

Patterns of Employment Before and After Childbirth

United States

Statistics, based on data collected in 1973, are presented on the employment of women before marriage, between marriage and first birth, and between first and second births. Trends in employment in these life-cycle stages are examined by comparing the experience of women married in different periods. Employment of women during and after the pregnancy preceding the most recent live birth is also examined. These statistics on employment are shown for all ever-married women, and for various socioeconomic groups.

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FOREWORD

The National Survey of Family Growth collects information on the fertility, family planning practices, and reproductive health of women in the United States. The information is based on standardized, home interviews with large, nationally representative samples of women in the reproductive years.

To supplement its own analyses of the Survey's rich data, the National Center for Health Statistics called upon various specialists outside the Center to prepare several analytical reports in this series of *Vital and Health Statistics*.

This report was planned by its authors, Dr. Larry Bumpass and Dr. James A. Sweet of the University of Wisconsin, within a general framework of analysis requested by the National Center for Health Statistics. Dr. Bumpass and Dr. Sweet conducted the analysis and prepared a report to the Center on their findings. The report was adapted by Center staff for publication in *Vital and Health Statistics*.

William F. Pratt, Chief
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SYMBOLS

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PATTERNS OF EMPLOYMENT BEFORE AND AFTER CHILDBIRTH

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INTRODUCTION

The idea of a life cycle is an important organizing principle of social science research. This concept recognizes that individuals live their lives in a series of typically ordered stages, and that there are crucial transition points that involve decisions affecting subsequent stages. Although various spheres of life such as marriage, childbearing, and labor-force activity can be studied individually, the life-cycle perspective suggests that a better understanding of each of these spheres of life can be achieved if they are studied in relation to one another.

An important aspect of the life cycles of women involves reproductive careers and labor-force activity. Throughout much of American history, labor-force activity was concentrated in one stage of the life cycle, and marriage and reproduction in another. Only a small minority of women were simultaneously workers, wives, and mothers: a few very highly educated women, women whose husbands were unable to earn enough to support their families, and women who were widowed, divorced, or separated.

In recent years this segregation of activities in the lives of women has diminished. As we enter the 4th quarter of the 20th century, nearly one-half of American women are in the labor force. Among married women with children under the age of 3 in the household, about one-third of the mothers are employed. Nevertheless, the probability of employment continues to be influenced by the presence of young chil-

dren in the household, by the composition of families, and by other social and economic factors.

This report describes and analyzes the pattern of employment of American women in relation to childbirth. It consists of three main subject areas:

1. Trends and differentials in female employment at particular life-cycle stages
2. Patterns of employment during pregnancy
3. Patterns of employment following childbirth

SOURCE OF DATA

The statistics in this report are from Cycle I of the National Survey of Family Growth (NSFG) conducted by the National Center for Health Statistics (NCHS). The NSFG was designed to provide information about fertility, family planning, and those aspects of maternal and child health that are closely related to childbearing. Data on these topics were collected by personal interviews with 9,797 women aged 15 through 44 years who had ever been married or who, although single, had offspring living in the household. The interviews were conducted between July 1973 and February 1974, and centered on September 13, 1973. Respondents were selected by a multistage, area probability, cross-sectional sample of households in the conterminous United States.

Various subsets of this sample are used in different parts of this report; they are described in conjunction with the analyses in which they are used. Appendix I contains more discussion of the sample design and discussions of estimating procedures and limitations of the data. Appendix II contains definitions of terms used in the report.

Two series of questions from the interview are used extensively in this report. The first determined how long a woman had worked before marriage and in the intervals between marriage and first birth, first and second births, and second and third births. The second series of questions asked how long before her most recent birth the woman stopped working and when she began work following that birth. These questions are reproduced in appendix III to this report.

SUMMARY OF PRINCIPAL FINDINGS

Women are more likely to have worked before marriage than at any other life-cycle stage, less likely to have worked between marriage and first birth, and least likely to have worked between the first and second births. At all three of these life-cycle stages, however, the percent of women employed has increased over time. For instance, comparing women first married in 1955-59 to women first married in 1965-69, the percent who worked before marriage increased from 80 to 84, the percent who worked between marriage and first birth increased from 66 to 80, and the percent who worked between first and second births increased from 37 to 51 (see figure 1).

Many women worked before their last child was 2 years old. Among mothers whose most recent birth occurred in 1960-64, and who intended to have no more children, 27 percent worked before the latest child's second birthday; the comparable statistic for women whose latest birth occurred 2-3 years before the interview (in 1973) was 41 percent, a significant increase.

Some of the increase in work activity by women before marriage and between births of first and second babies may have been tempo-

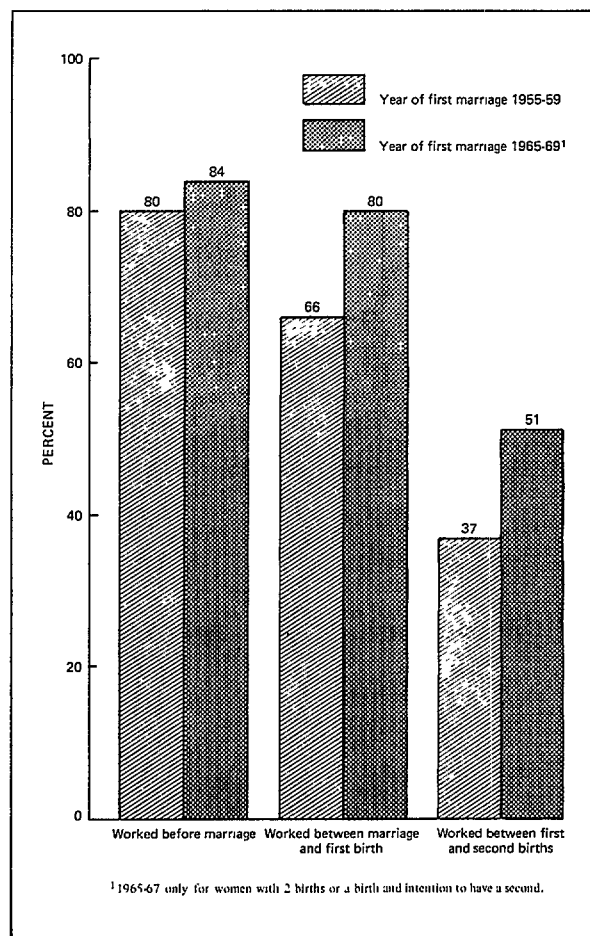


Figure 1. Percent of ever-married women 15-44 years of age who worked before marriage, percent of ever-married women 15-44 years of age with a birth or intention to have a birth who worked between marriage and first birth, and percent of ever-married women 15-44 years of age with 2 births or a birth and intention to have a second who worked between first and second births, by year of first marriage: United States, 1973.

rary or intermittent work, because the increasing trends are not observed always when short-term employment is excluded: The percent of workers employed for 2 or more years before marriage declined from 65 percent among women first married in 1955-59 to 61 percent among women first married in 1965-69, and the percent of workers employed for 1 year or more between first and second births did not change significantly in the same period (see figure 2).

Not only do many women work between births, many work during their pregnancies.

