

differentials in

# Expectation of Additional Children Among Mothers of Legitimate Live Births

## United States-1964-1966

Statistics on differentials in the proportion of mothers expecting to have additional children and in the average number of additional children expected, according to selected demographic and socioeconomic characteristics. Based on data collected by a questionnaire mailed to mothers for a sample selected from records of births in 1964, 1965, and 1966 which were filed with the National Center for Health Statistics.

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# DIFFERENTIALS IN EXPECTATION OF ADDITIONAL CHILDREN AMONG MOTHERS OF LEGITIMATE LIVE BIRTHS

Mary Grace Kovar, *Division of Vital Statistics*

## INTRODUCTION

There have been a number of studies in the past few years designed to predict future fertility by asking women how many children they expect, intend, or desire to have. These studies have been exhaustively analyzed elsewhere and will not be discussed here.

The present study, which is based on a sample of birth certificates, was designed to furnish information on two points only. First, given that a woman has recently given birth to a child, what factors obtained either from the birth certificate or from a questionnaire mailed to the mother might affect her expectation of having additional children? Second, if these factors do have an effect on the mother's expectations, is it a consistent one regardless of the number of children she already has? Presumably the mothers with two living children or more will expect to have fewer additional children than the mothers with one child since they have already completed more of their family. The question then is whether the socioeconomic and demographic factors that influence the expectation of additional children among mothers of one child exert the same influence among mothers with two, three, or more children. Data from the 1964-66 National Natality Survey (NNS) show that while the influence of demographic factors such as age and interval since first marriage seems to be consistent regardless of the number of children the mother already has, no such consistency is apparent for socioeconomic factors such as education and family income.

## SOURCES AND LIMITATION OF THE DATA

The sample for the 1964-66 National Natality Survey was drawn from the file of birth certificates for children born in the United States during those 3 years. From the sample of all births, those which were recorded as or inferred to be legitimate were selected for the survey. Because the sample was drawn from the birth certificates in such a manner that each birth rather than each mother had a known probability of being selected, the estimates given here are technically estimates of births rather than estimates of mothers. However, for ease and clarity in writing, the terms "married women" and "mothers" are used rather than "legitimate live births."

The sample was selected in advance from all the birth certificates expected in a given year so that as the monthly shipments of certificates were received by the National Center for Health Statistics (NCHS), those selected for the survey could be copied without waiting for the entire shipment to be processed. The first attempt to contact the mother was made as soon as possible after the birth, but because of registration and survey procedures the first contact was usually not made until the sample child was 3 to 6 months old. In a few cases where the birth certificate was filed late or the mother proved difficult to locate, no contact was made until the child was nearly a year old.

It is not known precisely how long after the birth of the child the mother reported her expectation of additional children. In general, it

was close to 6 months; occasionally it was almost a year.

The survey was conducted primarily by mail. To reduce the biases which might be introduced because of differential response to a mail survey, personal interviews were attempted with those women who did not respond to the mail survey and who were residents of one of the primary sampling units designated by the U.S. Bureau of the Census. The overall response rate for the 10,395 cases selected for the survey was 89 percent. Questionnaire information for the nonrespondents was imputed using a matrix based on age, color, and live-birth order obtained from birth certificate information available for both respondents and nonrespondents.

Because the NNS was a mail survey, the questionnaire was designed to be as easily understood and as unambiguous as possible so that the woman could complete it without help. The design of the question on expectations was apparently successful, at least in that respect, as 99 percent of the respondents to the questionnaire answered the question on whether they expected more children and 96 percent reported the number of children expected. Of those who did not answer, many wrote marginal comments explaining that they did not know. Data for those who did not respond to a specific item such as number of additional children expected were also imputed by a special matrix which took advantage of the information which was known from other parts of the questionnaire as well as that available from the birth certificate.

The disadvantage of a mail questionnaire is that no probing in depth is possible because of the necessary restrictions on the design of a mail form. It is possible, however, that this disadvantage is offset by the willingness of the women to respond to an impersonal questionnaire which can be sealed in a preaddressed envelope and dropped into the mail rather than to an interviewer. Also, the use of the mail form eliminates the possibility of interviewer bias which is particularly important as some of the woman's previous fertility might have antedated her marriage. No quantitative evidence on these points is available from the NNS. Only a qualitative judgment based on comments which respondents wrote on questionnaires and on a small sample of interviews supports this view.

The number of additional children expected, as shown in this report, is more likely to be an underestimate than an overestimate. First, women who responded "Definitely no" or "Probably no" were not asked how many children they expected to have in the future. The number of children expected by these women was set at zero, even though the mothers who responded "Probably no" most likely should have had a value greater than zero assigned to them. (In the Growth of American Families study, for example, certain women were assigned a value of 0.3.)<sup>1</sup> Second, the rules for coding the responses were: If a respondent reported a range of one (e.g., two or three) the lower number was coded; if she reported a range of two (e.g., two or four) the middle number was coded. If the average of the range had been coded in both cases, 106,000 more children would have been added to the total number of additional children expected (table A). If the upper number of the range had been coded in both cases, 221,000 more children would have been added to the number of additional children expected. Finally, approximately 5 percent of the women responded to the question but wrote comments on the questionnaire which indicated that although they were doing their best to answer, they really did not know how many more children they expected to have. While it is obviously impossible to make quantitative estimates for these women which differ from their stated expectation regarding their future child-bearing, a qualitative judgment is that for the most part they were making minimum estimates. They were mostly women who responded "Definitely yes." They expected to have additional children, but found it difficult to predict how many additional children they would have. It seems likely that the number they gave was the number they were relatively firm about. Their problem was apparently in predicting how many children they might have *beyond* the minimum they were reasonably sure of.

The number of living children has been used in this report rather than the conventional live-birth order (or parity) because the question used to ascertain expectation of additional children was "Do you expect to have more children?" not "Do you expect to have more births?" and thus the mother's frame of refer-

Table A. Average annual number of mothers according to qualifications on part two of expectation question, by response to part one: United States, 1964-66 National Natality Survey

Responses	Number of mothers	Reported qualifications on number of children expected					
		None	Range of one	Range of two	Don't know	Religion	Refusal
		Number in thousands					
All responses . . . . .	3,480	3,077	212	9	156	22	3
Total responses "yes" . . . . .	1,882						
Definitely "yes" . . . . .	887	710	125	7	36	8	1
Probably "yes" . . . . .	994	812	87	2	83	10	-
Total responses "no" . . . . .	1,599						
Probably "no" . . . . .	981	945	-	-	30	3	2
Definitely "no" . . . . .	618	610	-	-	7	1	-

ence when she answered the question was children rather than births.

The number of living children was defined as the number living on the date of the sample child's birth, including the sample child. The possible death of a child between that date and the time the mother completed the questionnaire may introduce an unknown bias in the data. This method of coding was used, however, because the 1964-66 NNS was a multipurpose survey and other needs for the data required such coding.

There was very little difference in the average number of children whether live births or living children were used. On the average, the mothers in the 1964-66 NNS had 2.84 live births and 2.78 living children. The differences in expectation according to whether or not the mother had had a child who died in infancy before the birth of the sample child are shown later in this report.

### NATURE OF THE POPULATION

The population discussed in this report consists of married women in the United States who

had a live birth in 1964, 1965, or 1966. Because they had recently had a child, they were a special subset of all married women in the childbearing ages who differed from all married women in the childbearing ages in several important respects.

They were younger than all married women ages 15-44; 14 percent were under age 20, 36 percent were aged 20-24; and 26 percent were aged 25-29. Altogether, 75 percent were under age 30, and only 2 percent were age 40 or older (table B).

In contrast, according to data from the June 1965 Current Population Survey (CPS) conducted by the Bureau of the Census, only 4 percent of all currently married women aged 15-44 were under age 20, 17 percent were aged 20-24, and 19 percent were aged 25-29. Altogether, 39 percent were under age 30 and 21 percent were aged 40-44.<sup>2</sup>

The women in the NNS had had, on the average, 2.84 live births while the married women in the CPS had had, on the average, 2.48 children ever born. One reason for the difference in the number of children ever born is, of course, the exclusion from the NNS of married



Table B. Percent distribution of mothers of legitimate births (1964-66) and of currently married women (June 1965) aged 15-44, by selected characteristics: United States, 1964-66 National Natality Survey and June 1965 Current Population Survey

Characteristics	Mothers of legitimate births 1964-66 NNS	Currently married women June 1965 CPS	Characteristics	Mothers of legitimate births 1964-66 NNS	Currently married women June 1965 CPS
<u>Age of woman</u>			<u>Education of woman</u>		
Percent distribution			Percent distribution		
All ages 15-44 years . . .	100.0	100.0	All levels . . . . .	100.0	100.0
15-19 years . . . . .	13.6	4.0	Elementary school . . . . .	12.2	13.7
20-24 years . . . . .	36.1	16.7	High school, 1-3 years . . . . .	25.0	22.7
25-29 years . . . . .	25.6	18.6	4 years . . . . .	43.7	47.3
30-34 years . . . . .	14.5	18.9	College, 1-3 years . . . . .	12.2	9.5
35-39 years . . . . .	7.8	20.9	4 years		
40-44 years . . . . .	2.3	20.9	or more . . . . .	6.9	6.9
<u>Race of woman</u>			<u>Family income</u>		
All races . . . . .	100.0	100.0	All incomes . . . . .	100.0	100.0
White . . . . .	86.9	88.8	Under \$3,000 . . . . .	19.8	11.6
Negro . . . . .	11.7	10.2	\$3,000-\$4,999 . . . . .	22.4	18.9
All other races . . . . .	1.4	0.9	\$5,000-\$6,999 . . . . .	25.5	24.6
<u>Geographic region of residence</u>			\$7,000-\$9,999 . . . . .	20.6	26.8
All regions . . . . .	100.0	100.0	\$10,000 and over . . . . .	11.7	18.2
Northeast . . . . .	23.5	24.3	<u>Age at first marriage</u>		
North Central . . . . .	28.5	28.0	All ages . . . . .	100.0	100.0
South . . . . .	31.4	30.9	Under 18 years . . . . .	24.0	21.9
West . . . . .	16.7	16.7	18-19 years . . . . .	31.9	29.2
<u>Metropolitan status of residence</u>			20-21 years . . . . .	22.7	22.4
All United States . . . . .	100.0	100.0	22-24 years . . . . .	14.2	16.5
Metropolitan . . . . .	64.3	65.5	25 years and over . . . . .	7.3	10.0
Non-metropolitan . . . . .	35.7	34.5	<u>Number of children born alive</u>		
<u>Number of times married</u>			All children . . . . .	100.0	100.0
All married women . . . . .	100.0	100.0	No children . . . . .	...	13.8
Once . . . . .	92.4	88.6	One child . . . . .	29.0	17.1
More than once . . . . .	7.6	11.4	Two children . . . . .	25.1	25.3
			Three children . . . . .	17.8	19.9
			Four children . . . . .	11.5	11.2
			Five children or more . . . . .	16.5	12.6

women who had never had a child. According to the CPS, approximately 14 percent of the married women had never borne a child. If these women are excluded, then the average number of children ever born to women who had had one child or more was higher in the CPS than in

the NNS for all ages 15-44 although probably not for age-specific components. The data necessary to make the age-specific comparisons have not been tabulated.

Approximately 63 percent of the women in the NNS were at least high school graduates and

19 percent had completed 1 year or more of college. Approximately 64 percent of the women in the CPS had graduated from high school, but only 16 percent had completed 1 year or more of college. The median number of years of school completed was 12.3 for both groups.

In the NNS the median family income during the calendar year before the child was born was \$5,610; approximately 42 percent of the families had an income of under \$5,000. Only 31 percent of the families in the CPS had an income of under \$5,000. The relatively low income for families in the NNS would be expected because the fathers, being young, would not yet have reached peak earning power and because the presence of small children in the home may have prevented many mothers from working. Data from the March 1965 CPS show that in all husband-wife families where the husband was under 45 years of age, 25 percent of the families had incomes under \$5,000 in 1964. Within this same category, however, 34 percent of the families had incomes under \$5,000 in 1964 when all the children were under 6 years of age, 24 percent when some of the children were under 6 years of age, and only 15 percent when all of the children were aged 6-17. Thus the incomes of the families in the NNS seemed comparable with those of all husband-wife families where the husband was under age 45 and all the children were under age 6.<sup>3</sup>

Approximately 87 percent of the women in the NNS were white, 12 percent were Negro, and 1 percent were members of other minority races. About 64 percent of the women were residents of metropolitan areas of the United States. Approximately 31 percent of all the women and more than 50 percent of the women who were members of Negro or other minority races were residents of the South.

Thus the women in the 1964-66 NNS were younger and had had more children than would be the case had the sample been drawn from all ever-married women. Furthermore, because the sample was drawn from women who had recently had a birth, age and number of children were closely related. Because both age and number of children are closely related to expectations of additional children, the data shown here should not be used to make generalizations about the total population of married women.

The tables were designed only to show differentials in expectations among married women who were having children during 1964-66.

## THE EXPECTATION OF ADDITIONAL CHILDREN

Of the estimated annual average 3,480,000 women who had legitimate live births in the United States during 1964-66, approximately 54 percent expected to have at least one more child. Given that they had, on the average, 2.78 living children at the time they were asked about their expectations, they expected to complete their families with 3.73 children.

Approximately 26 percent of the mothers reported that they definitely expected to have more children; they expected to have an average of 2.10 additional children (table 1). Approximately 29 percent reported that they would probably have additional children, with an average of 1.45 additional children. Approximately 28 percent of the mothers reported that they would probably not have any more children, and 18 percent reported that they would definitely not have any additional children. Thus 46 percent of the mothers expected to have no more children. They had completed their families with the birth of this child.

### Number of Living Children

The proportion of mothers who expected to have more children decreased from 92 percent of those who had one living child to 55 percent of those who had two, 38 percent of those who had three, and 22 percent of those who had four children. There was little variation in the proportion who expected to have more children among women who had four, five, or six or more living children. Among those mothers who expected to have more children, approximately two-thirds of those with only one child definitely expected more while one-third or less of those with two living children or more were definite.

The average number of additional children expected showed the same sort of differential pattern as the proportion expecting to have additional children. The mothers of one living child expected to have, on the average, 1.77 additional children; mothers of two children expected 0.90 additional children; mothers of

three children expected 0.55 and mothers of four children expected 0.35 additional children. Again there was little variation among mothers of four, five, or six or more children.

Among mothers who reported that they expected to have additional children, the differences in the average number expected were not as great. On the average, mothers who expected additional children expected to have 1.76 more children. Mothers of one child expected the most—1.93 additional children. Mothers of three children expected the fewest—1.44 additional children. Mothers of four, five, or six or more living children who expected to have additional children expected more additional children than mothers with only three.

Regardless of the number of children they already had, the mothers who reported that they definitely expected to have more expected a higher average number of additional children (2.10 overall) than those who reported that they would probably have more (1.45). Neither of these measures appeared to differentiate well between classes of women with a specified number of children.

