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In this bulletin, we report on the fertility and mortality information from the survey. This information was collected on a subsample of women in the households surveyed. In particular, the sampling procedure called for selecting one woman over 14 years of age per sampled household. Selection at random from the household, which is the final sampling stage, ensures that the women selected constitute a random sample. Information on these women can, therefore, be used to make inferences about the Conakry population. However, the possibility of selective loss of information cannot be discounted *a priori*. Some attention is paid to this issue in this report.

Out of the 1,725 households surveyed, 175 did not have any women older than 14 years. This is mainly because most (83 percent) of these households are single-person households. Another 121 households (with eligible women) were missed during the interviewing process. The fact that these households' heads are almost 6 years younger, and there are 3 fewer members in these households is cause for some concern. If they were missed mainly because the women in the households (81 percent have only one eligible woman) participate more in the labor market, or are more economically active, then some degree of sample selectivity will be present in the data on women with information on fertility and mortality.

This is an issue that will be taken up in greater detail at the time of multivariate analysis.

As a result of these omissions, we have information on age at menarche, age at first pregnancy, age at first birth, number of miscarriages and abortions, family size desires, child spacing, and contraceptive use for 1,429 women. These variables are discussed in the first part of this bulletin. Of these 1,429 women, 12 had not had their first period, 276 had not been pregnant at the time of the survey, and another 20 who had been pregnant but had not had a live birth. The second set of questions that collect detailed fertility histories were, therefore, administered to 1,133 women. These form the basis for our analysis of the frequency and pace of childbearing, and infant and child mortality, and are discussed in the second part of the bulletin.

Table 1 contains descriptive information on the 1,429 sampled women. The mean age of women rom whom we obtained demographic information is 30 years. Most of these women are the household head's wives (73 percent), and most (79 percent) were married at the time of the survey. In cases where the household head resides in the same household, he is, on average, 14 years older than the respondent. More than one-half of these women do not have any schooling, and this appears to have a strong bearing on child mortality rates. The young age at first birth and the high demand for children are t_ ical of high-fertility societies.

Since a cross-sectional survey picks women at different points in their childbearing years, it is best to examine demographic information by grouping women into cohorts. A cohort refers to a group of

individuals who experience the same event at a point in time or during the same time interval. The information from this survey is presented in terms of five-year age cohorts, i.e., women born during a five-year period of time. The first age cohort (younger than 20) and the last age cohort (55 and older) are not five-year cohorts, but given the small number of women in these categories, this simplification is unlikely to significantly influence the results.

Table 2 contains mean values for the five-year age cohorts for age at first period, age at first pregnancy, desired number of children, desired interval between births. It also contains the percentage of contraceptive users within each age cohort. By comparing the means (and percentages) across the age cohorts these data can be used to make inferences about changes in these demographic variables over time. There does not appear to have been any change in the age at which women have their first menstrual period, and the age at which they have their first pregnancy. The early age at first pregnancy and the negligible use of contraception suggests that in Conakry fertility must closely approximate "natural fertility" (fertility in the absence of conscious control). Evidence of this is also available in the high means for the number of children women would like to have. The bar graph in Figure 1 presents this information graphically. There appears to have been a decline in the demand for children over time from nine children among the oldest women in our sample, to less than six among the youngest. But even this reduction in demand, by itself, is unlikely to lower

> population growth rates since desired family size remains approximately equal to the number of children a Guinean woman could have in the absence of conscious control of fertility.

It is sometimes argued that responses to questions on desired family size, in a cross-sectional survey are likely to reflect "post hoc rationalization" of previous childbearing experiences, i.e., a woman who has five children at the time of the survey might say she would like to have six to justify her childbearing experiences. If this were the only confounding influence, then one can expect responses to this question to closely follow a woman's completed family size — after a reasonable number of years of childbearing. In Conakry, this does not appear to be the case. Figure 2 plots the mean desired family size and the number of children ever born (CEB) to a woman (at the time of the survey) for the five-year age cohorts. The DESIRED curve lies above the CEB curve at all points on the graph, indicating that if it was biologically possible to have more children, Guinean women of all age cohorts would do so. This "excess demand" for children is one possible explanation for the low rates of contraceptive use; the other factors would include knowledge of and access to contraceptives. This, however, only addresses the birth-limitation role of contraception. The use of contraception for birth-spacing purposes is quite independent of birth-limitation, and there is some indication that there might be a birth-spacing role for contraception. To examine this issue we will later explore the

relationship between desired and actual birth intervals. Nonetheless, one possible implication of the excess demand for children is that as health conditions improve and probabilities of survival increase, there may in fact be an increase in fertility and the rate of population growth.