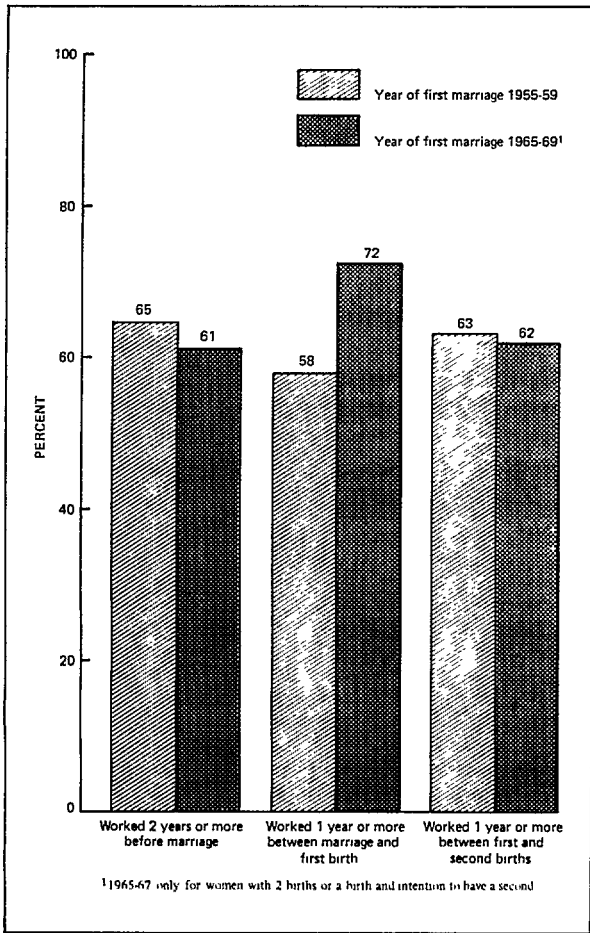


Figure 2. Percent of ever-married women 15-44 years of age, with work before marriage, who worked 2 years or more before marriage; percent of ever-married women 15-44 years of age, with a birth or intention to have a birth, and with work between marriage and first birth, who worked 1 year or more between marriage and first birth; and percent of ever-married women 15-44 years of age, with 2 births or a birth and intention to have a second, and with work between first and second births, who worked 1 year or more between first and second births; by year of first marriage: United States, 1973

About 42 percent of ever-married mothers worked during their most recent pregnancies; and of those who worked during those pregnancies, about one-half worked in the last 3 months of the pregnancy. An earlier study of women who had legitimate births in 1963 found that 31 percent worked during pregnancy then.¹ Working during pregnancy is more common among well-educated women than among other women, more common among black

than white women, and more common among women with few children than among women with many children (figure 3).

Among mothers whose latest birth occurred in 1970-73, and who worked during that pregnancy, most (62 percent) had returned to work by the time of the interview. The percents returning to work were not very different for women of different educational levels, and there is no consistent trend with increasing education; however, black women are more likely than white women to return to work, and there is some tendency for the percent returning to

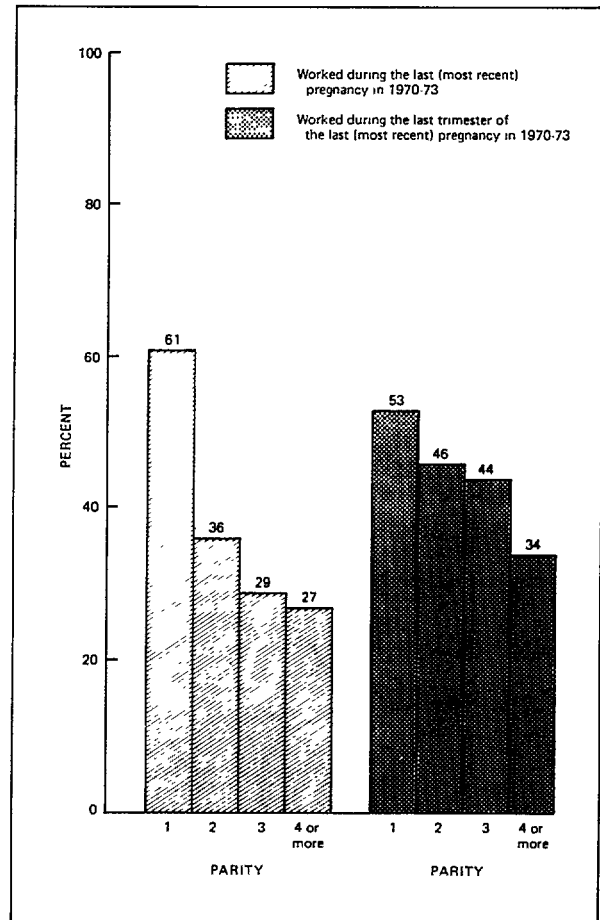


Figure 3. Percent of ever-married women 15-44 years of age with 1 or more children ever born who worked during the last (most recent) pregnancy in 1970-73, and percent of ever-married women 15-44 years of age with 1 or more children ever born and employed during the last (most recent) pregnancy who worked during the last trimester of that pregnancy, by parity: United States, 1973

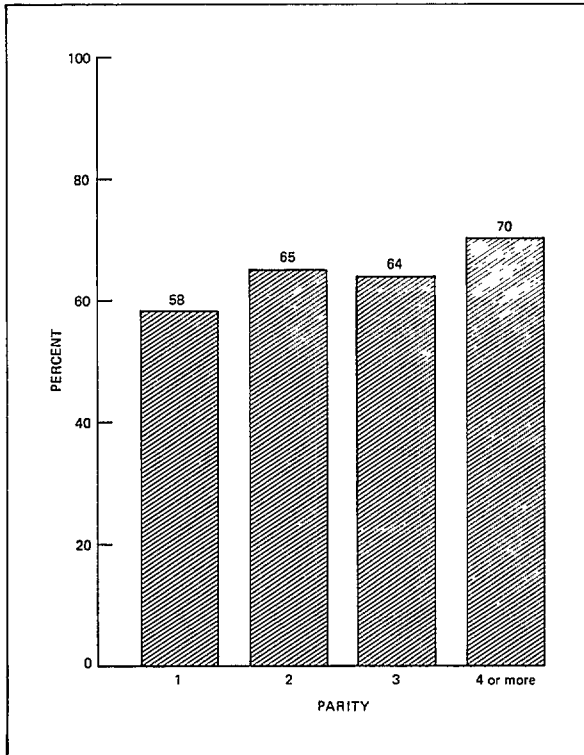


Figure 4. Percent of ever-married women 15-44 years of age with 1 or more children ever born employed during the last (most recent) pregnancy in 1970-73 who returned to work since the last birth, by parity: United States, 1973

work to increase with the number of children born (figure 4). Thus women with several children are less likely to work during pregnancy, but if they do work during pregnancy they are more likely than other women are to return to work after the birth.

The following sections contain a more detailed discussion of these and other findings of the study.

TRENDS AND DIFFERENTIALS IN FEMALE EMPLOYMENT AT PARTICULAR LIFE-CYCLE STAGES

The decade of the 1960's witnessed a large increase in the employment of women, especially among mothers of young children. This section examines that trend in terms of life-cycle stages. (For a related study of a State

population see Mott.²) For groups of women married in successive 5-year periods beginning in 1955 ("marriage cohorts"), trends and differentials in employment and length of employment are documented for the life-cycle stages before marriage, between marriage and first birth, and between first and second births. Because intervals between births ("birth intervals") tend to be short, much of the second-interval employment (between first and second births) is employment of mothers of young children. However, employment of such women is examined more directly in terms of trends in the proportion who worked within 2 years of the birth of their last (most recent) child.