Because the proportion of mothers expecting to have additional children and the average number of additional children expected by all mothers show the greatest differential, the remainder of the report concentrates on these two measures. The average number of additional children expected by mothers who expect more is also shown in all detailed tables.

### **Fetal and Infant Deaths**

The number of living children a woman has depends on the number of times she has been pregnant, the number of children born alive, and the number who survive after birth. In other words, the number of living children depends upon whether any pregnancies failed to result in a live birth and whether any of the children born alive died after birth.

The mothers in the NNS were asked whether they had ever had a miscarriage or a stillbirth and, if so, how many. They were also asked if any of their children had died and, if so, the date of death. These questions were used to develop a measure of fetal deaths (reported

miscarriages plus stillbirths) and infant deaths (deaths of children under 1 year of age).

The death of a child in infancy (under 1 year) appeared to have more influence on a mother's stated expectations of having additional children than a fetal death (tables 2 and 3). The proportion of mothers expecting to have additional children was lower among those mothers reporting one infant death or more than among those whose children had all survived their first year. Except among mothers with one child, the proportion expecting to have additional children was approximately the same regardless of whether the mother had ever experienced a fetal death.

These data on infant deaths can be used to obtain an approximate answer to the question of whether women will try to replace a child lost in infancy. Because the majority of the mothers with one infant death or more had only one such death, the mothers in a specified living-child category who had one infant death or more have had the same number of live births as the mothers in the next higher category who had no infant deaths. Thus the expectations of the 39,000 mothers of two living children who had one infant death or more would be comparable to those of the 583,000 mothers of three living children who had no infant deaths. In all except one case, such a comparison shows that if the mothers had been classified by number of children born alive, a higher proportion of those who lost a child in infancy than of those who did not lose a child expected to have additional children.

### **Interval Between Last Two Children and Sex of Children**

Among mothers of two or three children, there was an inverse relationship between the proportion expecting to have additional children or the average number expected and the interval between the birth of the preceding child and the sample child. Among mothers of four or five children, expectation of additional children was highest when the preceding child had been born 12-23 months before the sample child. However, the inverse relationship held for all longer intervals (table 4).

At least part of the decrease in the proportion expecting additional children could be explained by the fact that longer birth intervals denote older mothers, since there is a direct relationship between the age of the mother and the length of the interval. For example, the median age of the mothers whose previous child had been born 12 months or less before the sample child was 24.3 years; when the previous child had been born at least 120 months before the sample child, the median age of the mothers was 36.6 years.

It is a common belief that couples prefer to have both boys and girls in their families, but that there is a preference for boys. If this is true, then for a given number of children, a higher proportion of mothers with all children of the same sex would expect to have additional children than those with children of both sexes, and a higher proportion of mothers with all girls than mothers with all boys would expect to have additional children. The data in table 5 show fairly strong support for the first statement and some, though not significant, support for the second.

The difference in the proportion expecting additional children between mothers with children of one sex and those with children of both sexes was greatest among mothers of two children and decreased as the size of the family increased, which is the reverse of the direction found when the Growth of American Families data were analyzed.<sup>4</sup>

#### Age of Mother, Interval Since First Marriage, and Age at First Marriage

There was, in general, an inverse relationship between the mother's age or the length of time she had been married at the time the sample child was born and the number of additional children she expected to have (tables 6 and 7). These two variables are related, of course. The median interval since first marriage was 11 months for those mothers under 20 years, 35 months for those 20-24, 82 months for those 25-29, and more than 10 years for those 30 years or over at the time of the sample child's birth (figure 1).

One reason older women did not expect to have as many additional children as did younger women was that their families were nearer to

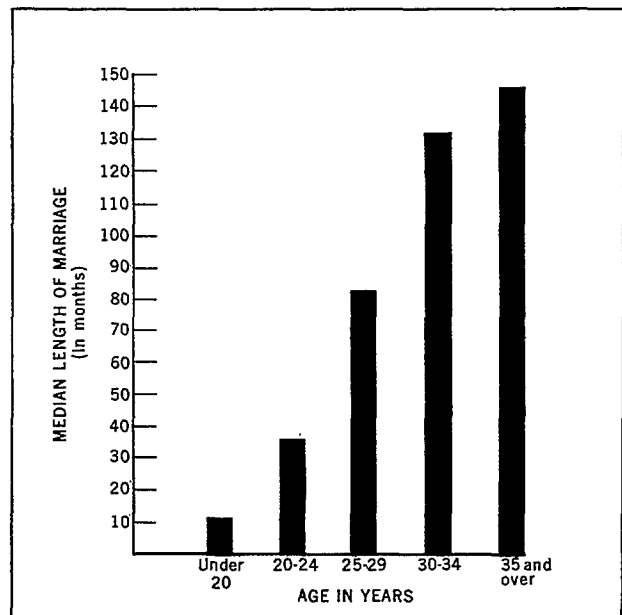


Figure 1. Median length of marriage, in months, for U.S. women aged 15-44 years.

completion. Table C shows the average number of children women in each class already had as well as the average number expected. It also shows, however, that even when the number expected is standardized to control for the differences in the number already living, older women still expected to have fewer additional children than did younger women.

An exception to the general observation on the relationship between age and duration of marriage and the number of additional children expected was that mothers of one child who were under age 20 when that child was born expected to have fewer additional children than did those aged 20-24. Data from the NNS indicate that a high proportion (42 percent) of the mothers of first births who were aged 15-19 had been married for less than 8 months at the time of the child's birth; over half (56 percent) had not finished high school; and many (46 percent) were classified as having a family income of under \$3,000. All of these factors may make their expectations of limiting their families unrealistic, particularly in view of the long period of potential childbearing ahead of them.

It is possible that those women who married before they were 20 really did not intend to

Table C. Average number of children now living, expected, in expected completed family, expected when standardized for number now living, by age of mother: United States, 1964-66 National Natality Survey

Age of mother	Average number of children			
	Now living	Expected	In expected completed family	Expected when standardized for number now living
All ages . . . . .	2.78	.95	3.73	.95
Under 20 years . . . . .	1.35	1.54	2.89	1.01
20-24 years . . . . .	2.00	1.25	3.25	1.05
25-29 years . . . . .	3.06	.80	3.86	.96
30-34 years . . . . .	4.06	.42	4.48	.60
35 years and over . . . . .	4.97	.22	5.19	.34

have large families. When all of the women in the survey were classified according to age at first marriage regardless of age at the time of the sample child's birth, those mothers of one child who were first married at ages 20-24 expected to have more additional children than those first married before age 20 (table 8). Even when the mothers' expectation of additional children was standardized to control for the number already living, those who first married in the early twenties had higher expectations than those married before age 20 (table D). The difference in expectation and realization can be estimated by comparing the number of children already born to those women who first married before age 18 with the number born to those who married later.

### Family Income

There was no clear indication that in the early stages of family formation mothers with low incomes expected to have larger families than those with high incomes (table 9). Among mothers of one or two living children, the expectation of additional children was of approximately the same magnitude for the high- and the low-income classes. Only among mothers of three or four children did the differential of higher expectation of additional children among mothers with low incomes ap-

pear, and among those with five children or more it no longer existed.

Because expectation of additional children has been shown to be related to the mother's age, it is important to know something of the age differences among women in the various income classes. If the number of children is held constant, women in families with low incomes tended to be younger than women in higher income families. For example, among mothers whose first birth was the sample child, 62 percent of those in families with incomes under \$3,000 were under age 20 at the time of the child's birth compared to 41 percent in families with incomes of \$3,000-\$4,999, 26 percent in families with incomes of \$5,000-\$6,999, 10 percent in families with incomes of \$7,000-\$9,999 and 7 percent in families with incomes of \$10,000 or more.

In general, median age at the time of the sample child's birth, median age at first marriage, and median interval since first marriage were directly associated with family income (table E). The proportion of mothers under age 20 at the time of the child's birth, the proportion married less than 1 year, and the proportion married before age 18 were inversely associated with the family income. Thus the mothers in the lower income classes were younger than those in the higher income classes and had been married for a shorter period.

Table D. Average number of children now living, expected, in expected completed family, and expected when standardized for number now living, by mother's age at first marriage: United States, 1964-66 National Natality Survey

Age of mother at first marriage	Average number of children			
	Now living	Expected	In expected completed family	Expected when standardized for number now living
All ages . . . . .	2.78	.95	3.73	.95
Under 18 years . . . . .	3.13	.84	3.97	.90
18-19 years . . . . .	2.64	.96	3.60	.94
20-21 years . . . . .	2.60	1.05	3.65	1.01
22-24 years . . . . .	2.84	1.00	3.85	1.01
25 years and over . . . . .	2.69	.84	3.54	.83

Despite the median interval of 34 months since first marriage for mothers in families with incomes under \$3,000 and 83 months for those in families with incomes of \$10,000 or more, mothers in both income classes had an average of 2.84 living children. However, the mothers in families with incomes under \$3,000 expected to have 1.07 additional children while those in the top income class expected to have 0.88 additional children. Therefore the size of the expected completed families of the highest income women was smaller than that of the lowest

income women. The number of living children mothers in the middle-income families already had was lower than at either of the income extremes and their expected completed family size was also smaller than that of the women in either the highest or lowest income classes.

When the number of additional children expected is standardized for the number already living, the number expected is still inversely proportional to family income although the gradient is less. Because the mothers in the lower income classes were younger than those in the

Table E. Average number of children now living, expected, in expected completed family, and expected when standardized for number of children now living; median age of mother at birth of sample child and at first marriage and length of marriage; percentage of mothers under age 20 at birth of sample child, under age 18 at first marriage, and married less than 12 months at birth of sample child, by family income: United States, 1964-66 National Natality Survey

Family income	Average number of children				Median age of mother (in years)		Median length of marriage (in months)	Percentage of mothers		
	Now living	Expected	In expected completed family	Expected when standardized for number now living	At birth of sample child	At first marriage <sup>1</sup>		Under age 20 at birth of sample child	Married under age 18	Married less than 12 months at birth of sample child
All incomes . . . . .	2.78	.95	3.73	.95	25.0	19.8	56.2	13.6	21.8	13.7
Under \$1,000 . . . . .	2.84	1.10	3.94	1.00	22.1	18.7	33.9	37.6	38.9	26.2
\$1,000-\$2,999 . . . . .	2.85	1.05	3.91	1.02	22.8			28.3		
\$3,000-\$4,999 . . . . .	2.69	.96	3.65	.95	23.8	19.2	48.2	18.2	30.1	14.5
\$5,000-\$6,999 . . . . .	2.75	.92	3.66	.95	24.8	19.7	57.5	8.9	17.1	10.7
\$7,000-\$9,999 . . . . .	2.83	.90	3.72	.95	27.1	20.7	73.6	3.5	11.7	8.3
\$10,000 and over . . . . .	2.84	.88	3.73	.90	29.2	21.7	82.6	2.1	5.8	6.7

<sup>1</sup>Married only once.

higher income classes, this difference could be accounted for by age alone; younger women, regardless of number of children already living or family income, expected to have more children in the future than older women.

In general, possibly because of the differing age distribution among the mothers in the several income classes, family income appears to be a poor variable to use in predicting differentials in future childbearing.

### **Mother's Employment During Pregnancy**

One of the methods often suggested for reducing the birth rate is to give women alternatives to motherhood. The hypothesis is that if women had an alternative, such as employment outside the home, they would have fewer children. If this hypothesis is true and the number of children the woman already has is held constant, the woman who has been employed outside the home would expect to have fewer additional children than the woman who has not been employed.

While it is not within the limits of this survey to present data on the mother's employment history or her plans for future employment, it is possible to examine the differentials in expectation between those mothers who were employed during their latest pregnancy and those who were not. The data are shown in table 10.

Except for mothers of one child, the majority of the women reported that they had not been employed at any time during the pregnancy that resulted in the birth of the sample child. Only 30 percent of all the mothers and 21 percent of the mothers of two children or more said that they had been employed during pregnancy; 53 percent of the mothers of one child had been employed at some time during pregnancy. Employment during pregnancy is, of course, related to other variables presented in this report and has been discussed in some detail in an earlier report in this series.<sup>5</sup>

In general, a smaller proportion of mothers of two or three children who were employed during pregnancy expected to have additional children than did women who were not employed. Mothers who were employed and who had two or three children also expected to have a lower average number of additional children

than did those who were not employed. The differences are statistically significant for mothers of two and of three living children. Among mothers of four children or more, there were no significant differences in expectation of additional children between employed and non-employed mothers.

Among mothers of one child, however, a higher proportion of those who were employed expected to have additional children than did those who were not employed. Approximately 93 percent of those who were employed as compared with 90 percent of those who were not employed expected to have more children. This difference is interesting as mothers who were employed during their first pregnancy were somewhat older and better educated than mothers who were not employed.

When the number of children expected was standardized for number of living children, mothers who were employed expected to have 0.91 additional children. Mothers who were not employed expected to have 0.95 additional children.

### **Education of Mother and Father**

Only among mothers of one child was there any clear relationship between level of education and the reported expectation of having more children. The proportion expecting to have additional children was directly related to both parents' levels of education (tables 11 and 12). The average number of additional children expected was not so closely related to level of education. The number of additional children expected was higher when either parent had only an elementary school education than when either had attended but not completed high school.

The mothers who had attended but not graduated from high school had low expectation of additional children regardless of how many they already had. They may just be poor predictors of their future fertility. They were younger on the average than women at the other levels of educational attainment; their median age was only 23.4 years; and 27 percent of them were under 20 at the time of the birth of the sample child. A high proportion of them had their first child soon after marriage. Among

those in the survey who had just had their first child, 32 percent had been married for less than 8 months when the child was born as compared with approximately 21 percent of those who had not gone beyond elementary school, 21 percent of those who were high school graduates, 18 percent of those who had some college, and 8 percent of those who were college graduates. Yet they expected to have fewer additional children than mothers at any other level of educational attainment.

The number of children in the expected completed family was inversely proportional to the mother's level of education (table F). Mothers who had not gone beyond elementary school expected to complete their families with 4.81 children while those who had graduated from college expected to complete their families with 3.40 children. The majority of the children in the expected completed family (approximately 83 percent of the children if the mother had not gone beyond elementary school, 72 percent if she had graduated from high school, and 65 percent if she had graduated from college) were children she already had. Thus the number of additional children expected was directly proportional to the mother's level of education.

When the number of additional children expected was standardized for the number already living, mothers who had not gone beyond elementary school expected to have the largest average number of additional children. Mothers

who were college graduates expected almost as many, and mothers who had attended but not graduated from high school expected the fewest. The same was not true for the fathers' level of education (table G). Mothers and fathers at the two educational extremes were the oldest, and those who had completed 1-3 years of high school were the youngest (tables F and G).