The second set of questions on childbearing experience was asked of women who had a first birth. Table 2 contains information derived from the fertility histories for the age cohorts. The column for CEB shows the mean number of live births. If these age-specific values captured the fertility experience of a typical Guinean woman through her childbearing years, it could be expected that each five years, on average, would result in an additional live birth. With low levels of contraceptive use and a high demand for children, this long interval between live births is very interesting. It reflects a combination of low "natural fertility" and effective traditional contraception. It is possible that of the two factors, low natural fertility has a stronger bearing than effective traditional contraception. While we do not have any data on the type and duration of traditional contraception, we base this conjecture on existing knowledge of the effectiveness of traditional contraception, and the relatively high rates of involuntary abortion and miscarriages observed in this sample. The proportion of pregnancies that are involuntarily aborted or miscarried is lower for women in the younger age cohorts. This may be due in part to age and parity effects, although another contributing factor may be improved health status. Nonetheless, the proportion of involuntary abortions and miscarriages remains high,

and is consistent with other evidence on natural fertility in Africa. These data provide further evidence that fertility in Conakry is, to a great extent, supply driven.

The next two tables contain information on what demographers refer to as the "quantum" and "tempo" of fertility. "Quantum" refers to the number of children women have within a period of time and "tempo" refers to the pace at which children are born. Since each woman has a relatively fixed period of life during which she can bear children, the two components are related because greater spacing of children will lead to fewer children at the end of the childbearing years. But from a population and health policy perspective, the two are of equal interest. Contraceptives can be used for birth-limitation as well as birth-spacing, and women's health and infant and child mortality are closely related to both the number of children a woman already has had (parity) and the spacing of births. Evidence on these factors is discussed later.

Table 3 contains data on the quantum of fertility. We would like to have information on the proportion of women who (eventually) move from one parity to another; these are called parity progression ratios. But since a cross-sectional survey censors the fertility histories of younger women, it is not possible to calculate parity progression ratios for survey samples. Instead, the proportion of women moving on to the next parity *within five years* of the previous birth is used as a measure of quantum. This is referred to as quintum, and Table 4 presents quintums for the nine age cohorts. Therefore, 88 percent of the women aged 25 to

29 at the time of the survey who had had a first birth went on to have a second birth within five years of the first one.

In both Tables 3 and 4, it is important to separate the first birth from the higher order births. While the at-risk period for the second, third, and higher-order births begins with the previous birth, it is not clear what event should be taken as the starting point for the first birth. Since we do not have any information on the beginning of sexual relations for these women, we have used the age of the first menstrual period as the starting point for the at-risk period for these women. Because of this approach there is likely to be much greater variation in the measures of quantum and tempo for the first birth.

The quintums for the first birth are considerably lower than those for the higher-order births, and this is consistent with the ambiguity associated with the beginning of the at-risk period for the first birth. For the second, third, and fourth births, the quintum values suggest that approximately 80 percent of the women moved on to the next parity. These numbers drop somewhat for the higher order births, and especially for the younger cohorts, but this is to be expected because these women are observed before they have completed their childbearing years. There is greater variation in the quintums for higher-order births, but there is no systematic pattern that would indicate a secular change in childbearing patterns.

A similar conclusion can be drawn from the next table, which contains information on average birth intervals for the nine age cohorts. Tukey's trimean is calculated by taking quartiles of the standardized

survival distribution of time to next birth. Because of censoring only women with a birth within five years of the previous one are used to obtain a survival distribution of time to next birth. If the first, second, and third quartiles of this distribution are denoted as $q_1$, $q_2$, and $q_3$, then Tukey's trimean equals $(q_1 + 2q_2 + q_3)/4$. There does not appear to be any clear pattern to these mean values that would suggest any change in the childbearing behavior of women over time in Conakry. What is interesting is that the desired interval between births (Table 2) is greater than the actual intervals these women have. So while the relationship between desired family size and achieved family size did not suggest much of a role for family planning services, these data are indicative of a birth-spacing role for family planning policy. This in fact has been the approach taken by many population programs in developing countries: program formulation in terms of provision of birth-spacing services instead of birth-limitation services.

The detailed fertility histories also contain information on the survival status of all live births, and this forms the basis of our analysis of infant and child mortality in Conakry. Analytical techniques for studying mortality are similar to those used to study birth intervals, because the variable of interest is amount of time before an event, and with cross-sectional data there is censoring of information on the variable for some individuals. In the case of birth intervals, at the time of the survey some women would not have progressed to the next parity, and in the case of mortality some births would not have experienced mortality. In the latter case, all that can be said about

these censored observations is that the "time to death" is greater than the survival time observed in the survey. The simplest way of summarizing data on mortality is the demographer's life table. With a set of death rates, and a statistical model that describes the mortality experience of a population, one can generate "probabilities of dying" before a certain age, and the number of years a typical individual can be expected to live. These life tables are the bases for the commonly used infant mortality rates and life expectations that are used to describe the quality of life in a country. Since our data is primarily on children born with some information on the year in which they died, if they died, we constructed life tables to obtain measures of infant and child mortality for the sample women. These results are summarized in Table 5.