Marriage cohorts before 1955 are not included because they are selective of young ages of marriage, given the upper age limit of the sample; for instance, women 44 years of age in 1973 who were married in 1952 were necessarily married before the age of 24. In other words, the sample women who married before 1955 underrepresent women who married at relatively old ages, because some women were past the upper age limit for sample eligibility (45 years) at the time of the interview. In fact, even the 1955-59 sample cohort is somewhat biased toward younger marriage ages.

Since marriage age is related to employment experience (early-marrying women tend to work less at every life-cycle stage), this bias could affect the interpretation of differences between employment in the 1955-1959 marriage cohort and subsequent cohorts. However, because the age-at-marriage bias in the 1955-59 cohort is not large, its effect on comparisons is probably not great. Even if all of the older brides omitted from the sample (perhaps 5 percent of the 1955-59 marriage cohort) were in a single employment category (an unlikely circumstance) the percents reported here would change very little.

A similar problem exists with respect to last-intended births: Cohorts of last-intended births are considered only after 1960 because earlier cohorts must have completed childbearing before age 31, and thus are selective of those who married young. Strategies employed to deal with this problem (known technically as the problem of "truncated open intervals") are explained in appendix I.

Premarital Employment

Proportion employed.—The proportion of women who worked before marriage was larger in the 1970-73 marriage cohort than in the 1955-59 cohort. The increase is observed in most subgroups shown in table 1, although not all of the increases are statistically significant. For two groups—those who married before age 18 and those who had a premarital birth—there was no increase between the 1955-59 and 1970-73 cohorts. The lowest employment rates are found for women marrying before age 18 and for women who did not complete high school. The two are probably related: Early marriage is a common reason for leaving high school.

Employment for 2 or more years.—Among women who worked before marriage, the proportion who worked at least 2 years was not significantly different in the 1955-59 and 1970-73 cohorts, but there were significant changes in some subgroups (see table 2). Women who married at later ages and women with at least some college education experienced increases in this proportion, although the latter difference is not statistically significant. On the other hand, decreases were experienced by black women, women who married young and women in low-education groups, although the latter difference is not statistically significant.

The proportion working at least 2 years before marriage varies directly with age at marriage. This would be expected, because those who marry later have more opportunity to work. Education differentials are less clear, however. A consistently linear, positive differential by education is found only for the latest marriage cohort.

Employment Between Marriage and Childbirth^a

Proportion employed.—Although increases in early marital employment were registered

among all groups considered, there were especially marked increases among black women and women with little or no work experience prior to marriage (table 3). Among black women, the proportion working in the first interval (between marriage and childbirth) increased from 51 to 73 percent, and among women who had either not worked or worked less than a year before marriage, the increase was from 41 to 66 percent working between marriage and childbirth.

Increases in the average lengths of first intervals through postponement of first births increased opportunity for employment in this interval. However, at least at the aggregate level, intercohort increases in employment are not explained entirely by increases in the length of first-birth intervals, since they occurred among women of all interval lengths. On the other hand, the subgroup differentials in the rate of increase in employment could reflect subgroup differences in the lengthening of first intervals over this time period.

Differentials in first-interval employment are probably related to differences in the amount of time available to work as conditioned by the length of the first interval. Women who married at young ages (less than 18 years) or who did not finish high school are less likely than women who married later or finished high school to work between marriage and their first birth. In spite of the increases experienced over the decade, in the most recent marriage cohort only about one-half of these groups worked in the first interval, in contrast to over four-fifths of the other age-at-marriage or education groups combined. It is important to note in this regard that although women with reported premarital pregnancies or births have been excluded, it is possible that the reporting error with respect to premarital pregnancies is most serious for these groups; that is, the low proportions working may reflect the influence of premarital pregnancies not identified as such by the dating of the pregnancy and marital histories.

Women who worked less than 1 year before marriage were also less likely to work after marriage. However, the differential in first-interval employment between those with less than 1 year of premarital work experience and those with 4 or more years of such experience

^aWomen with a premarital pregnancy are excluded from this analysis. Also the 1970-73 marriage cohort is not included because so many of its members had not had a first birth to end the interval; see appendix I for a full explanation.

was reduced from 40 to 21 percentage points between the earliest and latest marriage cohorts.

Employment of at least 1 year.—Unlike trends in the proportion working in the first interval, trends in the length of first-interval employment seem to be a consequence of the changing opportunity to work resulting from the increasing length of time between marriage and childbirth (table 4). Among women with similar interval lengths there is no significant increase. Thus differential changes in employment of at least a year among other groups probably reflect differential increases in first-interval lengths. For some subgroups, the increase in proportions working at least a year between marriage and birth of the first child are very large; for instance, the proportion increased from 56 to 80 percent among women marrying at ages 22 and over, and from 61 to 81 percent among women who attended college before marriage. For the latest marriage cohort, there was a direct relationship of extended first-interval employment with education and age at marriage, and no significant difference by race or previous work experience.

Employment Between First and Second Births^b

Proportion employed.—Employment between the births of first and second children also increased among all groups considered (table 5), significantly in almost all instances. As for first-interval employment, this increase is not simply a consequence of increasing interval lengths since it is observed among women with similar interval lengths. There was an irregular pattern of changes among black women, including an increase for the 1965-67 marriage cohort. Black women are more likely than white women are to work between first and second births (62 and 50 percent, respectively), although more rapid increases among white women have narrowed the gap. The rate of increase in employment between first and second

births varied by education and previous work experience. Whereas the rate for women with 12 or fewer years of education at marriage increased 16 percentage points (52 compared with 36 percent), there was a statistically insignificant increase of only 4 percentage points among those who had attended college before marriage. Also, among women who had not worked at all before their first birth, the proportion working in the second interval doubled from 22 percent in the 1955-59 cohort, to 43 percent in the 1965-67 cohort, compared with a modest increase from 44 to 52 percent among those who worked before the first birth. As a consequence of those varied trends, differentials in the experience of employment in the interval between first and second births tended to be reduced for race, previous work experience, and education.

The trends and differentials by age at marriage are particularly interesting. For all three marriage cohorts, women who married at ages 22 and over are the least likely to be employed in the interval between first and second births, although the differences are not all statistically significant. This might reflect the association of older age at marriage with greater economic security and hence less need to work. (However, this interpretation is called into question by the fact that the highest education group was neither significantly less nor more likely to work in any of the cohorts.) In any event, by the 1965-67 marriage cohort, women who married at ages 20 and over were 8 percentage points less likely to work in the second interval than women married at younger ages were.

Employment of at least 1 year.—Whatever its explanation, the decline over the last two marriage cohorts in the proportion of employed women working at least a year between their first and second births occurred for all groups considered, although it was not always statistically significant (table 6). This proportion increased in most groups (not always significantly) in the 1960-64 cohort, but then returned to the earlier level for the 1965-67 marriage cohort, declining from 70 to 62 percent. Although such changes should be regarded cautiously, the most likely sort of bias does not appear responsible. That is, rather than being an artifact of shorter lengths of exposure among women in the most

^bWomen married in 1968-73 are not included because so many of them had not had a second birth to end the interval; see appendix I for a full explanation.

recent cohort, as a consequence of remaining truncation (see the discussion in appendix I), the decline is greater among those with intervals 3 years or more in length than among women with shorter intervals. If other sources corroborate this finding, it is important in its implication for the interpretation of recent increases in the employment of mothers of young children. The new entrants may be seeking such employment on a more short-term basis than employed women with young children have in the past, or they may be entering more tentatively and withdrawing from employment upon discovering the difficulties involved.