### Race of Mother

Among married mothers of one or two children, a higher proportion of white mothers expected to have additional children than did Negro mothers; among mothers with three or more children, a higher proportion of Negro than of white mothers expected to have additional children (figure 2 and table 13). In addition, among mothers with one or two children who expected to have more children, a higher proportion of white mothers than of Negro mothers definitely expected more.

Overall, white mothers expected to have 0.98 additional children and Negro mothers expected to have 0.73 additional children. White mothers had, on the average, 2.66 children living at the time of the sample child's birth. If their expectations were realized, they would complete their families with 3.64 children. Because Negro mothers already had an average of 3.68 living children, they would complete their families with 4.41 children per mother even though their expectation of additional children was lower

Table F. Average number of children now living, expected, in expected completed family, and expected when standardized for number now living; median family income, median age of mother, and median length of marriage, by mother's level of education: United States, 1964-66 National Natality Survey

Level of mother's education	Average number of children				Median family income	Median age of mother (in years)	Median length of marriage (in months)
	Now living	Expected	In expected completed family	Expected when standardized for number now living			
All levels . . . . .	2.78	.95	3.73	.95	\$5,610	25.0	56.2
Elementary school only . . . .	4.00	.81	4.81	1.05	\$3,310	27.1	91.6
High school, 1-3 years . . . . .	2.92	.82	3.74	.86	\$4,390	23.4	56.8
4 years . . . . .	2.55	1.01	3.55	.95	\$6,050	25.9	51.3
College, 1-3 years . . . . .	2.45	1.03	3.47	.96	\$7,080	26.0	52.3
4 years or more . . . . .	2.21	1.19	3.40	1.02	\$9,010	28.1	53.6



Table G. Average number of children now living, expected, in expected completed family, and expected when standardized for number now living; median family income and median age of father: United States, 1964-66 National Natality Survey

Level of father's education	Average number of children				Median family income	Median age of father (in years)
	Now living	Expected	In expected completed family	Expected when standardized for number now living		
All levels . . . . .	2.78	.95	3.73	.95	\$5,610	28.2
Elementary school only . . . . .	3.84	.75	4.59	.94	\$3,470	31.5
High school, 1-3 years . . . . .	2.82	.84	3.66	.86	\$4,560	27.0
4 years . . . . .	2.52	.99	3.51	.93	\$5,820	27.3
College, 1-3 years . . . . .	2.42	1.13	3.55	1.01	\$6,500	27.5
4 years or more . . . . .	2.48	1.08	3.56	1.04	\$8,800	30.3

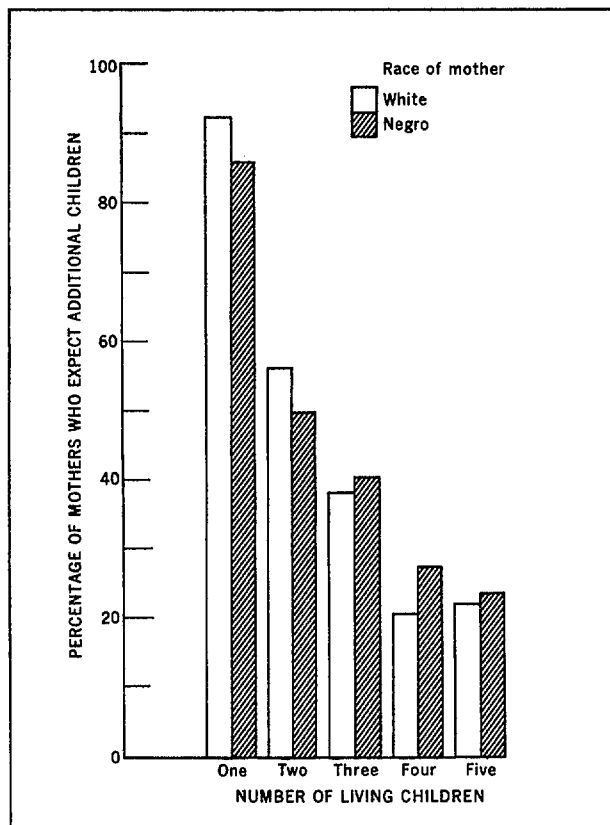


Figure 2. Percentage of mothers who expect to have additional children, according to race of mother and number of living children.

than that of the white mothers (table 13). However, even when the average number of

additional children expected was standardized for the number of children already living, Negro mothers still expected to have only 0.84 additional children on the average as compared with 0.96 expected by the white mothers (table H).

Although standardization for number of living children or making comparisons between mothers with a specific number of children controls for the number of children the mother already has, it does not control for any of the other variables which may have some influence on the mother's expectation of additional children. Data on some of these variables are presented in table J. For all mothers having births during 1964-66 and for mothers with a specified number of children, white mothers were older at the time of the birth and at first marriage; had been married longer; were members of families with higher incomes; and had achieved higher levels of education than had Negro mothers. Expectations of additional children were affected by these variables; therefore, their possible influence must be taken into account when child-specific comparisons are made between white and Negro mothers.

Because there were only 48,000 mothers of minority races other than Negro, it is not possible to give much detail concerning their expectation of additional children. In general, however, the data available seem to indicate that their expectations of future childbearing were lower than those of the white mothers but higher than those of the Negro mothers.

Table H. Average number of children now living, expected, in expected completed family, and expected when standardized for number now living, by race of mother: United States, 1964-66 National Natality Survey

Average number of children	All mothers	Race	
		White	Negro
Now living .....	2.78	2.66	3.68
Expected .....	.95	.98	.73
In expected completed family .....	3.73	3.64	4.41
Expected when standardized for number now living .....	.95	.96	.84

### Geographic Region and Metropolitan Status of Residence

Among mothers with one or two living children, those who resided in standard metropolitan statistical areas (SMSA's) expected to have more additional children than did those who resided outside SMSA's. Among mothers with three living children or more, those who resided in metropolitan areas expected to have fewer additional children than did those who resided outside metropolitan areas (table 14). This is not due to the racial composition of the population. Among mothers with one, two, or three children, the proportion of residents of the nonmetropolitan areas who were white was higher than the proportion of residents of the metropolitan areas, which is the reverse of what would be expected were race of the mother the determining factor.

When the mothers are classified by geographic region of residence, mothers in the Northeast and North Central Regions generally expected to have the highest average number of additional children, followed by those in the West, with mothers in the South expecting the fewest additional children. When the number of children expected was standardized for number of living children, mothers in the Northeast expected to have 1.02 additional children while those in the South expected to have only 0.89 additional children.

Because the racial composition of the South is different from the rest of the United States (approximately 21 percent of the mothers in the South were Negro compared with about 10

percent in each of the other three regions), the possibility exists that the lower expectation in the South is due to the high proportion of Negro mothers. When the expectation of additional children is computed separately for white and Negro mothers in the South and the results are standardized to the number of living children of white and Negro mothers in the United States, it is seen that at least two factors contribute to the lower expectation of additional children in the South. One is the high proportion of Negro mothers who, in general, expected to have fewer additional children than did white mothers. More interestingly, however, Negro mothers in the South expected more additional children than did Negro mothers in the entire United States, but white mothers in the South expected fewer additional children than did white mothers in the entire United States. Thus the regional difference was caused primarily by the low expectation of the white mothers rather than by the racial distribution since the Negro mothers in the South expected to have more additional children than did Negro mothers in the rest of the country (table K).

### SUMMARY AND CONCLUSIONS

The married women who had babies in 1964-66 had, on the average, 2.78 children. They expected to have 0.95 additional children and thus will complete their families with 3.73 children if their expectations are correct. This estimate is, as expected, higher than those derived from surveys of all married women. All of the women in the NNS had demonstrated

Table J. Percent distribution of mothers and median age, age at first marriage, length of marriage, family income, and education, by race and number of living children: United States, 1964-66 National Natality Survey

Race of mother	Number of living children						
	Total	One	Two	Three	Four	Five	Six or more
	Percent distribution						
All mothers . . . . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0
White . . . . .	86.9	90.6	88.6	88.0	86.6	83.1	70.7
Negro . . . . .	11.7	8.2	9.4	11.0	12.5	15.2	27.9
All other races . . . . .	1.4	1.2	2.0	1.0	0.9	1.7	1.4
	Median age (in years)						
All mothers . . . . .	25.0	21.8	23.8	26.7	29.0	30.8	33.5
White . . . . .	25.1	21.9	23.9	27.0	29.3	31.3	34.1
Negro . . . . .	24.8	20.4	22.6	23.9	25.8	28.6	32.1
	Median age at first marriage (in years)						
All mothers . . . . .	19.6	19.8	19.7	19.6	19.6	19.6	19.1
White . . . . .	19.7	19.8	19.7	19.5	19.6	19.5	19.4
Negro . . . . .	19.3	19.4	19.3	19.7	18.9	19.8	18.4
	Median length of time married (in months)						
All mothers . . . . .	56.3	14.6	44.9	83.1	105.7	over 120	over 120
White . . . . .	56.4	15.1	45.9	86.9	109.4	over 120	over 120
Negro . . . . .	56.0	8.9	31.4	47.5	79.3	105.2	over 120
	Median family income (in dollars)						
All mothers . . . . .	5,610	5,190	5,680	5,880	6,090	5,730	5,200
White . . . . .	5,910	5,350	5,890	6,140	6,470	6,220	6,260
Negro . . . . .	2,970	3,040	3,180	3,470	2,680	2,750	2,570
	Median education (in years)						
All mothers . . . . .	12.3	12.4	12.4	12.3	12.2	11.0	10.8
White . . . . .	12.3	12.5	12.4	12.3	12.3	12.1	11.9
Negro . . . . .	11.3	12.3	11.8	11.9	11.0	10.5	9.2

fertility by the birth of a child shortly before they were queried about their expectations of having additional children.

Whether this is an accurate prediction of the number of additional children the women will *actually* have is problematical. According to their stated expectations, they have already had 75 percent of the children they ever expect to

have. Yet they were, for the most part, young women with many more years of possible childbearing ahead of them.

The number of additional children expected by the mothers who were under age 20 when the sample child was born seemed particularly low in view of the number of years of possible childbearing they had ahead of them. They had

Table K. Average number of additional children expected, by race of mother and average number expected by region when standardized to specified race for number of living children: United States, 1964-66 National Natality Survey

Geographic region	Race of mother			
	All races	White	Negro	Other races
United States . . . . .	Average			
	.95	.98	.73	.89
Northeast . . . . .	Standardized			
	1.02	1.06	.60	*
North Central . . . . .	.99	1.03	.60	*
South . . . . .	.89	.88	.80	*
West . . . . .	.91	.94	.62	*

started childbearing early and the majority had relatively low levels of education. Both factors have been shown to be associated with high levels of completed fertility, and low levels of education are associated with poor ability to predict future fertility.<sup>6,7</sup>

Despite the reservations about the accuracy of the estimates of the actual number of children these young, recently fertile women will have in the future, the data are useful for investigating differentials in the women's perception of their future fertility at different stages of family formation. Only two of the variables considered here—the age of the mother and whether her children were of the same or different sexes—showed a differential in the same direction for each specified number of children. Other variables, such as the interval since the mother's first marriage or preceding child and whether she had ever had a child who died in infancy, were generally consistent.

The proportion of mothers who expected to have additional children did not seem to be influenced by whether the mother reported any fetal deaths, except for mothers of one child. It is possible that these mothers had been told that they had impairments which would make additional children unlikely; over half of those who reported that they did not expect to have any more children responded "Definitely no." Nor did the mothers' residence inside or outside a metropolitan area seem to have much influence

on whether she expected to have more children.

For some of the variables, however, the direction of any differential reversed after the first one or two children. Mothers of one child who were in high family income or education of father categories, who were employed during pregnancy, who were white, or who lived outside of the South were more likely to expect additional children than those who were in low family income or education of father categories, who were not employed, Negroes, or residents of the South. Conversely, mothers of three children who were in low family income or education of father categories, who were not employed during pregnancy, who were Negro, or who lived outside of the West were more likely to expect additional children than those in high family income or education of father categories, who were employed during pregnancy, who were white, or who lived in the West.

Cohort or age-specific analysis might help explain some of the reversal. It seems likely, however, that there are real differences between the population composed of mothers of one child and that composed of the mothers of three. These differences probably are the result of two selection processes.

Almost all of the married women in the United States want to have at least one child. The mothers of one child are thus a sample of all the women who are capable of having children. However, less than two-thirds of the women in the 1960 Growth of American Families Survey said that they wanted three or more children. The mothers of three children then are those women who *wanted* to have that many and those who *had* them even though they did not really want them. The women who wanted only one or two children and who successfully prevented unwanted pregnancies are no longer in the sample. Those who wanted only one or two children but who were not successful in preventing unwanted pregnancies are included with those who had always intended to have three children or more.

Other data show that couples in the lower socioeconomic classes are less likely to use contraception than are those in the higher classes and are less likely to be successful users even if they have tried contraception.<sup>8</sup> They would thus be more likely than those in the upper socioeconomic classes to have three or

more children even though they had not expected to. With a history of failure to prevent pregnancy, mothers of three children would be more likely to report that they expected to have additional children than they had been as mothers of one child who had not yet found that they were not successful at preventing pregnancy.

The mother's level of education warrants special consideration. It is one of the most common measures used in fertility studies because it is easy and reliable to measure and because it has appeared to be a good measure with consistent differentials in expected and completed fertility. There were no consistent differentials in the National Natality Survey

when the mothers were classified according to the number of children they had. When the expected completed size of family was computed, there appeared to be an inverse relationship with the level of education. Much of the expected family, however, is accounted for by the children the mother already had.

It is possible that the lack of the expected differentials among mothers with the specified number of children is an artifact due to the differing age distributions. It is also possible that differences in fertility according to the mother's level of education are lessening or shifting direction. In either case, the lack of the expected differentials suggests a need for further investigation.