The infant mortality rate (IMR) for the sample women was found to be 73, i.e., for every 1,000 births to women in Conakry, 73 can be expected to not survive beyond the first year of life. This is approximately one-half of that reported in the World Bank *Social Indicators of Development* for 1990. The probable cause for this difference lies in the study population for which these rates are applicable. The World Bank estimate of infant mortality is for Guinea, while our estimates are based on a random sample of women in Conakry. Therefore our IMR should not be taken as an estimate of Guinea's infant mortality rate. Our lower rate, however, does imply that the infant mortality rate in rural Guinea, and in other urban areas of Guinea is higher than 140. It should also be remembered that our IMR is based on births (and infant deaths) that are

spread out over a number of years, while typical IMRs are based on deaths in a particular year.

It is possible that, due to recall errors for births in the distant past, our estimate of infant mortality is subject to considerable error. To minimize this possibility and to simultaneously obtain some sense of changes in infant mortality, we constructed infant mortality rates based on births in the 5 and 10 years before the survey year, but excluding the survey years of 1990 and 1991 themselves. The survey years were excluded to minimize censoring, even though the statistical methods do account for censoring. IMR for births between 1980 and 1989 was found to be 66. This rate is considerably lower than the overall rate. On further disaggregating the 10-year period into two 5-year periods, it can be seen that the reason for the lower 10-year IMR is the significantly lower infant mortality in the 5 years preceding the survey. The improvement in infant mortality from 79 to 55 within a 5-year period is truly remarkable.

The same life tables used to obtain the infant mortality rate, can also be used to get estimates of child mortality. These child mortality rates also have a probabilistic interpretation similar to that of the IMR. Once again our mortality rates appear to be lower than those reported in the *Social Indicators of Development*. The differences between these rates are similar to those for the IMRs, indicating that the better outcomes in mortality conditions in Conakry, relative to the rest of the country, affected young children as well as infants. In looking at changes in child mortality over time, child mortality appears

to increase in the five years preceding the survey, but this difference is not statistically significant. In fact, a year-by-year analysis of child mortality suggests that the improvement in infant mortality (noted earlier) extends to the second year of life. Thereafter, differences in mortality rates between the two five-year time periods are statistically insignificant.

It is not possible at this point to say why mortality is falling for children younger than 2, but not for preschool-aged children older than 2 years of age. A number of possibilities exist, including the introduction of public health measures, such as oral rehydration therapy, and improved prenatal care. However, any conclusion at this point would be premature.

We next explored the role of various risk factors in infant and child mortality. At the present stage our examination of these factors remains at a univariate level, but at a later stage we expect to examine their role within a multivariate framework. We explored the effects of gender, parity, age, and education of the mother, length of the previous birth interval, and gender and survival status of the previous birth. Except for education all the other factors examined so far are demographic in nature. At a later stage we hope to extend this analysis to economic factors such as wages, income, and assets. Before discussing the results it is necessary to clarify two issues related to the analysis of physiological outcomes that are a result of individual decision-making.

Infant and child mortality are influenced by physiological as well as behavioral factors. But it is often difficult to clearly separate the physiological effect from the behavioral one. For example, while a short interval preceding a birth might have a physiological effect due to insufficient time for the mother to recuperate from the last delivery, the shorter interval itself might be a result of a conscious decision to space children closely. In these cases extreme caution needs to be exercised in drawing inferences from reduced form analyses.

Similarly, any individual decision - such as intrahousehold resource allocation - can be expected to be influenced by individual, household, and community-level factors. For example, the duration for which a child is breastfed is likely to be affected by individual-level factors such as the child's gender, birth order, mother's age, education, wages, etc. Household-level factors such as the household's assets, social status, etc., can also influence this decision, as can community-level factors such as women's employment opportunities, and availability of baby food and health care in the region. To conduct multivariate analyses that have a policy relevance, it is very important that a theoretical model be specified that delineates how these different sets of factors influence the decision being studied.

These issues are not important at this stage of our analysis, but they should be kept in mind when reviewing the results of the simple univariate tests reported in the remainder of this section. At the multivariate stage we expect to devote considerable attention to these issues.

The remaining sections summarize the results of our univariate analyses of risk factors in infant and child mortality. The sample for infant mortality, defined here as death within the first year, consists of all those who were at risk of dying within the first year of life, i.e., all live births. The sample for child mortality, defined here as death between the ages of 1 and 5, was all children surviving year 1. In each of the cases a chi-square test of association was employed to test the association between the risk factor and the outcome (infant and child mortality). The null hypothesis, in each case, was no association between the risk factor and survival status. Since a cross-tabulation does not account for censoring of information, as a life table would, we restricted the sample to all those who had a chance to experience the event of mortality. We therefore excluded all births in the year before the survey for infant mortality, and all births in the five years before the survey for child mortality. The same type of analysis can be conducted using life tables and univariate tests, such as the logrank test and the Wilcoxon test, but these were not attempted because these analyses are only meant to be precursors to multivariate analyses.