Employment Within 2 Years of the Final Birth Intended

One of the most remarkable changes in the labor-force participation of women has been the increase in the employment of mothers of young children. As noted, the preceding section relates indirectly to that issue. The 1973 NSFG data provide further information on the basis of reports about how soon the respondent went back to work after her most recent child. Because the information is available only for the most recent birth, some strategy must be employed to maximize the comparability of the data over time. In order to examine trends in the proportion of mothers working when the child is less than 2 years old, it is necessary to count only those births that occurred at least 2 years before interview. In order to avoid a bias in the intervals being compared, it is also necessary to limit the analysis to women who intend to have no more children. This is because women who intend to have more children and whose latest birth was at least 2 years ago are a selected subset of women who gave birth in the same year and would continue childbearing; that is, they are selected for longer birth intervals. For the sake of brevity, the following text will simply refer to employment of mothers of young children; it should be kept in mind that the measure is, more specifically, of employment within 2 years of the birth of the final child intended. Trends are measured here over dates of birth of final-intended children

rather than over marriage cohorts as in the previous sections.

The increase in the employment of mothers of young children was pervasive (table 7). For example, similar trends were experienced at all education levels, and with some further reduction in the modest differences by education. Women with only one or two children were more likely than women with larger families to work when the youngest child was under 2, and this difference increased over this period. In the early 1970's, one-half of the mothers of small families worked within 2 years of the final-intended child's birth compared with one-third of the mothers of three or more children.

Black women, who had the highest employment level initially, experienced greater increases than white women did, further widening the difference by race. For final-intended births in the early 1970's, 62 percent of the black mothers worked within 2 years compared with 38 percent of the white mothers. This increasing differential occurred despite considerable increases among white women.

The differences by age at marriage paralleled those noted for second-interval employment. Women who married at 22 years of age or after were less likely to work soon after the birth of their last child than were women who married before age 18. Again, if this reflects lower financial need among those who marry later, such an effect is not reflected in the education differential.

LEVELS AND DIFFERENTIALS IN THE PROBABILITY OF EMPLOYMENT DURING PREGNANCY

In this section, levels and differentials in the proportion of women who work during pregnancy are examined. Data are presented on the proportion employed at any time during pregnancy and the proportion employed during the last trimester of pregnancy. The latter measure is based on the subsample of women who were employed during pregnancy.

As noted in the previous section, the sample of latest births is not a good sample of the

experience of women giving birth in any given period of time, with the possible exception of the most recent 9- to 12-month period. This is because a large fraction of women who gave birth in a particular period, for example, 1965-69, have since given birth to another child, now their most recent birth, so their earlier births are not included in the births for 1965-69. The sample of most recent births is less representative of all births in a period the further the analysis moves back in time. In addition, women have aged out of the sampling universe. For example, women giving birth to their latest child in 1968 who were then over the age of 40 are not included in the sample that was under age 45 as of 1973. This analysis is focused on births occurring in the period 1970-73 in the attempt to use the experience of the sample that most completely represents the total experience of all women giving birth during a particular time period.

An additional consideration in this regard is that aggregate employment rates of women have been increasing for the past several decades by 0.5-1.0 percent per year. The total sample of "most recent births" spans a very broad period of time. Consequently, the experience of older women, whose latest birth occurred in the more distant past, occurred in a period when employment rates for women were lower.

Analyses were done for the total sample of most recent births and for those most recent births that occurred during the period 1970-73. For the reasons specified, this discussion is limited to the 1970-73 births, although the results for all most recent births are included in the detailed tables.

Throughout this section, the statistical procedure employed is "Multiple Classification Analysis."³ This can be thought of as a multiple standardization in which composition of the population with respect to selected variables is statistically controlled while assessing the "effect" on the rate of employment of a particular variable of interest. In tables 8 and 9 the column labeled "Percent" shows the proportion of women in each category who reported a given behavior; the column labeled "Adjusted percent" is the standardized proportion, adjusted for the association of each char-

acteristic with other characteristics included in the analysis. Following table 10, which shows only unadjusted percents, tables 11-12 also show percent and adjusted percent columns, as just defined.

For analyzing the interrelationships of several characteristics simultaneously, Multiple Classification Analysis has certain advantages over cross-tabulation. In cross-tabulation the simultaneous interrelationships of several characteristics are analyzed by cross-classifying cases according to their category values on each of the several characteristics; when this is done with relatively small samples, however, the number of cases in individual cross-classified categories is often too small to produce reliable statistics. In Multiple Classification Analysis the data are handled differently, and simultaneous analysis of many variables need not reduce reliability. It is possible, therefore, to consider more different characteristics, and to consider more-detailed categories in each characteristic. That possibility is exploited in this and the following sections of this report; many characteristics are considered simultaneously and some have many separate categories. Some characteristics that appeared earlier are defined somewhat differently in the following sections to take advantage of the opportunity for more detailed analyses afforded by Multiple Classification Analysis. Additional discussion of Multiple Classification Analysis is contained in appendix I.

Overall, 42 percent of women giving birth in 1970-73 worked at some time during their pregnancy. (This compares with 38 percent of the entire sample.) This proportion varied quite widely depending on the order of the birth (see table 8). For women giving birth to a first child, 61 percent worked; for women giving birth to a second child, 36 percent worked. For third and higher order births, the mothers had an employment rate during pregnancy of 28 percent. Thus the major difference occurred between women who gave birth to a first child and those who had a higher order birth. This is probably because women having their first child did not have preschool-age children of their own in the household during the time that they were pregnant; but those giving birth to a second or higher order child

often had preschool-age children in the household. If adjustments are made for the other factors, the differential in employment during pregnancy by parity increases slightly.

In Multiple Classification Analysis, two variables with a common category cannot be analyzed simultaneously. Because they have a common category (no previous births), it was not possible to include in the same model both the parity of women and the time since previous birth, that is, the interval between the birth in question and the previous birth. This latter variable was adjusted separately by including all of the variables in table 8 except parity. The proportion employed during pregnancy increases with the length of the interval, which is equivalent to the age of the youngest child at the time of pregnancy: Women who had a birth interval of 6 years or more had an unadjusted rate of employment of 46 percent, compared with a rate of 26 percent for those with an interval of less than 2 years. These differentials are not affected when other factors are controlled. This finding results primarily from the fact that the rate of current employment varies directly with the age of the youngest child. Women with a very young child tend to have quite low rates of employment. The longer the interval between births, the older the youngest child, the more likely the woman is to be employed. Related to this may be the tendency for women with longer intervals between children to expect no more children, and to begin working as a result of that expectation.

