	5.1	3.5	3.3
Lack of Information	12.5	12.2	12.8	20.5	20.7	3.3
Lack of Money	11.1	2.0	15.4	15.4	10.3	13.3
Health or Medical Reasons	9.3	2.0	7.7	10.3	17.2	11.7
Spouse Opposes	3.7	2.0	2.6	5.1	3.5	5.0
Advanced Age	1.4	6.1	0.0	0.0	0.0	0.0
Far Distance to Source	1.4	4.1	2.6	0.0	0.0	0.0
Prefers Using Other Methods	1.4	4.1	0.0	0.0	3.5	0.0
Not Sexually Active	0.9	2.0	0.0	2.6	0.0	0.0
Doesn't Like or Want to Use	0.5	0.0	0.0	2.6	0.0	0.0
Religion	0.5	0.0	0.0	0.0	0.0	1.7
Other	15.3	12.2	17.9	10.3	6.9	23.3
Doesn't Know	5.6	8.2	5.1	5.1	3.5	5.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(189)	(44)	(35)	(35)	(29)	(46)

Table 7-8

Belize: Percent Distribution of Reasons Not Interested
in Sterilization, by Years of Education: Currently Married
Fecund Women Aged 15-44 Who Said They Were Not Interested in Sterilization*
1991 Family Health Survey

		Years of Education		
Reasons Not Interested in Sterilization	Total	0-7	8	9+
Fears Operation/Side Effects	49.8	50.7	56.9	38.4
Doesn't Like or Want to Use	10.1	9.3	9.1	12.8
Prefers Using Other Methods	7.4	4.1	6.4	14.2
Considers Self Too Young	6.2	5.8	3.7	10.4
Lack of Information	4.0	6.4	2.4	2.4
Advanced Age	3.8	3.8	4.4	2.8
Spouse Opposes	3.2	3.8	2.0	3.8
Religion	3.2	4.3	2.4	2.4
Health or Medical Reasons	2.4	2.0	3.4	1.4
Not Sexually Active	0.9	1.7	0.0	0.9
Far Distance to Source	0.5	0.3	1.0	0.0
Lack of Money	0.3	0.3	0.7	0.0
Other	3.1	2.3	2.7	4.7
Doesn't Know	5.2	5.2	4.7	5.7
Total	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(714)	(287)	(244)	(183)

*Includes women who currently want no more children and women who would not be interested in sterilization after having all of the children they want.

8. Use of Maternal and Child Health Services

This chapter covers the use of maternal and child health (MCH) services for each pregnancy that resulted in a live birth within five years of interview to women aged 15-44. Various factors influencing the use of prenatal, postpartum, and newborn services as well as location and type of delivery (Cesarean versus vaginal) are examined. The use of MCH services is also assessed in terms of its association with contraceptive use.

8.1 Prenatal Care

Ninety-five percent of women obtained prenatal care during pregnancy for live births that occurred within five years of interview (Table 8-1). There were no significant differences in the use of prenatal care according to place of residence, education, and ethnic group (Table 8-2).

Overall, the majority of women (87 percent) used government facilities as their primary source of prenatal care. An additional 13 percent used private facilities while nurse midwives and traditional birth attendants accounted for less than one percent of the prenatal care received in the past five years. Women of high educational attainment were the most likely to use private facilities for their prenatal care.

Timing of the first prenatal visit is important in that the earlier this visit is made the earlier problems can be detected and managed. Of live births for which prenatal care was obtained, less than half received their first prenatal check-up during the first three months of pregnancy. Almost 50 percent of the women waited until the second trimester of pregnancy for their first checkup and 4 percent did not initiate prenatal care until the last trimester. Urban women, women with 9 or more years of schooling, Creoles, Mestizos, and women whose ethnic group was classified as "other" tended to receive their first checkup earlier.

For more than three fourths of live births, women who received prenatal care had 5 or more examinations during their pregnancies. Again, women who live in urban areas and women with more education were more likely to have made five or more prenatal visits than rural women and women with less education. Creoles and women whose ethnic group was classified as "other" made the most prenatal visits compared to the other ethnic groups.

Women receiving tetanus injections during pregnancy protect their newborns from neonatal tetanus. The Belize Ministry of Health recommends that women receive two doses of tetanus toxoid during their first pregnancy and one dose during each subsequent pregnancy. After this, a booster is given every five years. Overall, for 84 percent of pregnancies resulting in a live birth there was at least one injection received (Table 8-3). The proportion receiving a tetanus injection did not vary by residence, education, and ethnic group. However, those who received no prenatal care were the least likely to be vaccinated against tetanus.

8.2 Location and Type of Last Delivery

In general, more than three fourths of births in the last five years were delivered in either a government or private hospital (Table 8-4, Figure 8-1). This percentage is 93 percent for women living in urban areas but only 57 percent for women living in rural areas. About 90 percent of Creole and Garifuna births were delivered in a hospital compared to only 52 percent of the Maya/Ketchi. Overall, 21 percent of the children were delivered at home. Rural births (40 percent) were much more likely to occur at home than urban births (5 percent). The Maya/Ketchi, who primarily

live in rural areas, reported the highest proportion of children delivered at home (46 percent). The probability of delivery at home increases as the educational level of the mother decreases, reflecting the lower educational levels of rural women.

Sixty percent of the deliveries were attended by a nurse midwife (Table 8-5). An additional 20 percent were attended by traditional birth attendants (TBA), followed by physicians (17 percent). Less than one percent of deliveries were reported to be unattended. Twice as many births to urban women and to women of high educational attainment were attended by physicians compared to other women. Rural women, the Maya/Ketchi, and Mestizos were the most likely to report that they were attended by TBAs. The probability of being attended by a TBA was also inversely associated with educational level.

Women whose deliveries were in a hospital (76 percent of all deliveries) were asked if their deliveries were vaginal or Cesarean. Overall, 8 percent of deliveries occurring in a hospital were Cesarean (Table 8-6). The hospital rate of 8 percent compares to the rate of 32 percent reported in Brazil in 1986, which is the highest rate in Latin America (Arruda et al., 1987). As education increases, so does the proportion of deliveries that are Cesarean. In addition, the percentage of deliveries in private hospitals that were Cesarean (14 percent) was nearly twice that of deliveries attended in government hospitals (8 percent). Finally, the Cesarean rate for all births, regardless of place of delivery, was 6 percent.

8.3 Postpartum Care and Newborn Checkup

Less than half of live births in the past five years were followed by use of postpartum services for the mother (Table 8-7). Urban women (48 percent) were more likely than rural women (31 percent) to receive postpartum care. In addition, the likelihood of receiving a checkup was positively associated with higher educational attainment. With respect to ethnicity, the Creoles (55 percent), Garifuna (55 percent), and those classified as "other" (50 percent) reported the greatest use of postpartum care.

The United Nations recommends a newborn checkup as soon as possible after birth for tuberculosis immunization (if not given at time of birth) and a polio and DPT vaccination series beginning at six weeks of age (UNICEF, 1989). Only 58 percent of newborns were taken for a checkup (Table 8-7). In other countries in the region, this service is generally the most used among the MCH services discussed in this chapter. The low use rate may be explained by the fact that rural women do not have the same access to health services as urban women. As the table shows, nearly twice as many urban newborns (74 percent) as rural newborns (40 percent) were taken for a checkup. The proportion of women using newborn checkups increases as the level of education increases, and the Creoles (79 percent) and the Garifunas (78 percent) reported the greatest use of newborn checkups.

8.4 Use of MCH Services

When prenatal, postpartum, and newborn services are examined together, only 34 percent of births in the last five years were accompanied by use of all three services (Table 8-8). An equal proportion of women used prenatal services only. More urban woman (43 percent) than rural women (25 percent) used all three MCH services. The probability of using all three services was directly associated with educational attainment (Table 8-9, Figure 8-2), with 59 percent of women with nine or more years of education reporting the use of all three health services compared to only 26 percent of women with less than 8 years of schooling. The Creoles (51 percent), the Garifuna (47 percent), and those classified as "other" (46 percent) reported the greatest use of all the three services (Table 8-10). In

contrast, Mestizos (27 percent), and the Maya/Ketchi (23 percent) reported the lowest use rate of the three services. It should be noted that of those mothers who did not use all three services, more than one third reported using the two services, prenatal and newborn, that potentially have the greatest impact on their babies' health.

Finally, women who received all three MCH services were more likely to report that they were using contraception than women who received only some or none of those services. As shown in Table 8-11, twice as many women who received all three services (52 percent) were using contraception at the time of the survey as women who used no maternal and child health service (26 percent). We cannot say that the use of MCH services influences the use of contraception or vice versa. However, the fact that contraceptive use among nulliparous women is relatively low in Belize and increases with parity suggests that women's first exposure to family planning may indeed be in the MCH setting, which can be effectively used to promote the use of contraception. On the other hand, we cannot discount that an increase in parity may have simply been the key factor in the decision to use contraception.

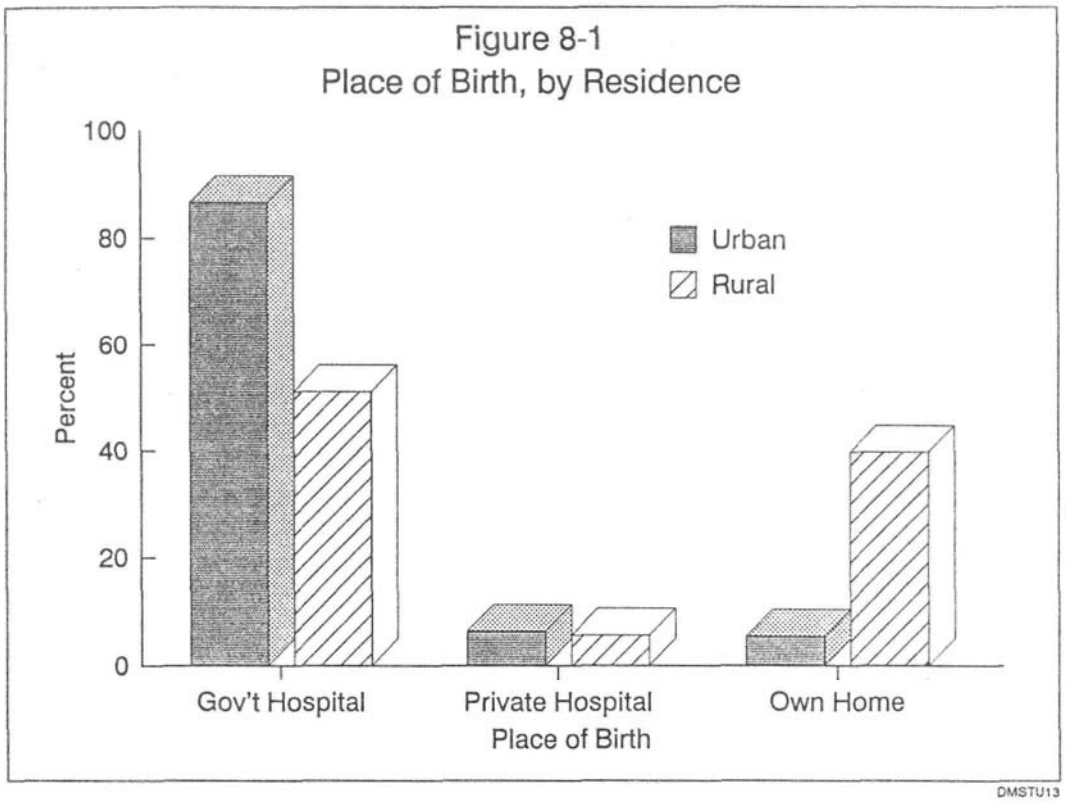


Figure 8-1
Place of Birth, by Residence
100
80
60
40
20
0
Percent
Urban
Rural
Gov't Hospital
Private Hospital
Own Home
Place of Birth
DMSTU13

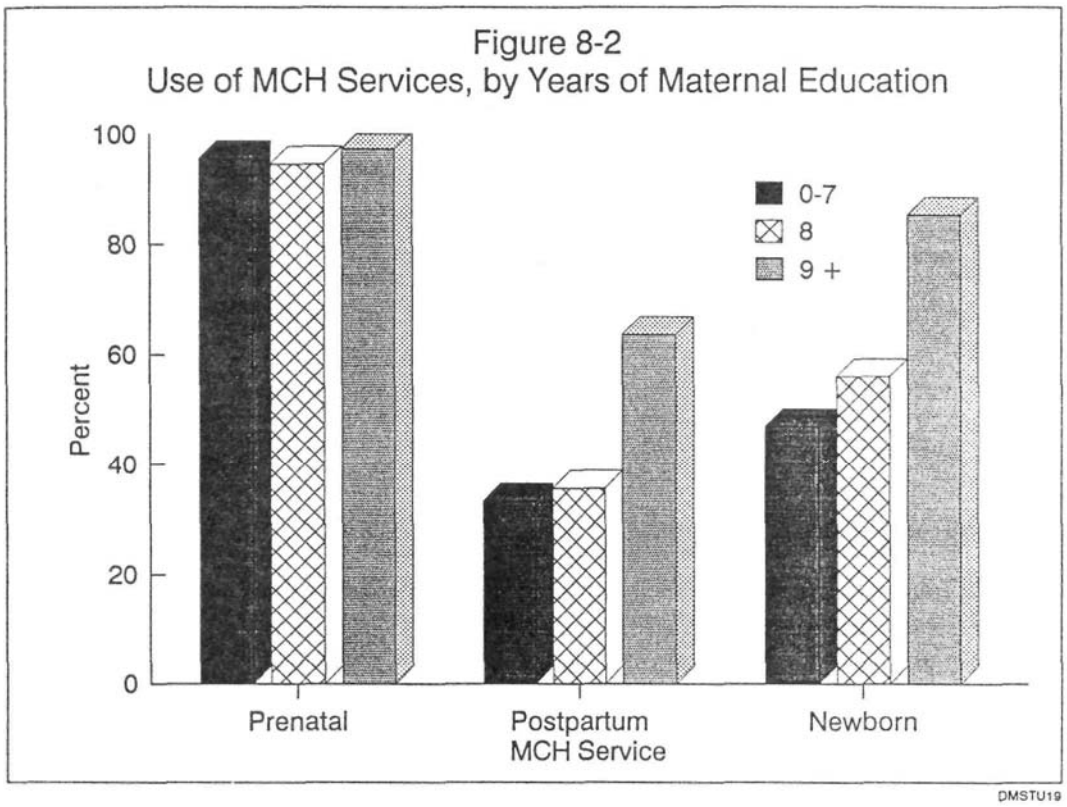


Figure 8-2
Use of MCH Services, by Years of Maternal Education
100
80
60
40
20
0
Percent
0-7
8
9 +
Prenatal
Postpartum
MCH Service
Newborn
DMSTU19

Table 8-1

Belize: Use of Prenatal Care, by Residence and Years of Education:
Live Births Within 5 Years of Interview
to Currently Married Women Aged 15-44
1991 Family Health Survey
(Percent Distribution)

Prenatal Care	Total	Residence		Years of Education		
		Urban	Rural	0-7	8	9+
Yes	95.5	95.9	95.1	95.5	94.5	97.3
No	4.5	4.1	4.9	4.5	5.5	2.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(1,991)	(1,035)	(956)	(878)	(697)	(416)
Source of Prenatal Care						
Government Facility	86.9	84.7	89.3	90.3	90.1	74.3
Private Facility	12.5	14.9	9.7	8.7	9.5	25.5
Midwife/TBA	0.5	0.3	0.7	0.7	0.4	0.2
Other	0.1	0.0	0.3	0.3	0.0	0.0
Months Pregnant When First Received Care						
≤ 3 Months	42.8	49.1	35.6	40.0	38.1	56.4
4-6 Months	49.4	44.2	55.5	51.5	53.9	37.8
7-9 Months	4.1	3.7	4.5	4.9	4.3	1.9
Doesn't Remember	3.7	3.0	4.4	3.5	3.7	3.9
No. of Prenatal Visits						
1-4	17.5	11.7	24.1	21.8	18.0	7.8
5-8	54.4	50.8	58.6	55.9	54.8	50.8
9-12	18.4	25.6	10.1	16.2	18.0	23.5
13+	3.6	6.1	0.7	1.6	2.4	9.7
Doesn't Remember	6.1	5.8	6.5	4.6	6.8	8.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(1,910)	(996)	(914)	(842)	(665)	(403)

Table 8-2

Belize: Use of Prenatal Care, by Ethnic Group:
Live Births Within 5 Years of Interview
to Currently Married Women Aged 15-44
1991 Family Health Survey
(Percent Distribution)

		Ethnic Group				
Prenatal Care	Total	Creole	Mestizo	Garifuna	Maya/ Ketchi	Other
Yes	95.5	94.9	95.8	94.1	96.2	96.6
No	4.5	5.1	4.2	5.9	3.8	3.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(1,991)	(436)	(1,027)	(158)	(257)	(113)
Source of Prenatal Care						
Government Facility	86.9	87.8	84.6	95.5	92.5	78.3
Private Facility	12.5	12.2	14.9	4.0	6.4	18.3
Midwife/TBA	0.5	0.0	0.3	0.6	0.7	3.5
Other	0.1	0.0	0.2	0.0	0.4	0.0
Months Pregnant When First Received Care						
≤ 3 Months	42.8	45.4	44.0	32.4	39.5	44.3
4-6 Months	49.4	47.3	47.7	56.8	54.5	51.3
7-9 Months	4.1	2.7	4.7	9.1	1.4	2.6
Doesn't Remember	3.7	4.6	3.5	1.7	4.6	1.7
No. of Prenatal Visits						
1-4	17.5	11.0	19.5	21.6	18.5	16.5
5-8	54.4	52.5	54.7	52.3	57.7	54.8
9-12	18.4	18.3	18.9	15.3	16.4	23.5
13+	3.6	9.3	1.9	2.3	2.1	1.7
Doesn't Remember	6.1	8.9	5.0	8.5	5.3	3.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(1,910)	(338)	(1,040)	(345)	(62)	(125)

Table 8-3

Belize: Percent of Mothers Vaccinated Against Tetanus
During Recent Pregnancies, by Selected Characteristics:
Live Births Within 5 Years of Interview
to Currently Married Women Aged 15-44
1991 Family Health Survey

Selected Characteristics	Percent Vaccinated	No. of Cases (Unweighted)
Total	83.8	(1,989)
Residence		
Urban	83.7	(1,035)
Rural	83.9	(954)
Years of Education		
0-7	84.7	(876)
8	82.1	(697)
9+	84.7	(416)
Ethnic Group		
Creole	84.5	(436)
Mestizo	84.3	(1,025)
Garifuna	81.3	(158)
Maya/Ketchi	82.5	(257)
Other	83.2	(113)
Source of Prenatal Care		
Government Facility	85.8	(1,647)
Private Facility	79.1	(247)
No Prenatal Care	60.8	(81)
Other	**	(14)

**Less than 25 cases.

Table 8-4

Belize: Percent Distribution of Births in the Last 5 Years,
by Place of Birth and Selected Characteristics
1991 Family Health Survey

	Place of Birth					
Selected Characteristics	Govt. Hospital	Private Hospital	Own Home	Other	Total	No. of Births (Unweighted)
Total	70.0	6.0	21.5	2.6	100.0	(1,989)
Residence						
Urban	86.6	6.3	5.4	1.7	100.0	(1,035)
Rural	51.1	5.6	39.7	3.6	100.0	(954)
Respondent's Education (years)						
0-7	62.1	5.7	29.5	2.7	100.0	(876)
8	70.3	4.5	21.7	3.5	100.0	(697)
9+	86.1	9.0	4.0	0.8	100.0	(416)
Ethnic Group						
Creole	88.0	3.9	5.3	2.8	100.0	(436)
Mestizo	64.3	7.7	24.9	3.1	100.0	(1,025)
Garifuna	88.8	1.1	9.6	0.5	100.0	(158)
Maya/Ketchi	46.9	4.8	45.9	2.4	100.0	(257)
Other	76.5	7.6	15.1	0.8	100.0	(113)

Table 8-5

Belize: Percent Distribution of Births in the Last 5 Years,
by Type of Assistance Received During Delivery
and Selected Characteristics
1991 Family Health Survey

	Type of Assistance						
Selected Characteristics	Nurse/Midwife	TBA	Doctor	None	Other	Total	No. of Births (Unweighted)
Total	60.1	20.4	16.8	0.6	2.1	100.0	(1,989)
Residence							
Urban	70.6	7.2	22.0	0.0	0.1	100.0	(1,035)
Rural	48.2	35.3	10.9	1.3	4.3	100.0	(954)
Years of Education							
0-7	55.9	26.9	12.8	1.0	3.4	100.0	(876)
8	61.1	21.4	15.4	0.5	1.6	100.0	(697)
9+	67.4	4.8	27.7	0.0	0.0	100.0	(416)
Ethnic Group							
Creole	76.6	7.3	16.1	0.0	0.0	100.0	(436)
Mestizo	54.4	25.7	18.9	0.1	1.0	100.0	(1,025)
Garifuna	73.3	10.2	15.0	0.0	1.6	100.0	(158)
Maya/Ketchi	44.9	31.5	8.6	4.1	11.0	100.0	(257)
Other	63.9	12.6	22.7	0.8	0.0	100.0	(113)

Table 8-6

Belize: Percent of Hospital Births in the Last 5 Years
That Were Cesarean, by Selected Characteristics
1991 Family Health Survey

Selected Characteristics	Percent Cesarean	No. of Births (Unweighted)
Total	8.4	(1,490)
Residence		
Urban	8.8	(956)
Rural	7.8	(534)
Years of Education		
0-7	6.2	(587)
8	8.8	(508)
9+	11.3	(395)
Ethnic Group		
Creole	4.5	(397)
Mestizo	10.6	(730)
Garifuna	8.9	(140)
Maya/Ketchi	6.0	(127)
Other	11.0	(96)
No. of Living Children		
0-1	14.5	(172)
2	7.4	(298)
3	10.0	(326)
4	9.5	(215)
5	4.8	(199)
6+	5.2	(280)
Location of Delivery		
Government Hospital	7.9	(1,366)
Private Facility	14.0	(124)

Table 8-7

Belize: Percentage of Pregnancies to Currently Married Women
Age 15-44 Who Received Postpartum Care and
Percentage of Children Born Within 5 Years of Interview
Who Received a Newborn Checkup, by Selected Characteristics
1991 Family Health Survey

Selected Characteristics	Postpartum Care*		Newborn Checkup**	
Total	40.3	(1,988)	58.0	(1,982)
Residence				
Urban	48.3	(1,035)	73.9	(1,031)
Rural	31.2	(953)	39.9	(951)
Respondent's Education (years)				
0-7	33.2	(875)	46.8	(874)
8	35.5	(697)	55.9	(695)
9+	63.5	(416)	85.2	(413)
Ethnic Group				
Creole	54.7	(436)	79.4	(432)
Mestizo	34.6	(1,024)	49.5	(1,023)
Garifuna	54.5	(158)	78.1	(158)
Maya/Ketchi	25.3	(257)	38.5	(256)
Other	49.6	(113)	67.2	(113)

*Excludes three cases for whom use of postpartum care is unknown.

**Excludes nine cases for whom use of newborn checkup is unknown.

Note: Figures in parentheses are unweighted numbers of cases.

Table 8-8

Belize: Use of Maternal and Child Health Services,
by Type of Services Used and Residence:
Live Births Within 5 Years of Interview
to Currently Married Women Aged 15-44
1991 Family Health Survey
(Percent Distribution)

		Residence	
Maternal and Child Health Services	Total	Urban	Rural
None	2.4	2.0	2.8
Prenatal Only	34.7	19.9	51.5
Postpartum Only	0.2	0.0	0.4
Newborn Only	1.1	1.2	0.9
Prenatal/Postpartum	4.8	4.2	5.5
Prenatal/Newborn	21.6	28.7	13.5
Postpartum/Newborn	0.9	1.0	0.7
All Three Services	34.4	43.1	24.5
Total	100.0	100.0	100.0
No. of Cases (Unweighted)	(1,980)	(1,030)	(950)

Table 8-9

Belize: Use of Maternal and Child Health Services,
by Type of Services Used and Years of Education:
Live Births Within 5 Years of Interview
to Currently Married Women Aged 15-44
1991 Family Health Survey
(Percent Distribution)

		Years of Education		
MCH Services	Total	0-7	8	9+
None	2.4	2.7	3.2	0.2
Prenatal Only	34.7	44.1	36.4	11.7
Postpartum Only	0.2	0.4	0.0	0.0
Newborn Only	1.1	0.9	1.6	0.4
Prenatal/Postpartum	4.8	6.0	4.5	3.0
Prenatal/Newborn	21.6	19.1	23.2	24.1
Postpartum/Newborn	0.9	0.5	0.6	2.1
All Three Services	34.4	26.3	30.4	58.5
Total	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(1,980)	(874)	(694)	(412)

Table 8-10

Belize: Use of Maternal and Child Health Services,
by Type of Services Used and Ethnic Group:
Live Births Within 5 Years of Interview
to Currently Married Women Aged 15-44
1991 Family Health Survey
(Percent Distribution)

		Ethnic Group				
MCH Services	Total	Creole	Mestizo	Garifuna	Maya/ Ketchi	Other
None	2.4	2.4	2.2	2.7	3.1	1.7
Prenatal Only	34.7	15.7	41.3	15.0	56.4	26.9
Postpartum Only	0.2	0.0	0.3	0.0	0.0	0.0
Newborn Only	1.1	1.4	1.4	0.0	0.3	0.0
Prenatal/Postpartum	4.8	2.6	6.6	4.3	2.1	4.2
Prenatal/Newborn	21.6	25.7	20.5	28.0	14.8	21.9
Postpartum/Newborn	0.9	1.4	0.3	3.2	0.3	1.7
All Three Services	34.4	50.9	27.3	46.8	23.0	43.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(1,980)	(431)	(1,023)	(157)	(256)	(113)

Table 8-11

Belize: Percentage of Currently Married Women
Aged 15-44 Who Have Had Live Births Within 5 Years of Interview
and Who Are Currently Using Contraception,
by Use of Maternal and Child Health Services
1991 Family Health Survey
(Percent Distribution)

MCH Services	Percent Currently Using Contraception	No. of Cases (Unweighted)
None	25.9	(40)
Prenatal Only	34.8	(688)
Postpartum Only	*	(2)
Newborn Only	*	(19)
Prenatal/Postpartum	50.9	(96)
Prenatal/Newborn	42.4	(428)
Postpartum/Newborn	*	(20)
All Three Services	52.4	(687)

**Less than 25 cases.

9. Breastfeeding and Weaning Practices

Breastfeeding is recognized around the world as an important determinant of child survival. Breastmilk is the most complete food an infant can receive, contains all the nutrients an infant needs for the first few months of life, and is generally free of contamination (McCann et al, 1984). Also, the transmission of maternal antibodies found in breastmilk contributes to the child's immunologic defense mechanism. Furthermore, part of the health benefit of lactation derives from its contraceptive effect; frequent suckling delays the return of ovulation and thus reduces the risks attendant to short birth intervals (VanLandingham et al., 1991).

According to the literature, breastfeeding offers protection to children up to one year of age, but not necessarily beyond, and that protection is greatest in the first three months of life (Feachem and Koblinsky, 1984). For the first few months, exclusive breastfeeding is more protective than partial breastfeeding which, in turn, is more protective than no breastfeeding as breastfeeding decreases exposure to contaminated foods and liquids. In short, an infant's chances of survival are increased if he/she is breastfed and is breastfed for as long as possible. If an infant is exclusively breastfed for some period of time, his/her chances of survival are still even greater.

