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**Mali**  
**Demographic and Health Survey**  
**1987**

**Summary Report**

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Centre d'Etudes et de Recherche sur la  
Population pour le Développement  
Institut du Sahel  
BP 1530  
Bamako, Mali

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This report summarizes the findings of the 1987 Mali Demographic and Health Survey, conducted by the Centre d'Etudes et de Recherche sur la Population pour le Développement (CERPOD), Sahel Institute. The Institute for Resource Development/Westinghouse provided funding and technical assistance. Editorial and production support for this report was provided by the IMPACT project of the Population Reference Bureau.

The Mali DHS study is part of the worldwide Demographic and Health Surveys Program, which is designed to collect data on fertility, family planning, and maternal and child health. Additional information on the Mali survey may be obtained from CERPOD, Institut du Sahel, BP 1530, Bamako, Mali. Additional information about the DHS program may be obtained by writing to: DHS, Institute for Resource Development/Westinghouse, 8850 Stanford Boulevard, Suite 4000, Columbia, MD 21045, U.S.A. (Telex 87775).

May 1989

## EXECUTIVE SUMMARY

The 1987 Mali Demographic and Health Survey (EDS) results indicate that both fertility and child mortality remain high, despite modest decreases in urban areas. At current rates, women are having an average of nearly seven children each, and one child in four dies before his or her fifth birthday.

Factors which lead to high fertility include:

- o Early marriage and childbearing;
- o A desire for large families; and
- o Low usage of traditional and modern methods of contraception.

The main factor influencing birth spacing is prolonged breastfeeding, which lengthens the period of natural infecundity following birth.

The low level of contraceptive usage can be attributed to lack of information and conservative attitudes about family planning. Few people surveyed could spontaneously name even one contraceptive method. Fewer than two in 10 married men and seven in 10 married women approve of couples who use contraception.

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At current fertility rates, women will have nearly seven children during their childbearing years.  
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Nevertheless, many people seem open to learning more about family planning. Nearly three in four women and one in three men said that radio and television broadcasts on birth spacing would be acceptable.

One important finding is that most couples have never discussed

family planning, and many men and women have incorrect perceptions of their spouse's attitude toward family planning.

Despite the fact that most women want large families, there is a potential demand for family planning services. About three in five married women are estimated to be in need of family planning services, either because they do not want any more children or wish to delay their next birth by two or more years.

Wider use of family planning could contribute to better child survival rates by preventing high-risk pregnancies. The EDS found that children born to mothers aged 19 or younger and those born less than two years after a previous birth are more likely to die in their first year of life than other children.

In regard to maternal and child health, the survey findings indicate some major problems needing attention:

- o Most mothers do not receive prenatal care or assistance during delivery from health professionals;
- o Most children are not immunized against the six major preventable childhood diseases;
- o Diarrhea and fever are common among children;
- o The most effective treatment for diarrhea, oral rehydration therapy, is not widely known or used;
- o Few children with fever receive treatment at health service facilities; and
- o Rates of chronic and acute malnourishment among children aged 3-36 months are high.

While child survival rates are slowly improving, targeted health

and nutrition interventions could make an important difference.

## **BACKGROUND**

The 1987 Mali Demographic and Health Survey (EDS) provides data on fertility levels; knowledge, attitudes and practice of contraception; and maternal and child health. It was conducted by the Centre d'Etudes et de Recherches sur la Population pour le Développement (CERPOD) of the Sahel Institute. A total of 3,200 women aged 15-49 and 970 men aged 20-55 were interviewed between March and August 1987 in a national-level sample. For a subsample of 635 couples, records for husbands and wives were matched. In addition, health indicators for children under 5 were collected, as well as the height and weight measurements for 1,538 children aged 3-36 months.

## **FERTILITY**

As in many other African countries, large families are common in Mali. At current rates, women aged 15-44 will give birth to an average of nearly seven children during their reproductive lives (see Figure 1, Total Fertility Rate).

Fertility levels vary by place of residence and education. At current rates, women living in urban areas are having an average of 6.1 births compared with 7.0 births among rural women. Women living in Bamako have the lowest fertility--an average of 5.4 children. Women who have attended at least primary school have fewer children than those with no education.

### Demographic Factors of Fertility

The major factors that influence fertility levels and trends in Mali are: 1) early marriage; 2) early childbearing; and 3) prolonged breastfeeding. Other factors, including polygamy and abstinence, also play a role. Contraceptive use is low and currently has little effect on fertility.

### Marriage Patterns

At the time of the survey, 92 percent of the women and 79 percent of the men were married. Nearly half the married women and one in four married men were in polygamous unions. Half of the women marry before 16 years of age--a very young age even when compared with other African countries. The age at marriage has remained nearly constant for the past 35 years, although women under 30 living in urban areas marry at a slightly later age.

### Age at First Birth

Childbearing typically begins in the teenage years, when more than half of all Malian women experienced their first birth.

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 Half of all Malian women give birth by the age of 19.  
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One in 10 gave birth at age 14 or younger. This pattern of early childbearing not only contributes to high fertility but also has adverse effects on the health of young mothers and their children.

### **Breastfeeding and Postpartum Infecundity**

Breastfeeding can prolong the period of infecundity following childbirth and protect the mother from pregnancy. The practice of breastfeeding is nearly universal among Malian women; more than 90 percent of infants aged 9 months or younger were being breastfed (see Figure 2). Half of the women breastfeed for at least 18 months. Women living in Bamako and other urban areas breastfeed for shorter periods.

Post-partum abstinence is relatively short and does not have a major impact on overall fertility.