By age, the highest unadjusted rate of employment during pregnancy occurs for women who were 20-24 years of age at the time of the birth, 50 percent. However, when other factors are adjusted, the pattern changes. Women who were under age 20 at the time of the birth had an adjusted rate of 24 percent; women aged 20-34 years had rates of 43-47 percent, and women aged 35 and over (only a small proportion of women in the sample) had a rate of 39 percent. The low rate of employment for women under age 20 reflects both their lack of work experience prior to the birth and the disadvantage very young women experience in the labor market.⁴ The reduction in the adjusted rate for women aged 20-24 reflects the fact that

births to women of this age are very often first births; it was noted previously that employment rates are high in the pregnancy preceding the first birth.

Women with higher levels of education were more likely to work during pregnancy than women were with less education. Women with less than 12 years of education had an employment rate of less than 35 percent; women with 13 or more years of education had rates of 48-50 percent. These differentials are attenuated, however, when the effects of other factors, particularly birth order and age, are controlled. The adjusted rate for college graduates is low (34 percent).

Black women had a rate of employment of about 50 percent, compared with a rate for white women of 42 percent. Hispanic women had a rate of employment of 37 percent. After controlling for other factors, the rate for Hispanic women is intermediate between that for white and black women, but closer to the rate of black women.

There were modest regional differences in employment during pregnancy. The adjusted employment rate of women in the West is lower than average and that for women in the South is higher, although the latter difference is not statistically significant. There is also a slight difference between the rate of employment of women living in metropolitan areas and those living outside of metropolitan areas, although it is not statistically significant. After adjusting for other factors, women living outside metropolitan areas have a rate that is about 3 percentage points higher than that for women living in metropolitan areas.

Rates of working during pregnancy are also considered for women classified by their current or most recent occupation. This procedure for classifying women by occupation is not completely adequate. Because occupation is not a fixed characteristic, women may reenter the labor force in an occupation group different from that they left; indeed, the probability of working at any given point may be related to whether a woman's previous job was commensurate with her training and skills. Similarly, a woman whose family has great economic need may be more willing to work in an occupation

below her qualifications than a woman who is more affluent. Higher than average adjusted rates of employment during pregnancy are found for women who are professionals (59 percent), managers (57 percent), and operatives and transport workers (48 percent). The rates of women in other occupational groups do not differ significantly from the average.

Finally, the year of most recent birth was included as a control variable in the analysis. This variable does not represent adequately the time trend in working during pregnancy, because the sample of most recent births that occurred in a given period is not a sample of the total universe of births in that period, as explained earlier. For instance, the sample of births in 1970 is not representative of all births during 1970, because women who had a birth in 1970 and also in a later year would be classified in the year of the most recent birth; therefore, these differentials are not easily interpreted.

Duration of Employment in Pregnancy

For women employed during pregnancy, the proportion employed during the last trimester of pregnancy is shown in table 9. In the sample of women who gave birth to their latest child in 1970-73, 48 percent of those who worked during their pregnancy worked in the last trimester. The figure for the entire sample of women is somewhat lower, 45 percent. Some differences in this measure among subgroups of women whose latest birth occurred in 1970-73, adjusted for the effects of other variables, are discussed briefly:

1. Low-parity women (parity 1) are more likely than high-parity women (parity 4 or higher) to work into the last trimester of pregnancy.
2. Women 30 years old and over who gave birth are more likely than younger women, other things being equal, to work into the last trimester.
3. Women living in metropolitan areas and in nonmetropolitan areas are equally likely to work into the last trimester.

4. Regional differences are small and non-significant with regard to this measure of work patterns.
5. Education does not have a linear relationship to working during the last trimester: High school graduates have the highest proportion, and women with less or more schooling have lower rates.
6. There are no significant racial and ethnic differences in the probability of working into the last trimester.

The timing of departure from the labor force during pregnancy is also described by the proportion still employed at each month of pregnancy. Included in this analysis were women who gave birth in the 2 years before the interview, and who worked at some time during their most recent pregnancy. Table 10 indicates the cumulative proportion remaining in the work force at each month of pregnancy. For example, in the total column it will be seen that by the 2d month of pregnancy, 7 percent of those who were working at the beginning of pregnancy had dropped out and 93 percent of women remained at work. By the 6th month of pregnancy, 61 percent remained. Beyond the 6th month, the proportion remaining drops off rapidly. Less than half were working by the 7th month, less than one-third by the 8th month, and 19 percent by the 9th month. For the total sample, the median point at which women leave the work force is 6.9 months. Black women have a median that is a half month earlier than that of white women. Women who are high school graduates, or who attended college remain in the work force approximately 1 month longer than those who did not finish high school. Women having a first birth have a median of 7.2 months, and women having a second or third and higher order births have a median duration of 6.3-6.5 months.

Work Since Latest Birth

In this section, differentials are examined in the probability that a woman who had her most recent birth in the period 1970-73 had worked since that birth. Forty-two percent of the mothers who had a birth in that period

had worked since their latest birth. This proportion varies with the length of the intervals since the most recent birth (table 11). Fifty-six percent (adjusted) of women who had their most recent birth in 1970 had worked by the time of interview in 1973. This compares with 53 percent of those having a birth in 1971, 39 percent in 1972, and 14 percent in 1973. These differentials reflect both the greater opportunity for work associated with the aging of the youngest child, and an increase in the length of exposure to the possibility of having worked.

Women whose most recent birth was a first birth have considerably higher rates of work since last birth, unadjusted and adjusted, than those whose most recent birth was a second or higher order birth. This is consistent with earlier findings that there is a large difference in employment rates between women with one and two children, but only relatively small differences between them and women with larger numbers of children.

The rate for black women is quite high (56 percent), and that for white women is 40 percent. The rate for Hispanic women is not significantly different from that for white women (42 percent) and is closer to the white women's rate than to the rate for black women. The black-white differential is only slightly attenuated after controlling for other factors; however, the rate for Hispanic women is increased, so that it is almost as high as that for black women.

There are only insignificant differences in adjusted proportions employed with respect to whether they expect additional children. It seems reasonable that women might plan their work and childbearing so that those who have had their last-intended child are more likely to return to work than those who expect to have an additional child. This, however, was not found by Sweet⁴ using the 1965 National Fertility Study, nor is it found here.

Women under age 25 at the time of a birth were more likely than older women were to work following the birth. This is true both for the unadjusted and the adjusted rates.

Regional differences in employment are significant, though not large. Women living in the South and West have adjusted rates of employment higher than those of women living

in the Northeast and North Central Regions. Similarly, as was found for working during pregnancy, women living outside of metropolitan areas have higher rates of employment than do those living within metropolitan areas, although those differences are not significant.

The association of higher education with employment is once again found. The adjusted rate of employment since latest birth for women who are college graduates is 11 percentage points higher than the rate for women who had not attended high school.

Women who were no longer married at the time of interview in 1973 have high rates of employment (57 percent, adjusted). Women whose husbands are at either extreme of the income distribution have lower than average rates; those whose husbands are intermediate in that distribution have rates that are not significantly different from average.

There are some sizeable differences in employment by occupation. Women in clerical occupations have a lower rate of employment (36 percent, adjusted). Higher than average rates are found for women in professional, service, and operative occupations. Women in other occupations have intermediate employment rates not significantly different from the average in this survey.

One important issue is the extent to which pregnancy disrupts periods of employment. It is addressed by the following analyses of levels and differentials in returning to work following childbirth. Because it is possible for a woman to return to work after a birth only if she was working prior to the birth, the sample is restricted to women who reported working during their last pregnancy ending in live birth. Again, the focus is on the experience of women who gave birth to a child since January 1, 1970.