Table 6 contains percentages of all male and female live births that did not survive beyond the first year of life, and those that died between 1 and 5 years of age. Male infant mortality is found to be significantly greater than female infant mortality. But no significant differences were noted between males and females in the incidence of child mortality. It is possible, therefore, that the gender differences in infant mortality are due to physiological differences between males

and females, and not due to a sex-bias in resource allocation within the household. Of course, it should be noted that differences in the incidence of mortality are only the extreme manifestation of resource allocation biases, and therefore lack of differences should not by themselves be interpreted as reflecting equitable allocation.

Table 7 shows that there is a curvilinear relationship between birth order and infant mortality. Almost 10 percent of all first births die within the first year, but the incidence of mortality for the higher-order births declines before turning up again after the fourth birth. Except for the seventh and eighth births, which show a slightly lower incidence, the higher incidence of infant mortality with increasing parity is quite distinct. Child mortality, on the other hand, does not exhibit any distinguishable pattern, and it is therefore safe to conclude that the pattern observed for infant mortality is another indication of relatively little bias in the allocation of resources between children according to their birth order.

Table 8 disaggregates the incidence of infant and child mortality according to the (five-year) age cohort of the mother. While there is no association between mother's age and the incidence of infant deaths, there is a significant tendency for higher child mortality amongst older women. It is interesting that the age effects are different from the birth order effects. We would expect the high correlation between mother's age and parity to result in similar effects for these two variables. This will be explored within a multivariate framework, and it is possible that the age effect is more complex than that tested here.

In Table 9, infant and child mortality are classified according to the educational level achieved by the mother. There is no significant association between education and infant mortality; in fact, the percentage of infants dying before age 1 is the highest for mothers with a university education, although the small number of live births to these women make the sample statistic suspect. The significant inverse relationship between child mortality and mother's education is an important finding. This effect is possibly due to better nutritional and health knowledge amongst women with more education, but at this stage it is not possible to draw a definite conclusion in this direction as numerous confounding factors, including income, are not taken into account.

We next examined factors related to the childbearing process preceding each birth, since these might indirectly provide information on "unobservable" physiological factors. But once again, it is not possible to determine whether the effects observed are due to physiological or biological factors. These variables include the survival status of the previous birth, the sex of the previous birth, and the length of the interval preceding the current birth. In each of these tables the first birth is excluded because no birth preceded the first birth.

Table 10 classifies infant and child deaths by the sex of the birth preceding the current one. No association was found between sex of the previous birth and infant or child mortality.

Survival status of the previous live birth has a significant impact on the survival chances of the current birth in the first year, and in

the four years following the first one (Table 11). A live birth is less likely to survive the first year of life if the one preceding it did not survive the first year of life. This "recurring mortality" effect is an important phenomena that we intend to study carefully at a later stage. In the case of child mortality we disaggregated the incidence of child mortality by the survival status of the previous birth, 5 years since birth. In this case too, incidence of previous infant or child mortality was found to affect the survival chances of those who survived past the first year of life, although the magnitude of the difference was not as great. This is the only risk factor that affects both infant and child mortality.

Table 12 contains means and standard deviations for the length of the birth interval preceding live births that survived the first year and those that did not survive the first year of life. A t-test was carried out to determine if the observed difference in means for the two groups is significant. The birth interval preceding a surviving (beyond the first year) live birth is significantly longer (by six months) than that preceding a birth that did not survive the first year. In other words, closer child-spacing appears to increase the risk of infant mortality. Table 12 presents the same information according to the survival status of children aged 1 to 4 years, and even though the difference in birth intervals is much smaller, it remains significant at the 10-percent level of confidence. Given the strong association between survival status of the previous birth and the present birth, this result might reflect some of that effect since infant mortality, through shortened breastfeeding,

and resulting resumption of menses, is likely to shorten the interval between births.

These results are very informative of the complex set of factors underlying mortality in the early years of life, but they should not be taken as the final word. These are univariate tests of association, and it is possible that variables not significant at this stage become significant when other factors are controlled for in a multivariate framework (and vice versa).