### **Fertility Desires**

The high level of fertility in Mali reflects, in part, a desire for large families. When asked how many children they would prefer to have, women giving a numeric response preferred an average of seven children. One in four women gave answers such as "that depends on God" and "don't know." In general, younger women want fewer children than older women, but the differences are small.

Despite the desire for large families, Malian women do experience unwanted or mistimed births. Of those children born in the previous year, mothers reported that 4 percent were unwanted and 11 percent were wanted at a later date.

Many women express a desire to control the number and timing of future births. One in six married women does not want any more

children, and nearly one in three women wants to wait two or more years from the date of the interview before her next birth.

## FAMILY PLANNING

### Knowledge of Contraception

Malian women and men have very limited knowledge of modern and traditional contraceptive methods. Fewer than half of the women and two thirds of the men have heard of at least one method. Among those recognizing a method, the vast majority recognized it only after hearing a description, suggesting limited familiarity.

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 Contraceptive knowledge and use are low.  
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The two most recognized traditional methods were prolonged abstinence and "gris-gris"<sup>1</sup>. However, each was named or recognized by only one in four women and one in three men. Knowledge of traditional methods may be underreported due to the respondents' reticence to discuss such topics or ignorance of the birth-spacing effects of some traditional practices. Most frequently recognized modern methods are the Pill, injection, IUD, and female sterilization. Urban women and men are more likely to recognize both modern and traditional methods than rural residents.

When women naming or recognizing a method were asked where they would obtain this method in case of need, most women named a source. Public-sector sources, including MCH centers (centres de

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<sup>1</sup>Generally a small leather pouch containing verses of the Koran or herbs, used to protect the wearer against adverse outcomes.

protection maternelle et infantile--PMI), dispensaries and health centers, were most frequently cited as sources of contraceptive methods. Hospitals and pharmacies were also mentioned as sources.

### Contraceptive Use

Fewer than 5 percent of married women use contraception; approximately 3 percent use traditional methods and 1 percent use modern methods. Contraceptive use is considerably higher in urban areas, where 11 percent of married women currently use a contraceptive method (see Figure 3). In rural areas only 2 percent of women are using contraception, mainly prolonged abstinence. Women who have attended at least primary school are more likely to use both modern or traditional methods than women with no education.

### Attitudes Toward Family Planning

Men have more conservative attitudes toward family planning than women. Among those recognizing at least one contraceptive method, fewer than two in 10 married men approve of couples using contraception to space births, compared with seven in 10 married women (see Figure 4). However, both women and men living in urban areas and those with a primary or higher education are more likely to approve of contraceptive use. Wives perceive their husbands to be more favorable to family planning than the husbands themselves report; more than half of the wives said that

their husbands approve of couples using contraception, though in fact only 16 percent of husbands stated their approval.

These findings underscore the very limited communication between Malian spouses regarding family planning. Of the couples in which at least one partner recognized a contraceptive method, two-thirds have never discussed family planning. In general, urban and more educated couples were more likely to have discussed family planning than others.

When asked whether they considered radio and television broadcasts on birth spacing to be acceptable, nearly three in four women approved, compared with only one-third of the men.

#### Barriers to Contraceptive Use

When asked why they are not using contraception, more than one-third of the women and men cited lack of information (see Table 1). Nearly one in four men mentioned religion as a factor in non-use.

Women who recognized a method were asked about the major problem they perceived in using this method. About 35 percent of married women replied that they did not know; this answer is consistent with the fact that most women had only a superficial knowledge of the method. Between one-third and one-half of the women perceived no problem with specific methods. Among those mentioning problems, side effects were the main problem cited for the IUD, Pill and injection. Cost was considered a problem in

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**Many men and women state that they are not currently using  
contraception because they lack information.**  
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regard to use of female sterilization and injection. Husband's opposition was cited in relation to vaginal methods, female sterilization, the Pill and injection. Methods considered least effective were gris-gris, herbal medicines, periodic abstinence and the condom.

These findings suggest that acceptance of family planning in Mali will require intensive information and education programs oriented to men as well as women. The involvement of religious leaders could also reassure couples that family planning is not prohibited by Islam.

#### **Need for Family Planning Services**

About three in five women in union are estimated to be in need of family planning services. These women either do not want any more children (16%) or wish to delay their next birth by two or more years (32%) but are not currently using contraception (see Figure 5).

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**About one out of two women in union are estimated to be in  
need of family planning services.**  
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However, only one in six of these women in need indicate any intention of using contraception. The majority of women intending to use a method plan to do so within one year and prefer modern methods. Urban women in need of family planning

and those with at least a primary education are more likely to state an intention to use contraception in the future.

#### MATERNAL AND CHILD HEALTH

Child mortality in Mali continues to rank among the highest in Africa. Currently, one child in four dies before his or her fifth birthday. Nevertheless, the Mali EDS findings indicate

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 One Malian child in four dies before his or her fifth birthday.  
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that death rates have been declining over the past fifteen years, especially in urban areas (see Figure 6).

The EDS findings highlight a number of factors that directly influence child survival:

- o Place of Residence Both infant and child mortality levels are higher in rural areas. Almost one in three rural children dies before his or her fifth birthday.
- o Mother's Age One in three children born to mothers aged 19 or younger dies before his or her fifth birthday. The risk of dying before their first birthday is more than 50 percent higher for children of younger mothers than the risk for children born to mothers aged 20-34. The mortality risk for children born to mothers 35 and older is about 25 percent higher.
- o Mother's Education Children born to mothers with no education are nearly twice as likely to die during their first year as those born to women who have attended some

primary school.