Although 42 percent of women giving birth since 1970 had worked since their latest birth, 62 percent (adjusted) of those who were working during their pregnancy had returned to work by the time of enumeration in 1973 (table 12). The average interval from last birth to time of observation was approximately 1½ years, but some women in the sample had had only a few days of opportunity to return to work; that is, they had given birth just a few days before being interviewed. Others had given birth a full 3 years

before. In this analysis, there is a statistical control for year of birth to adjust for this differential period of work reentry opportunity. Women who gave birth in 1973, shortly before being interviewed, have a much lower than average unadjusted rate of return to work (28 percent); those who gave birth to their last child in 1970 or 1971 have a high unadjusted rate of return (74-77 percent). This reflects both differences in the duration of opportunity to return to work, and the probability that many women who gave birth in 1970 and did not go back to work were likely to have had a subsequent pregnancy, and were thus selected out of the sample of 1970 last births and into the sample of more recent last births.

Fifty-nine percent of white women, compared with 73 percent of black women, had returned to work since the birth of their latest child. The Hispanic women had a rate of return of 66 percent. When other factors are adjusted, the rate for Hispanic women is not significantly different from the rate for black women.

The unadjusted relationship between education and return to work is irregular. However, when adjustment is made for husband's income and other characteristics, the relationship becomes positive. The adjusted proportion returning was 46 percent of the women who did not attend high school and 56 percent of women with 1-3 years of high school, both significantly lower than the 71 percent of college graduates who returned.

Women who were under age 20 at the time of the birth have a high adjusted rate of return to work (79 percent). Women 20-24 to 30-34 years have rates of 59-63 percent.

Husband's income is not significantly related to having returned to work, except that women in the lowest income group are less likely than average to return to work. Women who were not currently married at the time of interview had an adjusted rate 11 percentage points above the average. The probability of returning to work is lower after first births than after higher order births, although the difference is not statistically significant.

Among the occupational categories with sufficient numbers of cases to permit analysis, the only significant difference is a lower

than average rate of return to work among women whose most recent occupation was clerical. Just over half (53 percent) of such women had returned, compared with about two-thirds to three-fourths among other occupations.

There are some significant regional differences in return to work. Women in the South and West are more likely to return to work than those in the North Central or Northeast. Women living in metropolitan areas have significantly lower rates of return to work than those living outside of metropolitan areas.

Proportion Entering the Work Force After Childbirth by Timing of Entry

In this section the timing of entry into the work force following childbirth is examined, with the focus on the pattern of entry by 2-month intervals during the first year after childbirth, using a subsample of women who gave birth 12-23 months before interview. Women who gave birth in the past 12 months are excluded, because they had not had 12 months of opportunity to enter the labor force. Sample women who gave birth more than 2 years before interview are excluded because they are not representative of women who gave birth in those earlier periods.

It is emphasized that these rates are the cumulative proportions of women who entered the work force by a given month after pregnancy, not the proportion working in that month. Many women who have returned to work in, say the 6th month after birth, may not be working in the 12th month after birth, because there is a great deal of movement in and out of the work force following the birth of a child. In earlier studies it was shown that about one-half of the women who gave birth 12-23 months before interview and who had entered the work force since that birth, were not working when interviewed.⁴⁻⁶

Five percent of women reported having begun working in the first 2 months after the birth of their child (table 13). This is a reasonable estimate of the proportion of women who work almost continuously through the period

of childbirth with only a very short period out of the labor force. By the 4th month after the birth of a child, 15 percent of women have entered the work force; by the 8th month the figure is one-quarter; and by the 12th month, 31 percent of women have entered the work force.

The remaining columns in table 13 present cumulative proportions for women by race, education, and birth order. Black women have a more rapid rate of entry into the work force following a birth: By the end of the 4th month, 20 percent of the black women, compared with 14 percent of the white women, have entered the work force; by the 8th month the figures are 38 and 23 percent, respectively; and by the end of the 12th month, 44 percent of the black women and 30 percent of the white women have entered the work force.

Levels of entry also vary by education. Women who have attended college have lower rates of entry into the work force after childbearing than other women have. High school graduates and women with less than a high school education have patterns of entry into the work force that are similar to each other.

Generally, women who gave birth to a first child have a higher cumulative rate of entry into the work force than women who had second or higher order births: By the 8th month after childbirth, 31 percent of the women who had a first birth had entered the work force, compared with 19 percent of women who had a second birth. Women who have had a third or higher order birth have a higher cumulative rate of employment than women who had a second birth. A reason for the higher employment rate of higher parity women may be the greater economic need of large families.

Another way of looking at these same data is to focus attention on the pattern of *returning* to work for women who were working prior to their pregnancy. This takes into account the fact that some women remove themselves from the labor force for the whole childbearing

period; other women work between births of their children. Looked at from the perspective of the work force, returning to work is more relevant than the initial employment following childbirth. From an employer's point of view, for example, the probability that a woman who becomes pregnant will stop working, and the timing of her return, are more significant than the probability that any woman having given birth will enter the work force. Of the women who were working during their pregnancy, 10 percent had returned to work by the 2d month following the birth of their child (table 14). More than one-quarter had returned by the 4th month, and more than one-third by the 6th month. By the 12th month nearly one-half had returned. For black women the rate of return was considerably greater than that for white women. By the 8th month, 56 percent of the black women, compared with 40 percent of the white women, had returned. By the 12th month, 60 percent of the black women, compared with 48 percent of the white, had returned. With respect to education, the highest rate of return at any given interval since birth is for women with less than a high school education, and the lowest cumulative proportion returning is for college-educated women. The level for women who are high school graduates is intermediate.

Women who have a high-order birth have high rates of returning to work; those who had a first- and second-order birth have rates of returning that are quite similar to one another. Why should the rate of returning be so much higher for mothers of high-order births than for mothers of lower order births? First, mothers of high-order births are more likely than others to have an economic need motivating them to seek employment.⁷ A second reason is that women who had been working prior to a third-order or higher order birth may have adapted their lifestyle to working. Such women probably have a higher than average commitment to working.



REFERENCES

- ¹National Center for Health Statistics: Employment during pregnancy: Legitimate live births, United States—1963. *Vital and Health Statistics*. PHS Pub. No. 1000-Series 22-No. 7. Public Health Service. Washington. U.S. Government Printing Office, Sept. 1968.
- ²Mott, F. L.: Fertility, life cycle stage and female labor force participation in Rhode Island: a retrospective overview. *Demography* 9:173-185, 1972.
- ³Andrews, F. M., Morgan, J. N., Sonquist, J. A., and Klem, L.: *Multiple Classification Analysis*, 2nd ed. Ann Arbor, Mich. Institute for Social Research, 1973.
- ⁴Sweet, J. A.: *Women in the Labor Force*. New York. Seminar Press, 1973
- ⁵Sweet, J. A.: The Employment of Mothers of Young Children: 1970. CDE Working Paper 74-17. Madison. Center for Demography and Ecology, University of Wisconsin, 1974.
- ⁶Sweet, J. A.: Return to Work After Childbirth. CDE Working Paper 74-16. Madison. Center for Demography and Ecology, University of Wisconsin, 1974.
- ⁷Rindfuss, R. R., and Sweet, J. A.: *Postwar Fertility Trends and Differentials in the United States*. New York. Academic Press, 1977.
- ⁸National Center for Health Statistics: The National Survey of Family Growth, Cycle I: sample design, estimation procedures, and variance estimation. *Vital and Health Statistics*. Series 2-No. 76. DHEW Pub. No. (PHS) 78-1350. Washington. U.S. Government Printing Office, Jan. 1978.
- ⁹U.S. Bureau of the Budget: *Standard Metropolitan Statistical Areas*. Washington. U.S. Government Printing Office, 1967.
- ¹⁰U.S. Bureau of the Census: *1970 Census of Population, Detailed Characteristics, U.S. Summary*. PC(1)D1. Washington. U.S. Government Printing Office, Feb. 1973. pp. A17-A18.