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Number of living children	Number of mothers (in thousands)	Percent distribution of mothers by response						Average number of additional children expected by:			
		Total	Yes			No		All mothers	Mothers who expect more		
			Total	Definitely	Probably	Probably	Definitely		Total	Definitely	Probably
All living children . . . . .	3,480	100.0	54.1	25.5	28.6	17.8	28.2	.95	1.76	2.10	1.45
One child . . . . .	1,026	100.0	91.6	59.5	32.1	2.9	5.5	1.77	1.93	2.19	1.46
Two children . . . . .	900	100.0	55.4	18.4	37.0	13.7	30.9	.90	1.62	1.95	1.46
Three children . . . . .	621	100.0	37.9	9.9	27.9	23.3	38.8	.55	1.44	1.74	1.34
Four children . . . . .	393	100.0	21.5	5.7	15.8	34.7	43.7	.35	1.61	2.00	1.47
Five children . . . . .	232	100.0	23.1	6.4	16.7	34.8	42.1	.35	1.51	1.93	1.35
Six children or more . . . . .	308	100.0	22.7	4.1	18.6	33.7	43.6	.39	1.74	2.10	1.66



Table 2. Average annual number of women who had legitimate births during 1964-66, percentage expecting to have additional children, and average number of additional children expected by all the mothers and by those expecting to have additional children, according to number of living children and number of fetal deaths: United States, 1964-66 National Natality Survey

Number of living children and number of fetal deaths	Number of mothers (in thousands)	Percentage expecting additional children	Average number of additional children expected by:	
			All mothers	Mothers who expect more
One child, total . . . . .	1,026	91.6	1.77	1.93
No fetal deaths . . . . .	915	92.4	1.79	1.94
One fetal death or more . . . . .	110	84.7	1.59	1.88
One fetal death . . . . .	87	86.1	1.62	1.88
Two fetal deaths or more . . . . .	23	79.3	1.47	1.85
Two children, total . . . . .	900	55.4	.90	1.62
No fetal deaths . . . . .	720	55.5	.92	1.65
One fetal death or more . . . . .	180	55.3	.83	1.51
One fetal death . . . . .	134	57.2	.85	1.49
Two fetal deaths or more . . . . .	45	49.5	.78	1.57
Three children, total . . . . .	621	37.9	.55	1.44
No fetal deaths . . . . .	454	37.9	.56	1.47
One fetal death or more . . . . .	166	37.7	.52	1.38
One fetal death . . . . .	121	38.9	.55	1.42
Two fetal deaths or more . . . . .	46	34.6	.43	1.25
Four children, total . . . . .	393	21.5	.35	1.61
No fetal deaths . . . . .	279	21.2	.33	1.55
One fetal death or more . . . . .	114	22.4	.40	1.77
One fetal death . . . . .	73	22.4	.35	1.58
Two fetal deaths or more . . . . .	41	22.5	.47	2.10
Five children, total . . . . .	232	23.1	.35	1.51
No fetal deaths . . . . .	147	22.3	.34	1.50
One fetal death or more . . . . .	85	24.4	.37	1.53
One fetal death . . . . .	50	25.5	.38	1.51
Two fetal deaths or more . . . . .	35	22.9	.36	1.57
Six children or more, total . . . . .	308	22.7	.39	1.74
No fetal deaths . . . . .	179	22.8	.39	1.69
One fetal death or more . . . . .	129	22.6	.41	1.80
One fetal death . . . . .	74	23.2	.40	1.72
Two fetal deaths or more . . . . .	55	21.8	.42	1.91

Table 3. Average annual number of women who had legitimate births during 1964-66, percentage expecting to have additional children, and average number of additional children expected by all the mothers and by those expecting to have additional children, according to number of living children and number of infant deaths: United States, 1964-66 National Natality Survey

Number of living children and number of infant deaths	Number of mothers (in thousands)	Percentage expecting additional children	Average number of additional children expected by:	
			All mothers	Mothers who expect more
One child, total . . . . .	1,026	91.6	1.77	1.93
No infant deaths . . . . .	1,010	91.7	1.77	1.93
One infant death or more . . . . .	16	83.4	1.59	1.91
Two children, total . . . . .	900	55.4	.90	1.62
No infant deaths . . . . .	862	55.5	.91	1.63
One infant death or more . . . . .	39	52.6	.76	1.45
Three children, total . . . . .	621	37.9	.55	1.44
No infant deaths . . . . .	582	38.2	.55	1.44
One infant death or more . . . . .	38	32.8	.51	1.54
Four children, total . . . . .	393	21.5	.35	1.61
No infant deaths . . . . .	364	22.1	.36	1.62
One infant death or more . . . . .	29	14.8	.23	1.54
Five children, total . . . . .	232	23.1	.35	1.51
No infant deaths . . . . .	307	23.0	.34	1.49
One infant death or more . . . . .	25	24.1	.42	1.73
Six children or more, total . . . . .	308	22.7	.39	1.74
No infant deaths . . . . .	264	22.5	.37	1.65
One infant death or more . . . . .	44	23.8	.54	2.26

Table 4. Average annual number of women who had legitimate births during 1964-66, percentage expecting to have additional children, and average number of additional children expected by all the mothers and by those expecting to have additional children, according to number of living children and interval since birth of preceding child: United States, 1964-66 National Natality Survey

Number of living children and interval since birth of preceding child	Number of mothers (in thousands)	Percentage expecting additional children	Average number of additional children expected by:	
			All mothers	Mothers who expect more
One child, total . . . . .	1,026	91.6	1.77	1.93
No preceding child . . . . .	1,010	91.7	1.77	1.93
All intervals . . . . .	16	83.4	1.59	1.91
Two children, all intervals . . . . .	900	55.4	.90	1.62
Under 12 months . . . . .	44	67.5	1.37	2.03
12-23 months . . . . .	342	63.0	1.10	1.74
12-17 months . . . . .	176	66.8	1.21	1.81
18-23 months . . . . .	166	59.0	.98	1.67
24-35 months . . . . .	220	56.6	.89	1.57
36-59 months . . . . .	192	48.2	.68	1.41
60-119 months . . . . .	81	36.8	.49	1.33
120 months and over . . . . .	21	32.2	.39	1.20
Three children, all intervals . . . . .	621	37.9	.55	1.44
Under 12 months . . . . .	15	57.9	.96	1.66
12-23 months . . . . .	194	48.1	.77	1.60
12-17 months . . . . .	111	48.7	.80	1.64
18-23 months . . . . .	83	47.3	.73	1.55
24-35 months . . . . .	135	43.2	.60	1.39
36-59 months . . . . .	142	32.1	.43	1.35
60-119 months . . . . .	108	23.8	.27	1.14
120 months and over . . . . .	27	12.2	.12	1.00
Four children, all intervals . . . . .	393	21.5	.35	1.61
Under 12 months . . . . .	14	22.0	.36	1.65
12-23 months . . . . .	125	30.2	.54	1.80
12-17 months . . . . .	67	34.6	.57	1.66
18-23 months . . . . .	58	25.1	.51	2.02
24-35 months . . . . .	77	20.8	.36	1.74
36-59 months . . . . .	94	18.1	.24	1.31
60-119 months . . . . .	71	12.4	.15	1.24
120 months and over . . . . .	12	16.9	.22	*
Five children, all intervals . . . . .	232	23.1	.35	1.51
Under 12 months . . . . .	11	15.6	.22	1.41
12-23 months . . . . .	72	30.2	.57	1.88
12-17 months . . . . .	40	29.2	.53	1.81
18-23 months . . . . .	32	31.6	.62	1.97
24-35 months . . . . .	59	25.3	.32	1.25
36-59 months . . . . .	51	16.2	.19	1.20
60-119 months . . . . .	37	16.5	.23	1.36
120 months and over . . . . .	3	*	*	*
Six children or more, all intervals . . . . .	308	22.7	.39	1.74
Under 12 months . . . . .	19	25.5	.34	1.33
12-23 months . . . . .	114	24.4	.45	1.86
12-17 months . . . . .	60	22.3	.37	1.65
18-23 months . . . . .	54	26.8	.55	2.06
24-35 months . . . . .	77	24.4	.46	1.90
36-59 months . . . . .	65	21.0	.33	1.56
60-119 months . . . . .	31	15.2	.20	1.29
120 months and over . . . . .	2	-	-	-

Table 5. Average annual number of women who had legitimate births during 1964-66, percentage expecting to have additional children, and average number of additional children expected by all the mothers and by those expecting to have additional children, according to number and sex of living children: United States, 1964-66 National Natality Survey

Number and sex of living children,	Number of mothers (in thousands)	Percentage expecting additional children	Average number of additional children expected by:	
			All mothers	Mothers who expect more
One child, total . . . . .	1,026	91.6	1.77	1.93
Male . . . . .	535	91.9	1.79	1.95
Female . . . . .	490	91.2	1.75	1.92
Two children, total . . . . .	900	55.4	.90	1.62
Both one sex . . . . .	446	60.9	.96	1.58
Male . . . . .	235	60.2	.96	1.59
Female . . . . .	212	61.7	.97	1.57
Both sexes . . . . .	454	50.1	.84	1.67
Three children, total . . . . .	621	37.9	.55	1.44
All one sex . . . . .	166	40.8	.62	1.51
Male . . . . .	89	40.3	.59	1.46
Female . . . . .	78	41.4	.65	1.57
Both sexes . . . . .	455	36.8	.52	1.42
Four children, total . . . . .	393	21.5	.35	1.61
All one sex . . . . .	60	25.1	.36	1.42
Male . . . . .	29	24.8	.36	1.45
Female . . . . .	30	25.5	.35	1.38
Both sexes . . . . .	333	20.9	.35	1.65
Five children, total . . . . .	232	23.1	.35	1.51
All one sex . . . . .	19	24.9	.30	1.22
Male . . . . .	11	25.5	.35	1.39
Female . . . . .	8	24.0	.24	1.00
Both sexes . . . . .	213	22.9	.35	1.54
Six children or more, total . . . . .	308	22.7	.39	1.74
All one sex . . . . .	6	11.8	.12	1.00
Both sexes . . . . .	302	22.9	.40	1.74

Table 6. Average annual number of women who had legitimate births during 1964-66, percentage expecting to have additional children, and average number of additional children expected by all the mothers and by those expecting to have additional children, according to number of living children and age of mother at birth of sample child: United States, 1964-66 National Natality Survey

Number of living children and age of mother at birth of sample child	Number of mothers (in thousands)	Percentage expecting additional children	Average number of additional children expected by:	
			All mothers	Mothers who expect more
One child, all ages . . . . .	1,026	91.6	1.77	1.93
Under 20 years . . . . .	339	90.7	1.74	1.91
20-24 years . . . . .	487	95.0	1.91	2.01
25-29 years . . . . .	140	91.6	1.73	1.89
30-34 years . . . . .	41	78.1	1.08	1.38
35 years and over . . . . .	19	47.0	.61	1.30
Two children, all ages . . . . .	900	55.4	.90	1.62
Under 20 years . . . . .	110	61.5	1.09	1.77
20-24 years . . . . .	444	60.3	1.01	1.68
25-29 years . . . . .	234	52.3	.79	1.52
30-34 years . . . . .	76	41.2	.56	1.35
35 years and over . . . . .	37	28.0	.38	1.35
Three children, all ages . . . . .	621	37.9	.55	1.44
Under 20 years . . . . .	22	63.7	1.00	1.56
20-24 years . . . . .	214	44.5	.70	1.50
25-29 years . . . . .	224	41.6	.61	1.46
30-34 years . . . . .	108	23.6	.28	1.20
35 years and over . . . . .	53	13.6	.14	1.00
Four children, all ages . . . . .	393	21.5	.35	1.61
Under 20 years . . . . .	4	*	*	*
20-24 years . . . . .	78	29.7	.49	1.66
25-29 years . . . . .	146	27.8	.47	1.67
30-34 years . . . . .	101	15.5	.22	1.45
35 years and over . . . . .	65	7.1	.10	*
Five children, all ages . . . . .	232	23.1	.35	1.51
Under 20 years . . . . .	-	-	-	-
20-24 years . . . . .	26	32.8	.51	1.56
25-29 years . . . . .	78	30.1	.52	1.56
30-34 years . . . . .	74	22.6	.30	1.34
35 years and over . . . . .	54	9.2	.10	*
Six children or more, all ages . . . . .	308	22.7	.39	1.74
Under 20 years . . . . .	-	-	-	-
20-24 years . . . . .	9	11.6	.16	*
25-29 years . . . . .	71	28.9	.55	1.90
30-34 years . . . . .	106	24.6	.46	1.87
35 years and over . . . . .	123	18.2	.26	1.45

Table 7. Average annual number of women who had legitimate births during 1964-66, percentage expecting to have additional children, and average number of additional children expected by all the mothers and by those expecting to have additional children, according to number of living children and interval since first marriage: United States, 1964-66 National Natality Survey

Number of living children and interval since first marriage	Number of mothers (in thousands)	Percentage expecting additional children	Average number of additional children expected by:	
			All mothers	Mothers who expect more
One child, all intervals . . . . .	1,026	91.6	1.77	1.93
Under 12 months . . . . .	437	92.1	1.89	2.05
Under 8 months . . . . .	219	91.4	1.82	1.99
8-11 months . . . . .	218	92.9	1.96	2.11
12-23 months . . . . .	292	93.2	1.88	2.02
12-17 months . . . . .	178	93.8	1.91	2.04
18-23 months . . . . .	114	92.4	1.83	1.99
24-35 months . . . . .	120	95.5	1.76	1.84
36-47 months . . . . .	60	94.4	1.60	1.69
48-59 months . . . . .	31	89.1	1.41	1.58
60-119 months . . . . .	60	84.8	1.20	1.41
120 months and over . . . . .	25	56.9	.73	1.28
Two children, all intervals . . . . .	900	55.4	.90	1.62
Under 12 months . . . . .	32	64.8	1.02	1.58
Under 8 months . . . . .	16	62.6	.97	1.55
8-11 months . . . . .	15	67.1	1.08	1.61
12-23 months . . . . .	105	64.1	1.21	1.89
12-17 months . . . . .	32	63.9	1.11	1.73
15-23 months . . . . .	73	64.2	1.25	1.95
24-35 months . . . . .	189	66.5	1.20	1.80
36-47 months . . . . .	167	57.1	.95	1.66
48-59 months . . . . .	126	56.1	.78	1.40
60-119 months . . . . .	230	45.6	.63	1.39
120 months and over . . . . .	51	27.8	.40	1.45
Three children, all intervals . . . . .	621	37.9	.55	1.44
Under 12 months . . . . .	4	*	*	*
12-23 months . . . . .	12	46.2	.60	1.29
24-35 months . . . . .	26	60.1	1.06	1.77
36-47 months . . . . .	71	57.2	.93	1.63
48-59 months . . . . .	87	48.2	.77	1.59
60-119 months . . . . .	285	37.0	.49	1.33
120 months and over . . . . .	135	16.7	.19	1.15
Four children, all intervals . . . . .	393	21.5	.35	1.61
Under 36 months . . . . .	8	*	*	*
36-47 months . . . . .	10	33.3	.50	1.49
48-59 months . . . . .	33	33.0	.61	1.86
60-119 months . . . . .	190	26.3	.44	1.66
120 months and over . . . . .	151	10.5	.13	1.24
Five children, all intervals . . . . .	232	23.1	.35	1.51
Under 60 months . . . . .	9	*	*	*
60-119 months . . . . .	92	28.3	.49	1.74
120 months and over . . . . .	131	18.8	.24	1.28
Six children or more, all intervals . . . . .	308	22.7	.39	1.74
Under 60 months . . . . .	6	*	*	*
60-119 months . . . . .	54	22.8	.50	2.22
120 months and over . . . . .	248	22.3	.36	1.61

Table 8. Average annual number of women who had legitimate births during 1964-66, percentage expecting to have additional children, and average number of additional children expected by all the mothers and by those expecting to have additional children, according to number of living children and age of mother at time of first marriage: United States, 1964-66 National Natality Survey