- o Birth Spacing Almost four out of 10 children born less than two years after a previous birth die before reaching their fifth birthday. Their risk of dying is more than one-and-a-half times greater than for children born 2-3 years after a previous birth; it is more than three times higher than for a child born four or more years later (see Figure 7).
- o Birth Order Mortality risks are higher among first births and seventh or higher-order births.

### Maternity Care

Because the health of the child begins before birth, the care a woman receives during her pregnancy can be critical to her child's chances of survival. Mothers of nearly two-thirds of the children born during the five years prior to the survey had no prenatal care.

Most infants are still not protected from neonatal tetanus, a highly fatal -- but preventable -- disease that can strike newborns if the mother has not been immunized against tetanus and if the umbilical cord is not cut and treated in a sterile manner. Fewer than one in five mothers reported receiving at least one anti-tetanus injection during her pregnancy to protect the baby from developing tetanus.

At the time of delivery, fewer than one-third of the births were attended by medical personnel, and a similar proportion were

attended by a traditional birth attendant (see Figure 8). One in five was attended by a relative, neighbor or friend. A high proportion of births--13 percent--received no assistance. Women living in rural areas and those with no education were more likely to deliver with no assistance than urban women and women who had attended at least primary school.

### Breastfeeding and Infant Health

Breastfeeding plays an important role in child survival by providing key nutrients during the first year of life and beyond. Health experts increasingly recognize the role of breastfeeding in decreasing the incidence of diarrhea among children and reducing their susceptibility to other infectious diseases. Fortunately, most Malian children are breastfed for long periods; half are breastfed for 18 months. However, mothers living in urban areas breastfeed for shorter periods than rural mothers.

### Prevention of Childhood Diseases

Immunization against six childhood diseases--tuberculosis, diphtheria, whooping cough, tetanus, poliomyelitis and measles--is a key intervention to improve child survival rates. Because only 12 percent of Malian children under age 5 have health cards, it is difficult to assess precisely the extent of immunization.

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Only two percent of Malian children with health cards are fully vaccinated against the six principle childhood diseases.  
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Combining those children who have health cards and those whose mothers report that they have received at least one vaccination, about half of the children under age 5 have received at least one vaccination.

Among children with a health card aged 12-23 months, only 2 percent had been completely immunized against the six major childhood diseases, and all of these children were from the urban areas (see Figure 9). These findings suggest that overall vaccination coverage is extremely low in Mali and that immunization services and public education are needed.

### Diarrhea

Diarrhea, a leading cause of childhood mortality, is common among children under five in Mali. Mothers reported that one in five children had diarrhea in the 24 hours preceding the survey, and one child in three had had it during the previous two weeks. The proportions of children with diarrhea are similar in rural and urban areas, with the exception of Bamako, where it is less common.

The high incidence of diarrhea is an especially serious health problem considering the very small proportion of children who receive oral rehydration therapy (ORT), an effective and inexpensive treatment for dehydration, which is often the cause of death among children with diarrhea (see Figure 10). More often used, but usually less effective, treatments for diarrhea include herbal medicines and Ganidan or other pharmaceutical

products.

Only about one in 10 mothers of children under age 5 had heard of ORT. Clearly, educational campaigns are needed to increase awareness and use of ORT in the treatment of childhood diarrhea.

### **Fever**

Fever is also very common among Malian children. While one in three children under age 5 had had a fever in the four weeks prior to the interview, one-fourth of them were not treated. The main treatments for fever were nivaquine (an anti-malarial treatment), herbal medicines, and aspirin. Since fever is a symptom of several illnesses, the efficacy of the chosen treatments is difficult to evaluate. However, since malaria is endemic in Mali, the use of nivaquine is appropriate in many cases.

### **Nutritional Status of Children**

As part of the EDS, children aged 3-36 months were weighed and measured to assess their nutritional status. The study found that one in four of these children is short in relation to his/her age, compared with the international reference population. This finding suggests that chronic malnutrition is a serious problem. Acute malnutrition caused by short-term food deficits is also common, affecting one in 10 children aged 3-36 months.

Chronic malnutrition is two-and-a-half times higher among

children aged 1-3 years than among infants less than one year

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**One in four children under age three shows signs of chronic  
malnutrition.**  
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old, probably due to the nutritional benefits of breastfeeding. Malnutrition is apparent in both rural and urban children, although the levels are higher in rural areas (see Figure 11). Chronic malnutrition is associated with birth interval: one in three children born less than two years after a previous birth is malnourished, compared with one in five children born after an interval of two years or more.

#### CONCLUSIONS

The results of the 1987 Mali Demographic and Health Survey provide important information for the development of maternal and child health and family planning programs. Information on fertility and child survival can also be used to estimate population trends and future demand for education, employment and other public services.

Early marriage, early childbearing, the desire for large families and limited use of contraception are among the most important factors contributing to high fertility in Mali. Although the majority of women express a desire to limit or space births, most do not intend to use contraception, mainly because they know little about it.

Men also lack knowledge about contraception and are much more likely than women to disapprove of it. Couples rarely, if ever,

discuss family planning. Consequently, both men and women have incorrect perceptions of their spouse's views on contraception.

Maternal and child health remains a serious problem. Few mothers and children receive medical attention, and many sick children receive no treatment at all. The EDS findings suggest a number of specific policies and programs that could have a major impact on child survival and women's health:

- o Urging young women to delay birth of their first child until age 20 or later;
- o Providing women and men with information on modern contraceptive methods, including their advantages and disadvantages and correct usage, and making such methods widely available;
- o Encouraging couples to discuss family planning and related issues;
- o Providing more extensive medical care during pregnancy and childbirth;
- o Educating parents about immunization and extending its coverage;
- o Educating parents on the use of oral rehydration therapy to counter the dehydrating effects of diarrhea; and
- o Promoting improved child nutrition through growth monitoring, nutrition education and food distribution programs.