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Table 1. Percent and number of women who worked before marriage, by year of first marriage and selected characteristics: ever-married women¹ 15-44 years of age, United States, 1973

Characteristic	Year of first marriage							
	1970-1973	1965-1969	1960-1964	1955-1959	1970-1973	1965-1969	1960-1964	1955-1959
All women.....	Percent				Number in thousands			
	86	84	79	80	4,703	6,080	4,543	4,192
<u>Race</u>								
White.....	87	85	81	82	4,218	5,439	4,152	3,781
Black.....	76	73	71	68	405	550	401	377
<u>Age at marriage</u>								
Less than 18 years.....	52	49	44	55	429	550	515	639
18-19 years.....	88	83	83	82	1,514	1,794	1,525	1,306
20-21 years.....	94	91	90	90	1,239	1,669	1,196	1,060
22 years or more.....	95	96	93	91	1,526	2,035	1,315	1,189
<u>Education at marriage</u>								
Less than 12 years.....	67	63	61	63	898	1,170	1,081	1,150
12 years.....	91	88	87	89	2,276	3,034	2,400	2,172
More than 12 years.....	94	95	88	91	1,531	1,836	1,074	885
<u>Timing of first birth</u>								
Before marriage.....	77	75	68	77	308	423	261	249
After marriage.....	87	84	80	80	4,410	5,606	4,293	3,934

¹Includes only women first married 1955-73.

NOTE: Numbers may not add to totals because of rounding; see appendix I.

Table 2. Percent and number of women who worked 2 years or more before marriage, by year of first marriage and selected characteristics: ever-married women¹ 15-44 years of age who worked before marriage, United States, 1973

Characteristic	Year of first marriage							
	1970-1973	1965-1969	1960-1964	1955-1959	1970-1973	1965-1969	1960-1964	1955-1959
All women.....	61	61	62	65	2,867	3,689	2,820	2,725
<u>Race</u>								
White.....	62	61	62	65	2,613	3,316	2,546	2,441
Black.....	51	59	63	71	208	325	253	268
<u>Age at marriage</u>								
Less than 18 years.....	25	34	33	34	107	186	170	216
18-19 years.....	39	43	44	54	587	776	673	707
20-21 years.....	68	63	70	80	843	1,051	834	844
22 years or more.....	87	81	86	81	1,330	1,643	1,128	965
<u>Education at marriage</u>								
Less than 12 years.....	43	50	60	62	386	590	643	709
12 years.....	62	67	65	68	1,406	2,031	1,561	1,470
More than 12 years.....	69	57	56	61	1,060	1,048	602	540
<u>Timing of first birth</u>								
Before marriage.....	60	59	65	67	185	251	171	167
After marriage.....	61	61	61	65	2,679	3,431	2,614	2,563

¹Includes only women first married 1955-73.

NOTE: Numbers may not add to totals because of rounding; see appendix I.

Table 3. Percent and number of women who worked between marriage and first birth, by year of first marriage and selected characteristics: ever-married women¹ 15-44 years of age, United States, 1973

Characteristic	Year of first marriage					
	1965-1969	1960-1964	1955-1959	1965-1969	1960-1964	1955-1959
All women	80	69	66	4,311	2,991	2,699
	Percent			Number in thousands		
<u>Race</u>						
White	81	70	67	4,058	2,840	2,554
Black.....	73	63	51	222	151	114
<u>Age at marriage</u>						
Less than 18 years.....	50	45	42	362	375	339
18-19 years	77	69	65	1,227	944	834
20-21 years	90	78	76	1,302	813	739
22 years or more	88	78	75	1,429	852	771
<u>Education at marriage</u>						
Less than 12 years.....	52	45	44	564	517	547
12 years	85	75	75	2,253	1,597	1,496
More than 12 years	91	83	76	1,505	877	647
<u>Premarital employment</u>						
None or less than 1 year.....	66	52	41	1,127	775	547
1-3 years	87	77	76	1,944	1,344	1,268
4 years or more.....	87	80	81	1,259	880	880
<u>Interval between marriage and first birth</u>						
Less than 1 year	59	52	56	576	558	670
1-2 years	71	64	60	1,125	991	934
2 years or more	93	85	82	2,630	1,456	1,096

¹Includes only women who have had a birth (or intend a birth), were first married 1955-69, and had no premarital pregnancy.

NOTE: Numbers may not add to totals because of rounding; see appendix I.

Table 4. Percent and number of women who worked 1 year or more between marriage and first birth, by year of first marriage and selected characteristics: ever-married women¹ 15-44 years of age who worked between marriage and first birth, United States, 1973

Characteristic	Year of first marriage					
	1965-1969	1960-1964	1955-1959	1965-1969	1960-1964	1955-1959
All women	72	65	58	3,105	1,945	1,565
<u>Race</u>						
White	72	65	57	2,920	1,840	1,458
Black.....	72	70	66	159	105	75
<u>Age at marriage</u>						
Less than 18 years.....	54	54	46	197	203	157
18-19 years	65	67	63	799	636	529
20-21 years	75	62	59	973	503	438
22 years or more.....	80	70	56	1,139	601	438
<u>Education at marriage</u>						
Less than 12 years.....	53	58	49	299	297	266
12 years	70	66	59	1,569	1,060	883
More than 12 years	81	66	61	1,221	577	403
<u>Premarital employment</u>						
None or less than 1 year.....	69	66	54	775	511	295
1-3 years	72	62	58	1,393	831	739
4 years or more.....	75	68	59	941	597	518
<u>Interval between marriage and first birth</u>						
Less than 2 years.....	42	41	37	713	631	591
2 years or more.....	91	89	88	2,381	1,294	967

¹Includes only women who have had a birth (or intend a birth), were first married 1955-69, and had no premarital pregnancy.

NOTE: Numbers may not add to totals because of rounding; see appendix I.

Table 5. Percent and number of women who worked between first and second births, by year of first marriage and selected characteristics: ever-married women¹ 15-44 years of age, United States, 1973

Characteristic	Year of first marriage					
	1965-1967	1960-1964	1955-1959	1965-1967	1960-1964	1955-1959
All women	Percent			Number in thousands		
	51	43	37	1,678	2,083	1,747
<u>Race</u>						
White	50	43	35	1,462	1,853	1,463
Black.....	62	49	54	200	238	257
<u>Age at marriage</u>						
Less than 18 years.....	53	46	35	284	479	383
18-19 years	56	44	41	599	698	596
20-21 years	49	44	38	392	491	408
22 years or more.....	46	39	32	407	429	352
<u>Education at marriage</u>						
Less than 12 years.....	51	43	35	410	598	505
12 years	53	42	36	847	983	842
More than 12 years	47	47	43	417	523	404
<u>Previous employment</u>						
No previous employment.....	43	28	22	158	227	168
Premarital employment only.....	50	42	32	477	665	491
Employed between marriage and first birth	52	50	44	1,023	1,227	1,067
<u>Interval between first and second births</u>						
Less than 3 years.....	37	29	25	394	572	538
3-4 years	48	40	36	456	465	417
4 years or more.....	65	62	55	828	1,061	777

¹Includes only women who have had 2 births (or 1 birth and intend another) and were first married 1955-67.