Number of living children and age of mother at time of first marriage	Number of mothers (in thousands)	Percentage expecting additional children	Average number of additional children expected by:	
			All mothers	Mothers who expect more
One child, all ages . . . . .	1,206	91.6	1.77	1.93
Under 18 years . . . . .	206	88.4	1.62	1.83
18-19 years . . . . .	343	91.6	1.76	1.92
20-21 years . . . . .	254	94.9	1.90	2.01
22-24 years . . . . .	147	93.1	1.91	2.05
25 years and over . . . . .	75	85.8	1.55	1.81
Two children, all ages . . . . .	900	55.4	.90	1.62
Under 18 years . . . . .	203	55.2	.91	1.65
18-19 years . . . . .	297	54.3	.87	1.60
20-21 years . . . . .	206	58.5	1.00	1.70
22-24 years . . . . .	121	56.0	.86	1.54
25 years and over . . . . .	74	51.1	.77	1.51
Three children, all ages . . . . .	621	37.9	.55	1.44
Under 18 years . . . . .	150	38.4	.53	1.37
18-19 years . . . . .	205	37.9	.55	1.45
20-21 years . . . . .	142	37.5	.58	1.54
22-24 years . . . . .	83	36.7	.55	1.50
25 years and over . . . . .	41	39.3	.50	1.27
Four children, all ages . . . . .	393	21.5	.35	1.61
Under 18 years . . . . .	104	18.5	.26	1.43
18-19 years . . . . .	117	22.1	.38	1.70
20-21 years . . . . .	87	21.7	.34	1.58
22-24 years . . . . .	59	26.2	.46	1.74
25 years and over . . . . .	27	20.5	.32	*
Five children, all ages . . . . .	232	23.1	.35	1.51
Under 18 years . . . . .	64	27.1	.43	1.58
18-19 years . . . . .	67	20.5	.35	1.70
20-21 years . . . . .	47	23.0	.30	1.28
22-24 years . . . . .	37	26.7	.39	1.47
25 years and over . . . . .	16	10.0	.10	*
Six children or more, all ages . . . . .	308	22.7	.39	1.74
Under 18 years . . . . .	109	23.7	.43	1.81
18-19 years . . . . .	80	17.0	.32	1.90
20-21 years . . . . .	53	20.4	.31	1.50
22-24 years . . . . .	47	31.2	.52	1.66
25 years and over . . . . .	20	26.5	.44	*

Table 9. Average annual number of women who had legitimate births during 1964-66, percentage expecting to have additional children, and average number of additional children expected by all the mothers and by those expecting to have additional children, according to number of living children and family income: United States, 1964-66 National Natality Survey

Number of living children and family income	Number of mothers (in thousands)	Percentage expecting additional children	Average number of additional children expected by:	
			All mothers	Mothers who expect more
One child, all incomes . . . . .	1,026	91.6	1.77	1.93
Under \$1,000 . . . . .	113	87.9	1.76	2.00
\$1,000-\$2,999 . . . . .	141	90.7	1.74	1.92
\$3,000-\$4,999 . . . . .	236	90.1	1.69	1.87
\$5,000-\$6,999 . . . . .	231	93.8	1.86	1.99
\$7,000-\$9,999 . . . . .	185	91.8	1.79	1.96
\$10,000 and over . . . . .	119	94.7	1.78	1.88
Two children, all incomes . . . . .	900	55.4	.90	1.62
Under \$1,000 . . . . .	45	56.1	.88	1.57
\$1,000-\$2,999 . . . . .	108	56.0	1.01	1.80
\$3,000-\$4,999 . . . . .	208	58.4	.97	1.66
\$5,000-\$6,999 . . . . .	263	54.9	.88	1.60
\$7,000-\$9,999 . . . . .	185	53.2	.84	1.57
\$10,000 and over . . . . .	92	53.7	.81	1.50
Three children, all incomes . . . . .	621	37.9	.55	1.44
Under \$1,000 . . . . .	29	47.3	.76	1.61
\$1,000-\$2,999 . . . . .	63	44.5	.68	1.52
\$3,000-\$4,999 . . . . .	144	37.1	.54	1.46
\$5,000-\$6,999 . . . . .	170	37.2	.51	1.36
\$7,000-\$9,999 . . . . .	142	38.1	.53	1.39
\$10,000 and over . . . . .	73	30.7	.48	1.56
Four children, all incomes . . . . .	393	21.5	.35	1.61
Under \$1,000 . . . . .	23	33.8	.59	1.75
\$1,000-\$2,999 . . . . .	35	23.2	.42	1.82
\$3,000-\$4,999 . . . . .	82	24.4	.33	1.37
\$5,000-\$6,999 . . . . .	104	20.7	.28	1.34
\$7,000-\$9,999 . . . . .	96	20.0	.39	1.95
\$10,000 and over . . . . .	53	15.3	.28	1.81
Five children, all incomes . . . . .	232	23.1	.35	1.51
Under \$1,000 . . . . .	18	22.7	.26	1.16
\$1,000-\$2,999 . . . . .	29	33.0	.51	1.55
\$3,000-\$4,999 . . . . .	49	24.9	.45	1.82
\$5,000-\$6,999 . . . . .	56	19.6	.30	1.52
\$7,000-\$9,999 . . . . .	52	21.3	.32	1.48
\$10,000 and over . . . . .	29	20.7	.23	1.12
Six children or more, all incomes . . . . .	308	22.7	.39	1.74
Under \$1,000 . . . . .	37	19.6	.34	1.75
\$1,000-\$2,999 . . . . .	51	25.0	.45	1.82
\$3,000-\$4,999 . . . . .	60	17.4	.38	2.18
\$5,000-\$6,999 . . . . .	64	24.1	.32	1.32
\$7,000-\$9,999 . . . . .	57	22.6	.48	2.14
\$10,000 and over . . . . .	39	28.7	.39	1.34



Table 10. Average annual number of women who had legitimate births during 1964-66, percentage expecting to have additional children, and average number of additional children expected by all the mothers and by those expecting to have additional children, according to number of living children and mother's employment status during pregnancy: United States, 1964-66 National Natality Survey

Number of living children and mother's employment status during pregnancy	Number of mothers (in thousands)	Percentage expecting additional children	Average number of additional children expected by:	
			All mothers	Mothers who expect more
One child, all statuses . . . . .	1,026	91.6	1.77	1.93
Employed . . . . .	540	93.1	1.83	1.97
Not employed . . . . .	485	89.9	1.71	1.90
Two children, all statuses . . . . .	900	55.4	.90	1.62
Employed . . . . .	224	49.9	.75	1.50
Not employed . . . . .	677	57.2	.95	1.66
Three children, all statuses . . . . .	621	37.9	.55	1.44
Employed . . . . .	115	31.5	.43	1.35
Not employed . . . . .	506	39.3	.57	1.46
Four children, all statuses . . . . .	393	21.5	.35	1.61
Employed . . . . .	68	19.7	.38	1.94
Not employed . . . . .	325	21.9	.34	1.55
Five children, all statuses . . . . .	232	23.1	.35	1.51
Employed . . . . .	47	23.7	.32	1.36
Not employed . . . . .	185	22.9	.36	1.55
Six children or more, all statuses . . . . .	308	22.7	.39	1.74
Employed . . . . .	51	22.7	.41	1.79
Not employed . . . . .	257	22.7	.39	1.73

Table 11. Average annual number of women who had legitimate births during 1964-66, percentage expecting to have additional children, and average number of additional children expected by all the mothers and by those expecting to have additional children, according to number of living children and level of mother's education: United States, 1964-66 National Natality Survey

Number of living children and level of mother's education	Number of mothers (in thousands)	Percentage expecting additional children	Average number of additional children expected by:	
			All mothers	Mothers who expect more
One child, all levels . . . . .	1,026	91.6	1.77	1.93
Elementary school only . . . . .	65	84.2	1.78	2.11
High school, 1-3 years . . . . .	229	86.2	1.55	1.80
4 years . . . . .	498	93.5	1.83	1.96
College, total . . . . .	233	94.8	1.86	1.97
1-3 years . . . . .	140	93.1	1.82	1.95
4 years or more . . . . .	94	97.5	1.93	1.98
Two children, all levels . . . . .	900	55.4	.90	1.62
Elementary school only . . . . .	79	57.5	1.07	1.87
High school, 1-3 years . . . . .	210	54.4	.89	1.64
4 years . . . . .	413	54.3	.87	1.59
College, total . . . . .	198	58.1	.96	1.56
1-3 years . . . . .	126	58.0	.93	1.60
4 years or more . . . . .	72	58.2	.87	1.50
Three children, all levels . . . . .	621	37.9	.55	1.44
Elementary school only . . . . .	68	45.6	.73	1.60
High school, 1-3 years . . . . .	174	36.1	.49	1.35
4 years . . . . .	269	36.6	.51	1.39
College, total . . . . .	110	38.9	.62	1.59
1-3 years . . . . .	68	34.2	.53	1.56
4 years or more . . . . .	43	46.4	.75	1.62
Four children, all levels . . . . .	393	21.5	.35	1.61
Elementary school only . . . . .	59	27.6	.44	1.58
High school, 1-3 years . . . . .	106	19.3	.30	1.54
4 years . . . . .	164	23.1	.39	1.67
College, total . . . . .	65	15.7	.25	1.58
1-3 years . . . . .	46	16.9	.26	1.54
4 years or more . . . . .	18	12.6	*	*
Five children, all levels . . . . .	232	23.1	.35	1.51
Elementary school only . . . . .	48	31.5	.49	1.56
High school, 1-3 years . . . . .	68	18.7	.27	1.45
4 years . . . . .	86	22.6	.34	1.51
College, total . . . . .	30	21.0	.33	1.56
1-3 years . . . . .	23	18.7	.32	1.74
4 years or more . . . . .	7	28.2	*	*
Six children or more, all levels . . . . .	308	22.7	.39	1.74
Elementary school only . . . . .	105	23.8	.41	1.73
High school, 1-3 years . . . . .	81	18.0	.39	2.17
4 years . . . . .	93	22.7	.36	1.58
College, total . . . . .	30	31.5	.46	1.45
1-3 years . . . . .	22	27.7	.42	1.53
4 years or more . . . . .	8	42.3	*	*

Table 12. Average annual number of women who had legitimate births during 1964-66, percentage expecting to have additional children, and average number of additional children expected by all the mothers and by those expecting to have additional children, according to number of living children and level of father's education: United States, 1964-66 National Natality Survey

Number of living children and level of father's education	Number of mothers (in thousands)	Percentage expecting additional children	Average number of additional children expected by:	
			All mothers	Mothers who expect more
One child, all levels . . . . .	1,026	91.6	1.77	1.93
Elementary school only . . . . .	94	84.7	1.62	1.91
High school, 1-3 years . . . . .	204	88.6	1.58	1.78
4 years . . . . .	418	91.8	1.78	1.93
College, total . . . . .	309	95.3	1.94	2.03
1-3 years . . . . .	155	95.0	1.90	2.00
4 years or more . . . . .	155	95.7	1.97	2.06
Two children, all levels . . . . .	900	55.4	.90	1.62
Elementary school only . . . . .	111	52.8	.90	1.71
High school, 1-3 years . . . . .	189	52.1	.83	1.60
4 years . . . . .	343	55.2	.89	1.60
College, total . . . . .	257	59.3	.96	1.63
1-3 years . . . . .	115	57.0	1.00	1.75
4 years or more . . . . .	143	61.1	.94	1.53
Three children, all levels . . . . .	621	37.9	.55	1.44
Elementary school only . . . . .	98	42.6	.66	1.54
High school, 1-3 years . . . . .	138	41.0	.56	1.37
4 years . . . . .	221	34.6	.48	1.38
College, total . . . . .	164	36.8	.56	1.52
1-3 years . . . . .	70	37.1	.54	1.46
4 years or more . . . . .	94	36.5	.57	1.56
Four children, all levels . . . . .	393	21.5	.35	1.61
Elementary school only . . . . .	80	25.9	.39	1.50
High school, 1-3 years . . . . .	84	19.4	.29	1.47
4 years . . . . .	141	21.5	.36	1.67
College, total . . . . .	88	19.6	.35	1.78
1-3 years . . . . .	38	19.2	.32	1.68
4 years or more . . . . .	51	20.0	.37	1.85
Five children, all levels . . . . .	232	23.1	.35	1.51
Elementary school only . . . . .	64	30.7	.48	1.56
High school, 1-3 years . . . . .	56	17.2	.24	1.42
4 years . . . . .	64	22.6	.36	1.58
College, total . . . . .	48	20.7	.29	1.41
1-3 years . . . . .	22	23.1	.31	1.34
4 years or more . . . . .	27	18.8	.28	1.47
Six children or more, all levels . . . . .	308	22.7	.39	1.74
Elementary school only . . . . .	122	21.7	.41	1.88
High school, 1-3 years . . . . .	64	18.2	.33	1.79
4 years . . . . .	75	19.3	.33	1.69
College, total . . . . .	47	36.9	.56	1.52
1-3 years . . . . .	23	34.8	.46	1.33
4 years or more . . . . .	24	38.9	.65	1.68

Table 13. Average annual number of women who had legitimate births during 1964-66, percentage expecting to have additional children, and average number of additional children expected by all the mothers and by those expecting to have additional children, according to number of living children and race of mother for the United States and South: United States, 1964-66 National Natality Survey

Number of living children and race of mother	Number of mothers (in thousands)	Percentage expecting additional children	Average number of additional children expected by:	
			All mothers	Mothers who expect more
White, total . . . . .	3,025	55.3	.98	1.77
One child . . . . .	930	92.2	1.80	1.95
Two children . . . . .	798	55.9	.91	1.63
Three children . . . . .	546	37.9	.55	1.45
Four children . . . . .	340	20.5	.33	1.64
Five children . . . . .	193	22.8	.34	1.51
Six children or more . . . . .	218	23.3	.38	1.64
Negro, total . . . . .	407	44.7	.73	1.63
One child . . . . .	84	85.7	1.45	1.69
Two children . . . . .	85	49.8	.77	1.56
Three children . . . . .	68	40.3	.56	1.39
Four children . . . . .	49	27.5	.41	1.51
Five children . . . . .	35	23.4	.37	1.57
Six children or more . . . . .	86	21.6	.43	1.99
All other races, total . . . . .	48	54.5	.89	1.64
One child . . . . .	12	87.7	1.66	1.89
Two children . . . . .	18	62.7	.94	1.49
Three children or more . . . . .	18	24.1	.34	1.40
<u>South</u>				
White, total . . . . .	856	54.3	.91	1.68
One child . . . . .	277	90.1	1.65	1.84
Two children . . . . .	236	52.3	.83	1.59
Three children . . . . .	156	32.3	.45	1.39
Four children . . . . .	80	17.8	.23	1.30
Five children . . . . .	51	26.7	.37	1.38
Six children or more . . . . .	55	24.7	.38	1.53
Negro, total . . . . .	231	45.8	.78	1.69
One child . . . . .	41	83.9	1.46	1.74
Two children . . . . .	47	56.2	.84	1.50
Three children . . . . .	36	45.7	.67	1.47
Four children . . . . .	29	32.0	.54	1.69
Five children . . . . .	22	26.5	.45	1.69
Six children or more . . . . .	56	24.2	.53	2.20