A concerted effort will be needed to reduce child mortality levels substantially.

**FACT SHEET**

Based on results of the general Census, 1987

Population Size (millions) 7.6

Calculated from the results of the general Census, and the Mali Demographic and Health Survey, 1987

Population Growth Rate (percent)	2.7
Population Doubling Time (years)	26
Birth Rate (per 1000 population)	47
Death Rate (per 1000 population)	20
Inter-census Growth Rate (percent)	1.7
Migratory Growth Rate	-1.0

Mali, Demographic and Health Survey, 1987

**Sample Population**

Women 15-49	3,200
Men 20-55	970
Children 3-36 months (based on mother's interview)	1,538

**Background Characteristics of Women Interviewed**

Percent urban	26.2
Percent with more than primary education <sup>1</sup>	1.1
Percent who can read	13.5

**Marriage and Other Fertility Determinants**

Percent women currently in union	92.1
Percent women ever-married	95.5
Median age at first marriage for women 20-49	15.7
Median length of breastfeeding (in months) <sup>2</sup>	18.1
Median length of postpartum ammenorrhea (in months) <sup>2</sup>	13.0
Median length of postpartum abstinence (in months) <sup>2</sup>	2.4
Percent men currently in union	78.8
Percent men ever married	79.9

**Fertility**

Total fertility rate (projected completed family size) <sup>3</sup>	6.7
Mean number of children ever born to women 40-49	7.1
Percent of women currently in union who are pregnant	13.0

**Desire for Children**

Percent of women currently in union: Wanting no more children (excluding sterilized women)	16.5
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Wanting to delay next birth at least 2 years	32.4
Mean ideal number of children for women 15-49	6.9
Percent of unwanted births <sup>4</sup>	3.5
Percent of mistimed births <sup>5</sup>	10.7

#### Knowledge and Use of Family Planning

Percent of women currently in union:	
Knowing any method	43.2
Knowing any method and approving of family planning	70.7
Ever using any method	19.0
Currently using any method	4.7
Pill	0.9
IUD	0.1
Injection	0.1
Vaginal methods	0.1
Condom	0.0
Female sterilization	0.1
Prolonged abstinence	1.5
Periodic abstinence	1.3
Gris-gris	0.5
Withdrawal	0.1
Percent of all men:	
Knowing any method	65.4
Ever using any method	15.9
Currently using any method	3.7

#### Mortality and Health

Infant mortality rate <sup>6</sup>	108
Under five mortality rate <sup>6</sup>	249
Percent of births for which the mothers <sup>7</sup>	
Received prenatal care during pregnancy	31.4
Received at least one anti-tetanus injection during pregnancy	18.2
Were assisted at delivery by doctor or trained nurse/midwife	31.9
Percent of children aged 0-2 months breastfed	90.4
Percent of children aged 4-5 months breastfed	92.7
Percent of children aged 10-11 months breastfed	80.4
Percent of children under five years of age with health cards	11.6
Percent of children aged 12-23 months:	
With a health card	12.0
Having received at least one vaccination, according to health card and mother's report:	39.2
Vaccinated according to health card against:	
BCG	11.4
DPT	3.4
Polio	2.7
Measles	8.8
All six diseases	1.8

Percent of children under five years of age with diarrhea <sup>8</sup>	34.4
Percent of children under five years of age having diarrhea:	
Who received treatment	68.4
Who were treated with ORT	2.2
Percent of children under five years of age with fever <sup>9</sup>	33.1
Percent of children under five years of age with fever who received treatment	75.5
Percent of children aged 3-36 months considered moderately or severely chronically malnourished, based on height for age	24.4
Percent of children aged 3-36 months considered moderately or severely acutely malnourished, based on weight for height	11.0

1 6 or more years of education

2 Median duration (the point at which half are above and half are below), based on births during the 36 months preceding the survey

3 Based on births to women 15-44 years during the period 0-4 years before the survey

4 Percent of births in the 12-month period before the survey which were unwanted

5 Percent of births in the 12-month period before the survey which were wanted later

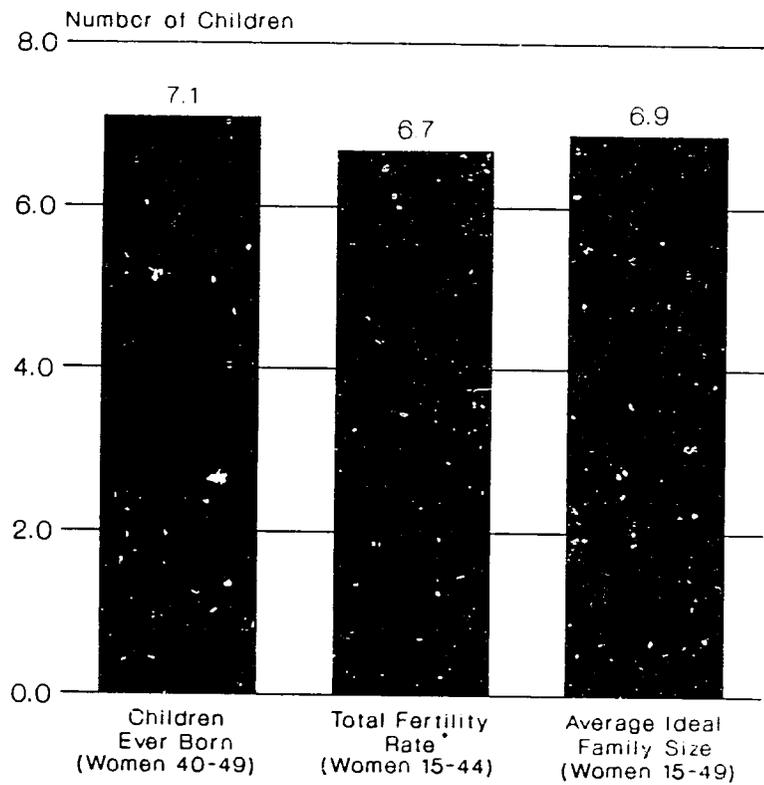
6 Rates are for the five-year period preceding the survey (approximately 1982-1986)