This chapter addresses the initiation and duration of breastfeeding and supplementary feeding patterns and concentrates on children who were born within the 24 months prior to the interview date. Twenty-nine children who died in the 24 month interim have been excluded from the analysis.

9.1 Initiation of Breastfeeding

Overall, 90 percent of surviving children born within 24 months of interview were reported by their mothers to have been breastfed (Table 9-1). A higher proportion of rural children (95 percent) were reported to have been breastfed than urban children (86 percent). As can be seen in Figure 9-1, the percent currently breastfed among children in different age groups is also consistently higher in rural than in urban areas. The likelihood of being breastfed was inversely associated with the number of amenities found in the household at the time of the interview. However, an inverse association of breastfeeding with educational attainment did not emerge from the data, as expected. With respect to ethnicity, the Maya/Ketchi were more likely to report breastfeeding their children than any of the other ethnic groups. The percentage of children ever breastfed did not vary appreciably by type of delivery. However, women who gave birth in a private facility were the least likely to breastfeed.

Early initiation of breastfeeding is beneficial for the health of both the mother and the child. If the mother places the baby to the breast immediately after birth, the effect of suckling causes a release of oxytocin and uterine contractions that accelerate the delivery of the afterbirth. Early suckling also means the ingestion of colostrum, which helps guard the newborn against several types of bacteria and other harmful organisms (McCann et al., 1984).

Table 9-2 provides information about when the baby is first placed at the mother's breast. Forty-six percent of the women reported that they initiated breastfeeding immediately after giving birth while an additional 33 percent initiated breastfeeding from one to 24 hours after delivery. Nineteen percent of the women delayed breastfeeding until the day following birth or later. The data suggest that rural and less educated mothers, the same groups of mothers who are the most likely to breastfeed

their children, tend to delay somewhat the initiation of breastfeeding. Women who deliver in private hospitals also tend to delay breastfeeding. Interestingly, women whose last child was delivered by Cesarean section tend to either initiate breastfeeding immediately following birth or to delay breastfeeding for a day or so. Given that delivery by Cesarean section constitutes major abdominal surgery, one would expect a higher proportion of mothers delaying breastfeeding than was reported.

9.2 Mean Duration and Frequency of Breastfeeding

As discussed in Chapter 3, the overall mean duration of breastfeeding in Belize was approximately 12 months (Table 3-10) among children ever breastfed. A comparison of the results of the 1991 Belize Survey with recent survey results from neighboring countries shows that Belize has the lowest reported mean duration of breastfeeding among its neighbors. In 1987, mean duration of breastfeeding in Guatemala was 20 months while in 1987 and 1988 it was 17 months in both Honduras and El Salvador, respectively (Ministerio de Salud Publica y Asistencia Social de Guatemala et al., 1987; Honduran Ministry of Health et al., 1989; and Monteith et al., 1991). As Table 3-10 showed, factors such as urban residence, educational attainment, socioeconomic status (as measured by number of household amenities), and employment may have a negative impact on breastfeeding duration in Belize.

Table 9-3 shows the mean number of times children who were breastfeeding at the time of the survey were breastfed during the previous 24 hours. The major finding of this data is that the number of feeds doesn't vary appreciably by age or from night to day. Thus, a child 16 months of age is breastfed just about as many times as a child who is 10 months younger. The number of feedings at night is not much lower than that during the day, even for older children.

9.3 Reasons for Never Breastfeeding and for Stopping Breastfeeding

Table 9-4 shows reasons for not breastfeeding children still alive at the time of the survey among children 24 months of age or less who were never breastfed. The reasons fall into two main categories: the infant's refusal to suckle (44 percent), and the mother's inability to nurse the infant, that is, insufficient milk (18 percent), nipple or breast problems (18 percent), and mother's illness (11 percent). Less than one percent of the children were not breastfed because the mother was working.

Table 9-5 shows the reasons for stopping breastfeeding among ever-breastfed children still alive at the time of the interview. Twenty-nine percent of the mothers stopped breastfeeding because the child refused to continue breastfeeding. Another 16 percent stopped because they felt that the child had reached weaning age while 14 percent and 8 percent reported insufficient milk and breast problems, respectively. It should be noted that almost 6 percent of the women reported that they stopped breastfeeding because they became pregnant. This occurred most often after 8 months of breastfeeding.

9.4 Supplementation and Weaning Practices

When foods and liquids other than breastmilk are introduced into an infant's diet and what foods are introduced can be crucial to the child's nutritional intake, growth and development, incidence of diarrhea and other infections, and the mother's milk supply and duration of postpartum amenorrhea. Exclusive breastfeeding is recommended for four to six months, with supplemented breastfeeding recommended for as long as feasible (World Health Organization, 1981).

About 24 percent of infants less than one year of age were exclusively breastfed for the first three months (Table 9-6). Exclusive breastfeeding was less common in urban areas,

among the Creoles, with first born children, by more educated women, and by younger mothers. Particularly striking was the difference by residence: exclusive breastfeeding in the first three months was nearly five times more common in rural areas than urban areas.

Nearly 41 percent of the infants were "predominantly" breastfed during the first three months of life, that is, they were either exclusively breastfed or were given other liquids (plain water, sugar water, juice, or herbal teas) in addition to breastmilk. The remaining 59 percent of the infants were introduced to milk (formula) other than breastmilk and/or to solid food during the first three months of life.

By the time infants are 6 to 9 months of age, nearly 50 percent receive both breastmilk and complementary foods (such as milk and/or solids). Interestingly, a higher proportion of rural women, who during the first three months of their infants' lives were the most likely to exclusively breastfeed, appropriately begin giving complementary foods to their children aged 6 to 9 months of age than urban women.

The feeding practices of children less than 36 months of age during the 24 hours prior to interview is summarized in Table 9-7. At less than a month of age, 89 percent of infants are breastfeeding but less than half of the infants are exclusively breastfeeding. The percentage of infants that are exclusively breastfeeding decreases from 41 percent for infants under one month of age to less than 10 percent of infants aged 3-4 months. By the time infants are 5-6 months of age, only 6 percent are exclusively breastfeeding and nearly 38 percent receive no breastmilk.

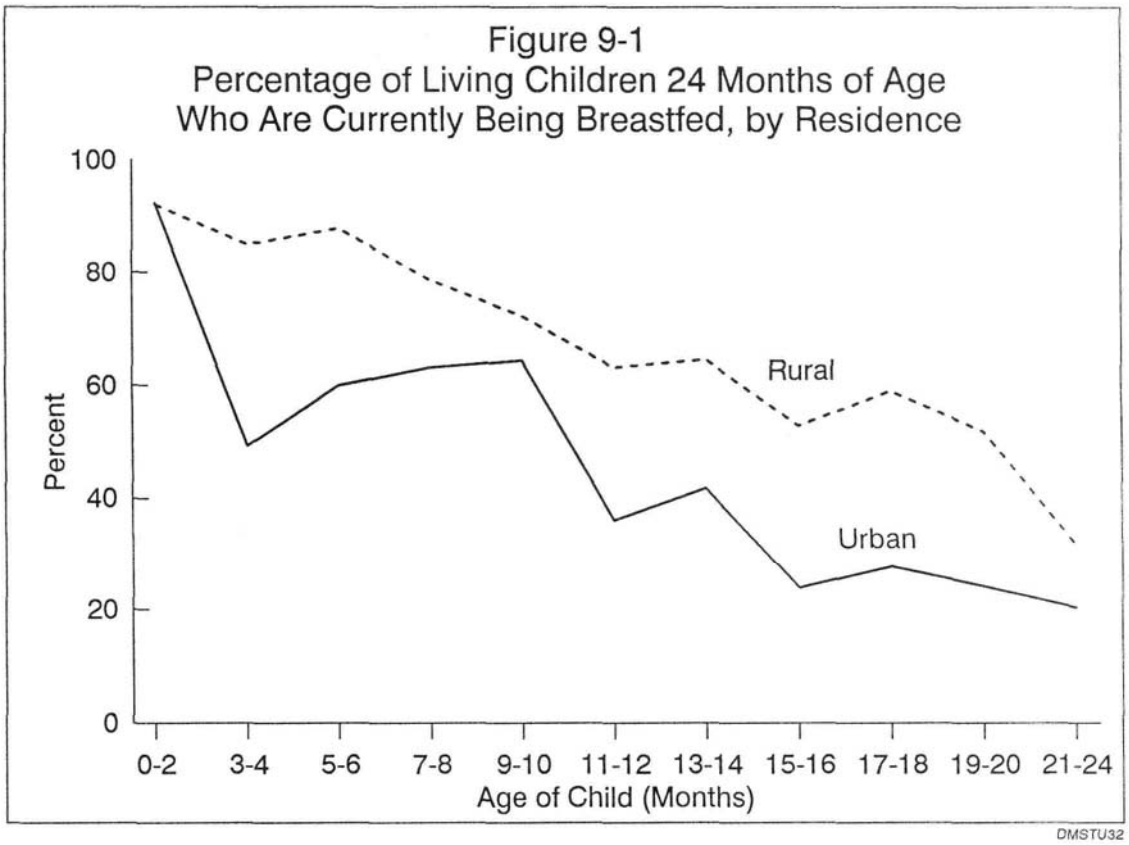


Figure 9-1
Percentage of Living Children 24 Months of Age
Who Are Currently Being Breastfed, by Residence
100
80
60
40
20
0
Percent
Rural
Urban
0-2
3-4
5-6
7-8
9-10
11-12
13-14
15-16
17-18
19-20
21-24
Age of Child (Months)
DMSTU32

Table 9-1

Belize: Percentage of Living Children
24 Months of Age or Less Who Were Ever Breastfed,
by Selected Characteristics of Their Mothers
1991 Family Health Survey

Selected Characteristics	Percent Breastfed	No. of Cases (Unweighted)
Total	90.0	(980)
Residence		
Urban	85.8	(526)
Rural	95.5	(454)
Years of Education		
0-7	92.2	(416)
8	86.6	(337)
9+	91.1	(227)
No. of Household Amenities		
0-2	93.5	(417)
3-7	88.1	(459)
8-10	86.3	(104)
Ethnic Group		
Creole	89.9	(250)
Mestizo	89.3	(466)
Garifuna	92.0	(87)
Maya/Ketchi	95.1	(122)
Other	81.7	(55)
Place of Birth[1]		
Government Facility	90.0	(692)
Private Facility	87.3	(64)
At Home	93.1	(197)
Type of Delivery[2]		
Vaginal	90.7	(894)
Cesarean	87.0	(70)

[1]Excludes 27 cases where place of delivery was classified as "other".

[2]Excludes 13 cases who last delivery was assisted with forceps and 3 cases whose type of last delivery is unknown.

Table 9-2

Belize: Timing of Initiation of Breastfeeding After Birth,
Ever Breastfed Children 24 months of Age or Less (Last Births Only)
1991 Family Health Survey
(Percent of Distribution)

Selected Characteristics	Timing of Breastfeeding: Immediately After Birth	Hours After Birth[1]	Days After Birth[2]	Un-known	Total	No. of Cases (Unweighted)
Total	46.1	33.2	19.4	1.2	100.0	(793)
Residence						
Urban	49.0	33.6	16.5	0.9	100.0	(408)
Rural	42.7	32.8	22.9	1.6	100.0	(385)
Years of Education						
0-7						
8	43.7	34.6	20.5	1.3	100.0	(338)
9+	48.3	31.7	18.2	1.9	100.0	(262)
	47.3	33.1	19.2	0.4	100.0	(193)
Ethnic Group						
Creole						
Mestizo	52.8	29.7	16.4	1.0	100.0	(204)
Garifuna	41.3	36.0	22.2	0.5	100.0	(373)
Maya/Ketchi	42.5	34.0	17.0	6.4	100.0	(73)
Other	49.2	30.8	20.0	0.0	100.0	(105)
	50.0	33.3	14.3	2.4	100.0	(38)
Place of Birth[3]						
Govt. Facility						
Priv. Facility	47.7	35.2	15.7	1.4	100.0	(563)
At Home	32.1	26.8	41.1	0.0	100.0	(51)
	42.9	29.1	27.4	0.6	100.0	(161)
Type of Delivery[4]						
Vaginal						
Cesarean	46.2	35.2	17.3	1.4	100.0	(729)
	49.4	12.3	38.3	0.0	100.0	(53)

[1]Ranges from one hour to 24 hours. Eighty-four percent of the respondents in this category initiated breastfeeding within 5 hours after delivery.

[2]Ranges from one day to 15 days. Eighty-nine percent of the respondents in this category initiated breastfeeding within 3 days after delivery.

[3]Excludes 18 cases whose place of delivery was classified as "other".

[4]Excludes 11 cases whose last delivery was assisted with forceps.

Table 9-3

Belize: Mean Number of Times Breastfed During the Previous Night* and During the Daylight Hours of the Previous Day, by Age of Child: Children Aged 24 Months or Less Who are Currently Being Breastfed
1991 Family Health Survey

Age of Child (in Months)	Mean No. of Times Breastfed		No. of Cases (Unweighted)
	Previous Day	Previous Night	
0-2	5.0	4.2	(80)
3-6	5.2	4.0	(101)
7-10	5.1	3.8	(85)
11-14	4.9	3.7	(65)
15-18	4.2	3.5	(51)
19-24	4.4	3.6	(38)

*6 p.m. to 6 a.m.

Note: Excludes women who did not breastfeed their children and those who did not recall the number of times they breastfed.

Table 9-4

Belize: Reason Did Not Breastfeed: Children 24 Months of Age or Less Who Were Never Breastfed
1991 Family Health Survey
(Percent Distribution)

Reason Did Not Breastfeed	Percent
Child Refused	44.3
No Milk	18.3
Nipple/Breast Problem	18.3
Mother Ill/Weak	11.3
Child Ill	2.6
Working	0.9
Other	4.3
Total	100.0
No. of Cases (Unweighted)	(92)

Table 9-5

Belize: Reason Stopped Breastfeeding:
Living Children 24 Months of Age or Less Who Were
Ever Breastfed But No Longer Are Breastfeeding
1991 Family Health Survey
(Percent Distribution)

		Months Breastfed Before Stopping					
Reason Stopped Breastfeeding	Total	0-2	3-4	5-6	7-8	9-10	11+
Child Refused	28.6	32.6	32.0	30.7	27.8	29.6	15.9
Weaning Age	16.5	3.2	4.1	27.4	19.4	14.8	46.4
No Milk	13.8	13.7	19.7	17.7	8.3	7.4	4.4
Nipple/Breast Problem	8.5	19.0	12.3	1.6	0.0	0.0	1.5
Working	8.2	10.5	10.7	6.5	8.3	3.7	4.4
Mother Ill/Weak	6.8	10.5	3.3	3.2	19.4	3.7	5.8
Became Pregnant	5.8	1.1	3.3	9.7	2.8	11.1	13.0
Child Ill/Weak	1.0	3.2	0.8	0.0	0.0	0.0	0.0
Other	10.9	6.3	13.9	3.2	13.9	29.6	8.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(338)	(71)	(100)	(50)	(28)	(26)	(63)

Table 9-6

Belize: Percentage of Living Children Within
Specified Age Groups, by Types of Supplemental Feeding and
Selected Characteristics
1991 Family Health Survey

Selected Characteristics	Exclusive Breastfeeding (0-3 Months)		Predominant[1] Breastfeeding (0-3 Months)		Complementary[2] Foods and Breastfed (6-9 Months)		Ever Breastfed (0-11 Months)	
Total	23.7	(150)	40.7	(150)	49.2	(147)	91.5	(447)
Residence								
Urban	10.4	(90)	32.0	(90)	39.8	(73)	87.6	(246)
Rural	47.8	(60)	56.5	(60)	59.6	(74)	97.0	(201)
Ethnicity								
Creole	16.1	(40)	41.9	(40)	44.4	(42)	88.1	(118)
Mestizo	22.2	(165)	35.8	(65)	49.4	(66)	93.4	(206)
Other	35.3	(45)	47.0	(45)	55.6	(39)	92.5	(123)
Language								
Spanish	21.8	(63)	28.2	(63)	47.6	(67)	94.9	(213)
Creole	19.8	(62)	45.3	(62)	48.1	(57)	87.6	(165)
Other	40.0	(25)	60.0	(25)	*	(23)	91.6	(69)
Religion								
Protestant	25.7		45.7	(52)	38.1	(73)	91.5	(180)
Catholic	21.9		37.7	(88)	61.3	(65)	91.2	(236)
Birth Order								
1	17.0		38.3	(25)	46.5	(28)	90.1	(80)
2-4	25.7		42.6	(82)	52.2	(73)	91.9	(229)
5+	26.1		39.1	(43)	46.2	(46)	91.9	(138)
Mother's Age								
<20	21.4		35.7	(26)	42.4	(21)	89.6	(69)
20-29	22.5		41.4	(88)	47.8	(92)	93.0	(273)
30+	29.3		43.9	(36)	60.0	(34)	89.0	(105)
Mother's Education								
<8 years	34.3		46.3	(59)	43.2	(58)	92.0	(188)
8 years	20.0		31.4	(50)	58.7	(63)	92.2	(154)
9+ years	15.8		45.6	(41)	42.1	(26)	89.9	(105)

[1]Breastfed and (plain water, sugarwater, juice, or herbal teas) or exclusive breastfeeding.

[2]Breastfed and (milks or solids).

Table 9-7

Belize: Feeding Practices of Living Children Less Than 36 Months of Age
During the 24 Hours Prior to Interview, by Age of Child
1991 Family Health Survey

Age of Child (Months)	Not Breastfed	Breastmilk Exclusively	Breastmilk and Water Only	Breastmilk and Other Liquids[1]	Breastmilk and Other Milk[2]	Breastmilk and Solids	Total	Number of Children
0	11.1	40.7	7.4	11.1	29.6	0.0	100.0	(20)
1-2	14.6	26.4	10.0	9.1	38.2	1.8	100.0	(83)
3-4	44.4	9.6	6.1	2.6	22.6	14.8	100.0	(92)
5-6	37.7	5.7	1.9	2.8	12.3	39.6	100.0	(83)
7-8	35.3	3.5	5.9	2.4	4.7	48.2	100.0	(68)
9-11	38.5	2.5	1.6	4.1	5.7	47.5	100.0	(101)
12-17	64.2	1.2	2.1	0.9	1.2	30.5	100.0	(225)
18-23	77.7	0.8	0.0	0.4	0.8	20.2	100.0	(218)
24-35	95.1	0.4	0.0	0.2	0.4	3.9	100.0	(413)

[1]Other Liquids include Sugar water, Juice, Herbal Teas and Other Liquids (may or may not have received plain water).

[2]Other Milk includes fresh milk, tinned or powdered milk and formula (may or may not have received other liquids).

10. Immunization Levels

As part of the Family Health Survey, the immunization status of children less than 5 years of age was evaluated. Data were recorded for only those children born to the women interviewed, although other children less than 5 years of age might have been living in the household. This step was taken as a measure to increase the accuracy and reliability of the immunization data. Questions were asked on the number of doses of vaccine received against tuberculosis (BCG), poliomyelitis, diphtheria-tetanus-pertussis (DPT), and measles for each child. In addition, mothers were asked if each child had a vaccination certificate. If a certificate was shown to the interviewer, she copied the number of doses and dates of administration of each vaccine. When the mother reported there was no certificate or could not find it, the interviewer recorded the number of doses of each vaccine and the date of administration the mother reported that a particular child had received, if any. A master copy of the vaccination certificate is maintained at the health center and a duplicate copy is given to the mother as a record of next appointment.

Only two thirds of the mothers were able to provide vaccination certificates for their children. While 77 percent of rural mothers could provide certificates for their children, only 60 percent of urban mothers could. Similarly, Mestizos (73 percent) were the most likely to have their children's certificates available for the interviewer to review while mothers whose ethnic group was classified as "other" (55 percent) were the least likely to have their children's certificate available. Availability did not vary significantly by educational level.

The World Health Organization (WHO) recommends that primary immunizations should be completed before the first birthday (WHO, 1986). The number of doses recommended by WHO for primary immunization are: three doses each of polio and DPT vaccines and one dose each of BCG and measles vaccine. According to the Belize Ministry of Health, the regimen of vaccination for polio and DPT is at 2-3 months, 4-5 months, and 6-7 months of age (Belize Ministry of Health et al., 1990). The regimen for BCG is at the time of birth and at 9 months of age for measles. If the measles vaccine is given before the first birthday, a second dose is recommended when the child reaches 15 months of age.

Since complete polio and DPT immunization should theoretically not occur until a child is at least 6 months of age, children under the age of 6 months are excluded from the analysis of coverage with these vaccines. Similarly, children under the age of 9 months are excluded when the coverage of measles vaccination is examined. Since BCG can be given at birth all children are included for these analyses.

Table 10-1 shows the percentage of children less than five years of age with complete immunizations, by vaccine and residence. Over 80 percent have had complete BCG, polio, DPT, and measles vaccinations. Levels of coverage do not vary significantly according to residence. The relatively high level of complete immunization in rural areas is most likely due to the regularly scheduled visits (every six weeks) of mobile health clinics to these areas. As expected, levels of coverage are similar for polio and DPT as these vaccines are generally administered simultaneously. Levels of complete immunization are highest for BCG, which may be due to the one-dose regimen required for this vaccine and to the fact that 76 percent of deliveries are attended in a hospital.

Levels of complete immunization are 8 percent to 10 percent higher when only children with

vaccination certificates are considered (Table 10-2). For children with certificates, complete immunization levels range from 89 percent (DPT) to 97 percent (BCG). For children without certificates, from 63 percent (polio, DPT, and measles) to 71 percent (BCG) were reported to have had a complete series of vaccines (Table 10-3). Although there is no difference seen by residence for those children with certificates, reported vaccination levels for children without certificates is higher in certain areas.

UNICEF considers an 80 percent coverage level as a minimum indication of having achieved universal immunization or the level required to halt the transmission of immunizable diseases (UNICEF, 1988). According to the survey data, overall vaccination coverage in Belize for children 9 to 59 months of age against all of the vaccine preventable diseases is 75 percent, based on information recorded on vaccination certificates and/or reported by mothers who did not show certificates for their children. (This figure increases to 84 percent for children whose immunization status was verified by their vaccination certificates). Only 47 percent of children are completely immunized before their first birthday. These findings indicate that, although Belize is close to achieving levels of immunization that are required to control the transmission of disease, children are immunized later than recommended.

BCG vaccine is intended to be given at birth but is often administered during the first year of life. As Table 10-4 and Figure 10-1 show, three fourths of the children were immunized before their first birthday. By the time children are one year of age or older more than 90 percent are vaccinated. Urban mothers, mothers with 9 or more years of schooling, and Creole mothers were the most likely to have their children vaccinated before their first birthday. The Maya/Ketchi stand out since only 79 percent of their children have received complete BCG immunization. With one exception, Maya/Ketchi levels of complete BCG immunization do not reach 90 percent for any age category.

Tables 10-5 and 10-6 show the percentage of children with complete polio and DPT vaccinations. Only 55 percent of children are completely vaccinated with these vaccines before their first birthday. Children of mothers with nine or more years of education were the most likely to have been vaccinated before their first birthday. With respect to ethnic group, about the same proportion (79 percent) of Creole, Garifuna, and Maya/Ketchi have complete polio and DPT immunization. The Mestizos, however, stand out in that they reported the highest levels of primary immunization for these vaccines (about 86 percent).

Measles is the most contagious of the four preventable diseases discussed in this chapter. WHO recommends that measles vaccination be administered during the ninth month of life. As Table 10-7 shows, only 53 percent of children are vaccinated before their first birthday. However, by the time children are one year of age or older, over 80 percent have received their measles vaccination. As was the case with polio and DPT vaccination, Mestizos reported the highest percentage of children completely vaccinated against measles (85 percent).

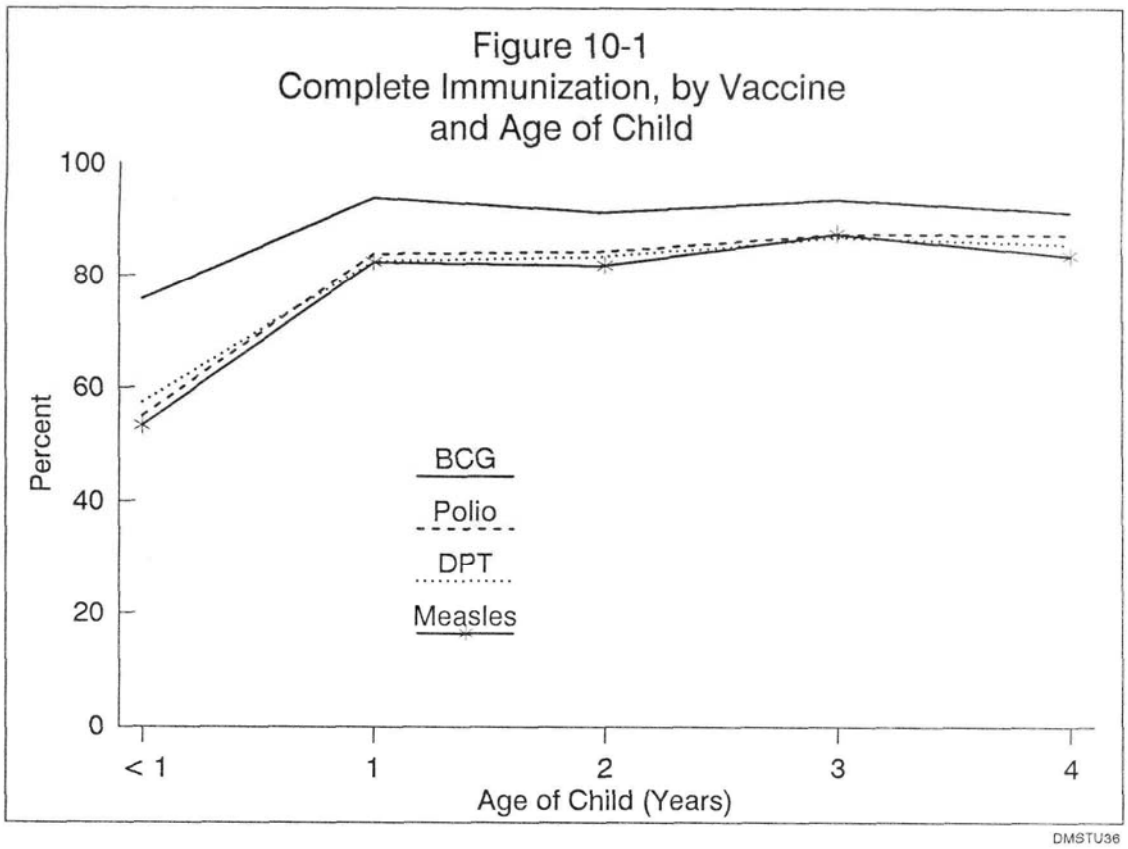


Figure 10-1
Complete Immunization, by Vaccine
and Age of Child
100
80
60
40
20
0
Percent
BCG
Polio
DPT
Measles
< 1
1
2
3
4
Age of Child (Years)
DMSTU36

Table 10-1

Belize: Percentage of Children Less Than 5 Years of Age
With Reported Complete BCG, Polio, DPT, and
Measles Immunization, by Residence
1991 Family Health Survey

Immunization	Total		Residence			
			Urban		Rural	
BCG	89.9	(2,176)	89.8	(1,217)	87.7	(959)
Polio*	82.1	(1,944)	82.2	(1,081)	82.1	(863)
DPT*	81.4	(1,944)	80.7	(1,081)	82.4	(863)
Measles**	82.0	(1,831)	81.3	(1,027)	83.0	(804)

*Excludes children 0 to 5 months of age.