**Table 1 — Characteristics of Sampled Women**

| | Mean | N |
|---|---|---|
| Age in years | 30.1 | 1,429 |
| Age of spouse in years | 43.7 | 1,073 |
| Percentage household head or head's wife | 77.3 | 1,429 |
| Percentage married at the time of the survey | 77.8 | 1,429 |
| Respondent's education: | | |
| No education | 57.5 | 819 |
| Primary education | 14.9 | 212 |
| Secondary education | 24.6 | 351 |
| University education | 3.0 | 43 |
| Age at first period | 13.8 | 1,417 |
| Age at first pregnancy | 17.9 | 1,153 |
| Age at first birth | 18.8 | 1,133 |
| Desired number of children | 6.6 | 1,418 |
| Desired interval between births | 2.5 | 1,418 |
| Percentage who have used contraception | 4.1 | 1,418 |

**Source:** CFNPP/ENCOMEC 1990 Survey data.

**Table 2** — Demographic Characteristics of Women with Information on Fertility

| Age Cohort | Age at First Period | Age at First Pregnancy | Number of Children Desired | Desired Interval Between Births | Children Ever Born (Live Births) | Percentage Who Use Contraception | Proportion of Pregnancies Aborted/ Miscarried |
|---|---|---|---|---|---|---|---|
| less than 20 | 13.7 | 16.2 | 5.8 | 2.5 | 0.4 | 0.43 | 0.07 |
| 20-24 | 13.8 | 17.5 | 6.0 | 2.5 | 1.5 | 4.59 | 0.08 |
| 25-29 | 13.9 | 18.3 | 6.2 | 2.5 | 2.7 | 5.19 | 0.08 |
| 30-34 | 13.8 | 18.4 | 6.5 | 2.5 | 3.8 | 5.99 | 0.12 |
| 35-39 | 13.7 | 18.3 | 7.1 | 2.5 | 5.0 | 7.05 | 0.12 |
| 40-44 | 13.6 | 17.4 | 7.9 | 2.6 | 5.9 | 4.26 | 0.12 |
| 45-49 | 13.7 | 17.7 | 8.2 | 2.6 | 6.3 | 2.86 | 0.11 |
| 50-54 | 13.7 | 18.2 | 8.9 | 2.6 | 6.2 | 0.00 | 0.19 |
| 55 and over | 14.0 | 17.8 | 9.0 | 3.0 | 5.8 | 0.00 | 0.13 |

**Source:** CFNPP/ENCOMEC 1990 Survey data.

**Table 3** — Mean Number of Children Ever Born, Proportion of Pregnancies Aborted/Miscarried, Proportion of Infants Dying Before Age 1, and Proportion of Children Alive at Age 1 Dying Before Age 5

| 5-Year Age Cohorts | Mean Children Ever Born | Proportion of Pregnancies Aborted/ Miscarried | Proportion of Births Dying Before Age 1 | Proportion of Children Alive at Age 1, Dying Before Age 5 |
|---|---|---|---|---|
| 19 and less | 0.4 | 0.07 | 0.06 | 0.05 |
| 20-24 | 1.5 | 0.08 | 0.06 | 0.06 |
| 25-29 | 2.7 | 0.08 | 0.07 | 0.07 |
| 30-34 | 3.8 | 0.12 | 0.08 | 0.09 |
| 35-39 | 5.0 | 0.12 | 0.06 | 0.09 |
| 40-44 | 5.9 | 0.12 | 0.07 | 0.07 |
| 45-49 | 6.3 | 0.11 | 0.07 | 0.09 |
| 50-54 | 6.2 | 0.19 | 0.08 | 0.09 |
| 55 and over | 5.7 | 0.13 | 0.08 | 0.16 |

**Source:** CFNPP/ENCOMEC 1990 Survey data.

**Table 4 — Mean (Tukey's Trimean) Birth Intervals by Age Cohort of Mother and Birth Order**

| | Birth Order | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 5-Year Age Cohorts | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 19 and less | 3.00 | 2.00 | | | | | | |
| 20-24 | 4.00 | 2.25 | 1.75 | 1.50 | | | | |
| 25-29 | 4.25 | 2.75 | 2.25 | 2.25 | 2.00 | 1.00 | | |
| 30-34 | 4.25 | 2.75 | 2.25 | 2.25 | 2.25 | 2.25 | 1.75 | 1.38 |
| 35-39 | 4.25 | 2.75 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 |
| 40-44 | 3.75 | 2.75 | 2.75 | 2.25 | 2.75 | 2.25 | 3.00 | 2.00 |
| 45-49 | 4.25 | 2.75 | 2.25 | 2.25 | 2.50 | 2.25 | 2.75 | 2.75 |
| 50-54 | 4.00 | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 | 2.00 | 2.00 |
| 55 and over | 4.50 | 2.75 | 2.75 | 2.75 | 2.75 | 2.25 | 2.00 | 2.25 |

**Source:** CFNPP/ENCOMEC 1990 Survey data.

**Table 5 — Infant and Child Mortality Rates**

| Sample | Infant Mortality Rate | Child Mortality Rate |
|---|---|---|
| All births | 73 | 105 |
| Births between 1980-1984 | 79 | 116 |
| Births between 1985-1989 | 55 | 119 |
| Births between 1980-1989 | 66 | 110 |

**Source:** CFNPP/ENCOMEC 1990 Survey data.

**Note:** The child mortality rates are conditional probabilities, i.e., the probability of dying before age 5 conditional on surviving past the first year of life.