Table 14. Average annual number of women who had legitimate births during 1964-66, percentage expecting to have additional children, and average number of additional children expected by all the mothers and by those expecting to have additional children, according to number of living children, geographic region, and metropolitan status of residence: United States, 1964-66 National Natality Survey

Number of living children, geographic region, and metropolitan status	Number of mothers (in thousands)	Percentage expecting additional children	Average number of additional children expected by:	
			All mothers	Mothers who expect more
<u>One child</u>				
United States . . . . .	1,026	91.6	1.77	1.93
Inside SMSA . . . . .	669	91.7	1.80	1.96
Outside SMSA . . . . .	357	91.3	1.72	1.89
Northeast . . . . .	241	92.5	1.92	2.08
Inside SMSA . . . . .	191	92.3	1.89	2.05
Outside SMSA . . . . .	50	93.3	2.03	2.17
North Central . . . . .	281	93.1	1.80	1.93
Inside SMSA . . . . .	172	92.8	1.82	1.96
Outside SMSA . . . . .	109	93.6	1.77	1.89
South . . . . .	318	89.3	1.63	1.83
Inside SMSA . . . . .	162	89.8	1.67	1.86
Outside SMSA . . . . .	157	88.8	1.59	1.79
West . . . . .	185	92.0	1.78	1.93
Inside SMSA . . . . .	144	91.9	1.78	1.94
Outside SMSA . . . . .	41	92.6	1.76	1.90
<u>Two children</u>				
United States . . . . .	900	55.4	.90	1.62
Inside SMSA . . . . .	581	55.9	.92	1.65
Outside SMSA . . . . .	319	54.6	.86	1.58
Northeast . . . . .	214	59.1	.95	1.61
Inside SMSA . . . . .	173	58.9	.96	1.64
Outside SMSA . . . . .	41	60.1	.90	1.50
North Central . . . . .	243	56.5	.98	1.73
Inside SMSA . . . . .	152	58.9	1.03	1.76
Outside SMSA . . . . .	91	52.6	.88	1.67
South . . . . .	285	53.3	.84	1.57
Inside SMSA . . . . .	143	52.2	.83	1.59
Outside SMSA . . . . .	142	54.3	.84	1.55
West . . . . .	158	52.6	.83	1.57
Inside SMSA . . . . .	113	51.8	.81	1.56
Outside SMSA . . . . .	45	54.7	.87	1.59

Table 14. Average annual number of women who had legitimate births during 1964-66, percentage expecting to have additional children, and average number of additional children expected by all the mothers and by those expecting to have additional children, according to number of living children, geographic region, and metropolitan status of residence: United States, 1964-66 National Natality Survey—Con.

Number of living children, geographic region, and metropolitan status	Number of mothers (in thousands)	Percentage expecting additional children	Average number of additional children expected by:	
			All mothers	Mothers who expect more
<u>Three children</u>				
United States . . . . .	621	37.9	.55	1.44
Inside SMSA . . . . .	405	37.4	.53	1.40
Outside SMSA . . . . .	216	38.7	.59	1.52
Northeast . . . . .	158	42.3	.62	1.47
Inside SMSA . . . . .	124	39.2	.55	1.41
Outside SMSA . . . . .	34	53.6	.86	1.61
North Central . . . . .	172	40.2	.59	1.48
Inside SMSA . . . . .	106	40.9	.61	1.48
Outside SMSA . . . . .	66	39.1	.57	1.46
South . . . . .	193	34.7	.49	1.41
Inside SMSA . . . . .	105	35.4	.49	1.37
Outside SMSA . . . . .	88	33.8	.49	1.46
West . . . . .	98	32.8	.46	1.40
Inside SMSA . . . . .	70	31.8	.41	1.28
Outside SMSA . . . . .	28	35.2	.58	1.65
<u>Four children</u>				
United States . . . . .	393	21.5	.35	1.61
Inside SMSA . . . . .	258	20.9	.34	1.62
Outside SMSA . . . . .	135	22.7	.37	1.61
Northeast . . . . .	94	23.2	.37	1.59
Inside SMSA . . . . .	77	24.9	.40	1.60
Outside SMSA . . . . .	17	15.6	.23	1.50
North Central . . . . .	123	23.0	.38	1.66
Inside SMSA . . . . .	78	21.4	.36	1.70
Outside SMSA . . . . .	45	25.9	.41	1.60
South . . . . .	109	21.6	.31	1.46
Inside SMSA . . . . .	55	19.5	.26	1.34
Outside SMSA . . . . .	54	23.7	.37	1.55
West . . . . .	67	16.4	.30	1.88
Inside SMSA . . . . .	47	15.3	.28	1.86
Outside SMSA . . . . .	19	19.0	.36	1.91

Table 14. Average annual number of women who had legitimate births during 1964-66, percentage expecting to have additional children, and average number of additional children expected by all the mothers and by those expecting to have additional children, according to number of living children, geographic region, and metropolitan status of residence: United States, 1964-66 National Natality Survey—Con.

Number of living children, geographic region, and metropolitan status	Number of mothers (in thousands)	Percentage expecting additional children	Average number of additional children expected by:	
			All mothers	Mothers who expect more
<u>Five children</u>				
United States . . . . .	232	23.1	.35	1.51
Inside SMSA . . . . .	152	21.5	.31	1.42
Outside SMSA . . . . .	80	26.2	.43	1.66
Northeast . . . . .	49	20.3	.30	1.48
Inside SMSA . . . . .	41	22.5	.34	1.51
Outside SMSA . . . . .	8	8.5	*	*
North Central . . . . .	73	23.0	.38	1.67
Inside SMSA . . . . .	47	21.5	.31	1.43
Outside SMSA . . . . .	26	25.5	.52	2.02
South . . . . .	73	26.7	.39	1.47
Inside SMSA . . . . .	38	20.9	.29	1.38
Outside SMSA . . . . .	35	32.9	.50	1.53
West . . . . .	37	20.0	.26	1.31
Inside SMSA . . . . .	26	20.6	.27	1.30
Outside SMSA . . . . .	11	18.4	.25	1.34
<u>Six children or more</u>				
United States . . . . .	308	22.7	.39	1.74
Inside SMSA . . . . .	175	21.1	.37	1.78
Outside SMSA . . . . .	133	24.8	.42	1.69
Northeast . . . . .	62	23.9	.38	1.59
Inside SMSA . . . . .	49	22.9	.35	1.51
Outside SMSA . . . . .	13	27.4	.50	1.82
North Central . . . . .	98	18.6	.34	1.83
Inside SMSA . . . . .	57	16.8	.32	1.91
Outside SMSA . . . . .	40	21.0	.37	1.74
South . . . . .	112	24.3	.45	1.87
Inside SMSA . . . . .	44	23.5	.52	2.22
Outside SMSA . . . . .	68	24.8	.41	1.65
West . . . . .	37	26.7	.38	1.43
Inside SMSA . . . . .	24	23.0	.30	1.28
Outside SMSA . . . . .	13	33.8	.55	1.63

## APPENDIX I

### TECHNICAL NOTES ON METHODS

#### Background of This Report

This report which presents estimates of the expectations of additional children of married women who had babies in 1964, 1965, or 1966 is based on data collected in the 1964-66 National Natality Survey. The survey, which was conducted by the National Center for Health Statistics, was designed primarily to collect information on the past and expected future fertility of women who were currently bearing children. In addition, information on certain socioeconomic and demographic characteristics, which were thought to be relevant to the study of fertility and of infant mortality, was obtained from the mother.

The basic source document was the certificate of live birth. Using the information given on the birth certificate to determine name, address, and legitimacy status, a questionnaire was mailed to the mother of each legitimate birth. Additional mailings were made if the original questionnaire was not returned or was returned with the answers to certain questions incomplete. If there was no response or if a usable questionnaire was not obtained after three mailings, a personal interview was attempted by U.S. Bureau of the Census interviewers if the mother was a resident of a primary sampling unit of the Bureau of the Census.

Although all stages of the survey from questionnaire through final processing were identical during the 3 years, each year was an independent survey and was treated as such. Sample selection, data collection, and all processing was completely independent until the final tape files were merged in the computer in order to prepare tables for publication. The description of survey procedures which follows is written for all 3 years, but all steps were actually carried out separately for each year.

#### Sample Design

The sampling frame for the 1964-66 National Natality Survey was the file of microfilm records received each month by the National Center for Health Statistics from the 54 birth-registration areas in the United States. As a general rule, each registration area assigns a number to each certificate prior to or during the filming of the birth record. The certificates are numbered consecutively from the first to the last birth occurring during the year.

The sample for the survey was based on a probability design which made use of these numbers on the birth records. Each 1,000 records constituted a primary sampling unit. Within each 1,000 records, one record was chosen at random. Thus a sample of 1 out of 1,000 births was selected from the records from each registration area.

The national sample included a total of 4,025 births in 1964, 3,702 births in 1965, and 3,604 births in 1966 or 11,331 births for the 3 years of the survey. Of these 11,331 births, 647 were reported as illegitimate on the birth certificate. However, legitimacy status is reported in only 36 of the 54 registration areas. Hence, a procedure was developed to infer legitimacy status on the basis of indirect evidence on the birth certificate for the 18 registration areas not reporting this item. If the surname of the father on the birth record was different from the surname of the child or if the surname of the father was not reported, the birth was inferred to be illegitimate. On the basis of this procedure 289 births in the sample were inferred to be illegitimate in addition to those reported.

The mothers of these 936 illegitimate births were outside the scope of the survey and were not queried. The mothers of an additional 79 births were not sent questionnaires although



they were within the scope of the survey because the State of New Mexico did not participate and because nine births in California were also in a sample selected by the State. Mothers of 10 additional births were not sent questionnaires either because their residence was outside the United States or because no usable mailing address was obtainable. Thus the final sample of mothers to whom questionnaires were mailed was 10,306. Table I shows the number in the original sample drawn from the birth records, the number of mothers of legitimate births included in the survey, and the final number of mothers to whom questionnaires were mailed.

### The Birth Certificate and Questionnaire

Facsimiles of the Standard Certificate of Live Birth and of the questionnaire used in the survey are shown in appendix III.

Although not all States use the standard certificate, most do include the basic informa-

tion used in this report. The major exception is legitimacy status (item 23) which is not reported in 18 registration areas. The procedure which was developed to overcome this omission is discussed under Sample Design.

The questionnaire sent to the mother of a legitimate birth was designed primarily to obtain information about her fertility history and her expected fertility. Information was obtained on the number of pregnancies and the date of birth, sex, and present status of the child if the pregnancy resulted in a live birth. Information on whether she expected to have more children and, if so, how many, was also collected. In addition, there were questions concerning the family income during the previous calendar year, the educational attainment of the mother and father, and the mother's employment at any time during her pregnancy. A household listing provided space for the age, sex, marital status, and relationship to the mother of every person residing in the household at the time of the sample child's birth.

Table I. Total number of births in the United States and the number in the survey of mothers: 1964-66 National Natality Survey

Item	Total	Year		
		1964	1965	1966
Total births in the United States . . . . .	11,394,000	4,027,000	3,760,000	3,606,000
Number of births selected in the sample . . . . .	11,331	4,025	3,702	3,604
Number of illegitimate births excluded from survey . . . . .	936	282	345	309
Number of legitimate births in survey . . . . .	10,395	3,743	3,357	3,295
Number of births from New Mexico and California . . . . .	79	26	22	31
Other . . . . .	10	-	3	7
Number of births for which questionnaires were mailed . . . . .	10,306	3,717	3,332	3,257

## Collection of Data

Data were collected primarily by mail. Using the addresses given on the birth certificates, questionnaires were mailed to the mothers of births which were either recorded as or inferred to be legitimate.

Followup procedures when there was no response consisted of a questionnaire sent by certified mail 2 weeks after the original mailing and a second followup questionnaire sent by regular mail 3 weeks after the certified mail. When the questionnaire was returned and there was no indication of a refusal but certain items were either incomplete or inconsistent, either a special letter was sent or a telephone call was made to obtain the missing data.

If the mother was a resident of one of the primary sampling units designated by the Bureau of the Census, a final followup was made by the Bureau of the Census interviewers for mothers who did not respond or whose responses were essentially incomplete. Because the primary sampling units are geographically selected to give unbiased national estimates, such a followup should serve to reduce the bias which might be introduced by the nonresponses to a mail survey.

Of the 10,395 legitimate births in the survey (including the 89 for whom questionnaires were not mailed), questionnaire information was obtained for 9,232, or 89 percent. Approximately 54 percent of the respondents returned the original questionnaire, 31 percent the first (certified) followup, and 7 percent the second followup. The remaining 8 percent were Bureau of the Census interviews.

It should be noted that the response rates to the original questionnaire might not have been as high if there had been no followups. The original questionnaire was sometimes returned after the respondent had had time to receive the followup questionnaire. And either the original or the first followup questionnaire was sometimes returned several weeks after the second followup had been mailed.

Response rates for selected characteristics of the mother are shown in table II.

## Processing of Data

After all the methods of obtaining complete questionnaires had been exhausted, the data

Table II. Number of mothers of legitimate births in the survey and percent responding by selected characteristics of the mother: 1964-66 National Natality Survey

Characteristic of mother	Number in survey	Percentage responding
All mothers . . . . .	10,395	88.8
<u>Age</u>		
Under 20 years . . . . .	1,466	82.5
20-24 years . . . . .	3,698	88.7
25-29 years . . . . .	2,617	90.7
30-34 years . . . . .	1,562	90.7
35 years and over . . . . .	1,052	90.5
<u>Color</u>		
White . . . . .	9,096	89.5
All other . . . . .	1,299	84.0
<u>Live-birth order</u>		
First . . . . .	3,009	88.7
Second . . . . .	2,596	89.4
Third . . . . .	1,852	89.4
Fourth . . . . .	1,208	89.1
Fifth or higher . . . . .	1,730	87.2
<u>Region of residence</u>		
Northeast . . . . .	2,445	92.8
North Central . . . . .	2,968	91.4
South . . . . .	3,246	87.1
West . . . . .	1,736	82.0
<u>Metropolitan status</u>		
Inside SMSA . . . . .	6,682	90.4
Outside SMSA . . . . .	3,713	85.9

were edited, coded, and transcribed onto punch cards. Basic range edits were made to eliminate punching errors, and the cards were then used as input for magnetic tape. Computer processing included consistency checks, interval edits, estimation or assignment of weights, and imputation of missing data.