7 Based on births occurring during the five years before the survey

8 Based on children under 5 reported by the mothers as having diarrhea during the two weeks before the survey

9 Based on children under 5 reported by the mothers as having fever during the four weeks before the survey

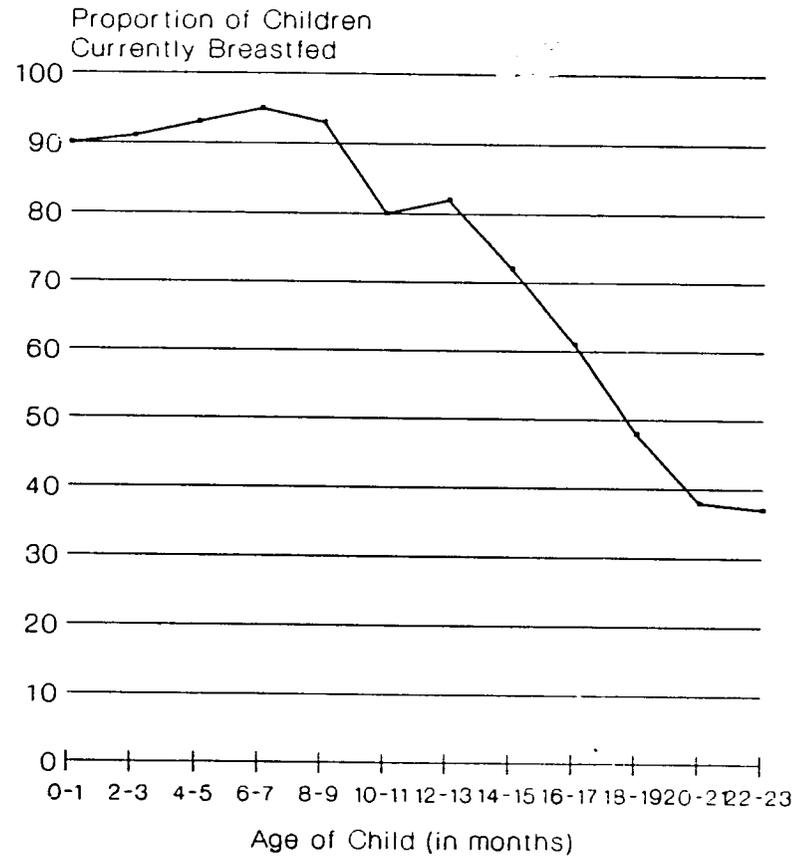
**Figure 1**  
**Past, Current and Ideal Family Size**