**Excludes children 0 to 8 months of age.

NOTE: Figures in parentheses are unweighted numbers of cases.

Table 10-2

Belize: Percentage of Children Less Than 5 Years of Age With Reported Complete BCG, Polio, DPT, and Measles Immunization Confirmed by Vaccination Certificate, by Residence
1991 Family Health Survey

Immunization	Total		Residence			
			Urban		Rural	
BCG	96.7	(1,521)	97.8	(773)	95.0	(748)
Polio*	90.0	(1,383)	90.7	(692)	89.2	(691)
DPT*	89.1	(1,383)	88.6	(692)	89.6	(691)
Measles**	90.1	(1,288)	90.6	(647)	89.5	(641)

*Excludes children 0 to 5 months of age.

**Excludes children 0 to 8 months of age.

NOTE: Figures in parentheses are unweighted numbers of cases.

Table 10-3

Belize: Percentage of Children Less Than 5 Years of Age
Without Vaccination Certificates
With Reported Complete BCG, Polio, DPT, and Measles Immunization, by Residence
1991 Family Health Survey

Immunization	Total		Residence			
			Urban		Rural	
BCG	71.1	(655)	76.8	(444)	56.4	(211)
Polio*	63.5	(561)	67.5	(389)	52.9	(172)
DPT*	62.8	(561)	66.7	(384)	52.4	(172)
Measles**	63.3	(543)	65.6	(380)	57.1	(163)

*Excludes children 0 to 5 months of age.

**Excludes children 0 to 8 months of age.

NOTE: Figures in parentheses are unweighted numbers of cases.

Table 10-4

Belize: Percentage of Children Less Than 5 Years of Age With
Reported Complete BCG Immunization,
by Selected Characteristics and Age of Child
1991 Family Health Survey

Selected Characteristics	Total		Age of Child (in years)									
			<1		1		2		3		4	
Total	89.9	(2,176)	75.8	(445)	93.8	(485)	91.2	(412)	93.5	(422)	91.2	(412)
Residence												
Urban	89.8	(1,217)	79.0	(244)	94.5	(260)	93.6	(227)	92.9	(258)	89.4	(228)
Rural	87.7	(959)	71.4	(201)	92.9	(225)	87.8	(185)	94.6	(164)	93.7	(184)
Years of Maternal Education												
0-7	85.6	(908)	65.8	(186)	93.3	(208)	87.9	(173)	92.5	(181)	88.8	(160)
8	90.0	(758)	77.4	(156)	94.4	(163)	93.5	(140)	93.9	(140)	92.0	(159)
9+	92.9	(510)	89.0	(103)	93.7	(114)	93.7	(99)	94.9	(101)	93.7	(93)
Ethnic Group*												
Creole	92.7	(570)	87.4	(117)	93.6	(122)	94.7	(103)	97.3	(119)	91.7	(109)
Mestizo	89.1	(1,032)	70.5	(205)	97.0	(233)	92.4	(212)	92.3	(186)	92.5	(196)
Garifuna	88.5	(198)	80.0	(39)	93.0	(48)	95.7	(39)	82.9	(34)	90.9	(38)
Maya/Ketchi	78.8	(259)	58.8	(60)	82.5	(53)	79.3	(42)	92.3	(57)	83.0	(47)
Other	89.8	(116)	**	(24)	91.2	(29)	**	(16)	100.0	(26)	**	(21)

*Excludes one case for whom ethnic group is unknown.

**Less than 25 cases.

NOTE: Figures in parentheses are unweighted numbers of cases.

Table 10-5

Belize: Percentage of Children 6 Months to 4 Years of Age With
Reported Complete Polio Immunization,
by Selected Characteristics and Age of Child
1991 Family Health Survey

Selected Characteristics	Total		Age of Child (in years)									
			<1*		1		2		3		4	
Total	82.8	(1,944)	55.1	(213)	83.8	(485)	84.3	(412)	87.4	(422)	87.3	(412)
Residence												
Urban	82.2	(1,081)	57.3	(108)	84.1	(260)	84.2	(227)	86.4	(258)	85.4	(228)
Rural	82.1	(863)	52.8	(105)	83.3	(225)	84.5	(185)	89.1	(164)	89.8	(184)
Years of Maternal Education												
0-7	81.0	(816)	46.9	(94)	82.1	(208)	86.0	(173)	88.2	(181)	86.6	(160)
8	82.5	(682)	55.9	(80)	86.2	(163)	83.4	(140)	87.1	(140)	86.7	(159)
9+	83.7	(446)	70.2	(39)	83.3	(114)	82.8	(99)	86.3	(101)	89.3	(93)
Ethnic Group***												
Creole	78.7	(509)	54.3	(56)	82.8	(122)	78.2	(103)	84.9	(119)	82.6	(109)
Mestizo	85.7	(927)	52.2	(100)	88.5	(233)	90.5	(212)	88.9	(186)	90.8	(196)
Garifuna	80.7	(176)	**	(17)	77.2	(48)	83.0	(39)	82.9	(34)	88.6	(38)
Maya/Ketchi	78.7	(229)	58.8	(30)	76.2	(53)	77.4	(42)	89.2	(57)	83.0	(47)
Other	78.9	(102)	**	(10)	76.5	(29)	**	(16)	90.9	(26)	**	(21)

*Includes children 6-11 months of age.
**Less than 25 cases.
***Excludes one case for whom ethnic group is unknown.

NOTE: Figures in parentheses are unweighted numbers of cases.

Table 10-6

Belize: Percentage of Children Less Than 5 Years of Age With
Reported Complete DPT Immunization,
by Selected Characteristics and Age of Child
1991 Family Health Survey

Selected Characteristics	Total		Age of Child (in years)									
			<1*		1		2		3		4	
Total	81.4	(1,944)	57.4	(213)	82.6	(485)	83.4	(412)	86.8	(422)	85.6	(412)
Residence												
Urban	80.7	(1,081)	58.0	(108)	81.7	(260)	83.2	(227)	85.7	(258)	82.5	(228)
Rural	82.4	(863)	56.8	(105)	83.7	(225)	83.6	(185)	88.6	(164)	89.8	(184)
Years of Maternal Education												
0-7	81.3	(816)	51.3	(94)	82.5	(208)	85.0	(173)	87.7	(181)	86.6	(160)
8	80.0	(682)	55.9	(80)	80.1	(163)	81.7	(140)	85.9	(140)	85.1	(159)
9+	83.7	(446)	71.9	(39)	86.1	(114)	82.8	(99)	86.3	(101)	84.8	(93)
Ethnic Group***												
Creole	78.9	(509)	58.0	(56)	82.8	(122)	78.2	(103)	84.3	(119)	81.8	(109)
Mestizo	84.5	(927)	64.8	(100)	85.5	(233)	88.9	(212)	88.9	(186)	89.0	(196)
Garifuna	80.2	(176)	**	(17)	80.7	(48)	80.9	(39)	82.9	(34)	84.1	(38)
Maya/Ketchi	77.6	(229)	58.8	(30)	71.4	(53)	77.4	(42)	89.2	(57)	83.0	(47)
Other	78.1	(102)	**	(10)	82.3	(29)	**	(16)	84.9	(26)	**	(21)

*Includes children 6-11 months of age.
**Less than 25 cases.
***Excludes one case for whom ethnic group is unknown.

NOTE: Figures in parentheses are unweighted numbers of cases.

Table 10-7

Belize: Percentage of Children 9 Months to 5 Years of Age With
Reported Complete Measles Immunization,
by Selected Characteristics and Age of Child
1991 Family Health Survey

Selected Characteristics	Total		Age of Child (in years)									
			<1*		1		2		3		4	
Total	82.0	(1,831)	53.3	(101)	82.4	(484)	81.8	(412)	87.4	(422)	83.5	(412)
Residence												
Urban	81.3	(1,027)	57.3	(54)	83.2	(260)	81.2	(227)	84.4	(258)	81.4	(228)
Rural	83.0	(804)	48.1	(47)	81.3	(224)	82.6	(185)	92.4	(164)	86.3	(184)
Years of Maternal Education												
0-7	80.4	(773)	46.7	(52)	78.2	(207)	82.2	(173)	88.7	(181)	82.7	(160)
8	82.4	(633)	45.7	(31)	83.7	(163)	82.3	(140)	86.5	(140)	84.6	(159)
9+	84.1	(425)	**	(18)	87.5	(114)	80.5	(99)	86.3	(101)	83.0	(93)
Ethnic Group***												
Creole	80.4	(475)	**	(23)	85.9	(121)	73.7	(103)	83.6	(119)	78.8	(109)
Mestizo	85.2	(879)	40.3	(52)	84.8	(233)	89.3	(212)	90.3	(186)	87.7	(196)
Garifuna	82.5	(166)	**	(7)	80.7	(48)	85.1	(39)	82.9	(34)	84.1	(38)
Maya/Ketchi	77.2	(214)	**	(15)	77.8	(53)	71.7	(42)	86.1	(57)	79.3	(47)
Other	70.4	(96)	**	(4)	58.8	(29)	**	(16)	93.9	(26)	**	(21)

*Includes children 9-11 months of age.
**Less than 25 cases.
***Excludes one case for whom ethnic group is unknown.

NOTE: Figures in parentheses are unweighted numbers of cases.

11. Child Morbidity and Mortality

In this chapter, the reported prevalence of diarrhea and acute respiratory illnesses among children less than 5 years of age are discussed. In addition to prevalence, severity of illness and type of treatment given, if any, are examined. Estimates of recent trends in infant and child mortality are also presented.

11.1 Prevalence of Diarrhea and Its Treatment

Acute diarrhea is a clinical symptom caused by viral, bacterial, or parasitic infections as well as by chemical agents. It is characterized by loose or watery stools and sometimes vomiting and fever. The major mode of transmission is fecal contamination of water, food, or fomites. It can be spread by person to person contact and is usually associated with inadequate food handling, inadequate personal hygiene, and/or poor environmental sanitation.

It is widely recognized that deaths due to dehydration are preventable with the timely and appropriate administration of rehydration therapy (Hirschhorn, 1980). Strategies to decrease the incidence of and mortality due to diarrheal disease include those addressing socioeconomic and environmental factors as well as child-specific interventions, such as oral rehydration therapy (Parker et al., 1980).

The prevalence, severity, and treatment of diarrhea among children under five are discussed below. Respondents were asked whether each of their children less than five years of age had diarrhea during the two weeks prior to interview. For the purpose of this survey, diarrhea was defined as an excessive number of watery stools over a period of at least 24 hours. This definition allowed for a wide variation in stooling patterns among individual children. If a child had a recent episode of diarrhea, the mother was then asked to respond to several questions that measured the severity of the most recent episode of diarrhea, and what treatment the child received, if any.

According to the Ministry of Health, the peak months for diarrhea in Belize are from June to August, the hottest and driest months of the year. The 1991 Family Health Survey was conducted during the cool rainy months of January and February.

Prevalence of Diarrhea

Table 11-1 shows that nearly 11 percent of children less than five years of age had a reported diarrheal illness during the two weeks prior to interview. Prevalence of diarrhea was highest in rural areas and among children 6 months to 23 months of age (Figure 11-1). Except for children less than one year of age, the prevalence of diarrhea was higher in rural areas than in urban areas for all age categories. Overall, prevalence decreases dramatically when children reach their third birthday.

In general, prevalence of diarrhea decreases as mother's level of education increases (Table 11-1). With the exception of children aged 6-11 months, prevalence of diarrhea is lowest for each age category among children of mothers with the highest educational attainment. This may be explained by the fact that better child care practices, food handling, and environmental sanitation are generally associated with higher levels of education. With respect to ethnicity, the Maya/Ketchi and Mestizo women reported the highest prevalence of diarrhea (15 and 12 percent, respectively) while the Garifunas (8 percent) and the Creoles (7 percent) reported the lowest (Table 11-2).

Table 11-3 shows prevalence of diarrhea by selected household characteristics. Prevalence of diarrhea is negatively associated with the

number of rooms in the household and is highest in households where the source of drinking water is unprotected. Children living in households with dirt floors, pit latrines or no toilet facilities, whose kitchens did not have a refrigerator, and where wood is used as a cooking fuel were also more likely to have had diarrhea than children living in better conditions.

Women were asked if their children with a recent episode of diarrhea presented various symptoms (Table 11-4). The most common symptom that was reported was blood or mucous in the stool (23 percent), followed by sunken, dry eyes (20 percent), and dry lips (17 percent). Blood and/or mucous in the stool is a helpful indicator of the cause of diarrhea--viral versus bacterial. In general, the primary etiology of childhood diarrhea is viral in nature. However, the 23 percent of children who were reported to have had blood and/or mucous in their stools suggests that their recent episode of diarrhea was bacterial or parasitic in origin and, therefore, not self-limiting.

Dry, wrinkled skin, sunken, dry eyes, and dry lips are the best indicators of acute dehydration, and children with these symptoms should be treated with rehydration therapy. More highly educated mothers were the least likely to report these symptoms. This finding suggests that these women may have a greater understanding of the disease process and, as a result, recognize and treat their child's illness before symptoms of severe dehydration can present themselves. On the other hand, the children of these women may just be healthier, with the diarrheal illness limiting itself before dehydration can set in.

Treatment of Diarrhea

For each child who reportedly had diarrhea in the two weeks prior to interview, respondents were asked what was done about the illness. Overall, 83 percent of children were reported to have been treated for their recent episode of diarrhea (Table 11-5). Children 3 years of age or older, children of mothers with more than 7 grades of education, and children whose diarrhea began the day of the interview or the day before were less likely to have been treated than other children.

Of the children with reported diarrhea, 10 percent were treated in the home. The likelyhood of being treated outside of the home generally increased as duration of diarrhea increased (Figure 11-2). In addition, children who presented symptoms associated with acute rehydration were more likely to be treated outside of the home than those that did not present these symptoms. The most frequently mentioned places where mothers sought treatment for their children included government clinics or hospitals (21 percent) and pharmacies (19 percent). Interestingly, urban women were more likely to use government facilities than rural women. Nearly 13 percent of rural mothers reported that they went to traditional healers to treat their children's most recent episode of diarrhea. Use of traditional healers increases as mother's level of education decreases. However, use of traditional healers decreases as duration of diarrhea increases. With respect to ethnicity, the Maya/Ketchi were more likely than others to seek treatment from traditional healers.

The likelihood of antibiotics, oral rehydration salts (ORS) packets, intravenous treatment, and hospitalization being used increases if the child manifested symptoms of acute dehydration. As Table 11-6 shows, use of ORS packets and homemade solutions was highest among those who sought treatment for their children in government clinics (61 percent). On the other hand, children who were treated in private clinics were the most likely to be treated with antibiotics.

As Table 11-7 and Figure 11-3 show, antidiarretics were the most common type of treatment given to children with diarrhea (37 percent), followed by oral rehydration salts (33

percent) and antibiotics (24 percent). However, when packets of oral rehydration salts and homemade salt and sugar solutions (11 percent) are considered together, oral rehydration therapy (ORT) was the primary method of treatment (44 percent). It should be noted that packets of ORS are generally available at all government health clinics and are dispensed as needed. Intravenous treatments were given in about 4 percent of the cases. Twenty-one percent of the children were treated with vague remedies. In addition, only 3 percent of the children were hospitalized. The likelihood of being hospitalized increased as duration of diarrhea increased, and if the child presented symptoms associated with acute dehydration.

The use of antidiarretics are a concern since mothers often use these medications without knowing their adverse effects. Antidiarretics slow down the natural process of intestinal cleansing during diarrheal illness and put the child at risk of acquiring a blood-borne infection.

Similarly, the use of antibiotics is not always indicated because they are not effective against viruses, which are the major cause of diarrhea. In addition, antibiotics can alter the intestinal flora and may lead to the over-growth of organisms which are resistant to antibiotic therapy. Overall, 70 percent of the antibiotics used to treat diarrhea were prescribed (data not shown). Conversely, 30 percent of the antibiotics were obtained without prescription.

The type of treatment the children received varied according to background characteristics of the mothers (Table 11-7). Rural children and children of mothers of lower educational attainment were the most likely to be treated with antibiotics. On the other hand, urban mothers and mothers of higher educational attainment were the most likely to treat their children with antidiarretics, ORS packets, and/or homemade salt/sugar solutions. The use of these treatments increases as the duration of diarrhea increases (Table 11-8).

Diets of Children with Diarrhea

Opinions vary as to the instructions mothers should be given to manage their children's diets during diarrheal illnesses. Most pediatriccians would agree that an increase in liquids and the feeding of soft foods for the first 24 hours of illness is best. The rationale behind this is that acute intestinal infections destroy the mucosal lining of the intestine causing malabsorption of solid foods and water loss, while the feeding of soft foods and an increase in liquids permit a healing period during which time the intestinal mucous can regenerate, thus facilitating rehydration.

Tables 11-9 and 11-10 show the diets that were given to children with diarrhea in the two weeks prior to interview. Forty-four percent of the mothers reported that they continued serving their children a normal diet, while 26 to 29 percent said that they either gave less food or only soft foods. Urban women and women of higher educational attainment were the most likely to give soft foods to their children. In addition, children who manifested symptoms of acute dehydration were more likely to be fed only soft foods rather than a normal diet.

Overall, 56 percent of the mothers increased liquids. This finding suggests that some mothers may not be able to equate diarrhea and dehydration with a net water loss necessitating an increase in total fluid intake. Rural mothers and less educated mothers were the least likely to increase liquids during their children's recent episode of diarrheal illness. Although there was a tendency for mothers to increase liquids during the first three days of illness (Table 11-10), the proportion of mothers increasing liquids did not increase after the fourth day of illness. Finally, mothers of children who manifested acute symptoms of dehydration were only slightly more likely to increase liquids than mothers of children who did not manifest these symptoms. There is obviously a need to emphasize the importance

of increasing liquids during diarrheal illnesses, especially if the child manifests signs of acute dehydration.

Seventeen percent of children with diarrhea were not treated. Nearly 90 percent of them were not treated because their mothers did not think that their recent episode of diarrhea was severe.

11.2 Prevalence of Acute Respiratory Illness and Its Treatment

Acute respiratory illness is one of the principal causes of death in Belize among children less than one year age. The severity of an acute respiratory illness (ARI) ranges from a simple cold to progressive croup or pneumonia, which may be viral or bacterial in origin. Symptom complexes associated with ARI also vary greatly, from rhinitis (inflammation of the mucous membrane of the nose) to tachypnea (excessive rapidity of respiration), retractions and cyanosis (bluish discoloration of the skin due to deficient oxygenation of the blood). Illness in younger age groups often requires hospitalization due to severe respiratory distress requiring oxygen therapy.

Prevalence of ARI

Mothers of children less than five years of age were asked if their children presented symptoms or signs of ARI in the two weeks prior to interview. Forty percent of the children were reported to have presented symptoms of ARI. The percentages of children with signs of ARI were highest among those living in urban areas, children of mothers of lower educational attainment, and children less than two years of age (Tables 11-11 and 11-12).

Based on the symptoms reported by the mothers, their children's ARIs were classified as either mild, moderate, or severe as demonstrated above.

Mild ARI. The presence of the following symptoms indicates the existence of a mild infection:

1. Red, teary eyes
2. Nasal congestion
3. Sneezing
4. Cough

Moderate ARI. The presence of the following symptoms, in addition to those of mild ARI, generally implies the existence of a moderate infection:

1. High temperature
2. Sore throat
3. Hoarseness
4. Difficulty in swallowing
5. Earache

Severe ARI. The presence of the following symptoms, in addition to those of moderate ARI, indicate the presence of a severe ARI:

1. Rapid, difficult respiration
2. Sunken chest
3. Blue lips
4. Absence of respiration

Based on the symptoms reported by the mother and the classification scheme discussed above, the most recent episode of ARI was classified as: not having ARI, when no symptoms were reported; mild ARI, when one or more symptoms of mild ARI are reported but no symptoms of the moderate or severe type; moderate ARI, when at least one symptom of moderate ARI is present but no sign of severe ARI; and severe ARI, if the mother reported of least one sign of severe ARI.

As shown in Tables 11-11 and 11-12, mild episodes of respiratory illness were the most prevalent form of ARI among children who presented symptoms of ARI in the two weeks prior to the interview. Only 7 percent of the children were reported to have suffered from a severe respiratory infection. Severity of ARI varied by residence, mother's education, and age of child. For example, mothers of lower educational attainment were more likely to

report that their children manifested symptoms associated with moderate or severe ARI than mothers of higher educational attainment. Similarly, the probability that a child had a severe form of ARI was inversely associated with the age of the child (Figure 11-4).

When ARI is examined by ethnic group, the Garifunas and the Maya/Ketchi where the most likely to report that their children suffered from ARI in the two weeks prior to interview (Table 11-13). While the Garifuna were more likely to report mild forms of ARI among their children, the Maya/Ketchi were more likely to report that their children suffered from a moderate form. The percentage of children with a severe form of ARI did not vary by ethnicity.

When prevalence of ARI is examined by selected household characteristics, no substantial differences in prevalence of ARI emerge (Table 11-14). This finding suggests that household characteristics may not be a good predictor of ARI prevalence in Belize.

Treatment of ARI

Overall, 86 percent of the children who presented ARI symptoms in the two weeks prior to the interview were treated and 14 percent were not (Table 11-15). Of the children treated, 40 percent were treated in either a public or private health facility. The likelyhood of being treated in a health facility did not vary appreciably by place of residence or mother's education. However, the probability of being treated in a health facility was inversely associated with age of the child and directly associated with severity and duration of the ARI (Figure 11-5). With respect to ethnicity, the Garifunas were the most likely to treat their children and treat them in a health facility. Overall, 2 percent of the children were treated by a traditional healer. The Maya/Ketchi were much more likely to seek treatment from a traditional healer (8 percent) than any other ethnic group.

Overall, 78 percent of children with a mild form of ARI were treated. Of these children, 30 percent were treated in a health facility. This finding raises questions about the appropriateness of their treatment in a health facility since mild forms of ARI are generally self-limiting and do not require treatment.

The most common treatments given to children included expectorants, unspecified pills and/or syrups, and aspirin (Table 11-16, Figure 11-6). Twenty-five percent of the mothers also treated their children with homemade remedies. About one percent of the children were hospitalized.

The use of antibiotics is an inappropriate therapy for most cases of ARI since over 90 percent of ARIs are not severe. Nevertheless, 30 percent of the mothers reported that their child's recent episode of ARI was treated with antibiotics. Nearly one fifth of children who presented symptoms associated with a mild form of ARI were treated with antibiotics. In general, the probability of being treated with antibiotics increases as the severity and duration of the ARI increases, and as the educational level of the mother increases (Figure 11-7). In addition, children of urban mothers were more likely than children of rural mothers to be treated with antibiotics. Nearly two thirds of children who were treated in a private health clinic or hospital were treated with antibiotics.

Overall, 82 percent of the mothers reported that the antibiotics that they obtained were prescribed while 18 percent were obtained without prescription (data not shown). The likelihood of obtaining antibiotics without a prescription was greater in the rural areas (33 percent) than in the urban areas (11 percent). An equal proportion of government and private doctors prescribed antibiotics (87 percent). These findings suggest that not only mothers of young children but health professionals as well may be unaware of the harm of indiscriminately administering antibiotics.

Fourteen percent of the ARI cases were not treated. Almost 90 percent of the mothers stated that their children were not treated because they did not perceive their children's illnesses to be severe.

11.3 Infant and Child Mortality

In this section, estimates of the levels of infant and child mortality in Belize are presented for a series of time periods prior to the 1991 survey. The 1991 survey contains a birth history which provides information on the dates of live births to survey respondents and age at death for infants and children that subsequently died. If this information is completely and accurately reported then levels, trends, and differentials in infant and child mortality can be directly estimated from the survey. Unfortunately, there was considerable omission of dates of birth, especially for children who died, and ages at death for dead children. Out of 7,541 births in the birth history, 212 are missing dates of birth. Of these, 122 were reported to have died. Also, 142 of the 494 infant and child deaths recorded in the survey are missing information on age at death. Consequently, direct estimates from the survey are not being reported.

Infant and child mortality may also be estimated indirectly from information on the proportions of children ever born who have died. This information does not rely on complete and accurate reporting of birth dates or ages at death. Indirect estimation uses a set of regression coefficients derived from empirical regularities observed in populations for which good mortality data are available to convert proportions dead to probabilities of dying before reaching some exact age (1, 2, 3, 5, 10 ...). The methodology used to obtain the indirect estimates is fully described in Chapter 3 of Manual X: Indirect Techniques for Demographic Estimation, United Nations Department of International Economic and Social Affairs, 1983. Table 11-17 provides estimates of the infant mortality rate, 1q0, which is the probability of dying between birth and a child's first birthday, and of the under five mortality rate, 5q0, which gives the probability of dying between birth and the fifth birthday.

The indirect estimates of infant and child mortality presented in Table 11-17 have been labelled with a year that is assigned by the estimation procedure as the reference period in which the estimated mortality rates were in effect. A different reference period is assigned for each of the age groups of women who were used to obtain the estimates. For example, proportion of children who have died among all births to women aged 20-24 yields estimates that correspond to the year 1987.5, and the proportion of children who have died among all births to women aged 40-44 yields estimates that correspond to the year 1977.6. The estimates for the different age groups of women thus form the basis for determining trends in infant and child mortality. As can be seen from Table 11-17, infant mortality is estimated to have declined from 63 infant deaths per 1000 live births in the late 1970's (1977.9) to 42 infant deaths per 1000 live births in the late 1980's (1987.5). Similarly, under five mortality is estimated to have declined from 86 deaths before reaching age five for every 1000 live births in the late 1970's to 53 under five deaths per 1000 live births in the late 1980's.

These indirect estimates are somewhat higher than independent estimates of infant mortality based on vital statistics, but as noted these higher rates are consistent with the proportions of children who were reported to have died in the 1991 Family Health Survey. The indirect estimates given here are also consistent with levels of infant mortality in other countries in the region. It is likely that estimates based on vital statistics underestimate the true level of infant mortality because of omission of early neonatal deaths.