**Table 6 — Infant and Child (1-4 years) Deaths by Sex of Child**

| | Infants | | Children (1-4 Years) | |
|---|---|---|---|---|
| Sex | Percentage Dying Before Age 1 | Number of Live Births | Percentage Dying Between the Ages of 1 and 5 | Number Alive after First Year of Birth |
| Male | 8.41 | 2,272 | 11.68 | 1,593 |
| Female | 5.74 | 1,969 | 11.52 | 1,372 |
| Total | 7.17 | 4,241 | 11.60 | 2,965 |
| $x^2(df=1)$ | 11.28* | | 0.018 | |

**Source:** CFNPP/ENCOMEC 1990 Survey data.

* Signifies $p < 0.01$.

**Table 7 — Infant and Child (1-4 Years) Deaths by Birth Order of Child**

| | Infants | | Children (1-4 Years) | |
|---|---|---|---|---|
| Birth Order | Percentage Dying Before Age 1 | Number of Live Births | Percentage Dying Between the Ages of 1 and 4 | Number of Children Alive at Age 1 |
| 1 | 9.64 | 1,100 | 12.14 | 791 |
| 2 | 5.62 | 854 | 10.13 | 622 |
| 3 | 5.48 | 675 | 12.36 | 461 |
| 4 | 4.17 | 503 | 12.86 | 350 |
| 5 | 8.38 | 370 | 11.02 | 254 |
| 6 | 8.55 | 269 | 10.88 | 193 |
| 7 | 6.38 | 188 | 11.67 | 120 |
| 8 | 5.69 | 123 | 13.10 | 84 |
| 9 | 12.66 | 79 | 4.76 | 42 |
| 10 | 16.47 | 85 | 14.58 | 48 |
| Total | 7.28 | 4,246 | 11.60 | 2,965 |
| $\chi^2$ ($df$=9) | 38.97* | | 5.03 | |

**Source:** CFNPP/ENCOMEC 1990 Survey data.

* Signifies $p < 0.01$.

**Table 8 — Infant and Child Deaths (1-4 Years) by (5-Year) Age Cohort**

| Age Cohort of Mother | Infants: Percentage Dying Before Age 1 | Infants: Number of Live Births | Children (1-4 Years): Percentage Dying Between the Ages 1 and 4 | Children (1-4 Years): Number of Children Surviving at Age 1 |
|---|---|---|---|---|
| 19 and less | 8.22 | 73 | 0.00 | 1 |
| 20-24 | 7.44 | 403 | 9.02 | 122 |
| 25-29 | 6.97 | 660 | 11.21 | 348 |
| 30-34 | 6.64 | 768 | 12.71 | 527 |
| 35-39 | 6.91 | 709 | 10.79 | 547 |
| 40-44 | 6.33 | 632 | 8.14 | 528 |
| 45-49 | 8.25 | 388 | 11.54 | 338 |
| 50-54 | 7.55 | 265 | 11.57 | 242 |
| 55 and over | 10.06 | 348 | 18.59 | 312 |
| Total | 7.28 | 4,246 | 11.60 | 2,965 |
| $\chi^2$ ($df$=8) | 6.21 | | 22.98 (significant at 1 percent) | |

**Source:** CFNPP/ENCOMEC 1990 Survey data.

**Table 9 — Infant and Child (1-4 Years) Death by Schooling Level of Mother**

| Schooling Level of Mother | Infants: Percentage Dying Before Age 1 | Infants: Number of Live Births | Children (1-4 Years): Percentage Dying Between the Ages of 1 and 4 | Children (1-4 Years): Number of Children Surviving at Age 1 |
|---|---|---|---|---|
| No schooling | 7.48 | 2,901 | 12.96 | 2,098 |
| Primary | 6.95 | 518 | 9.14 | 339 |
| Secondary | 6.52 | 736 | 8.01 | 487 |
| University | 9.20 | 87 | 4.88 | 41 |
| Total | 7.28 | 4,242 | 11.60 | 2,065 |
| $\chi^2$ ($df$=3) | 1.36 | | 13.72* | |

**Source:** CFNPP/ENCOMEC 1990 Survey data.

* Signifies $p < 0.01$.