\*Projected Completed Family Size

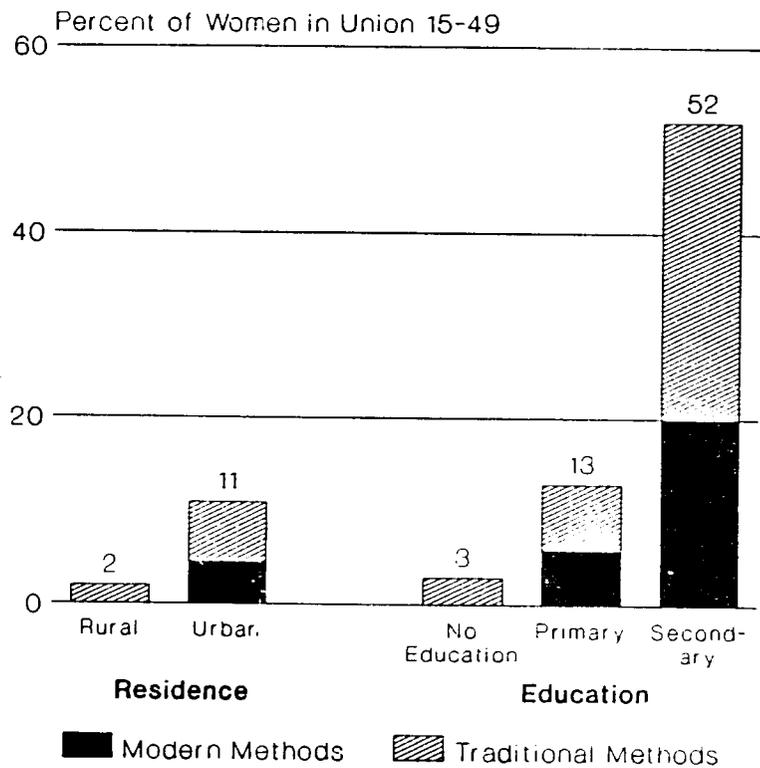
EDS-Mali 1987

**Figure 2**  
**Breastfeeding Duration**



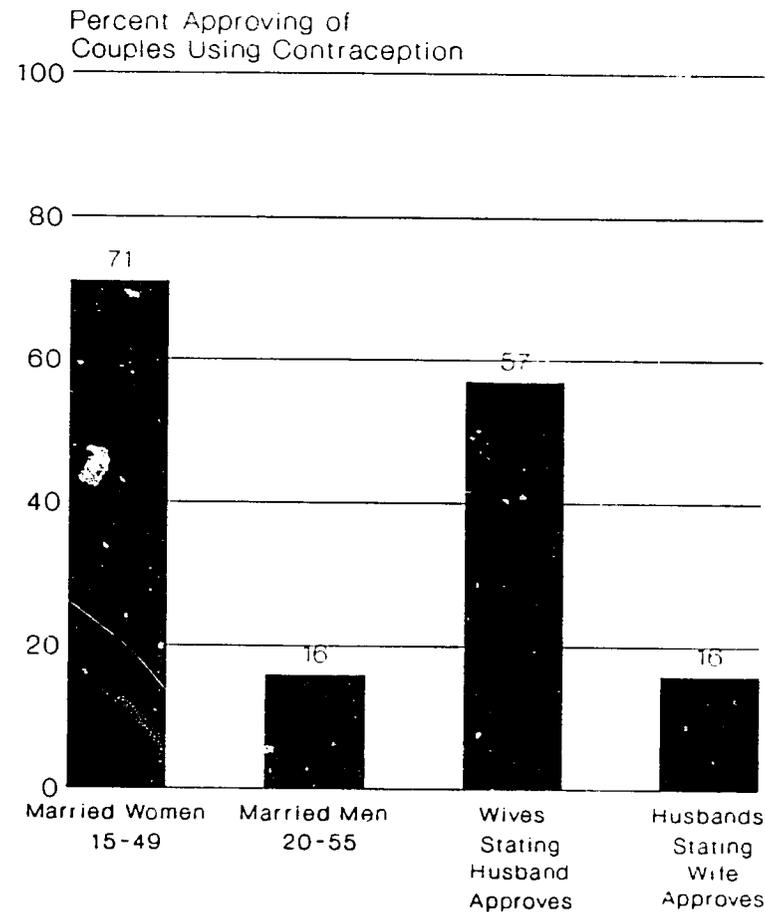
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**Figure 3**  
**Contraceptive Use by Residence**  
**and Education**



EDS-Mali 1987

**Figure 4**  
**Attitudes Toward Contraception**

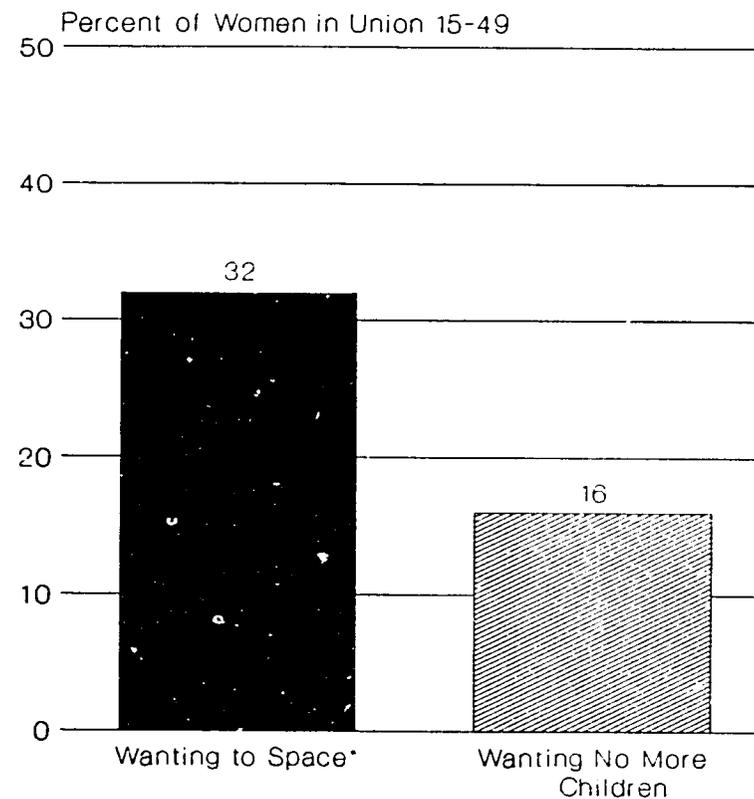


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**Table 1**  
**Reasons for Not Using Contraception**  
 (Among Non-Users)