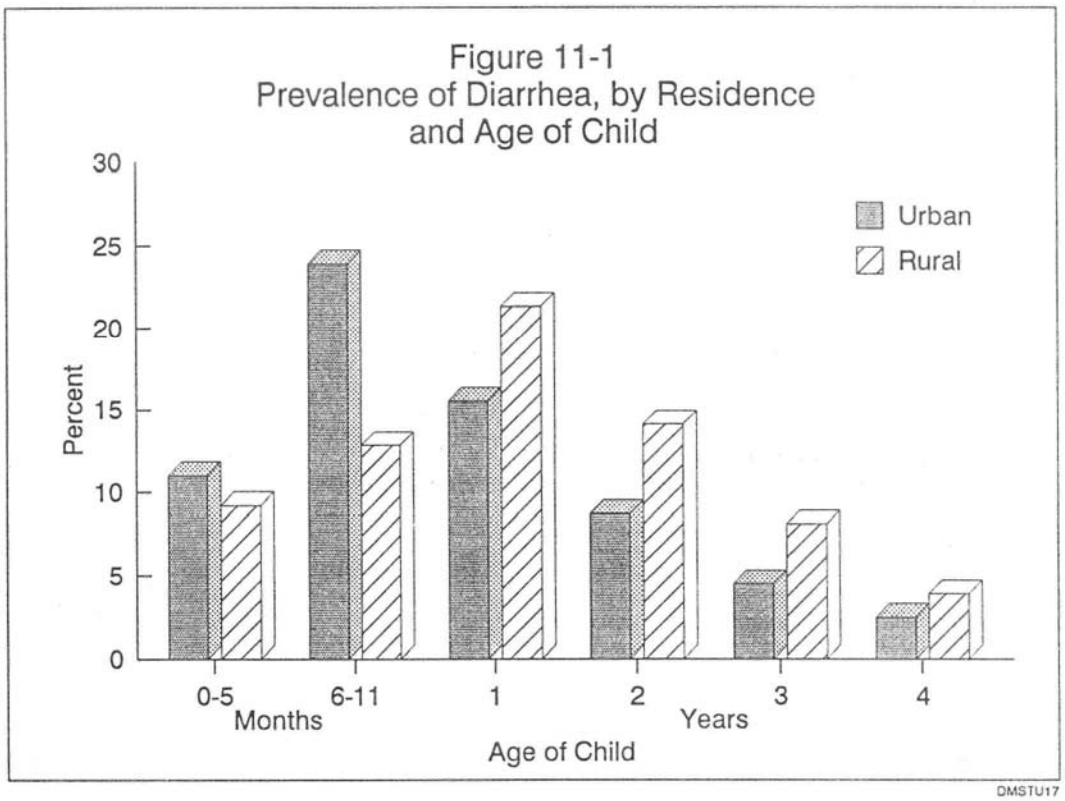


Figure 11-1
Prevalence of Diarrhea, by Residence
and Age of Child
Urban
Rural
Percent
30
25
20
15
10
5
0
0-5
6-11
1
2
3
4
Months
Years
Age of Child
DMSTU17

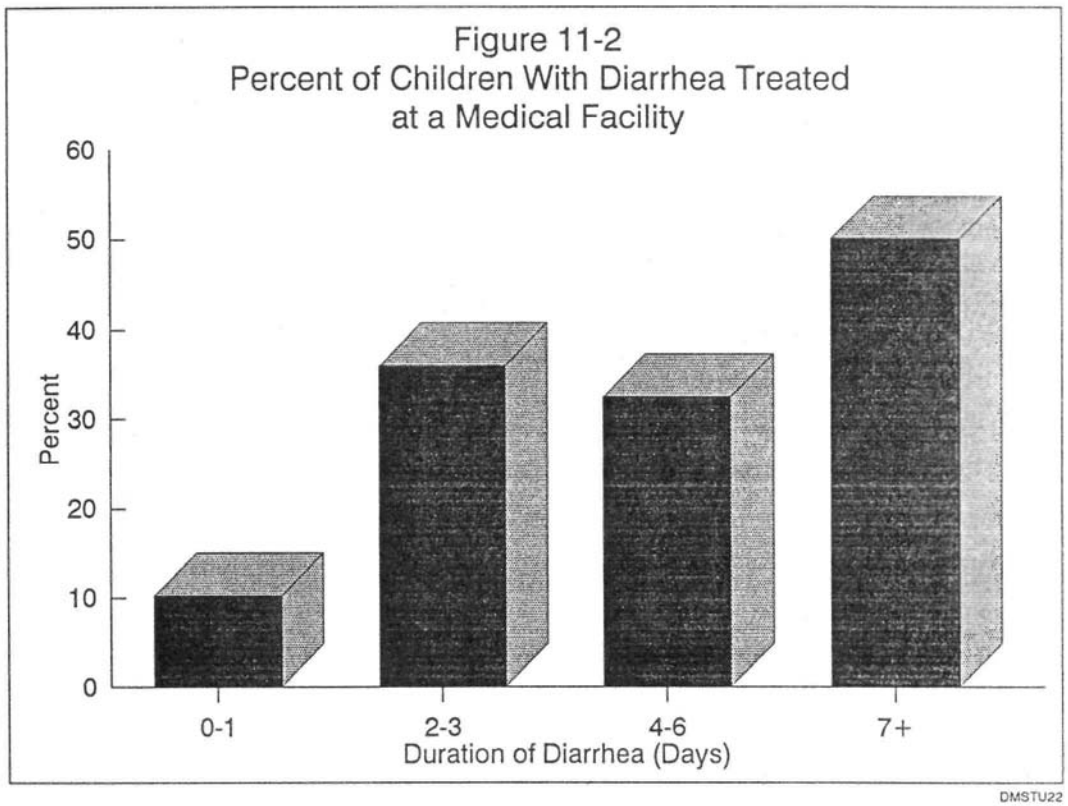


Figure 11-2
Percent of Children With Diarrhea Treated
at a Medical Facility
Percent
60
50
40
30
20
10
0
0-1
2-3
4-6
7+
Duration of Diarrhea (Days)
DMSTU22

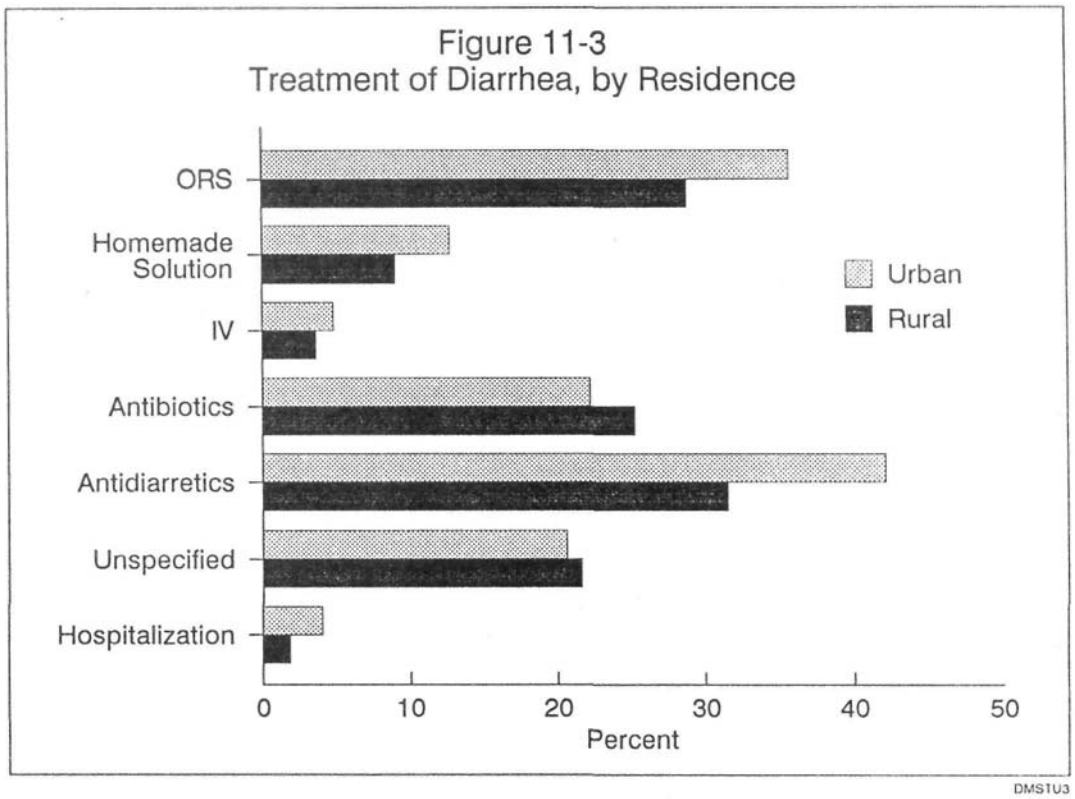


Figure 11-3
Treatment of Diarrhea, by Residence
ORS
Homemade Solution
IV
Antibiotics
Antidiarretics
Unspecified
Hospitalization
Urban
Rural
0
10
20
30
40
50
Percent
DMSTU3

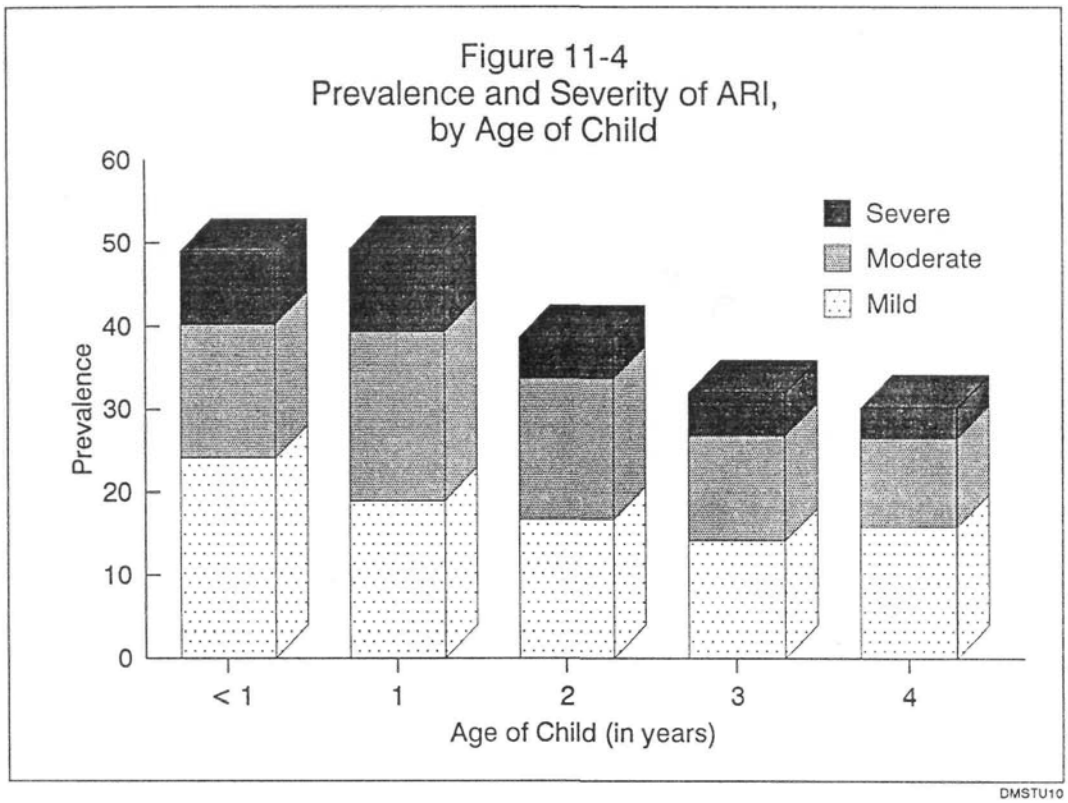


Figure 11-4
Prevalence and Severity of ARI,
by Age of Child
Severe
Moderate
Mild
Prevalence
60
50
40
30
20
10
0
< 1
1
2
3
4
Age of Child (in years)
DMSTU10

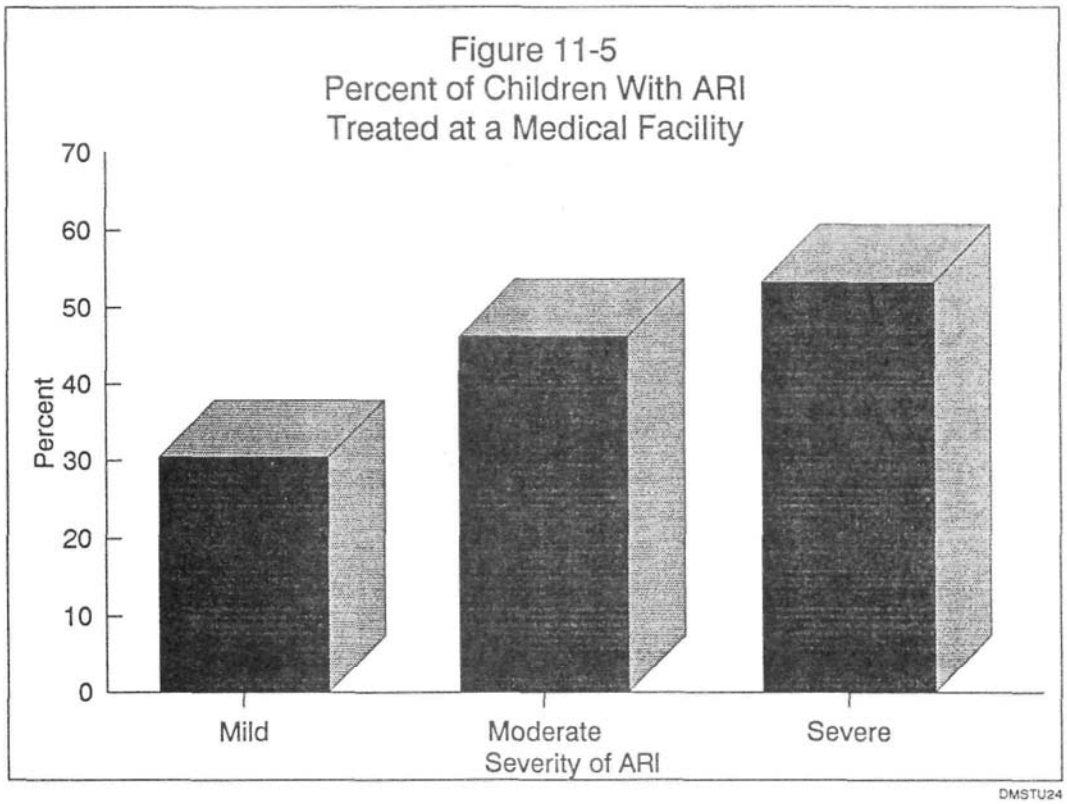


Figure 11-5
Percent of Children With ARI
Treated at a Medical Facility
70
60
50
40
30
20
10
0
Percent
Mild
Moderate
Severe
Severity of ARI
DMSTU24

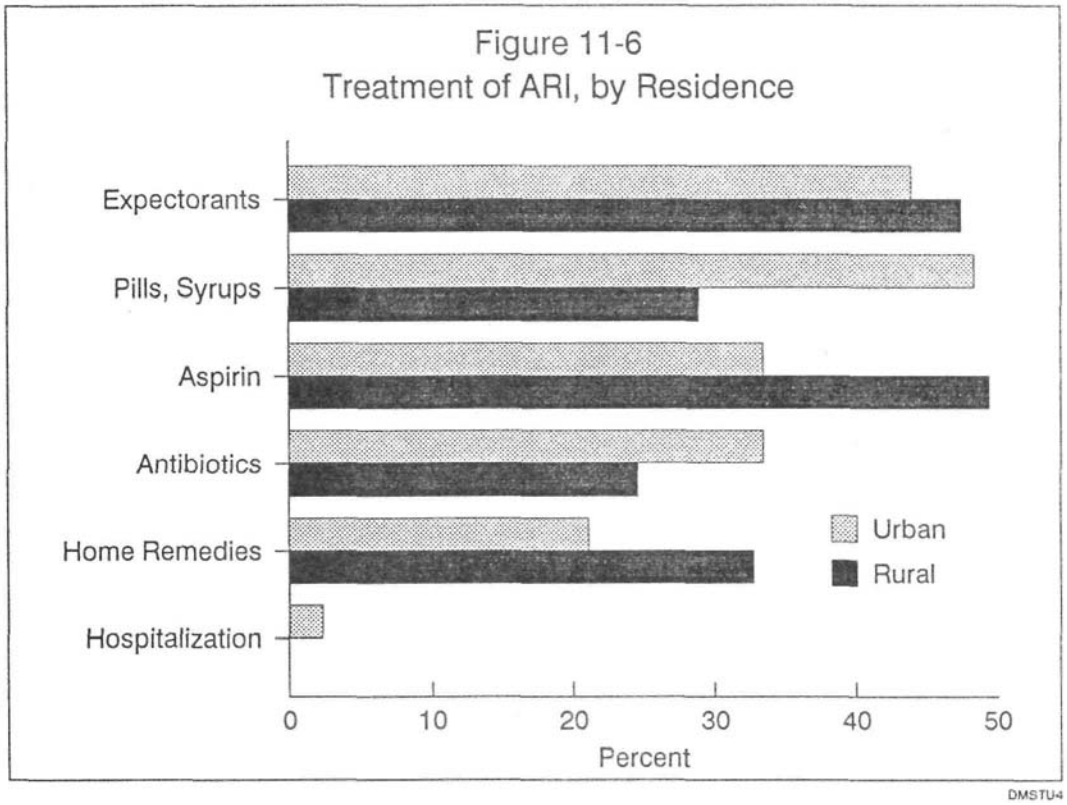


Figure 11-6
Treatment of ARI, by Residence
Expectorants
Pills, Syrups
Aspirin
Antibiotics
Home Remedies
Hospitalization
Urban
Rural
0
10
20
30
40
50
Percent
DMSTU4

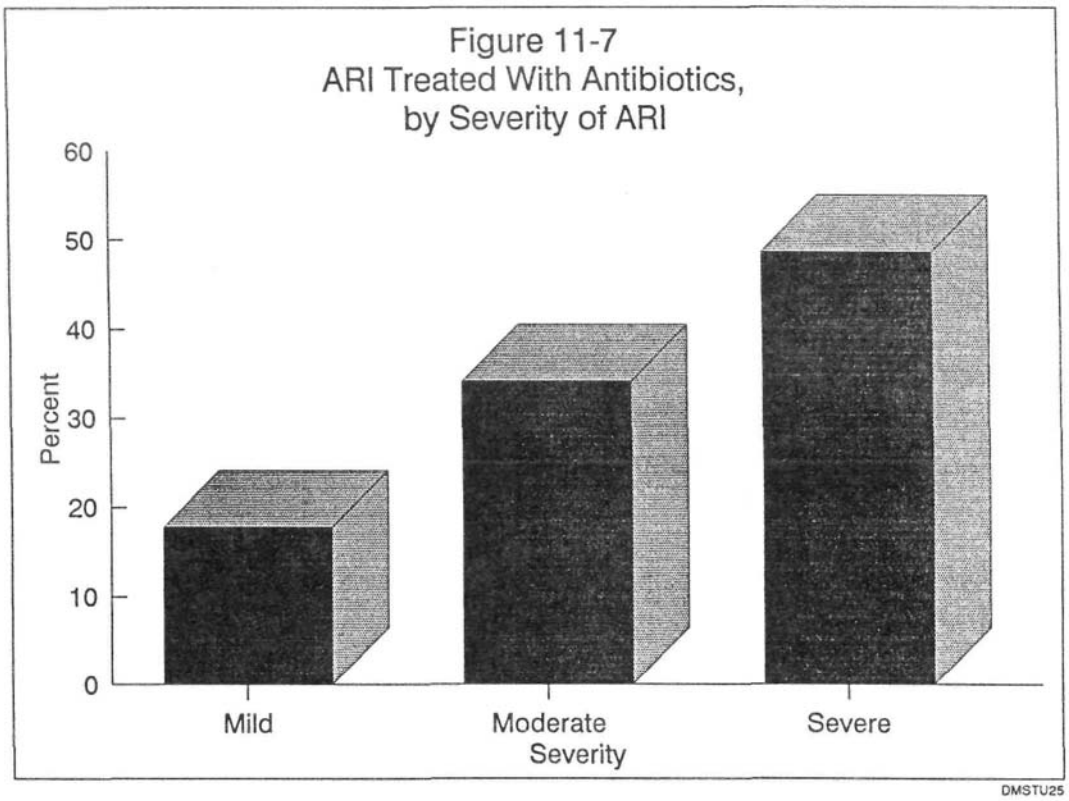


Figure 11-7
ARI Treated With Antibiotics,
by Severity of ARI
Percent
60
50
40
30
20
10
0
Mild
Moderate
Severity
Severe
DMSTU25

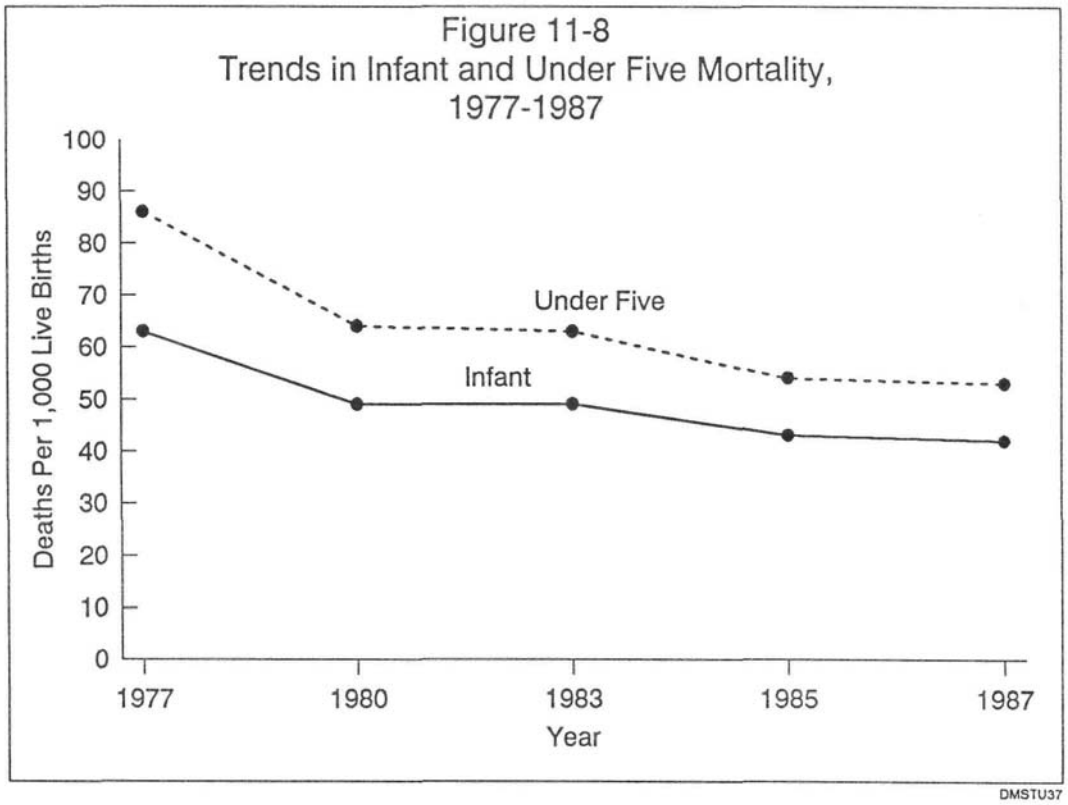


Figure 11-8
Trends in Infant and Under Five Mortality,
1977-1987
Deaths Per 1,000 Live Births
100
90
80
70
60
50
40
30
20
10
0
Under Five
Infant
1977
1980
1983
1985
1987
Year
DMSTU37

Table 11-1

Belize: Percentage of Children Less Than 5 Years of Age
Reported to Have Had Diarrhea During the Two Weeks Prior
to Interview, by Residence, Years of Education, and Age of Child
1991 Family Health Survey

			Residence				Years of Mother's Education					
Age of Child	Total		Urban		Rural		0-7		8		9+	
Total	10.8	(2,179)	9.9	(1,219)	12.2	(960)	12.9	(908)	11.7	(757)	6.3	(514)
0-5 Months	10.4	(232)	11.0	(136)	9.2	(96)	11.0	(92)	16.7	(76)	2.3	(64)
6-11 Months	18.6	(213)	23.9	(108)	12.8	(105)	20.3	(94)	11.8	(80)	26.3	(39)
1 Year	11.0	(486)	15.5	(260)	21.3	(226)	20.7	(209)	19.4	(163)	11.8	(114)
2 Years	11.0	(412)	8.7	(227)	14.1	(185)	13.5	(173)	14.2	(140)	2.3	(99)
3 Years	5.9	(422)	4.5	(257)	8.1	(165)	5.7	(181)	8.0	(139)	3.4	(102)
4 Years	3.1	(414)	2.5	(231)	3.9	(183)	6.7	(159)	1.6	(159)	0.0	(96)

Table 11-2

Belize: Percentage of Children Less Than 5 Years of Age
Reported to Have Had Diarrhea During the Two Weeks Prior
to Interview, by Ethnic Group and Age of Child
1991 Family Health Survey

Age of Child	Total		Ethnic Group							
			Creole		Mestizo		Garifuna		Maya/ Ketchi	
Total	10.8	(2,179)*	7.5	(572)	12.3	(1,032)	7.7	(199)	15.2	(259)
0-5 Months	10.4	(232)	25.4	(61)	13.5	(105)	**	(22)	11.8	(30)
6-11 Months	18.6	(213)	23.5	(56)	16.5	(100)	**	(17)	17.7	(30)
1 Year	18.1	(486)	9.5	(122)	20.8	(233)	14.0	(48)	31.7	(53)
2 Years	11.0	(412)	5.3	(103)	14.9	(212)	6.4	(39)	11.3	(42)
3 Years	5.9	(422)	6.2	(119)	4.3	(187)	2.4	(34)	10.8	(57)
4 Years	3.1	(414)	0.7	(111)	4.0	(195)	4.3	(39)	5.7	(47)

*Total includes 117 cases classified as "other".

**Less than 25 cases.

NOTE: Figures in parentheses are unweighted numbers of cases.

Table 11-3

Belize: Percentage of Children Less Than 5 Years of Age
Reported to Have Had Diarrhea During the Two Weeks Prior
to Interview, by Selected Household Characteristics
1991 Family Health Survey

Selected Characteristics	Percent With Diarrhea	No. of Cases (Unweighted)
Total	10.8	(2,179)
No. of Persons Living in Household		
1-3	10.9	(170)
4-5	11.1	(754)
6-7	9.1	(633)
8-9	11.0	(386)
10+	12.9	(236)
No. of Rooms in Household[1]		
1	13.8	(473)
2	12.1	(711)
3	9.4	(577)
4+	8.5	(388)
Source of Drinking Water[2]		
Tanker Truck/Other	20.7	(65)
Public tap	19.8	(97)
Well	12.2	(503)
River, Spring or Surface Water	12.1	(134)
Vat or Drum	10.3	(596)
Piped Into Yard or Plot	8.7	(456)
Piped Into Residence	7.5	(327)
Toilet Facilities[3]		
No Facilities/Other	13.6	(90)
Pit Latrine	13.0	(1,299)
Flush	7.5	(510)
Bucket	7.1	(276)

[1]Excludes 30 cases.

[2]Excludes one case.

[3]Excludes four cases.

Table 11-3 (Continued)

Belize: Percentage of Children Less Than 5 Years of Age
Reported to Have Had Diarrhea During the Two Weeks Prior
to Interview, by Selected Household Characteristics
1991 Family Health Survey

Selected Characteristics	Percent With Diarrhea	No. of Cases (Unweighted)
Refrigerator[4]		
No	12.9	(653)
Yes	6.6	(1,514)
Energy for Cooking[5]		
Wood	13.8	(799)
Propane Gas/Electricity	9.5	(1,241)
Kerosene	7.0	(129)
Floor of House[6]		
Dirt	13.5	(304)
Concrete	12.5	(1,042)
Wood	8.0	(786)
Other	6.1	(45)

[4]Excludes 12 cases.

[5]Excludes eight cases.

[6]Excludes two cases.