Consistency checks were made whenever the birth record and the questionnaire provided information about items which could be checked against one another. For example, both

the birth record and the questionnaire contained items about the number of children born alive to this mother. In addition, the questionnaire provided space for listing the birth date and other information about each child. The items were cross-checked to make certain that no child was omitted.

Interval edits were made wherever two dates were given which could reasonably be assumed to have some definite relationship or minimum or maximum interval between them. For example, if the interval between the mother's and the child's date of birth was less than 15 years or more than 44 years, the record was rejected for verification. Similarly, if the interval between the birth dates of any two children was less than 10 months, the record was rejected for verification.

When a record was rejected because of a consistency check or interval edit, the folder containing all records on the sample case was pulled from the files and gone over carefully to ascertain the correct answer. In almost all cases, information available on the questionnaire, either in answer to questions or in comments which the respondent had written voluntarily, made the correct answer apparent. In the few remaining cases where the differences could not be reconciled, questionnaire items were treated as nonresponses and were imputed at that stage of the processing.

### Nonresponse and Imputation for Missing Data

Failure to obtain a response represents one of the main sources of error and bias in any data

collection system. Data must be imputed for persons for whom the information is unknown in order to use the data at all. Often the user of the data merely assumes that the persons for whom the information is unknown are exactly like those for whom it is known. Instead, the imputation for the National Natality Survey was done as part of the processing by taking advantage of available information. This insured that imputed data for nonrespondents are the same as that for "similar" respondents, rather than for all respondents.

Imputation was done first for unit nonresponses. Unit nonresponse in this survey is defined as failure to mail a questionnaire to the mother of a legitimate birth for any of the reasons given at the beginning of this appendix, failure to obtain a returned questionnaire after all followup procedures had been completed, and failure to obtain a usable questionnaire even though the form was returned. Out of the 10,395 legitimate births selected in the sample, 1,163 or 11 percent were classed as unit nonresponses.

The number of sample cases and the proportion which were classed as unit nonresponses are shown by color and age of mother in table III and by color and live-birth order in table IV. Age of mother, live-birth order, and color of mother are all characteristics which could be expected to influence the mother's responses to items on the questionnaire such as number of children expected. They are also characteristics which are recorded on the birth certificate and are therefore available for all sample cases

Table III. Number of mothers of legitimate births in the survey and the nonresponse rates by age and color of mother: 1964-66 National Natality Survey

Age	Total		White		All other	
	Number in survey	Percent nonresponse	Number in survey	Percent nonresponse	Number in survey	Percent nonresponse
All ages . . . . .	10,395	11.2	9,096	10.5	1,299	16.0
Under 20 years . . . . .	1,466	17.5	1,235	16.8	231	20.8
20-24 years . . . . .	3,698	11.3	3,258	10.5	440	16.8
25-29 years . . . . .	2,617	9.3	2,315	8.5	302	15.6
30-34 years . . . . .	1,562	9.3	1,369	8.9	193	12.4
35 years and over . . . . .	1,052	9.5	919	9.2	133	11.3

Table IV. Number of mothers of legitimate births in the survey and the nonresponse rates by live-birth order and color of mother: 1964-66 National Natality Survey

Birth order	Total		White		All other	
	Number in survey	Percent nonresponse	Number in survey	Percent non-response	Number in survey	Percent non-response
All birth orders . . . . .	10,395	11.2	9,096	10.5	1,299	16.0
First . . . . .	3,009	11.3	2,734	10.8	275	16.0
Second . . . . .	2,596	10.6	2,315	9.6	281	18.1
Third . . . . .	1,852	10.6	1,643	9.8	209	17.2
Fourth . . . . .	1,208	10.9	1,069	10.3	139	15.8
Fifth and higher . . . . .	1,730	12.8	1,335	12.4	395	13.9

whether these cases represent respondents or nonrespondents. For these reasons, the three characteristics were chosen for use in unit imputation as well as estimation.

Imputation was done in the computer by setting up a matrix of 24 color, age, and live-birth order classes (shown in the section on Estimation), the cells of which were filled as each record meeting the criteria passed through. As the file of records was processed, the information in each cell was replaced by that from the next record which met the specifications. When a record for which no questionnaire information was available was read in, i.e., a unit nonresponse, the data already in the appropriate cell were imputed to that record.

In addition to unit nonresponses, there were also item nonresponses. Item nonresponse is defined as no information available on a particular item because of omission, illegibility, or refusal even though the questionnaire was complete enough to be considered a unit response. In general, item nonresponse rates were very low—less than 1 percent. Most of the item nonresponses were imputed on the basis of information available elsewhere on the birth certificate or questionnaire. For example,

mother's age as recorded on the birth certificate was used to compute her year of birth when she had not completed that questionnaire item. Other items with very low nonresponse rates (less than 0.5 percent) were imputed arbitrarily. Five items with fairly high nonresponse rates were imputed in the computer by procedures similar to those used for unit imputation on the basis of matrices designed specific for each item. Completed weeks of pregnancy were imputed using birth weight and race; expectation of more children by using age of mother and whether any children were expected; education of father by using age of father and education of mother; and family income by using age and education of father.

Item nonresponse rates for items used for this report are shown in table V.

### Estimation

Published statistics based on the survey are national estimates prepared by the use of a poststratified ratio estimation procedure. The purpose of ratio estimation is to take into account available relevant information, thereby reducing the variability of the estimate. The

Table V. Item nonresponse rates for statistics shown in this report: 1964-66 National Natality Survey

Item	Number	Percent
Age of mother <sup>1</sup> . . . . .	3	0.0
Race of mother <sup>1</sup> . . . . .	7	0.1
Sex of child <sup>1</sup> . . . . .	1	0.0
Number of previous children born alive		
Now living <sup>1</sup> . . . . .	43	0.4
Now dead <sup>1</sup> . . . . .	199	1.9
Number of fetal deaths <sup>1</sup> . . . . .	310	3.0
Employment during pregnancy <sup>2</sup> . . . . .	13	0.1
Year of first marriage <sup>2</sup> . . . . .	35	0.4
Education of mother <sup>2</sup> . . . . .	15	0.2
Education of father <sup>2</sup> . . . . .	78	0.8
Family income <sup>2</sup> . . . . .	231	2.5
Whether additional children are expected <sup>2</sup> . . . . .	73	0.8
Number expected <sup>2</sup> . . . . .	378	4.1
Sex of previous child <sup>3</sup> . . . . .	17	0.0

<sup>1</sup> Base: 10,395 legitimate live births.

<sup>2</sup> Base: 9,232 unit responses.

<sup>3</sup> Base: 26,177 children reported.

relevant information used in the 1964-66 National Natality Survey was age and race of mother and live-birth order of child. These three items are recorded on the birth certificate, and statistics showing the national totals (based on a 50-percent sample) are published annually by the Division of Vital Statistics, National Center for Health Statistics.<sup>8</sup>

The birth certificates were first checked to be certain that these items were complete on all records. When they were not, the items were imputed by hand, taking advantage of the information available on the questionnaire of a respondent and of all other items on the birth certificate of a nonrespondent. It was necessary to impute race of mother for seven records, age of mother for three records, and live-birth order for 242 records.

All certificates were classified as belonging in one of the following 24 groups:

Group	Color and age	Live-birth order
<u>White</u>		
1 . . . . .	Under 20 years	1
2 . . . . .	Under 20 years	2+
3 . . . . .	20-24 years	1
4 . . . . .	20-24 years	2
5 . . . . .	20-24 years	3+
6 . . . . .	25-29 years	1
7 . . . . .	25-29 years	2
8 . . . . .	25-29 years	3-4
9 . . . . .	25-29 years	5+
10 . . . . .	30-34 years	1-2
11 . . . . .	30-34 years	3-4
12 . . . . .	30-34 years	5+
13 . . . . .	35 years and over	1-4
14 . . . . .	35 years and over	5+
<u>All other</u>		
15 . . . . .	Under 20 years	1
16 . . . . .	Under 20 years	2+
17 . . . . .	20-24 years	1-2
18 . . . . .	20-24 years	3+
19 . . . . .	25-29 years	1-2
20 . . . . .	25-29 years	3-4
21 . . . . .	25-29 years	5+
22 . . . . .	30-34 years	1-4
23 . . . . .	30-34 years	5+
24 . . . . .	35 years and over	All

For each group, the ratio of the number of births in the United States in 1964, in 1965, and in 1966 estimated from the 50 percent sample to the number of births selected for the National Natality Survey (NNS) sample in each year was calculated. These 24 ratios for each year were the sample weights used in estimating national totals. In addition, for each of the same 24 groups, the ratio of births in the United States during the combined 3 years to the number of births selected in the National Natality Survey during the same 3 years was calculated so that statistics could be published on the annual average number of births in 1964-66.

The effect of the ratio adjustment is to make the estimate from the National Natality Survey sample consistent with the estimate based on the

50 percent sample for each of the groups used in the estimation procedure. However, since data published from the 1964-66 National Natality Survey include only legitimate births, the published statistics are not the same as those in Vital Statistics of the United States<sup>8</sup> which include all births.

Thus, estimates of characteristics are produced from the NNS using the following formula:

$$X'_i = \sum_{i=1}^{24} \frac{x_i}{y_i} Y_i$$

where

$X'_i$  is the estimate of the number of births with a particular characteristic in group  $i$ ,

$x_i$  is the count of sample births with the characteristic in group  $i$ ,

$y_i$  is the count of all sample births in group  $i$ , and

$Y_i$  is the total number of births in group  $i$ , based on the 50-percent sample.

### Reliability of Estimates

Since the statistics derived from this survey are estimates based on a sample, they may differ from the figures that would have been obtained had a complete count been made using the same questionnaire and procedures.

The probability design makes possible the calculation of sampling errors. The standard error is a measure of the sampling variation that occurs by chance because only a sample rather than the entire population is surveyed. The chances are about 68 out of 100 that an estimate from the sample differs from the value for the entire population by less than one standard error. The chances are about 95 out of 100 that the difference is less than twice the standard error and about 99 out of 100 that the difference is less than three times the standard error.

Estimates of sampling variability for the statistics derived from this survey were based on

20 random half-sample replications. This technique yields overall variability through observation of variability among random subsamples of the total sample. It reflects both the error that arises from sampling and a part of the measurement error, but it does not measure any systematic biases in the data. A general discussion of the development and evaluation of a replication technique for estimating variance has been published elsewhere.<sup>9</sup> However, the procedures and computations required to estimate variances by this method for the National Natality Survey are briefly described below.

Each record from the entire file of records in the survey was assigned systematically to a group numbered at random from 1 through 40. Twenty pairs of random groups were created from these groups. A half sample was formed by randomly selecting one group from each of the 20 pairs. This process was repeated until 20 "replicate half samples" were formed from which variance estimates were derived. The composition of the 20 half samples was determined by an orthogonal plan.

After the composition of each of the half samples was determined, all the estimation procedures used to produce the final estimates for the entire sample were applied separately to each of the resulting half samples.

An estimated variance  $S'^2_x$  of an estimated statistic  $x'$  of the parameter  $X$  was obtained by applying the following formula:

$$S'^2_x = \frac{1}{20} \sum_{i=1}^{20} (x''_i - x')^2$$

where

$x'$  is the estimate of  $X$  based on the entire sample, and

$x''_i$  is the estimate of  $X$  based on half sample  $i$ .

Rules to determine the approximate standard errors for estimates presented in this report are as follows:

1. *Estimates of aggregates.*—Approximate standard errors for estimates of aggregates,

such as the number of mothers who were high school graduates, are given in table VI.

2. *Estimates of percentages in a percent distribution.*—Approximate standard errors for estimated percentages, such as proportion of mothers who expected to have additional children, are determined in one of the two following ways, depending upon the source of the base of the percentage:

a. when the denominator is an estimate from the sample which is not one of the ratio estimation cells shown on page 40, the approximate standard errors are given in table VII.

b. when the denominator is one of the 24 ratio estimation cells and is therefore not subject to sampling error, the relative standard error of the percentage is equivalent to the relative standard error of the numerator, which is given in table VI.

3. *Estimates of rates.*—Approximate standard errors for estimated rates, such as average

number of children per mother, are determined in one of the two following ways, depending upon the source of the base of the rate:

a. when the denominator is an estimate which is not one of the cells used in ratio estimation, the approximate standard errors are given in table VIII.

b. when the denominator is one of the 24 ratio estimation cells, the relative standard error of the rate is equivalent to the relative standard error of the numerator which is given in table VI.

4. *Difference between two sample estimates.*—The standard error of a difference is approximately the square root of the sum of the squares of the standard errors of the two estimates. This formula will represent the actual standard error quite accurately for the difference between mothers with separate and uncorrelated characteristics, although it is only a rough approximation in cases where the characteristics are correlated.

Table VI. Approximate standard errors of aggregates: 1964-66  
National Natality Survey

Annual estimate	Relative standard error percent	Standard error
5,000	29.8	1,490
10,000	19.6	1,960
15,000	14.8	2,220
20,000	12.2	2,440
25,000	10.9	2,725
50,000	7.5	3,750
75,000	6.0	4,500
100,000	4.9	4,910
150,000	3.9	5,850
200,000	3.3	6,600
250,000	2.9	7,175
300,000	2.5	7,590
500,000	2.0	10,100
700,000	1.8	12,670
1,000,000	1.3	13,200

In addition to sampling errors, survey results are subject to errors in conceptual formulation, ambiguities in definitions and in the wording of questions, biases due to nonresponse or incomplete response, and errors in coding, editing, and tabulation. There is no way of computing the magnitude of these errors. However, they were minimized as far as possible.

Errors in conceptual formulation and ambiguities were reduced by pretesting the questionnaire before the survey began. The steps taken to reduce biases due to nonresponse were discussed in the sections on data collection and imputation. Errors in coding and editing were reduced by verification and the consistency and interval checks discussed in the section on processing the data. Errors in tabulation were reduced, if not eliminated, by carefully cross-checking the tabulations and by comparing data from this survey with data from other sources when available.

### Standardization

Standardization was done by the direct method, using the total number of mothers as the standard population.