**Table 10** — Infant and Child (1-4 Years) Deaths by Sex of Previous Child

| Sex of Previous Child | Infants | | Children (1-4 Years) | |
|---|---|---|---|---|
| | Percentage Dying Before Age 1 | Number of Live Births | Percentage Dying Between the Ages of 1 and 5 | Number Alive After First Year of Birth |
| Male | 6.96 | 2,154 | 12.02 | 1,514 |
| Female | 7.31 | 1,861 | 10.68 | 1,283 |
| Total | 7.12 | 4,015 | 11.41 | 2,797 |
| $\chi^2$ ($df$=1) | 0.179 | | 1.24 | |

**Source:** CFNPP/ENCOMEC 1990 Survey data.

**Table 11 — Infant and Child (1-4) Deaths by Survival Status of Previous Live Birth**

| Survival Status of Previous Child 1 Year After Birth | Infants | | Children (1-4 Years) | |
|---|---|---|---|---|
| | Percentage Dying Before Age 1 | Number of Live Births | Percentage Dying Between the Ages of 1 and 5 | Number Alive After First Year of Birth |
| Alive | 6.56 | 3,733 | 11.16 | 2,501 |
| Dead | 14.98 | 287 | 14.01 | 464 |
| Total | 7.16 | 4,020 | 11.60 | 2,965 |
| $\chi^2$ ($df$=1) | 28.41* | | 3.11** | |

**Source:** CFNPP/ENCOMEC 1990 Survey data.

* Signifies $p < 0.01$.
** Signifies $p < 0.1$.

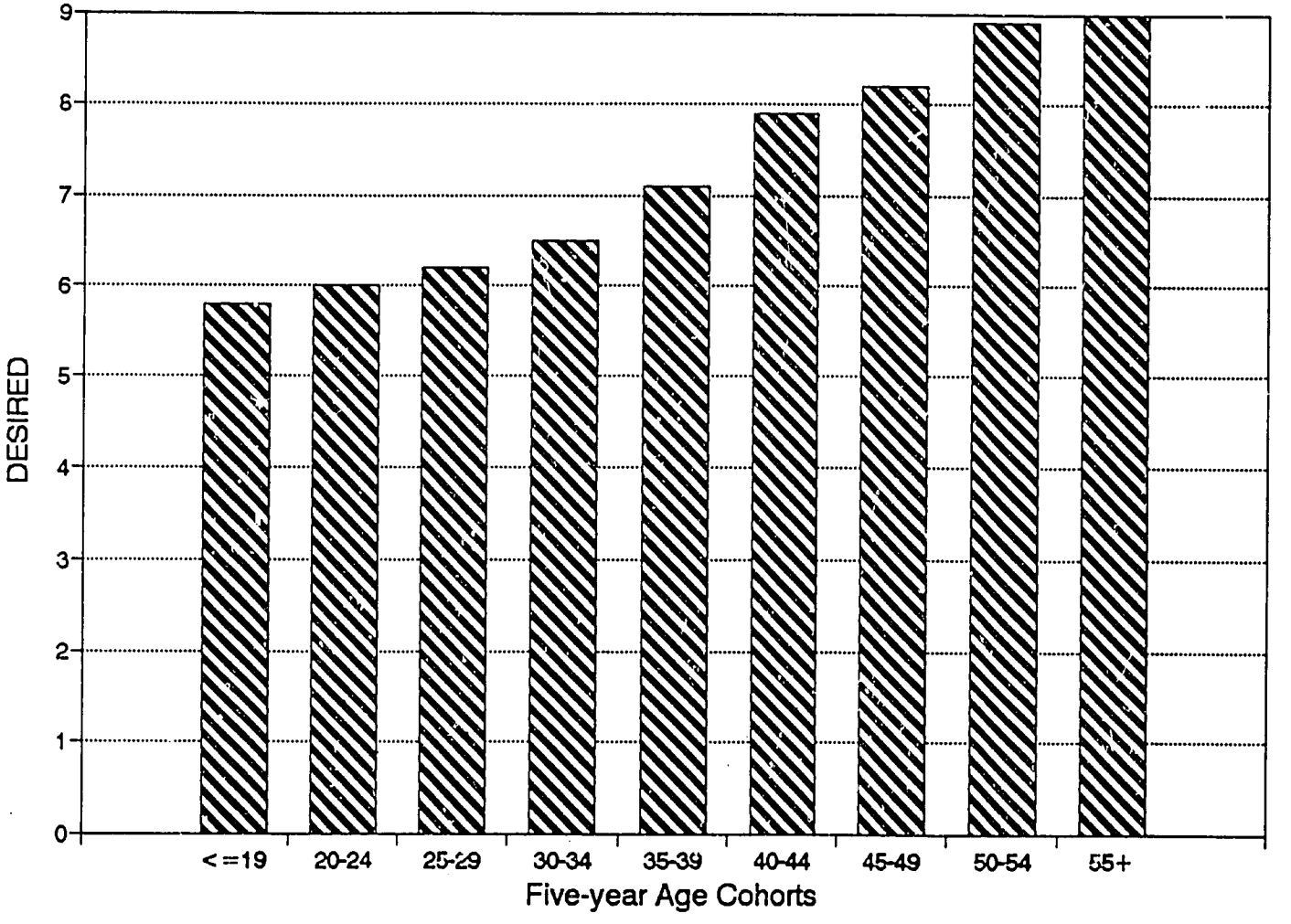
**Table 12** — Mean (Standard Deviation) Birth Interval Preceding Present Birth by Survival Status of Child 1 Year After Birth, and Aged 1-4 Years

| | 1 Year After Birth | | Aged 1-4 Years | |
|---|---|---|---|---|
| Survival Status | Mean | Standard Deviation | Mean | Standard Deviation |
| Alive | 2.94* | 1.84 | 2.90** | 1.82 |
| Dead | 2.29* | 1.42 | 2.72** | 1.46 |