Table 11-4

Belize: Percentage of Children Less Than 5 Years of Age
Manifesting Various Symptoms During Their Recent Episode
of Diarrhea, by Selected Characteristics
1991 Family Health Survey

Selected Characteristics	No Symptoms	Blood/Mucous in Stool	Dry, Wrinkled Skin	Sunken, Dry Eyes	Sunken Fontanel	Dry Lips	No. of Cases (Unweighted)
Total	54.5	23.4	13.6	19.9	12.2	17.5	(226)
Residence							
Urban	56.6	23.0	14.5	17.8	15.8	13.8	(115)
Rural	52.2	23.9	12.7	22.4	8.2	21.6	(111)
Age of Child							
<1 Year	50.0	23.7	17.5	18.7	27.5	11.3	(58)
1 Year	61.3	18.9	13.2	17.0	7.5	17.0	(88)
2 Years	51.8	26.8	12.5	25.0	7.1	25.0	(41)
3+ Years	50.0	29.5	9.1	22.7	2.3	20.5	(39)
Education of Mother (in Years)							
0-7	49.6	23.7	15.1	27.3	10.1	26.6	(116)
8	51.9	25.5	14.1	16.0	19.8	11.3	(84)
9+	78.0	17.1	7.3	4.9	0.0	2.4	(26)

NOTE: Figures in parentheses are unweighted numbers of cases.

Table 11-5

Belize: Percent Distribution of Location of Treatment of Children Less Than 5 Years of Age for Their Recent Episode of Diarrhea, by Selected Characteristics
1991 Family Health Survey

	Location of Treatment									
Selected Characteristics	Not Treated	At Home	Govt. Worker/Clinic/ Hospital	Private Clinic/ Hospital	Pharmacy	Trad. Healer	Multiple Sources	Other	Total	No. of Cases (Unweighted)
Total	17.2	9.8	20.6	12.2	18.5	5.9	6.6	9.1	100.0	(226)
Residence										
Urban	17.1	12.5	25.7	12.5	18.4	0.0	9.2	4.6	100.0	(115)
Rural	17.2	6.7	14.9	11.9	18.7	12.7	3.7	14.7	100.0	(111)
Age of Child										
<1 Year	8.7	13.7	27.5	13.7	15.0	8.7	8.7	3.7	100.0	(58)
1 Year	17.9	7.5	21.7	14.1	20.7	3.8	7.5	6.6	100.0	(88)
2 Years	17.9	10.7	7.1	14.3	16.1	7.1	7.1	19.6	100.0	(41)
3+ Years	29.5	6.8	22.7	2.3	22.7	4.5	0.0	11.4	100.0	(39)
Years of Mother's Education										
0-7	12.9	5.8	15.8	14.4	23.0	10.1	6.5	11.5	100.0	(116)
8+	21.1	13.6	25.2	10.2	14.3	2.0	6.8	6.8	100.0	(110)
Presented Symptoms of Dehydration										
Yes	3.9	7.7	22.3	20.0	16.1	6.1	10.0	13.9	100.0	(107)
No	28.2	11.5	19.2	5.8	20.5	5.8	3.9	5.1	100.0	(119)

Table 11-5 (Continued)

Belize: Percent Distribution of Location of Treatment of Children Less Than 5 Years of Age for Their Recent Episode of Diarrhea, by Selected Characteristics
1991 Family Health Survey

	Location of Treatment									
Selected Characteristics	Not Treated	At Home	Govt. Worker/Clinic/ Hospital	Private Clinic/ Hospital	Pharmacy	Trad. Healer	Multiple Sources	Other	Total	No. of Cases (Unweighted)
Duration of Diarrhea*										
0-1 Days										
2-3 Days	30.9	8.8	7.3	2.9	27.9	2.9	7.3	11.8	100.0	(53)
4-6 Days	12.5	15.0	21.7	14.2	14.2	10.8	4.2	7.5	100.0	(90)
7+ Days	18.9	8.1	16.2	16.2	18.9	2.7	10.8	8.1	100.0	(34)
	10.3	1.7	34.5	15.5	17.2	1.7	8.6	10.3	100.0	(46)
Ethnic Group										
Creole										
Mestizo	21.4	17.9	41.1	5.4	7.1	1.8	3.6	1.8	100.0	(39)
Maya/Ketchi	16.7	8.7	8.0	19.3	22.0	4.0	10.0	11.3	100.0	(120)
Other	8.7	6.5	28.3	4.3	17.4	15.2	4.3	15.2	100.0	(37)
	23.5	5.9	32.3	2.9	23.5	8.8	0.0	2.9	100.0	(30)

*Excludes three cases for whom duration of diarrhea is unknown.

Table 11-6

Belize: Type of Treatment Given to Children Less
Than 5 Years of Age With Recent Diarrhea,
by Location of Treatment
1991 Family Health Survey

		Location of Treatment			
Treatment	Total	Government Worker/Clinic/ Hospital	Private Clinic/ Hospital	Pharmacy	Other[1]
ORS Packets	32.5	61.0	37.1	17.0	21.1
Homemade salt/sugar solution	11.0	23.7	5.7	1.9	10.0
Intravenous Treatment	4.2	6.8	14.3	0.0	1.1
Antibiotics	23.6	20.3	54.3	18.9	16.7
Antidiarretics	37.1	47.5	77.1	26.4	21.1
"Remedies" (Vague)	21.1	15.3	5.7	45.3	16.7
Hospitalization	2.9	6.8	2.9	0.0	2.2
No. of Cases (Unweighted)	(187)	(46)	(30)	(42)	(69)

[1]Includes home treatment, traditional healers, multiple sources, and other sources of treatment.

Table 11-7

Belize: Type of Treatment Given to Children Less
Than 5 Years of Age With Recent Diarrhea,
by Residence and Mother's Education
1991 Family Health Survey

		Residence		Years of Mother's Education	
Treatment	Total	Urban	Rural	0-7	8+
ORS Packets	32.5	35.7	28.8	28.1	37.1
Homemade salt/sugar solution	11.0	12.7	9.0	7.4	14.7
Intravenous Treatment	4.2	4.8	3.6	3.3	5.2
Antibiotics	23.6	22.2	25.2	26.5	20.7
Antidiarretics	37.1	42.1	31.5	29.7	44.8
"Remedies" (Vague)	21.1	20.6	21.6	22.3	19.8
Hospitalization	2.9	4.0	1.8	2.5	3.5
No. of Cases (Unweighted)	(187)	(95)	(92)	(99)	(88)

Table 11-8

Belize: Type of Treatment Given to Children Less Than 5 Years of Age With Recent Diarrhea, by Duration of Diarrhea and Presentation of Symptoms Associated With Dehydration
1991 Family Health Survey

		Duration (in days)*				Presented Symptoms Associated With Dehydration	
Treatment	Total	0-1	2-3	4-6	7+	Yes	No
ORS Packets	32.5	27.7	25.7	40.0	46.1	32.0	33.0
Homemade salt/sugar solution	11.0	0.0	18.1	0.0	11.5	12.0	9.8
Intravenous Treatments	4.2	2.1	4.8	3.3	5.8	7.2	0.9
Antibiotics	23.6	6.4	19.0	30.0	44.2	35.2	10.7
Antidiarretics	37.1	25.5	40.9	26.7	48.1	42.4	31.3
"Remedies" (Vague)	21.1	21.3	19.0	30.0	21.1	16.0	26.8
Hospitalization	2.9	2.1	0.9	3.3	7.7	4.8	0.9
No. of Cases (Unweighted)	(187)	(36)	(78)	(27)	(43)	(102)	(85)

*Excludes three cases for whom duration of diarrhea is unknown.

Table 11-9

Belize: Percentage of Children With Recent Diarrhea,
by Type of Diet Received, Residence, and Mother's Education
1991 Family Health Survey

		Residence		Years of Mother's Education	
Diet	Total	Urban	Rural	0-7	8+
Normal Diet	43.9	38.1	50.5	46.3	41.4
Only Soft Foods	26.2	34.9	16.2	20.7	31.9
Less Food	29.5	32.5	26.1	29.7	29.3
More Frequent Feedings	17.3	24.6	9.0	11.6	23.3
Increased Liquids	55.7	48.4	64.0	49.6	62.1
Decreased Liquids	15.2	18.3	11.7	19.8	10.3
Only Breast Milk	18.6	15.9	21.6	21.5	15.5
Withheld Milk	15.2	18.3	11.7	13.2	17.2
No. of Cases (Unweighted)	(187)	(95)	(92)	(99)	(88)

Note: Children could have received more than one type of diet.

Table 11-10

Belize: Percentage of Children With Recent Diarrhea,
by Type of Diet Received, Duration of Diarrhea,
and Presentation of Symptoms Associated With Dehydration
1991 Family Health Survey

		Duration of Diarrhea (in days)*				Symptoms of Dehydration	
Diet	Total	0-1	2-3	4-6	7+	Yes	No
Normal Diet	43.9	48.9	47.6	16.7	46.1	39.2	49.1
Only Soft Foods	26.2	10.6	29.5	40.0	25.0	32.0	19.6
Less Food	29.5	25.5	23.8	50.0	28.9	42.4	15.2
More Frequent Feedings	17.3	8.5	23.8	16.7	13.5	20.8	13.4
Increased Liquids	55.7	36.2	64.8	56.7	57.7	57.6	53.6
Decreased Liquids	15.2	10.6	12.4	16.7	19.2	23.2	6.3
Only Breast Milk	18.6	12.8	18.1	26.7	17.3	24.0	12.5
Withheld Milk	15.2	2.1	18.1	20.0	17.3	24.0	5.4
No. of Cases (Unweighted)	(187)	(36)	(78)	(27)	(43)	(102)	(85)

*Excludes three cases for whom duration of diarrhea is unknown.

Table 11-11

Belize: Prevalence and Severity of ARI Among
Children Less Than 5 Years of Age During
the Two Weeks Prior to Interview,
by Residence and Mother's Education
1991 Family Health Survey

		Residence		Years of Mother's Education		
Presence and Severity of ARI	Total	Urban	Rural	0-7	8	9+
ARI	40.4	42.9	36.8	42.8	39.4	37.7
Mild	18.1	19.2	16.6	15.4	20.0	19.9
Moderate	15.6	16.5	14.3	19.5	14.1	11.3
Severe	6.7	7.2	5.9	7.9	5.3	6.6
No ARI	59.6	57.1	63.2	57.2	60.6	62.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(2,206)	(1,227)	(979)	(914)	(775)	(517)

Table 11-12

Belize: Prevalence and Severity of ARI Among Children
Less Than 5 Years of Age During the Two Weeks
Prior to Interview, by Age of Child
1991 Family Health Survey

		Age of Child				
Presence and Severity of ARI	Total	<1	1	2	3	4
ARI	40.4	48.9	49.1	38.6	32.1	30.3
Mild	18.1	24.1	18.9	16.7	14.1	15.8
Moderate	15.6	16.1	20.4	16.9	12.7	10.7
Severe	6.7	8.7	9.9	5.0	5.2	3.7
No ARI	59.6	51.1	50.9	61.4	67.9	69.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(2,206)	(447)	(494)	(416)	(431)	(418)

Table 11-13

Belize: Prevalence and Severity of ARI Among Children
Less Than 5 Years of Age During the Two Weeks
Prior to Interview, by Ethnic Group
1991 Family Health Survey

		Ethnic Group				
Presence and Severity of ARI	Total	Creole	Mestizo	Garifuna	Maya/ Ketchi	Other
ARI	40.4	39.3	38.3	46.6	48.7	33.9
Mild	18.1	19.4	16.3	23.5	18.8	15.4
Moderate	15.6	13.5	15.0	16.2	23.7	12.3
Severe	6.7	6.4	6.9	6.9	6.2	6.1
No ARI	59.6	60.7	61.7	53.4	51.3	66.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(2,206)	(576)	(1,048)	(199)	(265)	(118)

Table 11-14

Belize: Prevalence of ARI Among Children
Less Than 5 Years of Age During the Two Weeks
Prior to Interview, by Selected Household Characteristics
1991 Family Health Survey

Selected Household Characteristics	Percent With ARI	No. of Cases (Unweighted)
Total	40.4	(2,206)
No. of Household Amenities		
0-2	39.2	(906)
3-7	42.0	(1,054)
8-10	37.1	(246)
No. of Persons Living in Household		
1-3	42.1	(171)
4-5	37.0	(770)
6-7	42.6	(637)
8-9	41.3	(391)
10+	41.1	(237)
No. of Rooms in Household*		
1	43.5	(483)
2	40.1	(721)
3	37.2	(580)
4+	41.3	(391)
Energy for Cooking**		
Wood	41.1	(812)
Propane Gas/Electricity	41.1	(1,254)
Kerosene	28.7	(129)
Floor of House***		
Wood	43.2	(794)
Concrete	39.0	(1,057)
Dirt	38.0	(308)
Other	36.7	(45)

*Excludes 31 cases.

**Excludes 11 cases.

***Excludes 2 cases.

Table 11-15

Belize: Percent Distribution of Location of Treatment of Children Less Than 5 Years of Age for Their Recent Episode of Respiratory Illness, by Selected Characteristics
1991 Family Health Survey

	Location of Treatment									
Selected Characteristics	Not Treated	At Home	Govt. Worker/Clinic/ Hospital	Private Clinic/ Hospital	Pharmacy	Trad. Healer	Multiple Sources	Other	Total	No. of Cases* (Unweighted)
Total	13.6	12.4	26.5	13.8	18.0	2.1	5.5	7.9	100.0	(874)
Residence										
Urban	12.7	15.1	25.2	15.9	19.8	0.5	5.3	5.6	100.0	(519)
Rural	15.2	8.1	28.4	10.5	15.2	4.9	5.9	11.8	100.0	(355)
Years of Mother's Education										
0-7	11.8	13.3	25.7	15.0	14.6	3.3	6.7	9.6	100.0	(383)
8	17.3	10.1	26.0	10.1	20.8	1.9	4.1	9.6	100.0	(301)
9+	11.8	14.2	28.5	17.1	20.3	0.4	5.3	2.4	100.0	(190)
Ethnic Group										
Creole	12.0	17.1	29.1	14.4	16.8	1.0	4.5	5.1	100.0	(221)
Mestizo	13.0	11.1	16.0	19.0	23.7	1.1	7.5	8.7	100.0	(392)
Garifuna	20.9	8.7	51.3	4.3	9.6	2.6	0.9	1.7	100.0	(93)
Maya/Ketchi	12.7	12.7	32.0	4.0	11.3	8.0	4.7	14.7	100.0	(127)
Other	15.9	4.5	36.4	13.6	11.4	0.0	6.8	11.4	100.0	(41)

*Excludes 4 cases for whom treatment status is unknown.

Table 11-15 (Continued)

Belize: Percent Distribution of Location of Treatment of Children Less Than
5 Years of Age for Their Recent Episode of Respiratory Illness, by Selected Characteristics
1991 Family Health Survey

	Location of Treatment									
Selected Characteristics	Not Treated	At Home	Govt. Worker/Clinic/ Hospital	Private Clinic/ Hospital	Pharmacy	Trad. Healer	Multiple Sources	Other	Total	No. of Cases* (Unweighted)
Age of Child (In Years)										
<1	14.9	6.9	27.9	17.0	15.9	3.3	7.3	6.9	100.0	(216)
1	11.8	13.8	29.1	14.9	16.3	2.4	5.9	5.9	100.0	(236)
2	13.6	13.1	28.1	12.6	20.1	0.5	3.5	8.5	100.0	(156)
3	13.7	15.6	23.7	11.9	16.3	2.5	5.6	10.6	100.0	(142)
4	15.1	15.7	19.2	9.6	24.7	1.4	4.1	10.3	100.0	(124)
Duration of ARI										
0-1 Days	35.9	18.5	13.6	2.9	15.5	1.9	2.9	8.7	100.0	(85)
2-3 Days	10.0	11.7	29.7	12.7	22.3	4.3	3.0	6.3	100.0	(254)
4-6 Days	7.6	13.7	26.4	14.2	26.9	1.5	2.0	7.6	100.0	(152)
7+ Days	6.9	12.0	29.2	17.7	14.0	1.0	10.6	8.6	100.0	(335)
Unknown	57.1	4.8	14.3	11.1	0.0	1.6	0.0	11.1	100.0	(48)
Severity of ARI										
Mild	22.3	15.5	22.5	7.9	19.6	2.1	2.9	7.1	100.0	(402)
Moderate	7.0	12.6	30.2	15.9	16.9	1.7	5.1	10.6	100.0	(332)
Severe	5.7	3.9	28.3	24.9	16.4	3.4	13.6	3.9	100.0	(140)

*Excludes 4 cases for whom treatment status is unknown.

Table 11-16

Belize: Type of Treatment Given to Children Less Than 5 Years of Age
With Recent Respiratory Illness, by Selected Characteristics
1991 Family Health Survey

Selected Characteristics	Expectorants	Pills, Syrups (Vague)	Aspirin	Antibiotics	Home Remedies	Hospitalization	No. of Cases (Unweighted)
Total	45.2	41.0	40.0	30.1	25.4	1.4	(759)
Residence							
Urban	43.9	48.3	34.4	33.4	21.1	2.3	(458)
Rural	47.4	28.9	49.4	24.6	32.7	0.0	(301)
Years of Mother's Education							
0-7	44.4	38.5	48.4	26.7	28.4	1.2	(342)
8	47.0	43.4	36.7	26.5	28.5	1.7	(248)
9+	44.2	42.4	29.0	41.5	15.7	1.4	(169)
Duration of ARI*							
0-1 Days	31.8	25.8	33.3	24.2	34.9	0.0	(56)
2-3 Days	43.3	39.3	34.4	24.1	19.6	2.6	(233)
4-6 Days	47.8	49.5	39.6	31.3	28.0	0.0	(140)
7+ Days	48.0	41.2	46.2	35.4	27.7	1.6	(311)

Table 11-16 (Continued)

Belize: Type of Treatment Given to Children Less Than 5 Years of Age
With Recent Respiratory Illness, by Selected Characteristics
1991 Family Health Survey

Selected Characteristics	Expectorants	Pills, Syrups (Vague)	Aspirin	Antibiotics	Home Remedies	Hospitalization	No. of Cases (Unweighted)
Severity of ARI							
Mild	42.2	42.7	29.6	17.7	21.5	0.0	(316)
Moderate	46.2	39.5	46.7	34.0	26.7	1.6	(310)
Severe	49.7	40.7	47.9	48.5	31.1	4.2	(133)
Location of Treatment							
At Home	18.0	47.4	38.3	9.0	27.8	0.0	(110)
Govt. Worker/Hospital/Clinic	62.1	34.7	40.8	38.7	18.8	3.5	(233)
Private Clinic/Hospital	44.6	62.9	39.9	64.2	22.3	1.3	(119)
Pharmacy	41.5	42.0	40.9	10.9	13.5	0.0	(160)
Other*	43.1	26.3	39.5	24.5	51.5	0.6	(137)

*Excludes 19 cases for whom duration of illness is unknown.

Table 11-17

Belize: Estimated Levels of Infant and Under Five Mortality
for Selected Periods Before the Survey
1991 Family Health Survey

Age	Number of Women	Proportion Children Dead	Reference Period	Infant 1q0	Under Five 5q0
20-24	539	.046	1987.5	.042	.053
25-29	587	.052	1985.4	.043	.054
30-34	475	.063	1983.0	.049	.063
35-39	281	.068	1980.4	.049	.064
40-44	218	.099	1977.6	.063	.086

12. Knowledge of AIDS

The acquired immune deficiency syndrome (AIDS) has developed into a global epidemic. By mid-1988, there were some 250,000 officially reported AIDS deaths worldwide. In addition to the United States, especially high rates have been reported from central Africa, Haiti, and Brazil. There have been 126 HIV positive cases documented in Belize and 38 cases of AIDS (Medical Statistics Office, 1991). While the incidence of AIDS in Central and South America is relatively low compared to the U.S., further spread of the virus in the region may be prevented by knowledge and awareness of how the virus is transmitted.

Of all women aged 15-44 who were interviewed, 97 percent reported that they have heard of AIDS (Table 12-1). While nearly all urban women had heard of AIDS (99 percent), 92 percent of the rural women had. For every age category, urban women were more likely to have heard of AIDS than rural women, with the largest differentials in knowledge being at the youngest ages. Knowledge of AIDS was also found to be directly associated with educational attainment, as 98 percent of women with 9 or more years of schooling reported that they knew of AIDS compared to 93 percent of women with 7 or fewer years of schooling. However, when education is controlled by residence, differences in knowledge disappear for urban women but remain for rural women. Thus, while 99 percent of urban women with less than eight years of education have heard of AIDS, only 87 percent of their rural counterparts have. Some differentials in knowledge of AIDS also emerge when ethnic group and marital status are controlled by residence, especially among the Maya Ketchi for whom only 84 percent reported knowledge of AIDS.

Over 90 percent of the respondents knew correctly that AIDS can be transmitted by drug users sharing needles, through homosexual or heterosexual intercourse, and by receiving a blood transfusion (Table 12-2). Overall, urban women fared better on the correct transmission of AIDS questions than did rural women. The largest differential between urban and rural women was on receiving blood transfusions, as 95 percent of urban correctly knew that AIDS can be transmitted this way compared to 86 percent of rural women.

According to the Belize Ministry of Health, 42 percent of the AIDS cases in Belize to date were transmitted heterosexually. Bisexual and homosexual contact were each responsible for 20 percent of the AIDS cases. The remainder of AIDS cases were transmitted perinatally (8 percent), through blood transfusion (3 percent) or by unknown means (10 percent).

While there is no clear pattern of correct knowledge by age group, years of education is positively associated with correct knowledge about AIDS transmission. Again, the largest differential in knowledge was on getting AIDS from a blood transfusion: only 87 percent of the low education group said that this was a way that AIDS can be transmitted compared to 96 percent of the high education group. With regards to ethnicity, the Maya/Ketchi were least likely to have correct knowledge of AIDS transmission. In general, Creoles appear to be the most knowledgeable concerning the most common modes of transmission.

There is also misinformation related to modes of HIV transmission. Four incorrect ways of transmitting HIV infection were read to the respondents: shaking hands or hugging, being in a room with a person with AIDS, sharing personal items, giving blood, and being bitten by an insect (Table 12-3). While only 9 percent and 15 percent, respectively, believed that AIDS could be transmitted by shaking hands or hugging or by being in the same room with

someone who has AIDS, 72 percent and 61 percent, respectively, stated that AIDS could be transmitted by giving blood or by being bitten by an insect. In general, a lower percentage of urban women thought that these were legitimate ways of transmitting AIDS than did rural women. With the exception of giving blood, the percentage of women with incorrect knowledge was inversely related to the level of education. No clear pattern of incorrect knowledge emerged with respect to ethnic group.

Of the women who had heard of AIDS, one third believed that they were at some risk of getting AIDS (Table 12-4). This percentage includes women who stated that they were "at great risk", "some risk", or "not much risk" of getting AIDS. In contrast, 51 percent did not feel that they were at risk, and 16 percent did not know. More urban women (37 percent) believed that they were at some risk of getting AIDS than rural women (25 percent). However, more rural women (28 percent) were uncertain about their risk than urban women (11 percent). The youngest women (15-19) saw themselves as being the least at risk while at least one third of women over 20 years of age perceived themselves as having some risk of getting AIDS. The proportion of women who perceive themselves to be at "great risk" decreases as level of education increases. Marital status appears to be an important factor in terms of perceived AIDS risk. Nearly 53 percent of women in visiting partner relationships perceived themselves as having some risk of getting AIDS. The category with the lowest percentage of perceived risk was single women (23 percent), a great many of whom are not sexually active.

The gap between perceived risk and behavior in Belize is quite evident, as shown in Table 12-5 and Figure 12-1. Of women who perceive themselves to be at either great or some risk of getting AIDS, 84 percent know of condoms, but only 16 percent have ever used condoms and only 2 percent are currently using them. This extremely low use of condoms corresponds to the level of condom use reported by all women aged 15-44 in this survey (see Table 4-5). A higher proportion of urban women than rural women know about and have used condoms. Women aged 25-34 were the most likely to report current use of condoms while none of the women 35 years of age or older reported using condoms. As education increases so does knowledge and past use of condoms. All of the women who have visiting partners know about condoms; yet, only 3 percent of these women are currently using them. Interestingly, women who are separated, divorced, or widowed reported the highest use of condoms. Similarly, when ethnicity is considered, the Maya/Ketchi were the most likely of all the ethnic groups to be currently using condoms. However, sample size was small for the categories mentioned above.

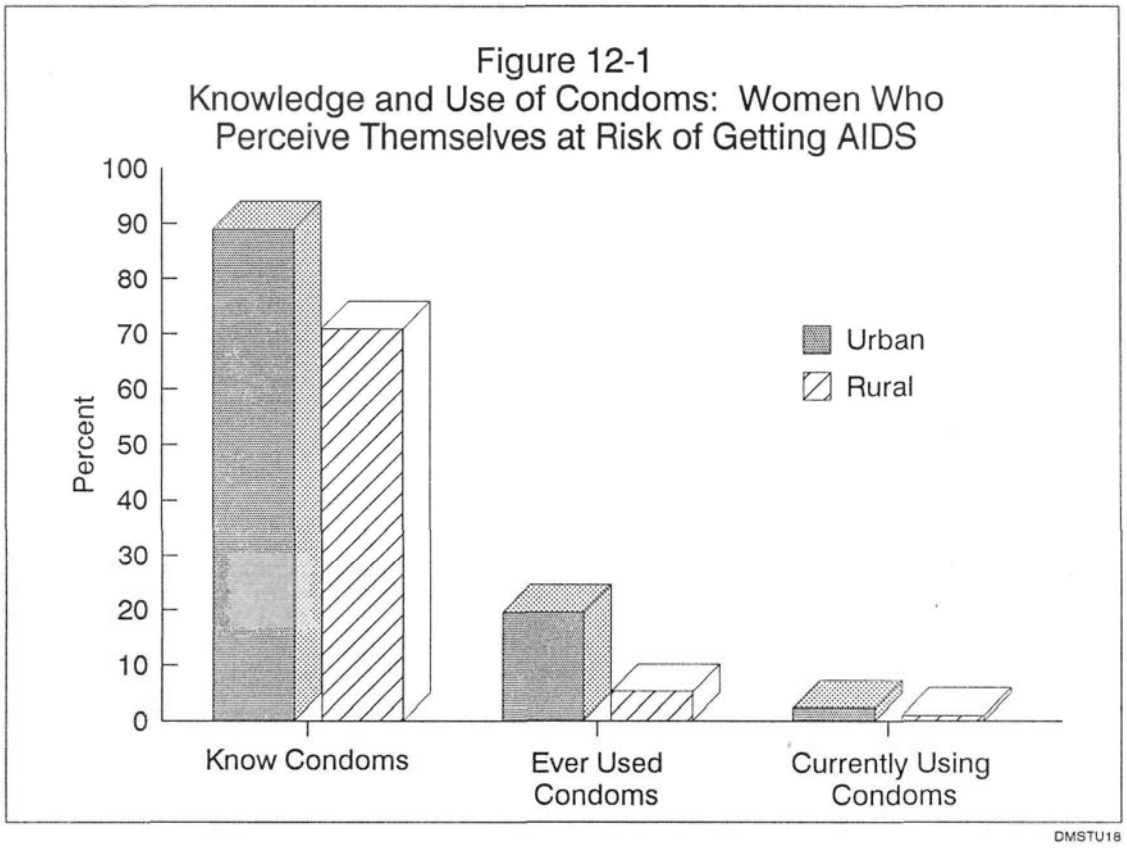


Figure 12-1
Knowledge and Use of Condoms: Women Who Perceive Themselves at Risk of Getting AIDS
Percent
100
90
80
70
60
50
40
30
20
10
0
Urban
Rural
Know Condoms
Ever Used Condoms
Currently Using Condoms
DMSTU18

Table 12-1

Belize: Percentage of All Women Aged 15-44
Who Have Ever Heard of AIDS,
by Selected Characteristics and Residence
1991 Family Health Survey

Selected Characteristics	Total		Residence			
			Urban		Rural	
Total	97.0	(2,656)	99.5	(1,724)	91.9	(932)
Age						
15-19	96.3	(526)	99.2	(335)	91.1	(191)
20-24	96.2	(549)	99.0	(344)	90.7	(205)
25-29	98.0	(593)	100.0	(383)	94.0	(210)
30-34	97.8	(483)	100.0	(322)	93.2	(161)
35-39	95.7	(280)	99.2	(184)	89.2	(96)
40-44	98.5	(225)	100.0	(156)	94.9	(69)
Years of Education						
0-7	92.9	(827)	99.4	(380)	87.0	(447)
8	97.9	(918)	99.3	(543)	95.6	(375)
9+	99.4	(911)	99.7	(801)	97.7	(110)
Ethnic Group*						
Creole	98.9	(894)	99.5	(757)	95.2	(137)
Mestizo	97.0	(1,162)	99.6	(640)	93.7	(522)
Garifuna	99.4	(228)	100.0	(169)	97.7	(59)
Maya/Ketchi	84.0	(220)	97.0	(50)	80.1	(170)
Other	99.5	(151)	100.0	(108)	98.0	(43)
Marital Status						
Ever Married	96.4	(1,941)	99.4	(1,202)	91.2	(739)
Never Married	98.0	(715)	99.7	(522)	93.8	(193)
Contraceptive Use Status						
Currently Using	99.2	(1,001)	99.5	(740)	98.3	(261)
Not Using	95.9	(1,655)	99.5	(984)	90.0	(671)

*Excludes one case for whom ethnic group is unknown.