Table VII. Approximate standard errors for percentages: 1964-66 National Natality Survey

Base of percentage	Estimated percent							
	2 or 98	5 or 95	10 or 90	20 or 80	25 or 75	30 or 70	40 or 60	50
Standard errors expressed in percentage points								
30,000 . . . . .	1.5	2.3	3.2	4.2	4.6	4.8	5.2	5.3
50,000 . . . . .	1.1	1.8	2.4	3.3	3.5	3.7	4.0	4.1
100,000 . . . . .	0.8	1.3	1.7	2.3	2.5	2.6	2.8	2.9
250,000 . . . . .	0.5	0.8	1.1	1.5	1.6	1.7	1.8	1.8
500,000 . . . . .	0.4	0.6	0.8	1.0	1.1	1.2	1.3	1.3
1,000,000 . . . . .	0.3	0.4	0.5	0.7	0.8	0.8	0.9	0.9
2,000,000 . . . . .	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.6
3,000,000 . . . . .	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.5
4,000,000 . . . . .	0.1	0.2	0.3	0.4	0.4	0.4	0.4	0.5

Table VIII. Standard error of number of children per mother: 1964-66 National Natality Survey

Average annual number of mothers	Number of children				
	1	2	3	4	5
Standard error expressed in number of children					
25,000 . . . . .	.13	.17	.21	.25	.29
50,000 . . . . .	.10	.14	.16	.19	.22
75,000 . . . . .	.08	.09	.11	.12	.13
100,000 . . . . .	.08	.09	.09	.10	.11
150,000 . . . . .	.06	.07	.07	.08	.08
200,000 . . . . .	.05	.05	.06	.06	.07
500,000 . . . . .	.03	.04	.04	.05	.05

**Rounding of Numbers**

The original tabulations on which the data in this report are based show figures to the nearest whole unit. In the published tables, estimates of

aggregates are rounded to the nearest thousand although they are not necessarily accurate to that detail. All percentages, ratios, and averages were computed using unrounded figures.



## APPENDIX II

### CERTAIN TERMS USED IN THIS REPORT

#### Information From the Certificate of Live Birth

*Race of mother.*—Race is recorded or derived from entries on the birth certificate. Negro is used as recorded. The category “white” includes white, Mexican, or Puerto Rican. The category “all other races” includes American Indian, Chinese, Japanese, Aleut, Eskimo, Hawaiian, or part-Hawaiian.

*Color.*—Color is recorded or derived from entries on the birth certificate. The category “white” includes white, Mexican, or Puerto Rican. The category “all other” includes Negro, American Indian, Chinese, Japanese, Aleut, Eskimo, Hawaiian, or part-Hawaiian. Color is used only in appendix I.

*Region of residence.*—States are grouped into four regions which correspond to the regions used by the U.S. Bureau of the Census. The regions are as follows:

<u>Region</u>	<u>States Included</u>
Northeast . . . . .	Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania
North Central . . .	Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas
South . . . . .	Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Ala-

bama, Mississippi, Arkansas, Louisiana, Oklahoma, Texas

West . . . . . Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Alaska, Hawaii

*Metropolitan status of residence.*—Usual residence of mother of infant is classified by location in metropolitan or nonmetropolitan areas. Metropolitan areas are standard metropolitan statistical areas (SMSA's) defined by the U.S. Office of Management and Budget and used by the U.S. Bureau of the Census. In New England, metropolitan State economic areas are used in place of SMSA's.

*Age of mother.*—Age of mother is recorded or derived from entries on the birth certificate. It refers to the mother's age at the time of the sample child's birth.

*Legitimacy status.*—For the reporting States, legitimacy is recorded or derived from the entry on the birth certificate. For States not reporting legitimacy on the birth record, it is inferred from other evidence on the certificate as, for example, mother, father, and child all with the same last name, and mother's maiden name is different. Legitimacy status is reported in 36 of the 54 registration areas in the United States.

#### Information From the Questionnaire

*Living children.*—All of the mother's own children whom she reported as live births but for whom no date of death was reported were coded as living at the time of the sample child's birth. The sample child was always coded as a living child.

*Expectation of additional children.*—Coded directly as the response to the question: "In your case, do you expect to have more children?" with four possible responses of "Definitely yes," "Probably yes," "Probably no," "Definitely no."

*Number of children expected.*—Coded from the number reported by mothers who responded "Definitely yes" or "Probably yes." All numbers were coded as integers with the lower number reported if a range of one and the middle if a range of two. Mothers who responded "Definitely no" or "Probably no" were coded to zero.

*Intervals.*—All intervals were computed by converting the dates of birth, marriage, or death into the number of months since January 1, 1900, and subtracting one date from the other. Measures computed in this manner include mother's age at first marriage, interval from first marriage to sample child, and interval from preceding birth to sample child.

*First marriage.*—Defined by the mother's own response to the question. If her present marriage was the first marriage, she was asked to record the month, day, and year of her marriage. If her present marriage was not her first marriage, she was asked to record the month, day, and year of her first marriage and her present marriage. All data in this report are based on her first marriage.

*Preceding child.*—Defined as the child, whether living or not, whose date of birth immediately preceded that of the sample child when all the children born alive to this mother were ranked by date of birth. If the sample child

was the second (or later) child of a multiple birth, the preceding child was the first (or second) child of that birth.

*Dates of birth.*—Dates of birth of all members of the household were recorded in the household listing and of all the mother's children who were not members of the household in specific questions. All dates were recorded by month, day, and year.

*Infant death.*—Defined as a child born alive who died before his first birthday. If the interval in months between the date of birth and the date of death was less than 12, the child was coded as an infant death.

*Fetal death.*—Defined by the mother's response that she had had one or more miscarriages and/or babies born dead.

*Sex of children.*—Recorded on the household listing or the specific questions for children who were not living in the household.

*Mother's age at first marriage.*—Defined by the interval in months between her date of birth and date of first marriage. The intervals in months were converted into years of age.

*Family income.*—Defined as the total income during the calendar year preceding the birth of the sample child received by all members of the family who were living in the same household as the mother at the time of the birth of the sample child.

*Level of educational attainment.*—Defined as the highest grade of regular school completed.

*Employment status.*—Defined by employment outside the home at any time during the pregnancy which resulted in the birth of the sample child.

# APPENDIX III SOURCE FORMS

## Certificate of Live Birth

Form approved,  
Budget Bureau No. 68-R374.3

STATE OF		<b>CERTIFICATE OF LIVE BIRTH</b>			BIRTH NO.	
1. PLACE OF BIRTH a. COUNTY		2. USUAL RESIDENCE OF MOTHER ( <i>Where does mother live?</i> ) a. STATE b. COUNTY				
b. CITY, TOWN, OR LOCATION		c. CITY, TOWN, OR LOCATION				
c. NAME OF HOSPITAL OR INSTITUTION <i>(If not in hospital, give street address)</i>		d. STREET ADDRESS				
d. IS PLACE OF BIRTH INSIDE CITY LIMITS? YES <input type="checkbox"/> NO <input type="checkbox"/>		e. IS RESIDENCE INSIDE CITY LIMITS? YES <input type="checkbox"/> NO <input type="checkbox"/>			f. IS RESIDENCE ON A FARM? YES <input type="checkbox"/> NO <input type="checkbox"/>	
CHILD	3. NAME <i>(Type or print)</i> First Middle Last			6. DATE OF BIRTH Month Day Year		
	4. SEX	5a. THIS BIRTH SINGLE <input type="checkbox"/> TWIN <input type="checkbox"/> TRIPLET <input type="checkbox"/>				
FATHER	7. NAME First Middle Last			8. COLOR OR RACE		
	9. AGE ( <i>At time of this birth</i> ) YEARS	10. BIRTHPLACE ( <i>State or foreign country</i> )	11a. USUAL OCCUPATION		11b. KIND OF BUSINESS OR INDUSTRY	
MOTHER	12. MAIDEN NAME First Middle Last			13. COLOR OR RACE		
	14. AGE ( <i>At time of this birth</i> ) YEARS	15. BIRTHPLACE ( <i>State or foreign country</i> )		16. PREVIOUS DELIVERIES TO MOTHER ( <i>Do NOT include this birth</i> ) a. How many OTHER children are now living? b. How many OTHER children were born alive but are now dead? c. How many fetal deaths (fetuses born dead at ANY time after conception)?		
17. INFORMANT						
18. MOTHER'S MAILING ADDRESS						
<i>I hereby certify that this child was born alive on the date stated above.</i>		18a. SIGNATURE			18b. ATTENDANT AT BIRTH M. D. <input type="checkbox"/> D. O. <input type="checkbox"/> MIDWIFE <input type="checkbox"/> OTHER ( <i>Specify</i> )	
		18c. ADDRESS			18d. DATE SIGNED	
19. DATE RECD. BY LOCAL REG.		20. REGISTRAR'S SIGNATURE			21. DATE ON WHICH GIVEN NAME ADDED  BY _____ ( <i>Registrar</i> )	
<b>FOR MEDICAL AND HEALTH USE ONLY</b> <i>(This section MUST be filled out)</i>						
22a. LENGTH OF PREGNANCY COMPLETED WEEKS		22b. WEIGHT AT BIRTH LB. OZ.		23. LEGITIMATE YES <input type="checkbox"/> NO <input type="checkbox"/>		
(SPACE FOR ADDITION OF MEDICAL AND HEALTH ITEMS BY INDIVIDUAL STATES)						

1956 REVISION OF STANDARD CERTIFICATES

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE—PUBLIC HEALTH SERVICE

PHS-706 REV. 11-54

# Informant Questionnaire



NATIONAL CENTER FOR  
HEALTH STATISTICS

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
WASHINGTON, D.C. 20201

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The U. S. Public Health Service is conducting a national study of families having babies during 1966. In this study, we are particularly interested in learning about the size and types of these families, as well as about other family characteristics. This information is needed in order to better understand the growth and changes taking place in our population. Detailed and accurate information of this type is essential for intelligent planning of programs to improve the Nation's health and welfare.

This national study will be based on information obtained from families which were selected as a sample from among the 4 million families having a baby during 1966. Your family was one of those selected. Please answer the questions on the following pages and return this form in the enclosed postage-free envelope.

As you might expect, statistical accuracy requires that we receive your reply and those of all of the other families in the study. You may be assured that all information which you report about yourself and your family will be kept completely confidential, in accordance with regulations of the U. S. Public Health Service. Your cooperation in this study, which seeks information of importance for the general welfare, is appreciated.

Sincerely yours,

Monroe G. Sirken, Ph. D.  
Chief, Division of Health  
Records Statistics

Name of Child	
Date of Birth	File Number

66M

# NATIONAL BIRTH SURVEY

## PART I. INFORMATION ABOUT YOUR CHILDREN

*In this part, we are interested in knowing about all of the children which have ever been born to you, even if they were by a previous marriage.*

1. How many babies have you ever had? (Count all those that were born alive to you at any time.)

- 1     4     7     10 or more  
 2     5     8  
 3     6     9

Number

4. Have you ever had any babies that were born dead?

- NO  
 YES → How many have you ever had?

Number

2. Have you ever had any children who have died? (Do not count miscarriages or babies that were born dead.)

- NO  
 YES → Please list below the name, sex, date of birth, and date of death of each such child.

Name of child	Sex	Date of Birth	Date of Death

5. Have you ever had a miscarriage?

- NO  
 YES → How many have you ever had?

Number

3. Were any of your children living away from you when your last baby was born? (For example, in the Armed Forces, living with relatives, etc.)

- NO  
 YES → Please list below the name, sex, and date of birth of each such child.

Name of child	Sex	Date of Birth

6. After each birth, some couples feel that their families are completed, while others expect more children. In your case, do you expect to have more children?

- Definitely yes  
 Probably yes  
 Probably no  
 Definitely no

How many more children do you think you will probably have?

Number

## PART II. INFORMATION ABOUT YOUR FAMILY

*In this part, information is asked about the members of the family who lived with you when your last baby was born.*

1. List below everyone who usually lived in your household at the time your last baby was born. Be sure to list yourself, your husband (if he lived at home) and your newborn baby, as well as other children and relatives living with you. Unrelated persons who lived with you, and children who were away at school or college, should be listed. **Do not** include persons who lived away. (For example, persons in the Armed Forces). Also, **do not** include persons who were only visiting temporarily at the time your baby was born.

Enter your name on the first line; enter the names of every other person who lived with you, including your newborn baby, on the following lines.  (First name)                  (Last name)	For each person, provide the information requested below.		
	Relationship to you (husband, daughter, son, father-in-law, nephew, stepson, adopted daughter, etc)	Date of birth  Month-Day-Year	Marital Status (for persons 14 years and older). Married    Divorced Widowed    Separated Single (never married)
	Yourself		

*(If more space is needed, please continue on separate sheet)*

<p>2. Who was the head of your household?</p> <p><input type="checkbox"/> Your husband</p> <p><input type="checkbox"/> Another person</p> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 2px;">Name of head</div> <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 2px;"></div>	<p>3. What was the total income of your family during 1965? (Include all income of all members of the family listed above even if they were not living together during 1965. Include income from all sources such as wages, salaries, unemployment compensation, help from relatives, profits and fees from own business or farm, welfare payments, Social Security payments, etc.)</p> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"><input type="checkbox"/> None</div> <div style="width: 50%;"><input type="checkbox"/> \$4000 - \$4999</div> <div style="width: 50%;"><input type="checkbox"/> Under \$1000</div> <div style="width: 50%;"><input type="checkbox"/> \$5000 - \$6999</div> <div style="width: 50%;"><input type="checkbox"/> \$1000 - \$1999</div> <div style="width: 50%;"><input type="checkbox"/> \$7000 - \$9999</div> <div style="width: 50%;"><input type="checkbox"/> \$2000 - \$2999</div> <div style="width: 50%;"><input type="checkbox"/> \$10,000 - \$14,999</div> <div style="width: 50%;"><input type="checkbox"/> \$3000 - \$3999</div> <div style="width: 50%;"><input type="checkbox"/> \$15,000 or over.</div> </div>
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**PART III. INFORMATION ABOUT YOURSELF AND YOUR HUSBAND**

*In this part, information is requested about you and your husband.*

1. Is this your first marriage?

YES → Please give the date of your marriage.

↓

Month	Day	Year

NO → Please give the date of your first marriage.

Month	Day	Year

Please give the date of present marriage.

Month	Day	Year

2. Were you employed outside your home at any time during your recent pregnancy?

YES → When did you stop working before your baby was born?

↓

Month	Day	Year

NO

3. What was the highest grade (or year) of regular school that you ever attended?

(Circle highest grade attended)

None----- 0  
 Elementary----- 1 2 3 4 5 6 7 8  
 High School----- 1 2 3 4  
 College----- 1 2 3 4 5 6+

3a. Did you finish this grade?  YES  NO

**COMMENTS:**

**PART III. Con.**

4. What was the highest grade (or year) of regular school that your husband ever attended?

(Circle highest grade attended)

None----- 0  
 Elementary----- 1 2 3 4 5 6 7 8  
 High School----- 1 2 3 4  
 College----- 1 2 3 4 5 6+

4a. Did he finish this grade?  YES  NO

**PART IV. INFORMATION ON HEALTH INSURANCE**

*In this part, we are interested in finding out whether you were covered by health insurance at any time during your recent pregnancy. Please report on each kind of health insurance protection which you had, whether or not the insurance was used.*

1. During your recent pregnancy, did you have health insurance to pay for doctor's bills for office visits or home calls?

YES  NO

2. Did you have health insurance to pay for hospital care at the time of delivery?

YES  NO

3. Did you have health insurance to pay for the doctor's bill for delivery of your baby?

YES  NO

**PART V. PERSON COMPLETING THIS FORM**

Name of person completing this form \_\_\_\_\_

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

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