**Source:** CFNPP/ENCOMEC 1990 Survey data.

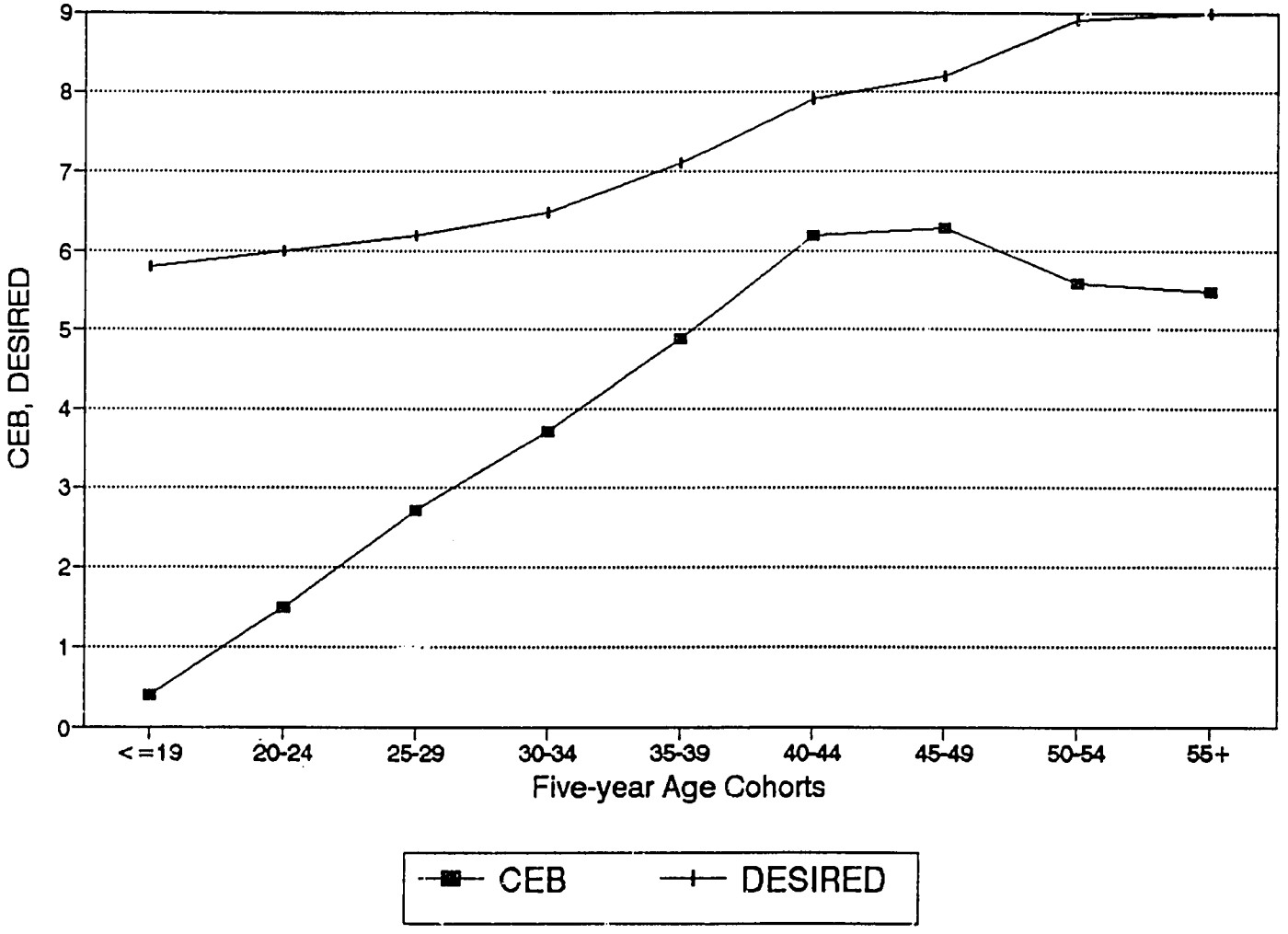
* Signifies means significantly different at $p < 0.01$.
** Signifies means significantly different at $p < 0.1$.

Figure 1: Mean Number of Children Desired by Age Cohorts




**Source:** CFNPP/ENCOMEC 1990 Survey data.

Figure 2: Children Ever Born and Number Desired by Age Cohorts




**Source:** CFNPP/ENCOMEC 1990 Survey data.