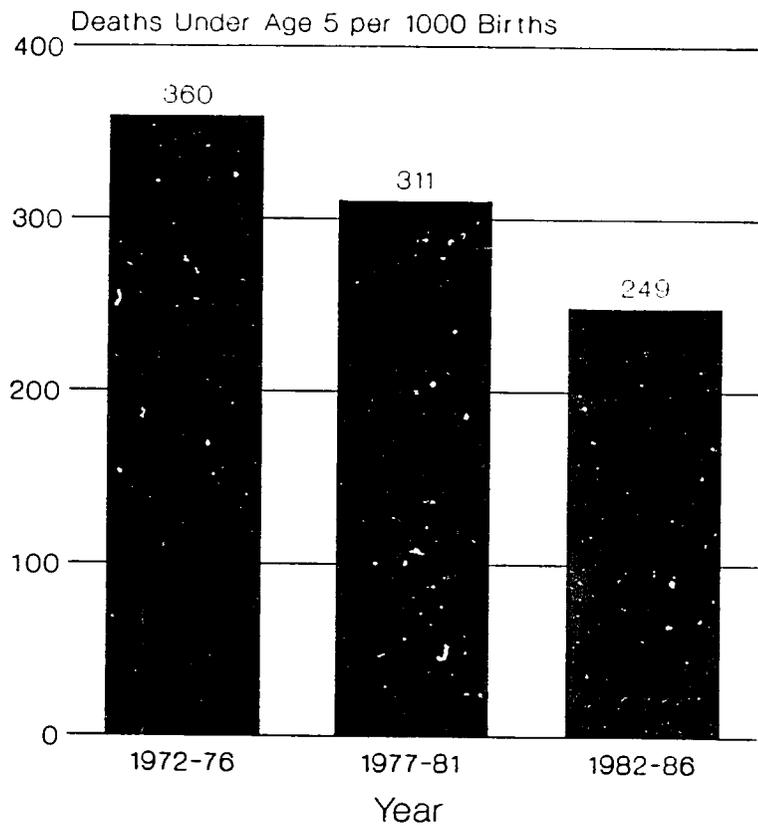
<u>Reason Given</u>	<u>Women (%)</u>	<u>Men (%)</u>
Lack of Information	42	36
Desire for a Child	16	16
Religion	6	23
Opposition to Family Planning	8	5
Health Risks	4	7
Sexual Inactivity	5	3
Other	19	10

**Figure 5**  
**Estimated Need for Family Planning Services**



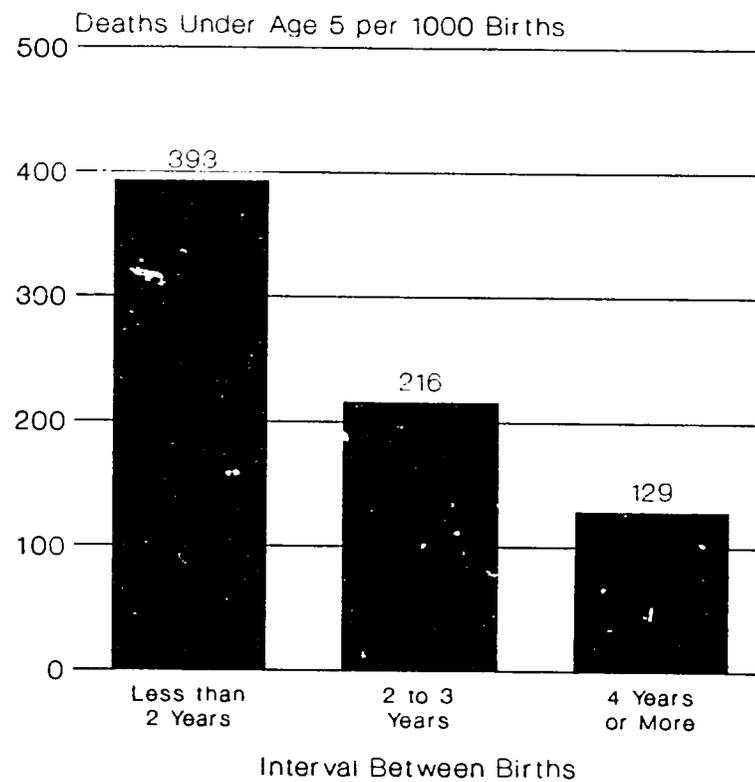
\* Wanting to wait at least two years before birth of next child

**Figure 6**  
**Trends in Child Mortality**



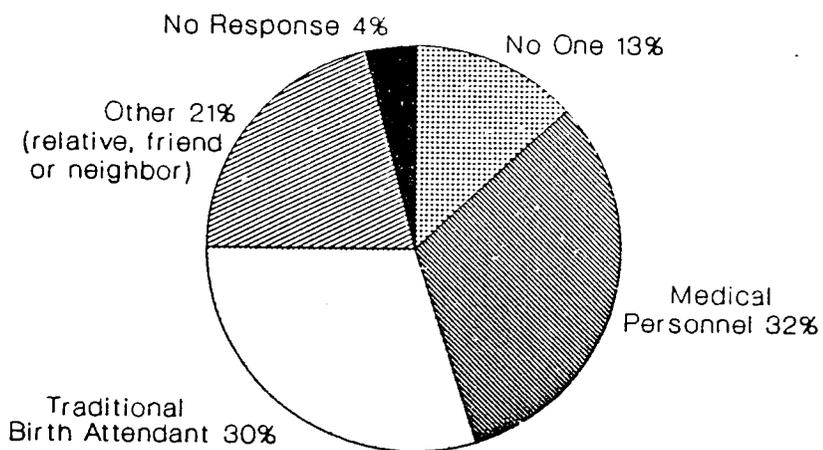
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**Figure 7**  
**Birthspacing and Child Mortality (1977-86)**