NOTE: Figures in parentheses are unweighted numbers of cases.

Table 12-2

Belize: Percentage of Women Aged 15-44
Who Have Knowledge of AIDS and
Who Have Correct Knowledge of How AIDS May be Transmitted,
by Selected Characteristics
1991 Family Health Survey

	Mode of Transmission				
Selected Characteristics	Receiving Blood Transfusion	Sharing Needles	Male Sexual Intercourse	Heterosexual Intercourse	No. of Cases (Unweighted)
Total	92.1	94.5	95.5	97.8	(2,567)
Residence					
Urban	95.0	96.2	96.7	98.7	(1,715)
Rural	85.7	90.9	92.8	95.8	(852)
Age					
15-19	90.9	94.3	93.0	97.0	(505)
20-24	92.7	95.4	97.0	98.8	(526)
25-29	92.3	95.7	96.4	98.9	(580)
30-34	92.4	93.9	95.0	96.5	(472)
35-39	92.3	91.8	96.6	97.2	(264)
40-44	92.9	94.7	96.5	97.9	(220)
Years of Education					
0-7	87.3	90.1	93.7	96.2	(759)
8	91.7	94.3	94.7	97.2	(901)
9+	96.0	98.0	97.5	99.4	(907)
Ethnic Group*					
Creole	94.9	97.0	98.1	98.5	(886)
Mestizo	91.9	94.6	94.4	97.8	(1,117)
Garifuna	94.4	91.9	95.9	99.7	(227)
Maya/Ketchi	74.7	83.4	86.7	90.0	(186)
Other	92.9	95.7	96.7	98.9	(150)

*Excludes one case for whom ethnic group is unknown.

Table 12-3

Belize: Percentage of Women Aged 15-44 Who Have Knowledge of AIDS and Who Have Incorrect Knowledge or Do Not Know How AIDS May be Transmitted, by Selected Characteristics
1991 Family Health Survey

	Mode of Transmission					
Selected Characteristics	Shaking Hands or Hugging	In Room w/Person With AIDS	Sharing Personal Items	Bitten by Insect	Giving Blood	No. of Cases (Unweighted)
Total	8.8	15.5	23.9	61.3	71.9	(2,567)
Residence						
Urban	4.4	9.7	19.7	60.3	74.7	(1,715)
Rural	18.3	27.9	33.1	63.5	65.8	(852)
Age						
15-19	8.2	14.8	21.0	61.5	74.2	(505)
20-24	8.3	13.7	25.0	61.3	75.0	(526)
25-29	6.3	14.6	23.2	58.0	68.3	(580)
30-34	9.8	18.0	26.2	61.4	72.4	(472)
35-39	12.5	16.4	27.5	64.9	68.3	(264)
40-44	10.9	17.9	24.1	64.1	69.1	(220)
Years of Education						
0-7	20.1	31.7	37.0	68.6	70.5	(759)
8	7.0	14.3	25.9	63.0	72.6	(901)
9+	2.0	4.5	12.4	54.5	72.3	(907)
Ethnic Group*						
Creole	2.5	5.6	14.9	59.7	73.8	(886)
Mestizo	13.0	22.0	31.2	65.4	71.6	(1,117)
Garifuna	2.5	9.3	13.4	52.3	80.4	(227)
Maya/Ketchi	22.4	32.8	34.9	58.5	58.9	(186)
Other	10.3	17.9	30.4	58.2	64.1	(150)

*Excludes one case for whom ethnic group is unknown.

Table 12-4

Belize: Perceived Risk of Getting AIDS Among Women Aged 15-44
Who Have Heard of AIDS, by Selected Characteristics
1991 Family Health Survey
(Percent Distribution)

Selected Characteristics	Great Risk	Some Risk	Not Much Risk	No Risk	Doesn't Know	Total	No. of Cases (Unweighted)
Total	8.8	11.1	13.2	50.7	16.5	100.0	(2,567)
Residence							
Urban	9.3	12.0	15.5	51.8	11.3	100.0	(1,715)
Rural	7.6	9.2	8.3	47.2	27.7	100.0	(852)
Age							
15-19	7.6	8.3	9.2	58.4	16.5	100.0	(505)
20-24	8.0	11.3	13.4	49.3	18.0	100.0	(526)
25-29	10.2	10.9	14.6	48.3	15.9	100.0	(580)
30-34	10.4	11.3	14.1	47.5	16.7	100.0	(472)
35-39	7.1	16.1	18.7	43.9	14.2	100.0	(264)
40-44	10.3	13.5	14.1	45.9	16.2	100.0	(220)
Years of Education							
0-7	12.2	9.9	10.1	45.8	22.0	100.0	(759)
8	8.7	11.1	13.5	47.1	19.6	100.0	(901)
9+	6.4	12.1	15.3	56.7	9.5	100.0	(907)
Marital Status							
Married/In Union	10.4	11.8	14.1	45.4	18.3	100.0	(1,715)
Sep./Div./Widowed	8.4	16.2	14.0	50.7	10.9	100.0	(151)
Single	5.8	6.4	10.8	62.5	14.5	100.0	(584)
Visiting Partner	9.7	25.8	17.2	32.8	14.5	100.0	(117)
Ethnic Group*							
Creole	6.7	13.8	16.5	52.8	10.2	100.0	(886)
Mestizo	9.6	9.5	10.4	50.8	19.7	100.0	(1,117)
Garifuna	12.1	10.0	13.7	41.7	22.4	100.0	(227)
Maya/Ketchi	12.9	9.1	8.7	46.1	23.2	100.0	(186)
Other	5.4	11.4	19.0	50.5	13.6	100.0	(150)

*Excludes one case for whom ethnic group is unknown.

Table 12-5

Belize: Percentage of Women Aged 15-44 Who Perceive Themselves to be at Great or Some Risk of Getting AIDS and Who Know, Have Ever Used, and Are Currently Using Condoms, by Selected Characteristics
1991 Family Health Survey

	Percentage That:			
Selected Characteristics	Know Condoms	Have Ever Used Condoms	Are Currently Using Condoms	No. of Cases (Unweighted)
Total	84.2	15.7	1.9	(527)
Residence				
Urban	89.0	19.5	2.3	(381)
Rural	70.8	5.2	1.0	(146)
Age				
15-19	84.1	13.3	1.3	(92)
20-24	83.1	14.8	0.7	(100)
25-29	89.1	23.1	5.4	(120)
30-34	88.9	13.7	2.6	(106)
35-39	80.5	20.7	0.0	(58)
40-44	74.1	6.2	0.0	(51)
Years of Education				
0-7	63.7	7.2	2.7	(166)
8	90.6	16.8	1.2	(179)
9+	96.0	22.1	2.0	(182)
Ethnic Group				
Creole	95.1	21.4	2.3	(191)
Mestizo	77.6	10.4	0.3	(217)
Garifuna	94.4	19.7	0.0	(54)
Maya/Ketchi	56.6	13.2	11.3	(37)
Other	77.4	12.9	3.2	(28)
Marital Status				
Married/In Union	80.7	14.3	1.1	(379)
Sep./Div./Widowed	92.9	16.1	8.9	(34)
Single	84.7	7.3	1.5	(78)
Visiting Partner	100.0	42.4	3.0	(36)

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Appendix A: Household Amenities

The "Household Amenities Index" is simply a count of the number of items from the following list of ten household amenities that were reported to be in the household at the time of the interview: Piped water into the house; flush toilet; four or more rooms in the house (excluding bathrooms and kitchens); electricity; radio; television; refrigerator; telephone; personal vehicle; and either a gas or electric stove. These household amenities pertain to the time of the interview and do not necessarily reflect conditions at the time of a given event, such as prenatal care during the last pregnancy or the previous death of a child.

The percentage of households reporting each household item or amenity ranges from 23.2 percent for personal vehicles and 23.4 percent for piped water to 86.3 percent for radios, as shown below:

Item	Percent of Households
Radio	86.3
TV	76.5
Electricity	73.9
Stove	68.5
Refrigerator	45.2
Telephone	38.4
Flush Toilet	35.5
4 Rooms or More	30.8
Piped Water	23.4
Personal Vehicle	23.2

The highest value a respondent could receive for this index was 10 and the lowest zero. Six percent of respondents did not have any of the amenities that were included in the index. Almost 4 percent reported all 10 amenities. Otherwise, the percentage with from 1 to 9 items ranged from 8 to 11 percent. The frequency distribution is shown below:

Number of Household Amenities	Percent of Respondents
0	6.0
1	10.6
2	8.2
3	8.3
4	10.1
5	10.3
6	10.2
7	11.0
8	11.9
9	9.7
10	3.7

The respondents were divided into three groups based on the number of amenities they reported to possess:

Group I---If the household possessed 0-2 items
Group II---If the household possessed 3-7 items
Group III---If the household possessed 8-10 items

These three groups may be considered to represent lower, middle, and higher socioeconomic groups, respectively. It must be pointed out, however, that the division of this index into three groups is somewhat arbitrary. For example, a household could possess only two items such as a car and telephone, high ticket items in most developing countries, but still be classified as a Group I household. However, this is highly unlikely. Finally, the index corresponds closely with the educational level of the respondents, which is generally accepted as a surrogate of socioeconomic level.

Appendix B: Acronyms

AID	United States Agency for International Development
AIDS	Acquired Immune Deficiency Syndrome
ARI	Acute Respiratory Infection
BCG	a vaccine used to vaccinate human beings against tuberculosis
BFLA	Belize Family Life Association
CDC	Centers for Disease Control
CSO	Central Statistical Office, Belize
DPT	a vaccine used to vaccinate human beings against diphtheria, tetanus, and pertussis
FP	family planning
IPPF	International Planned Parenthood Federation
IUD	intrauterine contraceptive device
MCH	Maternal and Child Health
MOH	Ministry of Health
ORS	oral rehydration salts
ORT	oral rehydration therapy
SMAM	singulate mean age at marriage
TFR	total fertility rate
TMFR	total marital fertility rate
UNICEF	United Nations Children's Fund (formerly the United Nations International Children's Emergency Fund)
WHO	World Health Organization

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Appendix E: Sampling Errors

The estimates for a sample survey are affected by two types of errors: (1) sampling error and (2) non-sampling error. Non-sampling error is the result of mistakes made in carrying out data collection and data processing, including the failure to locate and interview the right household, errors in the way questions are asked or understood, and data entry errors. Although quality control efforts were made during the implementation of the Family Health Survey to minimize this type of error, non-sampling errors are impossible to avoid and difficult to evaluate statistically.

Sampling error is defined as the difference between the true value for any variable measured in a survey and the value estimated by the survey. Sampling error is a measure of the variability between all possible samples that could have been selected from the same population using the same sample design and size. For the entire population and for large subgroups, the Family Health Survey is large enough that the sampling error for most estimates is small. However, for small subgroups, sampling errors are larger and may affect the reliability of the estimates.

Sampling error is usually measured in terms of the standard error for a particular statistic (mean, proportion, or ratio), which is the square root of the variance. The standard error can be used to calculate confidence intervals for estimated statistics. For example, the 95 percent confidence interval for a statistic is the estimated value plus or minus 1.96 times the standard error for the estimate.

The standard errors of statistics estimated using a multistage cluster sample design, such as that used in the Family Health Survey, are more complex than are standard errors based on simple random samples, and they tend to be somewhat larger than the standard errors produced by a simple random sample. The increase in standard error due to using a multi-stage cluster design is referred to as the design effect, which is defined as the ratio between the variance for the estimate using the sample design that was used and the variance for the estimate that would result if a simple random sample had been used. Based on experience with similar surveys, the design effect generally falls in a range from 1.2 to 2.0 for most variables.

Table E.1 presents examples of what the 95 percent confidence interval on an estimated proportion would be, under a variety of sample sizes, assuming a design effect of 1.6. It presents half-widths of the 95 percent confidence intervals corresponding to sample sizes, ranging from 25 to 3200 cases, and corresponding to estimated proportions ranging from .05/.95 to .50/.50. The formula used for calculating the half-width of the 95 percent confidence interval is:

$$(\text{half of } 95\% \text{ C.I.}) = (1.96)\ \text{SQRT}\ \{(1.6)(p)(1-p) / n\},$$

where p is the estimated proportion, n is the number of cases used in calculating the proportion, and 1.6 is the design effect. It can be seen, for example, that for an estimated proportion of 0.30, and a sample of size of 200, half the width of the confidence interval is 0.08, so that the 95 percent confidence interval for the estimated proportion would be from 0.22 to 0.38. If the sample size had been 3200, instead of 200, the 95 percent confidence interval would be from 0.28 to 0.32.

The actual design effect for individual variables will vary, depending on how values of that variable are distributed among the clusters of the sample. These can be calculated using advanced statistical software for survey analysis. An addendum to this report will report design effects and standard errors for selected variables. The values in Table E.1 are given as examples of how the width of the confidence interval may vary, depending on the value of the proportion and the number of cases used in the calculation, and assuming an average design effect of 1.6.

Table E.1

Half widths of the 95 Percent Confidence Interval Corresponding
to Given Sample Sizes (n), and Estimated Proportions (p),
Assuming a Design Effect of 1.6

Estimated Proportion (p)	Sample Size (n)							
	25	50	100	200	400	800	1600	3200
.05/.95	0.108	0.076	0.054	0.038	0.027	0.019	0.014	0.010
.10/.90	0.149	0.105	0.074	0.053	0.037	0.026	0.019	0.013
.20/.80	0.198	0.140	0.099	0.070	0.050	0.035	0.025	0.018
.30/.70	0.227	0.161	0.114	0.080	0.057	0.040	0.028	0.020
.40/.60	0.243	0.172	0.121	0.086	0.061	0.043	0.030	0.021
.50/.50	0.248	0.175	0.124	0.088	0.062	0.044	0.031	0.022

QUESTIONNAIRE NUMBER __ __ __ __

1991 FAMILY HEALTH SURVEY - BELIZE

INDIVIDUAL QUESTIONNAIRE

(For women aged 15-44 years)

Identification No.

GEO. CODE		HH SCHED NO.		

Interview Calls	**1**	**2**	**3**	**Final Visit**
Month of interview				
Time started				
Time ended				
Duration				
Interview Status *				
Interviewer's Name				
Supervisor's Name				
Next Visit: Date				
Time				

* Interview status codes:

1 Completed individual interview
2 No eligible respondent
3 Residents not at home
4 Respondent not at home
5 Total Refusal
6 Partial refusal
7 Vacant Household
8 Other (specify) _____

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Reviewed by: _____ Date: _____

Edited by: _____ Date: _____

H100. What is the primary source of drinking water for members of this household?

1 Piped into residence
2 Piped into yard or plot
3 Public tap
4 Well with handpump
5 Well without handpump
6 River, spring, surface water
7 Tanker truck, other vendor
8 Vat, drum
9 Other (specify) _____

H101. What kind of toilet facility does this household have?

1 Flush
2 Bucket
3 Pit latrine
4 No facilities
8 Other (specify) _____

H102. Does this house have:

	YES	NO
Electricity?	l	2
A radio?	1	2
A television?	1	2
A refrigerator?	l	2
A telephone?	1	2
A personal vehicle?	1	2

H103. What is the floor of this house made of?

1 Wood
2 Concrete
3 Dirt
4 Tile
8 Other (specify) _____

H104. How many rooms does this house have (excluding the kitchen, bathroom, and those used for commercial purposes)?

No. of Rooms __ __

H105. What fuel is generally used for cooking?

1 Electricity
2 Propane gas
3 Kerosene
4 Wood
5 Charcoal
8 Other (specify) _____
9 Doesn't cook

H106. Mow many people (including children) usually live in this household? This should include all who usually eat and sleep here.

Total ___ ___
No. of Men ___ ___
Mo. of Women ___ ___

H107. How many women 15 to 44 years of age usually live in this household?

Number ___

INTERVIEWS: IF '0' TERMINATE THE INTERVIEW.

H108. NAME Please give me the names of the women 15-44 who usually live in this household. YOU SHOULD START WITH THE OLDEST	H109. AGE How old is she? (years)	H110. Marital Status what is her marital status7 (see 0801)	H111. Education Level What is her highest level of education attained? (see 010")
1 _____	___ ___	___	___ ___
2 _____	___ ___	___	___ ___
3 _____	___ ___	___	___ ___
4 _____	___ ___	___	___ ___
5 _____	___ ___	___	___ ___
6 _____	___ ___	___	___ ___
7 _____	___ ___	___	___ ___
8 _____	___ ___	___	___ ___

H112. Line Number of the Eligible Woman Selected ___ ___

SELECTION OF RESPONDENT

LAST DIGIT OF QUESTIONNAIRE NUMBER	NO. OF WOMEN 15-44 IN HOUSEHOLD							
	1	2	3	4	5	6	7	8
0	1	1	1	3	4	3	3	1
1	1	2	2	4	5	4	4	2
2	1	1	3	1	1	5	5	3
3	1	2	1	2	2	6	6	4
4	1	1	2	3	3	1	7	5
5	1	2	3	4	4	2	1	6
6	1	1	1	1	5	3	2	7
7	1	2	2	2	1	4	3	8
8	1	1	3	3	2	5	4	1
9	1	2	1	4	3	6	5	2

SECTION I - RESPONDENT'S CHARACTERISTICS

101. In what month and year were you born?

__ __ Month __ __ Year

98 Don't know

102. How old were you on your last birthday?

__ __ Age

98 Don't know

INTERVIEWER: COMPARE 101 WITH 102 AND CORRECT Q 101 IF INCONSISTENT. TERMINATE INTERVIEW IF THE RESPONDENT IS NOT BETWEEN THE AGES OF 15 AND 4 4

103. In what country were you born?

1 Belize
2 Mexico
3 Guatemala
4 El Salvador
5 Honduras
6 Nicaragua
7 United States
8 Other (specify) _____
9 Don't know

104. In what country did you live mostly when you were growing up, say up to age 15?

1 Belize
2 Mexico
3 Guatemala
4 El Salvador
5 Honduras
6 Nicaragua
7 United States
8 Other (specify) _____
9 Don't know

105. To which ethnic group do you belong?

1 Creole
2 Mestizo
3 Garifuna
4 Maya/Ketchi
5 Caucasian
6 East Indian
7 Asian
8 Other (specify) _____
9 No response

106. What language is usually spoken in your home?

1 English
2 Spanish
3 Creole
4 Garifuna
5 Maya
6 Ketchi
7 German
8 Other (specify) _____

107. What is the highest level of education you have attained at school, college, or university?

LEVEL	YEARS	NOT SPECIFIED
0 None	0	
1 Primary	1 2 3 4 5 6 7 8	9
2 High School	1 2 3 4	9
3 Sixth Form	1 2	9
4 University	1 2 3 4+	9
5 Teachers College	1 2 3	9
6 Nursing School	1 2 3 4	9
9 Refused		9

108. What is your religion?

0 No religion **(SKIP TO 110)**
1 Anglican
2 Mennonite
3 Methodist
4 Pentecostal
5 Roman Catholic
6 Seventh Day Adventist
7 Nazarene
8 Other (specify) _____
9 No response **(SKIP TO 110)**

109. About how often do you usually attend religious services?

1 Never
2 Less than once a month
3 Once or twice per month
4 Three to four times per month
5 Five or more times per month
9 No response

110. Now, I would like to ask you some questions about working. As you know, many women work - I mean aside from doing their own housework. Some take jobs for which they are paid in cash or kind. Others sell things, have a small business or work on the family farm or in the family business.

Have you ever worked?

1 Yes
2 No **(SKIP TO 201)**

111. How old were you when you first began to work? __ __ Age

98 Don't know

112. Are you currently working?

1 Yes
2 No **(SKIP TO 201)**

113. Do you work full or part time?

1 Full time
2 Part time

	Yes	No	NR
114. Do you work outside the home?	1	2	9
115. Do you primarily work in agriculture?	1	2	9
116. Are you self-employed?	1	2	9

SECTION II. FERTILITY

201. Are you currently pregnant?

1 Yes **(SKIP TO Q203)**
0 No
9 Not sure

202. Have you ever been pregnant?

1 Yes **(SKIP TO Q205)**
2 No **(SKIP TO Q219)**

203. When do you expect to give birth?

___ ___ Month ___ ___ Year

98 = DK

204. Is this your first pregnancy?

1 Yes **(SKIP TO Q215)**
2 No

205. Do you have any sons or daughters to whom you have given birth who are now living with you?

1 Yes
2 No **(SKIP TO Q207)**

206. How many sons live with you?

Sons at home: ___ ___

INTERVIEWER: IF NONE, ENTER '00'.

And how many daughters live with you?

Daughters at home: ___ ___

INTERVIEWER: IF NOME, ENTER '00',

207. Do you have any sons or daughters to whom you have given birth who are alive, but do not live with you?

1 Yes
2 No **(SKIP TO Q209)**

208. How many sons are alive, but do not live with you?

Sons elsewhere: ___ ___

INTERVIEWER: IF NONE, ENTER '00'

And how many daughters are alive, but do not live with you?

Daughters elsewhere: ___ ___

INTERVIEWER: IF NONE, ENTER '00'.

209. Have you ever given birth to a son or daughter who was born alive, but later died? IF NO, PROBE: Any (other) baby who cried or showed any sign of life, but only survived a few hours or days?

1 Yes
2 No **(SKIP TO Q211)**

210. In all, how many sons have died?

Sons dead: ___ ___

INTERVIEWER: IF NONE, ENTER '00'.

And how many daughters have died?

Daughters dead: ___ ___

INTERVIEWER: IF NONE, ENTER '00'.

211. Have you ever given birth to a boy or girl that was born dead after completing the sixth month of pregnancy?

1 Yes
2 No **(SKIP TO Q213)**

212. How many of your pregnancies terminated in stillbirths?

Number of stillbirths ___ ___

213. Have you ever had a miscarriage or an abortion before completing your sixth month of pregnancy?

1 Yes
2 No **(SKIP TO Q215)**
9 No Response **(SKIP TO Q215)**

214. How many miscarriages or abortions have you had before completing your sixth month of pregnancy?

Number of abortions ___ ___

215. INTERVIEWER: RECORD THE TOTALS OF QUESTIONS 201, 206, 208, 210, 212 AND 214.

201	CURRENTLY PREGNANT		___
206	TOTAL BOYS AND GIRLS AT HOME	___	___
208	TOTAL BOYS AND GIRLS LIVING ELSEWHERE	___	___
210	TOTAL CHILDREN BORN ALIVE THAT DIED	___	___
212	TOTAL STILLBIRTHS	___	___
214	TOTAL ABORTIONS	___	___
	TOTAL NUMBER OP PREGNANCIES	___	___

ASK: In total, you have had ___ ___ pregnancies, is that correct?

---

216. Have you had multiple births?

Number of multiple births ___ ___

INTERVIEWER: IF THE TOTAL NUMBER OF PREGNANCIES IS INCORRECT AND THIS IS NOT DUE TO MULTIPLE BIRTHS, RETURN TO QUESTIONS 201 THRU 214 AND PROBE AND RECONCILE.

---

217. When you became pregnant (the last time), did you want to become
pregnant?

1 Yes **(SKIP TO Q219)**
2 No
3 God's will, fate, didn't think about it **(SKIP TO Q219)**
9 Don't now, not sure **(SKIP TO Q219)**

---

218. Was lit that you wanted no more children, or that you just wanted to wait longer before another pregnancy?

1 Wanted no more children
2 Wanted to wait longer
9 Don't know, not sure, don't remember

---

219. Do *you* currently desire to become pregnant?

1 Yes
2 No
3 **CURRENTLY PREGNANT (SEE Q201)**
9 Don't know

---

220. **INTERVIEWER: SEE Q215**

1 RESPONDENT HAS ONE OR MORE LIVE BIRTHS (CONTINUE WITH Q221)
2 RESPONDENT HAS NEVER BEEN PREGNANT (SKIP TO Q280)
3 RESPONDENT PREGNANT FOR FIRST TIME (SKIP TO Q280)
4 RESPONDENT HAS ONLY HAD STILLBIRTHS AND/OR ABORTIONS (SKIP TO Q280)

Now I would like to talk to you about all of your births, whether still alive or not, starting with the last one you had.

RECORD NAMES'OF ALL THE BIRTHS IN Q221. RECORD TWINS AND TRIPLETS ON SEPARATE LINES.

221. What name was given to your (last, next to last, etc.) baby?	222. Is (name) a boy or girl?	223. In what month and year was (name) born? (ASK AGE IF MONTH AND/OR YEAR UNKNOWN)	224. Is (name) still alive?	225. IF DEAD: How old was he/she when he/she died? If "1 Yr ' PROBE: How many months old was (name)? Record Days if less than 1 month; months if less than 2 Yrs or Yrs.
01 _____ (name)	1 Boy 2 Girl	Month ____ ____ Year ____ ____ DK = 98 Age ____ ____	1 Yes 2 No	1 Days ____ ____ 2 Months ____ ____ 3 Years ____ ____ DK 98
02 _____ (name)	1 Boy 2 Girl	Month ____ ____ Year ____ ____ DK = 98 Age ____ ____	1 Yes 2 No	1 Days ____ ____ 2 Months ____ ____ 3 Years ____ ____ DK 98
03 _____ (name)	1 Boy 2 Girl	Month ____ ____ Year ____ ____ DK = 98 Age ____ ____	1 Yes 2 No	1 Days ____ ____ 2 Months ____ ____ 3 Years ____ ____ DK 98
04 _____ (name)	1 Boy 2 Girl	Month ____ ____ Year ____ ____ DK = 98 Age ____ ____	1 Yes 2 No	1 Days ____ ____ 2 Months ____ ____ 3 Years ____ ____ DK 98
05 _____ (name)	1 Boy 2 Girl	Month ____ ____ Year ____ ____ DK = 98 Age ____ ____	1 Yes 2 No	1 Days ____ ____ 2 Months ____ ____ 3 Years ____ ____ DK 98
06 _____ (name)	1 Boy 2 Girl	Month ____ ____ Year ____ ____ DK = 98 Age ____ ____	1 Yes 2 No	1 Days ____ ____ 2 Months ____ ____ 3 Years ____ ____ DK 98
07 _____ (name)	1 Boy 2 Girl	Month ____ ____ Year ____ ____ DK = 98 Age ____ ____	1 Yes 2 No	1 Days ____ ____ 2 Months ____ ____ 3 Years ____ ____ DK 98
08 _____ (name)	1 Boy 2 Girl	Month ____ ____ Year ____ ____ DK = 98 Age ____ ____	1 Yes 2 No	1 Days ____ ____ 2 Months ____ ____ 3 Years ____ ____ DK 98

09 _____ (name)	1 Boy 2 Girl	Month ____ ____ Year ____ ____ DK = 98 Age ____ ____	1 Yes 2 No	1 Days ____ ____ 2 Months ____ ____ 3 Years ____ ____ DK 98
10 _____ (name)	1 Boy 2 Girl	Month ____ ____ Year ____ ____ DK = 98 Age ____ ____	1 Yes 2 No	1 Days ____ ____ 2 Months ____ ____ 3 Years ____ ____ DK 98
11 _____ (name)	1 Boy 2 Girl	Month ____ ____ Year ____ ____ DK = 98 Age ____ ____	1 Yes 2 No	1 Days ____ ____ 2 Months ____ ____ 3 Years ____ ____ DK 98
12 _____ (name)	1 Boy 2 Girl	Month ____ ____ Year ____ ____ DK = 98 Age ____ ____	1 Yes 2 No	1 Days ____ ____ 2 Months ____ ____ 3 Years ____ ____ DK 98
13 _____ (name)	1 Boy 2 Girl	Month ____ ____ Year ____ ____ DK = 98 Age ____ ____	1 Yes 2 No	1 Days ____ ____ 2 Months ____ ____ 3 Years ____ ____ DK 98
14 _____ (name)	1 Boy 2 Girl	Month ____ ____ Year ____ ____ DK = 98 Age ____ ____	1 Yes 2 No	1 Days ____ ____ 2 Months ____ ____ 3 Years ____ ____ DK 98

INTERVIEWER: COMPARE THE SUM OP Q2 06, Q2 08 AND Q210 WITH NUMBER OP BIRTHS RECORDED IN HISTORY ABOVE. IF THE NUMBER ARE DIFFERENT, PROBE AND RECONCILE.

MAKE SURE THAT FOR EACH LIVE BIRTH, MONTH AND YEAR OF BIRTH IS RECORDED. SIMILARLY, FOR EACH CHILD THAT HAS DIED THAT THE AGE AT DEATH IS RECORDED.

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226. INTERVIEWER: CHECK Q223 AND ENTER THE NUMBER OF LIVE BIRTHS SINCE JANUARY, 1986 ___ ___

IF '00', SKIP TO Q280

Now, I would like to make a list of all the live births that you've had since January, 1986 whether they are still alive or not. We will start with your last live birth.

INTERVIEWER:

- **RECORD THE NAME OF EACH LIVE BIRTH AT THE TOP OP EACH COLUMN BEGINNING WITH THE LAST LIVE BIRTH IN COLUMN 1 AND CONTINUE IN ORDER OF BIRTH FROM YOUNGEST TO OLDEST.**
- **IF THERE ARE MORE THAN FIVE BIRTHS, TERMINATE THE LIST IN COLUMN 5.**
- **IF THERE ARE MULTIPLE BIRTHS (TWINS, TRIPLETS) REGISTER THESE LIVEBIRTHS IN SEPARATE COLUMNS. DRAW A LINE CONNECTING LIVEBIRTHS FROM THE SAME PREGNANCIES.**

BIRTH HISTORY CHART

	(1) Last Birth	(2) Next to Last Birth	(3) Second From Last Birth	(4) Third From Last Birth	(5) Fourth From Last
RECORO MAME	_____	_____	_____	_____	_____
CHECK 224. CHILD ALIVE OR DEAD?	1 Alive 2 Dead	1 Alive 2 Dead	1 Alive 2 Dead	1 Alive 2 Dead	1 Alive 2 Dead
227. How many pounds and ounces did the baby weigh at birth?	Lbs. ___ ___ Ozs. ___ ___ 98 Don't know	Lbs. ___ ___ Ozs. ___ ___ 98 Don't know	Lbs. ___ ___ Ozs. ___ ___ 98 Don't know	Lbs. ___ ___ Ozs. ___ ___ 98 Don't know	Lbs. ___ ___ Ozs. ___ ___ 98 Don't know

IF WEIGHT IS GIVEN, SKIP TO Q229, OTHERWISE CONTINUE

228. Did (s/he) weigh more or less than five and one half pounds?	1 More 2 5 1/2 or less	1 More 2 5 1/2 or less	1 More 2 5 1/2 or less	1 More 2 5 1/2 or less	1 More 2 5 1/2 or less
229. When you were pregnant with (NAME) did you see anyone for a check on this pregnancy?	1 Yes 2 No (SKIP TO 235)	1 Yes 2 No (SKIP TO 235)	1 Yes 2 No (SKIP TO 235)	1 Yes 2 No (SKIP TO 235)	1 Yes 2 No (SKIP TO 235)
230. Where did you go for most of this care?	1 Gov't Health Centre/Clinic 2 Gov't Hospital 3 Private hospital 4 Pyt. Doctor/Clinic 5 Midwife/TBA 8 Other	1 Gov't Health Centre/Clinic 2 Gov't Hospital 3 Private hospital 4 Pyt. Doctor/Clinic 5 Midwife/TBA 8 Other	1 Gov't Health Centre/Clinic 2 Gov't Hospital 3 Private hospital 4 Pyt. Doctor/Clinic 5 Midwife/TBA 8 Other	1 Gov't Health Centre/Clinic 2 Gov't Hospital 3 Private hospital 4 Pyt. Doctor/Clinic 5 Midwife/TBA 8 Other	1 Gov't Health Centre/Clinic 2 Gov't Hospital 3 Private hospital 4 Pyt. Doctor/Clinic 5 Midwife/TBA 8 Other
231. How many months were you pregnant when you made your first visit?	Number of months pregnant ___ ___ DK 98	Number of months pregnant ___ ___ DK 98	Number of months pregnant ___ ___ DK 98	Number of months pregnant ___ ___ DK 98	Number of months pregnant ___ ___ DK 98
232. How many times did you go?	___ ___ Times	___ ___ Times	___ ___ Times	___ ___ Times	___ ___ Times
233. (FOR THE LAST TWO CHILDREN ONLY) How much, in total, did you spend on these visits when you were pregnant with (NAME)?	Amount for visits; $ ___ ___ ___ ___ FREE = 7777 DK = 9999	Amount for visits; $ ___ ___ ___ ___ FREE = 7777 DK = 9999			
234. (FOR THE LAST TWO CHILDREN ONLY) How much, in total, did you spend on drugs or vitamins required for your pregnancy when you were pregnant with (NAME)?	Amount for drugs or vitamins: $ ___ ___ ___ ___ FREE = 777 DK = 999	Amount for drugs or vitamins: $ ___ ___ ___ ___ FREE = 777 DK = 999			

235. When you were pregnant with (NAME) were you given any injection (shot in the arm) to prevent the baby from getting tetanus, that is, lock jaw?	1 Yes 2 No 9 Don't know	1 Yes 2 No 9 Don't know	1 Yes 2 No 9 Don't know	1 Yes 2 No 9 Don't know	1 Yes 2 No 9 Don't know
236. Where did you give birth to (NAME)?	1 Gov't Hospital 2 Pvt. Hospital 3 Own Home 4 Home of a relative or friend 8 Other _____	1 Gov't Hospital 2 Pvt. Hospital 3 Own Home 4 Home of a relative or friend 8 Other _____	1 Gov't Hospital 2 Pvt. Hospital 3 Own Home 4 Home of a relative or friend 8 Other _____	1 Gov't Hospital 2 Pvt. Hospital 3 Own Home 4 Home of a relative or friend 8 Other _____	1 Gov't Hospital 2 Pvt. Hospital 3 Own Home 4 Home of a relative or friend 8 Other _____
237. Who assisted with the delivery of (NAME)?	1 Doctor 2 Nurse Midwife 3 Midwife/TBA 5 No one 8 Other _____	1 Doctor 2 Nurse Midwife 3 Midwife/TBA 5 No one 8 Other _____	1 Doctor 2 Nurse Midwife 3 Midwife/TBA 5 No one 8 Other _____	1 Doctor 2 Nurse Midwife 3 Midwife/TBA 5 No one 8 Other _____	1 Doctor 2 Nurse Midwife 3 Midwife/TBA 5 No one 8 Other _____
238. Was this a normal delivery (vaginal) or was it a forcep/caesarean delivery?	1 Normal delivery 2 Forceps Delivery 3 Caesarean Section	1 Normal delivery 2 Forceps Delivery 3 Caesarean Section	1 Normal delivery 2 Forceps Delivery 3 Caesarean Section	1 Normal delivery 2 Forceps Delivery 3 Caesarean Section	1 Normal delivery 2 Forceps Delivery 3 Caesarean Section
239. (FOR THE LAST TWO CHILDREN ONLY) Did you make any payments to the facility or birth attendant for the delivery of (NAME)?	1 Yes 2 No (SKIP TO 241) 9 Don't know (SKIP TO 241)	1 Yes 2 No (SKIP TO 241) 9 Don't know (SKIP TO 241)			
240. (FOR THE LAST TWO CHILDREN ONLY) How much did you pay, in total, for the delivery of (NAME)?	Amount for delivery: $ __ . __ __ __ DK = 9999	Amount for delivery: $ __ . __ __ __ DK = 9999			
241. After the delivery of (NAME], did you have if of these? (READ EACH ONE)					
A. Did you receive a medical checkup, that is **a** postpartum check up, about 5 to 6 weeks after [name] was born?	1 Yes 2 No 9 Don't Remember	1 Yes 2 No 9 Don't Remember	1 Yes 2 No 9 Don't Remember	1 Yes 2 No 9 Don't Remember	1 Yes 2 No 9 Don't Remember
B. After (name) was born did you take him/her for a newborn medical check up?	1 Yes 2 No 9 Don't Remember	1 Yes 2 No 9 Don't Remember	1 Yes 2 No 9 Don't Remember	1 Yes 2 No 9 Don't Remember	1 Yes 2 No 9 Don't Remember
242. When you became pregnant did you want to become pregnant?	1 Yes (SKP TO Q244) 2 No 9 Don't know	1 Yes (SKP TO Q244) 2 No 9 Don't know	1 Yes (SKP TO Q244) 2 No 9 Don't know	1 Yes (SKP TO Q244) 2 No 9 Don't know	1 Yes (SKP TO Q244) 2 No 9 Don't know

243. Was it that you wanted no more children, or that you just wanted to wait longer before another pregnancy?	1 Wanted no more children 2 Wanted to wait longer 9 Don't know	1 Wanted no more children 2 Wanted to wait longer 9 Don't know	1 Wanted no more children 2 Wanted to wait longer 9 Don't know	1 Wanted no more children 2 Wanted to wait longer 9 Don't know	1 Wanted no more children 2 Wanted to wait longer 9 Don't know
244. Did you ever breastfeed (NAME)?	1 Yes (SKIP TO 246) 2 No	1 Yes (SKIP TO 252) 2 No	1 Yes (SKIP TO 252) 2 No	1 Yes (SKIP TO 252) 2 No	1 Yes (SKIP TO 252) 2 No
245. Why did you not breastfeed (NAME)7	1 Mother ill/weak 2 Child ill/weak 3 Child died 4 Nipple/Breast problem 5 No milk 6 Working 7 Child refused 8 Other _____ (specify) (SKIP TO Q256)	1 Mother ill/weak 2 Child ill/weak 3 Child died 4 Nipple/Breast problem 5 No milk 6 Working 7 Child refused 8 Other _____ (specify) (SKIP TO Q256)	1 Mother ill/weak 2 Child ill/weak 3 Child died 4 Nipple/Breast problem 5 No milk 6 Working 7 Child refused 8 Other _____ (specify) (SKIP TO Q256)	1 Mother ill/weak 2 Child ill/weak 3 Child died 4 Nipple/Breast problem 5 No milk 6 Working 7 Child refused 8 Other _____ (specify) (SKIP TO Q256)	1 Mother ill/weak 2 Child ill/weak 3 Child died 4 Nipple/Breast problem 5 No milk 6 Working 7 Child refused 8 Other _____ (specify) (SKIP TO Q256)
246. How long after birth did you first put (NAME) to the breast? RECORD IN DAYS IF MORE THAN 24 HOURS.	000 Immediately 1 Hours __ __ 2 Days __ __				
247. IF STILL ALIVE: Are you still breastfeeding (NAME)? (IF DEAD, CIRCLE '2')	1 Yes 2 No (SKIP TO Q252)				
248. How many times did you breastfeed last night between 6 p.m. and 6 a.m. (IF ANSWER IS HOT NUMERIC, PROBE FOR APROXIMATE NO.)	Number of nighttime feedings __ __				
249. How many times did you breastfeed yesterday during the daylight hours? (IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NO.)	Number of daylight feedings __ __				

250. At any time yesterday or last night was(NAME) given any of the following?:

	Yes	No
Plain water?	1	2
Sugar water?	1	2
Juice?	1	2
Herbal tea?	1	2
Baby formula7	1	2
Fresh milk?	1	2
Tinned or powdered milk?	1	2
Other liquids?	1	2
Any solid or mashed food?	1	2

251. CHECK Q250 FOOD OR LIQUID GIVEN YESTERDAY?	Yes to one or more ___ (SKIP TO 256) No to all ___ (SKIP TO 255)				
252. For how many months did you breastfeed (NAME)?	Months ___ ___ 00 < 1 month 95 Until died (SKIP TO Q255)	Months ___ ___ 00 < 1 month 95 Until died (SKIP TO Q255)	Months ___ ___ 00 < 1 month 95 Until died (SKIP TO Q255)	Months ___ ___ 00 < 1 month 95 Until died (SKIP TO Q255)	Months ___ ___ 00 < 1 month 95 Until died (SKIP TO Q255)
253. Why did you stop breastfeeding (NAME)?	01 Mother ill/weak 02 Child ill/weak 03 Child died 04 Nipple/Breast problem 05 No milk 06 Working 07 Child refused 08 Weaning age 09 Became pregnant 10 Other _____ (specify)	01 Mother ill/weak 02 Child ill/weak 03 Child died 04 Nipple/Breast problem 05 No milk 06 Working 07 Child refused 08 Weaning age 09 Became pregnant 10 Other _____ (specify)	01 Mother ill/weak 02 Child ill/weak 03 Child died 04 Nipple/Breast problem 05 No milk 06 Working 07 Child refused 08 Weaning age 09 Became pregnant 10 Other _____ (specify)	01 Mother ill/weak 02 Child ill/weak 03 Child died 04 Nipple/Breast problem 05 No milk 06 Working 07 Child refused 08 Weaning age 09 Became pregnant 10 Other _____ (specify)	01 Mother ill/weak 02 Child ill/weak 03 Child died 04 Nipple/Breast problem 05 No milk 06 Working 07 Child refused 08 Weaning age 09 Became pregnant 10 Other _____ (specify)
254. INTERVIEWER: REFER TO TOP OF CHART: CHILD ALIVE?	1 Alive—(SKIP TO 256) 2 Dead	1 Alive—(SKIP TO 256) 2 Dead	1 Alive—(SKIP TO 256) 2 Dead	1 Alive—(SKIP TO 256) 2 Dead	1 Alive—(SKIP TO 256) 2 Dead
255. Was (NAME) ever given any water, or something else to drink or eat (other than breastmilk)?	1 Yes 2 No (SKP TO 257)	1 Yes 2 No (SKP TO 257)	1 Yes 2 No (SKP TO 257)	1 Yes 2 No (SKP TO 257)	1 Yes 2 No (SKP TO 257)
256. How many months old was (NAME) when you started giving him/her the following?					
Formula or milk other than breastmilk?	Age in months ___ ___ 96 Not given	Age in months ___ ___ 96 Not given	Age in months ___ ___ 96 Not given	Age in months ___ ___ 96 Not given	Age in months ___ ___ 96 Not given
Water or other liquids?	Age in months ___ ___ 96 Not given	Age in months ___ ___ 96 Not given	Age in months ___ ___ 96 Not given	Age in months ___ ___ 96 Not given	Age in months ___ ___ 96 Not given
Any solid or mashed food?	Age in months ___ ___ 96 Not given (IF LESS THAN ONE MONTH, RECORD '00') (DK = 98)	Age in months ___ ___ 96 Not given (IF LESS THAN ONE MONTH, RECORD '00') (DK = 98)	Age in months ___ ___ 96 Not given (IF LESS THAN ONE MONTH, RECORD '00') (DK = 98)	Age in months ___ ___ 96 Not given (IF LESS THAN ONE MONTH, RECORD '00') (DK = 98)	Age in months ___ ___ 96 Not given (IF LESS THAN ONE MONTH, RECORD '00') (DK = 98)
257. How many months after the birth of (NAME) did your menstrual period first return?	Months ___ ___ 96 Hasn't returned 98 Don't remember	Months ___ ___ 96 Hasn't returned 98 Don't remember	Months ___ ___ 96 Hasn't returned 98 Don't remember	Months ___ ___ 96 Hasn't returned 98 Don't remember	Months ___ ___ 96 Hasn't returned 98 Don't remember
258. Have you resumed sexual relations since the birth of (NAME)?	1 Yes 2 No (SKIP TO Q260)				

259. How many weeks after the birth of (NAME) did you resume sexual relations?	Weeks __ __ DK = 98				
260. INTERVIEWER: CHECK TOP OF CHART ON PAGE 10. IS CHILD ALIVE OR DEAD?	1 Alive __ 2 Dead (NEXT CHILD)	1 Alive __ 2 Dead (NEXT CHILD)	1 Alive __ 2 Dead (NEXT CHILD)	1 Alive __ 2 Dead (NEXT CHILD)	1 Alive __ 2 Dead (NEXT CHILD)
261. In the last two weeks has (NAME) had any of the following symptoms?	YES NO DR	YES NO DR	YES NO DR	YES NO DR	YES NO DR
Red/teary eyes	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9
Stuffed/runny nose	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9
Sneezing	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9
Cough	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9
High fever	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9
Sore throat	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9
Hoarseness	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9
Difficulty swallowing	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9
Earache (or ear secretions)	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9
Rapid, difficult and loud breathing	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9
Sunken chest	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9
Blue or purple lips	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9
Periods of not breathing	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9

(IF ALL RESPONSES IN 261 ARE CODE 2 AND/OR 9 THEN GO TO 268)

262. How many days did the symptoms last?	Number of days __ __ 00 Began today 98 DK/DR	Number of days __ __ 00 Began today 98 DK/DR	Number of days __ __ 00 Began today 98 DK/DR	Number of days __ __ 00 Began today 98 DK/DR	Number of days __ __ 00 Began today 98 DK/DR
263. Did you do anything to improve (NAME)'s condition?	1 Yes 2 No (GO TO 267)	1 Yes 2 No (GO TO 267)	1 Yes 2 No (GO TO 267)	1 Yes 2 No (GO TO 267)	1 Yes 2 No (GO TO 267)
264. Did you seek advice or treatment from any of the following? 0 None 1 Community Health Worker 2 Govt. Health Ctr/CUnic 3 Govt. Hospital 4 Private or Mission Hospital 5 Private Doctor/Clinic 6 Traditional Healer 7 Private Pharmacy 8 Other (specify)	Location: __ __ __ __	Location: __ __ __ __	Location: __ __ __ __	Location: __ __ __ __	Location: __ __ __ __

265. What type of treatment did the chi (READ EACH ONE)	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
Antibiotics	1	2	1	2	1	2	1	2	1	2
Were these prescribed by the health center or doctor?	1	2	1	2	1	2	1	2	1	2
Aspirin/Anti febril	1	2	1	2	1	2	1	2	1	2
Expectorant/Antidecongestant	1	2	1	2	1	2	1	2	1	2
Pills, syrups, other unspecified Treatment	1	2	1	2	1	2	1	2	1	2
Home remedies	1	2	1	2	1	2	1	2	1	2
Specify	_____		_____		_____		_____		_____	
Hospitalized for more than 24 hours	1	2	1	2	1	2	1	2	1	2
Other (specify)	1	2	1	2	1	2	1	2	1	2
	_____		_____		_____		_____		_____	
266. During this illness how much was spent for treatment and medicines?	$ __ __ __ FREE = 777 DK = 999 (GO TO Q268)		$ __ __ __ FREE = 777 DK = 999		$ __ __ __ FREE = 777 DK = 999 (GO TO Q268)		$ __ __ __ FREE = 777 DK = 999 (GO TO Q268)		$ __ __ __ FREE = 777 DK = 999 (GO TO Q268)	
267. Why did you do nothing?										
Was not necessary, was not serious	1		1		1		1		1	
Perhaps should have, but didn't have time	2		2		2		2		2	
Didn't know what to do or what to give the child	3		3		3		3		3	
Did not have any remedies to give the child	4		4		4		4		4	
Unable to go to health center/doctor	5		5		5		5		5	
Did not have enough money	6		6		6		6		6	
Went to the health center, but they did not see us; it was closed	7		7		7		7		7	
The health center is too far away or hard to get to	8		8		8		8		8	
Other (specify)	9		9		9		9		9	
	_____		_____		_____		_____		_____	
Don't know/don't remember	98		98		98		98		98	

268. Sometimes, children have diarrhea, that is to say more frequent liquid stools in a day than what is normal. Has (NAME) had diarrhea in the last two weeks?	1 Yes (GO TO 269) 2 No (GO TO 279) 9 DK/DR (GO TO 279)	1 Yes (GO TO 269) 2 No (GO TO 279) 9 DK/DR (GO TO 279)	1 Yes (GO TO 269) 2 No (GO TO 279) 9 DK/DR (GO TO 279)	1 Yes (GO TO 269) 2 No (GO TO 279) 9 DK/DR (GO TO 279)	1 Yes (GO TO 269) 2 No (GO TO 279) 9 DK/DR (GO TO 279)
269. How long has the diarrhea lasted/ did the diarrhea last?	Days _____ (IF LESS THAN 1 DAY ENTER '00') 98 = DK	Days _____ (IF LESS THAN 1 DAY ENTER '00') 98 = DK	Days _____ (IF LESS THAN 1 DAY ENTER '00') 98 = DK	Days _____ (IF LESS THAN 1 DAY ENTER '00') 98 = DK	Days _____ (IF LESS THAN 1 DAY ENTER '00') 98 = DK
270. Was there any blood and/or mucous in in the stools?	1 Yes 2 No 9 DK	1 Yes 2 No 9 DK	1 Yes 2 No 9 DK	1 Yes 2 No 9 DK	1 Yes 2 No 9 DK

271. When (NAME) had diarrhea did she/he have?

	YES	NO	DK/DR	YES	NO	DK/DR	YES	NO	DK/DR	YES	NO	DK/DR	YES	NO	DK/DR
Dry/wrinkled skin	1	2	9	1	2	9	1	2	9	1	2	9	1	2	9
Sunken/dry eyes	1	2	9	1	2	9	1	2	9	1	2	9	1	2	9
Sunken fontenal (Mole drop)	1	2	9	1	2	9	1	2	9	1	2	9	1	2	9
Dry lips	1	2	9	1	2	9	1	2	9	1	2	9	1	2	9

272. Did you do anything to improve the child's condition?	1 Yes 2 No (GO TO 278)	1 Yes 2 No (GO TO 278)	1 Yes 2 No (GO TO 278)	1 Yes 2 No (GO TO 278)	1 Yes 2 No (GO TO 278)
273. Did you seek advice or treatment from any of the following? 0 None 1 Community Health Worker 2 Govt. Health Ctr/Clinic 3 Govt. Hospital 4 Private or Mission Hospital 5 Private Doctor/Clinic 6 Traditional Healer 7 Private Pharmacy 8 Other (specify)	Location: __ __ __ __	Location: __ __ __ __	Location: __ __ __ __	Location: __ __ __ __	Location: __ __ __ __

274. Whet type of treatment did the child receive? (READ EACH ONE)	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
Antibiotics	1	2	1	2	1	2	1	2	1	2
Were these prescribed by the health center or a doctor?	1	2	1	2	1	2	1	2	1	2
Antidiarretics	1	2	1	2	1	2	1	2	1	2
Were these prescribed by the health center or a doctor?	1	2	1	2	1	2	1	2	1	2
Remedies (over the counter syrup, tablets, etc.)	1	2	1	2	1	2	1	2	1	2
ORS (Oral Rehydration Salts)	1	2	1	2	1	2	1	2	1	2
Homemade salt/sugar solution	1	2	1	2	1	2	1	2	1	2
Traditional remedies	1	2	1	2	1	2	1	2	1	2
IV (Intravenous treatment)	1	2	1	2	1	2	1	2	1	2
Hospitalization more than 24 hours	1	2	1	2	1	2	1	2	1	2
Other treatments (specify):	1	2	1	2	1	2	1	2	1	2
275. During this illness how much was spent for treatment and medicines?	$ __ __ __ FREE = 777 DK = 999		$ __ __ __ FREE = 777 DK = 999		$ __ __ __ FREE = 777 DK = 999		$ __ __ __ FREE = 777 DK = 999		$ __ __ __ FREE = 777 DK = 999	
276. During the time of the diarrhea, did you change the child's feeding patterns?	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
Cave normal diet	1	2	1	2	1	2	1	2	1	2
Gave only soft foods	1	2	1	2	1	2	1	2	1	2
Gave less food	1	2	1	2	1	2	1	2	1	2
Gave more frequent feedings	1	2	1	2	1	2	1	2	1	2
Gave other types of food (specify):	1	2	1	2	1	2	1	2	1	2
277. During the time of the diarrhea did you change the amount of liquids you were giving him/her?	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
	1	2	1	2	1	2	1	2	1	2
Decreased liquids	1	2	1	2	1	2	1	2	1	2
Increased liquids	1	2	1	2	1	2	1	2	1	2
Only breastfed	1	2	1	2	1	2	1	2	1	2
Withheld milk	(GO TO 279)		(GO TO 279)		(GO TO 279)		(GO TO 279)		(GO TO 279)	

278. Why did you do nothing?

Was not necessary, was not serious	1	1	1	1	1
Perhaps should have, but didn't think it would make any difference	2	2	2	2	2
Didn't know what to do or what to give the child	3	3	3	3	3
Did not have any remedies to give the child	4	4	4	4	4
Unable to go to health center/doctor	5	5	5	5	5
Did not have enough money	6	6	6	6	6
The health center was too far away	8	8	8	8	8
Other (specify)	9	9	9	9	9
Don't know/don't remember	98	98	98	98	98

279. For your children under five, I'd like to get some information about their vaccinations. Do you have a card where (NAME'S) vaccinations are written down? IF TES, may I please see it?