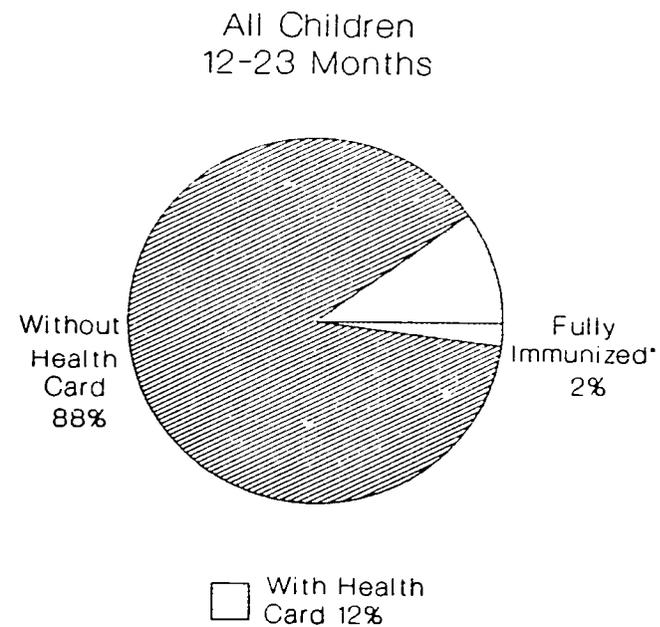
EDS-Mali 1987

**Figure 8**  
**Assistance During Childbirth**  
*(Based on births in 5 years before the survey)*



EDS-Mali 1987

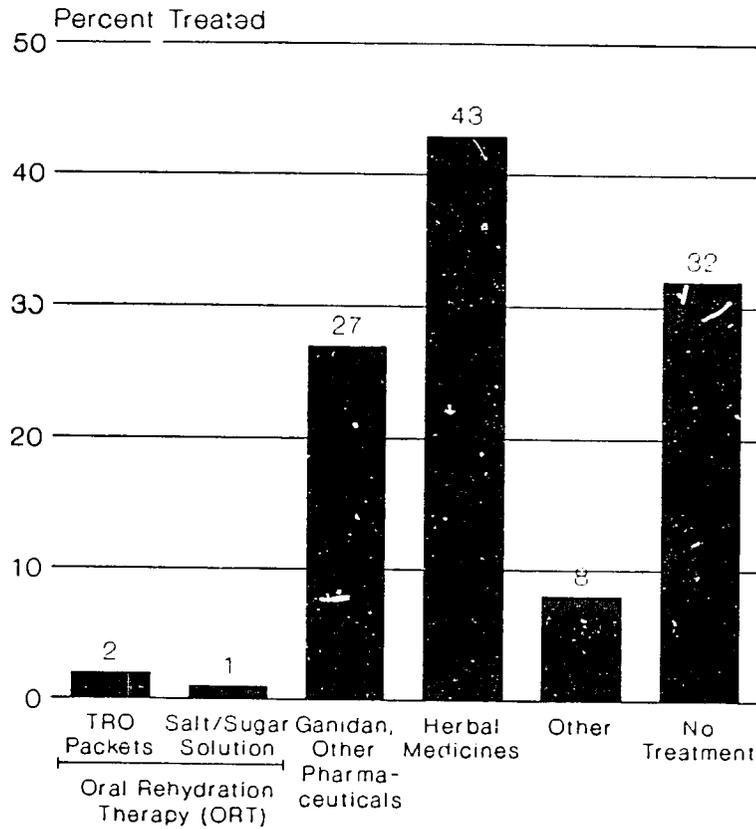
**Figure 9**  
**Immunization of Children 12-23 Months**  
**According to a Health Card**



\* Fully immunized against the six major childhood diseases: tuberculosis, diphtheria, pertussis, tetanus, polio, measles

EDS-Mali 1987

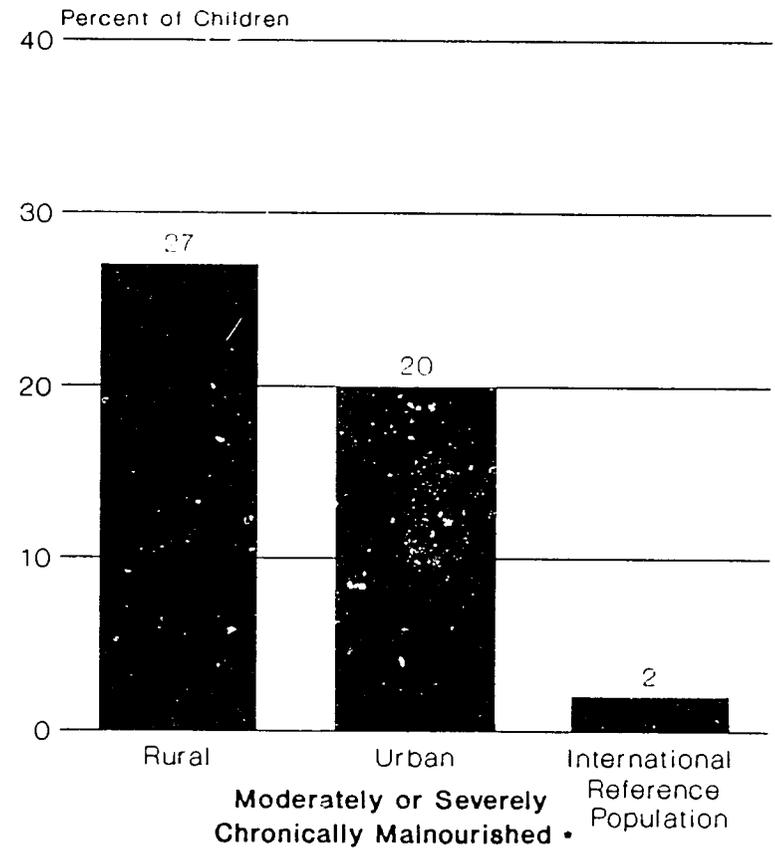
**Figure 10**  
**Treatment of Childhood Diarrhea**  
*(Children under age 5 with Diarrhea  
 in the 2 Weeks Before the Survey) \**



\* Total greater than 100 due to multiple responses

EDS-Mali 1987

**Figure 11**  
**Child Malnutrition**  
*(Based on Height for Age Ratio  
 among Children 3-36 Months)*



\*Less than or equal to 2 standard deviations below the median of the international reference population

EDS-Mali 1987