INTERVIEWER:
RECORD THE INFORMATION FOR EACH DOSE, MONTH AND YEAR, VERT CAREFULLY. IF THE MOTHER DOES NOT HAVE A VACCINATION CARD FOR THE CHILD, COMPLETE THE TABLE BELOW CONSULTING WITH THE MOTHER

	LAST BIRTH				NEXT TO LAST BIRTH				SECOND TO LAST BIRTH				THIRD TO LAST BIRTH				FOURTH TO LAST BIRTH			
	NAME				NAME				NAME				NAME				NAME			
		CODE	MO	YR		CODE	MO	YR		CODE	MO	YR		CODE	MO	YR		CODE	MO	YR
BCG?	BCG				BCG				BCG				BCG				BCG			
POLIO 1?	P1				P1				P1				P1				P1			
POLIO 2?	P2				P2				P2				P2				P2			
POLIO 3?	P3				P3				P3				P3				P3			
POLIO B	PB				PB				PB				PB				PB			
DPT 1?	D1				D1				D1				01				D1			
DPT 2?	D2				02				02				02				D2			
DPT 3?	D3				D3				D3				D3				D3			
DPT B?	DPTB				DPTB				DPTB				DPTI				DPTB			
MEASLES1	MEA1				MEA1				MEA1				MEA1				MEA1			
MEASLES2	MEA2				MEA2				MEA2				MEA2				MEA2			

CODES:
1 HAS DOSE ACCORDING TO VACCINATION CARD
2 HAS DOSE ACCORDING TO MOTHER
3 DOES NOT HAVE DOSE
9 DOESN'T KNOW/REMEMBER

MONTH/YEAR:
DON'T KNOW/REMEMBER = 98

280. Now I would like to ask about your opinion towards child-bearing. What is the main reason a woman might wish to limit the number of children that she has?

1 Financial
2 Work Belated
3 Schooling
4 Health of Mother
5 Physical Appearance
6 Child Care Problems
7 Health of Child

88 Other (specify) _____
98 Don't know
99 No answer

281. How old do you think a child should be before the mother stops giving only breast milk to him/her?

___ ___ Months
77 As long as possible
98 Don't know

282. How many months old do you think it is best for a child to be before another child is born?

___ ___ Months
98 Don't know

283. Who should decide the number of children a couple wants to have?

1 Husband/Partner
2 Wife/Woman
3 Both
4 Mother-in-law
5 Fate, Up to God
8 Other (specify) _____

284. During a woman's menstrual cycle, when is it most likely that she will become pregnant? **[READ]**

1 During her period
2 Right after her period has ended
3 In the middle of the cycle
4 Just before her period begins
5 At any time
8 Other (specify) _____
9 Don't know

INTERVIEWER: CHECK Q215

1 IF NO LIVE BIRTHS (CONTINUE WITH Q285)
2 IF ONE OR MORE LIVE BIRTHS (SKIP TO Q286)

285. If you could choose exactly the number of children to have In your whole life, how many would that be?

___ ___ Number
77 God's Will
98 Don't know
99 No response

(SKIP TO Q301)

286. If you could go back to the time when you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?

___ ___ Number
77 God's Will
98 Don't know
99 No response

(CONTINUE WITH Q301)

SECTION III - FAMILY PLANNING

301. Now, I would like to talk about methods that people use to space or limit the number of children they have.

a. FIRST ASK: Please tell me all the methods you have heard of to space or limit the number of children a person has. [CIRCLE NUMBER "1" NEXT TO EACH METHOD MENTIONED.]

b. THEN: READ EACH METHOD NOT MENTIONED AND CIRCLE "2" OR "3", AS APPROPRIATE.

c. THEN: ASK QUESTIONS ABOUT USE FOR EVERY METHOD KNOWN BY THE RESPONDENT. [CIRCLE "4" OR "5" AS APPROPRIATE.]

Method	Sponta-neous	Have you Ever Heard of (method)?		Have you/your Partner ever used (method)	
		Yes	No	Yes	No
1. Female Sterilization, Tubal Ligation, Tying Off	1	2	3	4	5
2. Male Sterilization, Vasectomy	1	2	3	4	5
3. Pill, oral contraceptives	1	2	3	4	5
4. Injection	1	2	3	4	5
5. Inter-Uterine Device/Coil (IUD)	1	2	3	4	5
6. Condoms	1	2	3	4	5
7. Diaphragm	1	2	3	4	5
8. Vaginal Foaming Tablets	1	2	3	4	5
9. Vaginal Creams/Jellies/Foam	1	2	3	4	5
10. Rhythm (Calendar Method)	1	2	3	4	5
11. Billings Method	1	2	3	4	5
12. Withdrawal	1	2	3	4	5

302. INTERVIEWER: RESPONDENT HAS EVER USED AT LEAST ONE METHOD OF CONTRACEPTION (CODE "4" IN QUESTION Q301)?

1 Yes
2 No **(SKIP TO Q305)**

303. Are you currently using a method of contraception?

1 Yes
2 No **(SKIP TO Q305)**

304. What is the method you are currently using? **[RECORD ONLY ONE METHOD, THE MOST EFFECTIVE]**

1 Female Sterilization, Tubal Ligation, Tie Off
2 Male Sterilization, Vasectomy
3 Pill
4 Injection
5 Inter-Uterine Device/Coil/IUD
6 Condom
7 Diaphragm
8 Foaming Tablets
9 Creams/Jellies
10 Rhythm (Calendar Method)
11 Billings Method
12 withdrawal

308. Who should decide whether a person should use a method of contraception?

1 Husband/Partner
2 Wife/Woman
3 Both
4 Mother-in-law
5 Nurse
6 Doctor
7 Midwife
8 Doesn't believe in using contraception
88 Other (specify) _____
98 Don't know

INTERVIEWER: OBSERVE THE FOLLOWING SKIPS:

- **IF RESPONDENT HAS NEVER USED CONTRACEPTION (Q302 = "NO") SKIP TO Q312.**
- **IF RESPONDENT IS USING CONTRACEPTION NOW (Q303 = "YES" AND Q304 = "METHODS 3 - 12") SKIP TO Q320.**
- **IF RESPONDENT OR HUSBAND IS STERILIZED (Q304 = "METHODS 1 OR 2"), SKIP TO Q501.**
- **IF RESPONDENT HAS USED CONTRACEPTION IN THE PAST, BUT IS NOT USING IT NOW (0302 = "YES" AND Q303 = "NO"), CONTINUE.**

306. How old were you when you first used contraception?

___ ___ Age
98 Don't know
99 No response

307. How many living children did you have when you first used contraception?

___ ___ Number
98 Don't know
99 No response

308. What was the family planning method you used most recently?

1 Female Sterilization, Ligation, Tie Off
2 Male Sterilization, Vasectomy
3 Pill
4 Injection
5 Inter-Uterine Device/Coil/IUD
6 Condom
7 Diaphragm Tubal
8 Foaming Tablets
9 Creams/Jellies
10 Rhythm (Calendar Method)
11 Billings Method
12 Withdrawal

309. What was the month and year you stopped using this method?

___ ___ Month___ ___ Year
98 Don't know

310. Why did you stop using that method?

1 Desire Pregnancy
2 Not Sexually Active
3 Fears Side Effects
4 Spouse Opposes
5 Religion
6 Had Bad Side Effects
7 Advanced Age
8 Lack of Knowledge
9 Far Distance to Source
10 Doesn't Like or Want to Use
11 Sexual Intercourse Not Satysfying
12 Method Not Effective
13 Method Difficult to Use
14 Lack of Money
15 Health/Medical Reasons
16 Infertile
17 Embarassed to Use
88 Other (specify) _____
98 Don't know

311. Where did you/your partner get your family planning supplies?

1 Clinic
2 Gov't Hospital
3 Private Hospital
4 Private Doctor/Clinic
5 BFLA
6 Pharmacy/Drug Store
7 Guatemala or Mexico
8 Herself/Partner
9 Church
10 Friend/neighbor/family member
88 Other (specify) _____
98 DK/DR

INTERVIEWER: IF PREGNANT NOW (CHECK Q201), SKIP TO Q316

312. Do you think you are able to get pregnant at the present time?

1 Yes **(SKIP TO Q314)**
2 No
3 Not sure, don't know **(SKIP TO Q314)**

313. why not?

1 Menopause **(SKIP TO Q701)**

2 Has had an operation for medical reasons which makes pregnancy impossible (or husband/partner has had an operation)(SKIP TO Q701)

3 Has tried to get pregnant for at least 2 years without success (or has not gotten pregnant despite at least 2 years of non-contraception) (**SKIP TO Q701)**

4 Not sexually active **(SKIP TO Q316)**

5 Postpartum/breast-feeding **(SKIP TO Q316)**

8 Other (specify) _____

314. Would you like to become pregnant now?

1 Yes **(SKIP TO Q316)**
2 No
3 God's will, Fate
8 Don't know, not sure

315. Why are you not using a method to prevent pregnancy now?

01 esire Pregnancy
02 Not Sexually Active Now
03 Fears Side Effects
04 Spouse Opposes
05 Religion
06 Had Bad Side Effects
07 Advanced Age
08 Lack of Knowledge
9 Far Distance to Source
10 Doesn't Like or Want to Use
11 Sexual Intercourse Not Satisfying
12 Method Not Effective
13 Method Difficult to Use
14 Lack of Money
15 Health/Medical Reasons
16 Infertile
17 Embarassed to Use
88 Other (specify) _____
98 Don't know

316. In the future, do you think you will want to use a method to prevent pregnancy?

1 Yes
2 No **(SKIP TO Q318)**
3 Not sure **(SKIP TO Q318)**

317. What method would you most like to use?

1 Female Sterilization, Tubal Ligation, Tie Off
2 Male Sterilization, Vasectomy
3 Pill
4 Injection
5 Inter-Uterine Device/Coll/IUD
6 Condom
7 Diaphragm
8 Foaming Tablets
9 Creams/Jellies
10 Rhythm (Calendar Method)
11 Billings Method
12 Withdrawal
88 Other (specify) _____
98 Don't know

318. Do you know where to obtain contraceptive methods for preventing pregnancy or information about contraceptive methods?

1 Yes
2 No **(SKIP TO Q329)**

319. Where? **(IF MORE THAN ONE PLACE MENTIONED, CIRCLE TEE ONE SEE WOULD HOST LIKELY USE)**

1 Clinic/Heal1th Centre
2 Gov't Hospital
3 Private Hospital
4 Private Doctor/Clinic
5 BFLA
6 Pharmacy/Drug store
7 Guatemala or Mexico (Melcohor or Chetumal)
8 Church
9 Herself/partner
10 Friend/neighbor/family member
86 Other (specify) _____
93 DK/DR

(SKIP TO Q329)

INTERVIEWER: FOR CURRENT USERS OP REVERSIBLE METHODS, IP RESPONDENT OR PARTNER IS STERILIZED, SKIP TO Q501.

320. Where do you/your partner get, your family planning supplies?

1 Clinic/Health Centre
2 Gov't Hospital
3 Private Hospital
4 Private Doctor/Clinic
5 BFLA
6 Pharmacy/Drug Store
7 Guatemala or Mexico
8 Church
9 Herself/partner
10 Friend/neighbor/family member
88 Other (specify) _____
98 DK/DR

321, Are you using a contraceptive method to space pregnancies or because you do not want anymore children?

1 Space pregnancies
2 Want no more children

322. In the future do you think you will want to use a different method to prevent pregnancy?

1 Yes
2 No **(SKIP TO Q326)**
3 Don't know, not sure **(SKIP TO Q326)**

323. What method would you most like to use?

1 Female Sterilization, Tubal Ligation, Tie Off
2 Male Sterilization, Vasectomy
3 Pill
4 Injection
5 Inter-Uterine Device/Coll/IUD
6 Condom
7 Diaphragm
8 Foaming Tablets
9 Creams/Jellies
10 Rhythm (Calendar Method)
11 Billings Method
12 Withdrawal
88 Other (specify) _____
98 Don't know

324. Do you know where to obtain this method or information about this method?

1 Yes
2 No **(SKIP TO Q326)**

325. Where? **(IF MORE THAN ONE PLACE MENTIONED, CIRCLE THE ONE SHE WOULD HOST LIKELY USE)**

1 Clinic/Health Centre
2 Gov't Hospital
3 Private Hospital
4 Private Doctor/Clinic
5 BFLA
6 Pharmacy/Drug Store
7 Guatemala or Mexico (Melochor or Chetumal)
8 Church
9 Herself/partner
10 Friend/neighbor/family member
88 Other (specify) _____
98 DK/DR

326. How old were you when you first used contraception?

___ ___ Age
98 Don't know
99 No response

327. How many living children did you have when you first used contraception?

___ ___ Number
98 Don't know
99 No response

328. What was the first method you used?

1 Female Sterilization, Tubal Ligation, Tie Off
2 Male Sterilization, Vasectomy
3 Pill
4 Injection
5 Inter-Uterine Device/Coll/IUD
6 Condom
7 Diaphragm
8 Foaming Tablets
9 Creams/Jellies
10 Rhythm (Calendar Method)
11 Billings Method
12 Withdrawal
88 Other (specify) _____
98 Don't know

329. Would you accept receiving family planning supplies from someone in your local community?

1 Yes
2 No **(SKIP TO Q401)**
9 Don't know, maybe **(SKIP TO Q401)**

330. Who should dispense the family planning supplies?

1 Trained Nuree
2 Trained Midwife
3 Other (specify) _____
9 Don't know

SECTION IV. INTEREST IN STERILIZATION

401. **INTERVIEWER: CIRCLE THE CORRECT STATUS. REFER TO Q215.**

1 RESPONDENT HAS LIVING CHILDREN (CONTINUE WITH Q402)
2 RESPONDENT DOES NOT HAVE LIVING CHILDREN (SKIP TO 408)

402. Do you want to have anymore children?

1 Yes **(SKIP TO Q408)**
2 No
3 God's will, Fate **(SKIP TO Q409)**
4 Not sure **(SKIP TO Q409)**

403. Would you be interested in an operation that would prevent you from having any more children?

1 Yes
2 No **(SKIP TO Q407)**
9 Don't know/not sure **(SKIP TO Q409)**

404. Do you know where to go for this operation or to get information about it?

1 Yes
2 No **(SKIP TO Q701)**

405. **Where? (IF MORE THAN ONE PLACE MENTIONED, CIRCLE THE ONE SHE WOULD MOST LIKELY USE.)**

1 Clinic/Health Centre
2 Gov't Hospital
3 Private Hospital
4 Private Doctor/Clinic
8 Other (specify) _____

406. Since you have all the children you want and you know where to get this operation, why have you not had it?

1 Not Sexually Active
2 Fears Side Effects
3 Spouse Opposes
4 Religion
5 Advanced Age
6 Lack of Knowledge
7 Far Distance to Source
8 Doesn't Like or Want to Use
9 Fear of Operation
10 Prefers Using Other Methods
11 Considers Self Too Young
12 Needs More Information
13 Lack of Money
14 Health/Medical Reasons
15 Infertile
88 Other (specify)_____
98 Don't Know

(SKIP TO Q701)

407. Why are you not interested in this operation?

1 Not Sexually Active
2 Fears Side Effects
3 Spouse Opposes
4 Religion
5 Advanced Age
6 Lack of Knowledge
7 Far Distance to Source
8 Doesn't Like or Want to Use
9 Fear of Operation
10 Prefers Using Other Methods
11 Considers Self Too Young
12 Needs More Information
13 Lack of Money
14 Health/Medical Reasons
15 Infertile
88 Other (specify) _____
98 Don't Know

(SKIP TO Q701)

408. How many (more) children would you like to have?

____ children
66 As many as possible
77 As many as God sends, up to Fate
98 Don't know

409. After you have all the children you want, would you be interested in an operation that would prevent you from having any (more) children?

1 Yes
2 No **(SKIP TO Q412)**
9 Don't know/not sure **(SKIP TO Q412)**

410. Do you know where to get this operation or information about it?

1 Yes
2 No **(SKIP TO Q701)**

4ll. Where could you get the operation?

1 Clinic/Health Centre
2 Gov't Hospital
3 Private Hospital
4 Private Doctor/Clinic
8 Other (specify) _____

(SKIP TO Q701)

412. Why would you not be interested in this operation?

01 Not Sexually Active
02 Fears Side Effects
03 Spouse Opposes
04 Religion
05 Advanced Age
06 Lack of Knowledge
07 Far Distance to source
08 Doesn't Like *or* Want to Use
09 Fear of Operation
10 Prefers Using Other Methods
11 Considers Self Too Young
12 Needs More Information
13 Lack of Money
14 Health/Medica1 Reasons
15 Infertile
88 Other (specify) _____
98 Don't Know

(SKIP TO Q701)

SECTION V. STERILIZATION

INTERVIEWER: QUESTIONS 501-507 ARE FOR WOMEN WHO HAVE BEEN STERILIZED OR WHOSE HUSBANDS/PARTNERS HAVE HAD A VASECTOMY (SEE Q303 AND Q304)

501. Where was your tubal ligation, tie off (your husband's/partner's vasectomy) done?

1 Gov't Hospital
2 Private Hospital
3 Private Doctor/clinic
8 Other (specify) _____

502. In which country?

1 Belize
2 Guatemala
3 Mexico
4 El Salvador
5 Honduras
6 Nicaragua
7 United States
8 Other (specify) _____
9 Doesn't know

503. How old were you when you/he had the operation?

___ ___ Age
98 Don't Know

504. Are you satisfied with having had the operation?

1 Yes
2 No

505. How old were you when you first used contraception?

___ ___ Age
98 Don't Know

506. How many living children did you have when you first used contraception?

___ ___ Number

507. What was the first method of contraception that you used?

1	Female Sterilization, Tubal Ligation, Tie Off	7	Diaphragm
2	Male Sterilization,	8	Foaming Tablets
3	Pill	9	Creams/Jellies
4	Injection	10	Rhythm (Calendar Method)
5	Inter-Uterine	11	Billings Method
6	Condom	12	Withdrawal
		88	Other (specify)_____
		98	Don't know

(CONTINUE WITH Q701)

SECTION VII - KNOWLEDGE OF AND OPINIONS ON AIDS

701. Have you ever heard of AIDS or the AIDS virus?

1 Yes
2 No **(GO TO Q801)**

702. In Which of the following ways do you think a person can get the AIDS Virus **[READ]**

	Yes	No	Don't Know
1. Shaking, hands or hugging	1	2	9
2. Being in the same roam with a person who has the AIDS virus	1	2	9
3. Sharing personal items like dishes, toilets, etc.	1	2	9
4. Sharing needles used for drugs	1	2	9
5. Sexual intercourse between men	1	2	9
6. Sexual intercourse between a man and a woman	1	2	9
7. Giving a blood donation	1	2	9
8. Receiving a blood transfusion	1	2	9
9. Being bitten by an insect that has bitten someone with the AIDS virus	1	2	9

703. What risk do you think there is of your getting AIDS? Would you say that you have . . . **[READ]**

1 A great risk
2 Some risk
3 Not much risk, or
4 No risk at all
9 Doesn't know

704. Did you begin to use any of these methods for protection since you first heard about AIDS? [READ]

	Yes	No	Not Sexually Active	Already Using
Condom	1	2	3	8
Diaphragm	1	2	3	8
Spermicidal Jelly, Foam or Cream	1	2	3	8
Other _____ (specify)	1	2	3	8

SECTION VIII - CURRENT AND PAST MARITAL STATUS

INTERVIEWER: NOW I WOULD TO ASK YOU SOME QUESTIONS ABOUT YOUR PERSONAL LIFE. YOU MAY FIND *SOME OF* THE QUESTIONS TOO PERSONAL. REMEMBER, YOU ARE NOT OBLIGATED TO ANSWER THEM.

801. What is your current marital status? Are you married, have a common-law marriage, separated, divorced, widow, have a visiting gentleman, or are you single?

1 Married **(SKIP TO 804)**
2 Common-law **(SKIP TO Q804)**
3 Separated **(SKIP TO Q804)**
4 Divorced **(SKIP TO Q804)**
5 Widow **(SKIP TO Q804)**
6 Visiting gentleman **(*SKIP* TO Q804)**
7 *Single*

802. Have you ever been married or lived in a common-law marriage?

1 Yes **(SKIP TO Q804)**
2 No

803. Do you currently have a boyfriend?

1 Yes **(SKIP TO Q806)**
2 No **(SKIP TO Q806)**

804. What *was* the month and year of your first marriage/common-law marriage/visiting partnership?

___ ___ Month ___ ___ Year
98 Doesn't remember

805. How old were you when you first began to live with your first husband/common-law partner/visiting gentleman?

___ ___ Age
98 Doesn't remember

806. In what month and year did you first have sexual intercourse?

___ ___ Month ___ ___ Year
Never = 2222 **(SKIP TO Q901)**
Doesn't remember = 9898
No response = 9999 **(SKIP TO Q901)**

807. How old were you when you had your first sexual intercourse?

___ ___ Age
98 Doesn't remember
99 No Response

808. Who was your first sexual partner?

1 Husband
2 visiting partner
3 Fiancee
4 Boyfriend
5 Friend
6 Rape
7 Incest (Relative)
8 Other (specify) _____

809. Have you had sexual relations in the last 4 weeks?

1 Yes
2 No **(SKIP TO Q901)**
9 No response **(SKIP TO Q901)**

810. How many times?

___ ___ No. of Times
98 Doesn't remember
99 No response

(CONTINUE WITH 901)

SECTION IX - HEALTH CARE UTILIZATION

901. I have asked whether your children have had symptoms or diarrhea during the previous two weeks. I would also like to know if you or anyone else in your household has been ill during the last two weeks. That is, has anyone been sick so that they could not perform their normal routine, such as going to work or school? Please give me the name of each person who was sick so we can identify him or her for other questions.
(INTERVIEWER: WRITE DOWN ALL NAMES FIRST, THEN ASK QUESTIONS 902 TO 906 FOR EACH ONE. IF NO ONE WAS SICK, RECORD THIS ON THE TABLE, AND SKIP TO Q907).

902. What is (NAME'S) sex?

903. What is (NAME'S) age in years?

904. Where was advice or treatment sought for (NAME'S) illness?
(INTERVIEWER: PROBE FOR UPTO 4 RESPONSES AND WRITE THEM DOWN. 0167, FOR EXAMPLE, WOULD BE INTERPRETED AS 3 VISITS TO PROVIDERS 1,6,AND 7)

0 None —-> (INTERVIEWER; ASK EXPENDITURE QUESTIONS ANYWAY, PROBING TO FIND OUT IF ANYTHING WAS SPENT. THEN RETURN TO THIS QUESTION TO VERIFY THE RESPONSE)

1 Community Health Worker
2 Govt. Health Center/Clinic
3 Govt. Hospital
4 Private or Mission Hospital
5 Private Doctor/Clinic
6 Traditional Healer
7 Private Pharmacy
8 Other (specify) _____
9 Don't know

905. How much was spent for treatment or advice for (NAME'S) illness on each of the following: **(INTERVIEWER: IF NOTHING WAS SPENT, WRITE A ZERO)**

(a) Visits
(b) Medicines
(c) Other treatment-related expenses, such as X-rays or laboratory tests
(d) Transport for the visit(s)

906. Were any of these expenditures for(NAME) paid by an employer, social security, or other insurance?

0 No coverage
1 Employer
2 Social Security
3 Private insurance
4 Don't know

Tabla 9- Illnesses and Injuries in the Last Two Weeks CHECK IF NONE ——

					(905) Expenditures in $				(906) Insurance
	(901) Name	(902) Sex	(903) Age	(904) Visit Location	(a) Visits	(b) Medicine	(c) Other	(d) Transport	
	(Write)	(Circle)	(Years)	(Enter Code)	(Enter Amount)				(Circle)
a		1-M 2-F							0 1 2 3 4
b		1-M 2-F							0 1 2 3 4
c		1-M 2-F							0 1 2 3 4
d		1-M 2-F							0 1 2 3 4
e		1-M 2-F							0 1 2 3 4
f		1-M 2-F							0 1 2 3 4
g		1-M 2-F							0 1 2 3 4
h		1-M 2-F							0 1 2 3 4
i		1-M 2-F							0 1 2 3 4
j		1-M 2-F							0 1 2 3 4
k		1-M 2-F							0 1 2 3 4

CODES FOR (904) VISIT LOCATION

0 None --> (INTERVIEWER: ASK EXPENDITURE QUESTIONS ANYWAY, PROBING TO FIND OUT IF ANYTHING WAS SPENT. THEN RETURN TO THIS QUESTION TO VERIFY THE RESPONSE)

1 Community Health Worker
2 Govt. Health Center/Clinic
3 Govt. Hospital
4 Private Mission Hospital
5 Private Doctor/Clinic
6 Traditional Healer
7 Private Pharmacy
8 Other (specify) _____
9 Don't Know

CODES FOR (906)INSURANCE

0 No coverage
1 Employer
2 Social Security
3 Private insurance
4 Don't know

907. Now I will ask you several questions about fees you might be willing to pay for government health services. Suppose you become ill today and visit a government health center or hospital. Would you be willing to pay a $15 fee in total for the visit and any medicines you might receive?

1 Yes —> **GO TO Q912**
2 No —> **GO TO Q908**

908. Would you be willing to pay a $2 fee in total for the visit and any medicines you might receive at the government facility?

1 Yes —> **GO TO Q909**
2 No —> **GO TO Q912**

909. Would you be willing to pay a $10 fee in total for the visit and any medicines you might receive at the government facility?

1 Yes —> **GO TO Q912**
2 No —> **GO TO Q910**

910. Would you be willing to pay a $5 fee in total for the visit and any medicines you might receive at the government facility?

1 Yes —> **GO TO Q911**
2 No —> **GO TO Q912**

911. Would you be willing to pay a $7 fee in total for the visit and any medicines you might receive at the government facility?

1 Yes —> **GO TO Q912**
2 No —> **GO TO Q912**

912. Have you ever used any of the following?

a. Government clinic

1 Yes
2 No

b. Government hospital

1 Yes
2 No

c. Private doctor/clinic

1 Yes —> **GO TO Q913**
2 No —> **GO TO Q914**

913. How much did you pay for your most recent visit to a private doctor or clinic, including any drugs you purchased?

Amount for private visit and drugs: $ ___ ___ ___
999 Don't Remember

914. Now I would like to ask you several more questions about fees in government facilities, but this time suppose that the facilities are improved, waiting time is rarely more than one hour, waiting rooms are more pleasant, and medicines are always available. Suppose services are improved in this way, and you become ill today. If you visit one of these improved government health centers or hospitals, would you he willing to pay a $15 fee in total for a visit and any medicines?

1 Yes —> **GO TO Q919**
2 No —> **GO TO Q915**

915. Would you be willing to pay a $2 fee in total for a visit and any medicines at the improved government facility?

1 Yes --> **GO TO Q916**
2 No —> **GO TO Q919**

916. Would you be willing to pay a $10 fee in total for a visit and any medicines at the improved government facility?

1 Yes —> **GO TO Q919**
2 No —> **GO TO Q917**

917. Would you he willing to pay a $5 fee in total for a visit and any medicines at the improved government facility?

1 Yes —> **GO TO Q918**
2 No —> **GO TO Q919**

918. Would you be willing to pay a $7 fee in total for a visit and any medicines at the improved government facility?

1 Yes
2 No

919. Please estimate the total annual income for the past year for your household- This estimate should include income from wages or salaries, rental property, farm products, business or trade, and any other income-producing activities by members of your household.

Was the total income of your household: **[READ]**

1. 0
2. 1 < 3000
3. 3000 < 7000
4. 7000 < 10000
5. 10000 < 14000
6. 14000 < 19000
7. 19000 < 26000
8. > 26000
9. Don't Know