NOTE: Numbers may not add to totals because of rounding; see appendix I.

Table 6. Percent and number of women who worked 1 year or more between the first and second births, by year of first marriage and selected characteristics: ever-married women¹ 15-44 years of age who worked between the first and second births, United States, 1973.

Characteristic	Year of first marriage					
	1965-1967	1960-1964	1955-1959	1965-1967	1960-1964	1955-1959
All women	Percent			Number in thousands		
	62	70	63	1,037	1,472	1,097
<u>Race</u>						
White	61	69	62	888	1,270	909
Black.....	68	76	65	135	182	166
<u>Age at marriage</u>						
Less than 18 years.....	55	68	61	155	328	231
18-19 years	65	70	64	388	486	383
20-21 years	58	73	63	226	356	257
22 years or more.....	66	70	62	266	307	221
<u>Education at marriage</u>						
Less than 12 years.....	61	70	56	251	422	279
12 years	60	71	64	506	691	539
More than 12 years	67	69	69	279	364	277
<u>Previous employment</u>						
No previous employment.....	53	73	52	85	164	88
Premarital employment only.....	66	71	52	315	469	259
Employed between marriage and first birth	61	70	70	630	853	753
<u>Interval between first and second births</u>						
Less than 3 years.....	41	47	35	159	267	191
3-4 years	53	63	61	244	294	256
4 years or more.....	76	86	84	625	919	653

¹Includes only women who have had 2 births (or 1 birth and intend another) and were first married 1955-67.

NOTE: Numbers may not add to totals because of rounding; see appendix I.

Table 7. Percent and number of women who worked within 2 years of their final birth, by year of final birth and selected characteristics: ever-married women¹ 15-44 years of age whose final birth was at least 2 years ago, United States, 1973

Characteristic	Year of final birth					
	1970-1972	1965-1969	1960-1964	1970-1972	1965-1969	1960-1964
All women	41	33	27	910	1,582	808
<u>Race</u>						
White	38	32	26	724	1,376	714
Black.....	62	51	45	166	227	104
<u>Age at marriage</u>						
Less than 18 years.....	46	40	36	210	372	222
18-19 years	43	34	26	332	484	237
20-21 years	43	35	26	207	397	183
22 years or more.....	33	27	24	168	353	182
<u>Education at marriage</u>						
Less than 12 years.....	41	35	24	287	482	173
12 years	39	32	27	412	729	410
More than 12 years	44	35	31	204	399	234
<u>Previous employment</u>						
No previous employment.....	32	32	24	115	237	103
Premarital employment only.....	45	33	26	309	526	231
Employed between marriage and first birth	41	34	29	481	836	485
<u>Children ever born</u>						
1 or 2	50	39	33	548	847	464
3	30	29	21	147	363	213
4 or more.....	33	28	25	209	384	143

¹Includes only women who have had a birth and intend to have no more and were first married 1955-67.

NOTE: Numbers may not add to totals because of rounding; see appendix I.

Table 8. Percent, adjusted percent,¹ and number of women who worked during the latest pregnancy,² by selected characteristics, according to year of latest birth: ever-married women 15-44 years of age, United States, 1973

Characteristic	All women			Latest birth in 1970-73		
	Percent	Adjusted percent ¹	Number in thousands	Percent	Adjusted percent ¹	Number in thousands
<u>Education</u>						
Less than 9 years	31	38	540	30	41	242
9-11 years	32	37	1,331	34	40	653
12 years	40	39	4,037	44	43	2,066
13-15 years	42	39	1,135	50	47	596
16 years or more	44	35	863	48	34	408
<u>Husband's income</u>						
Less than \$3,000	28	30	323	36	27	226
\$3,000-\$4,999	40	40	446	41	42	285
\$5,000-\$5,999	40	38	336	41	41	213
\$6,000-\$6,999	39	39	411	45	46	278
\$7,000-\$7,999	42	39	512	48	43	337
\$8,000-\$8,999	40	39	522	47	47	324
\$9,000-\$9,999	39	36	515	44	42	293
\$10,000-\$11,999	40	39	1,162	42	43	591
\$12,000-\$14,999	38	38	1,191	45	44	587
\$15,000-\$24,999	34	36	1,061	37	36	388
\$25,000 or more	31	33	300	31	32	95
Respondent not married	47	47	1,186	49	51	432
<u>Parity</u>						
1 live birth	61	63	3,389	61	63	2,009
2 live births	33	32	2,320	36	34	1,140
3 live births	28	28	1,201	29	28	429
4 live births or more	26	25	983	27	27	412
<u>Age at birth of child</u>						
Less than 20 years	37	21	823	36	24	433
20-24 years	45	42	3,422	50	46	1,795
25-29 years	36	40	2,577	40	43	1,223
30-34 years	31	39	912	34	47	407
35 years or more	31	38	225	27	39	113
<u>Race and ethnicity</u>						
White	38	37	6,348	42	40	3,189
Black	48	48	1,080	50	53	494
Hispanic	36	42	523	37	48	282
Other race or ethnicity	29	33	73	23	32	28
<u>Occupation</u>						
Professional	47	49	1,206	55	59	563
Managers	51	50	297	58	57	129
Sales	34	36	411	36	37	206
Clerical	41	40	2,960	46	44	1,542
Craftsman	46	47	154	50	52	78
Operatives and transport workers	41	41	1,317	46	48	663
Laborers, except farm	30	28	*61	36	29	*28
Farmers	*	*	*	*	*	*
Farm laborers	36	30	*61	*25	*28	*22
Service	36	36	1,326	39	39	682
Private household	28	27	126	29	30	*62
Other	*1	*3	*10	*2	*4	*11

See footnotes at end of table.

Table 8. Percent, adjusted percent,¹ and number of women who worked during the latest pregnancy,² by selected characteristics, according to year of latest birth: ever-married women 15-44 years of age, United States, 1973 — Con.

Characteristic	All women			Latest birth in 1970-73		
	Percent	Adjusted percent ¹	Number in thousands	Percent	Adjusted percent ¹	Number in thousands
<u>Region</u>						
Northeast	36	36	1,586	40	41	765
North Central	38	39	2,072	41	42	1,048
South	43	41	2,856	48	45	1,519
West	35	36	1,455	36	37	661
<u>Place of residence</u>						
Metropolitan	38	38	5,585	41	41	2,749
Nonmetropolitan	39	39	2,324	45	44	1,242
<u>Year of latest birth³</u>						
Before 1955 or 1970	55	*36	*53	40	41	890
1955-59 or 1971	37	33	367	45	45	1,161
1960-64 or 1972	32	34	1,161	42	42	1,164
1965-69 or 1973	36	39	2,331	40	39	756
1970-73	42	41	3,976	...	...	...
<u>Interval since last birth</u>						
Less than 2 years	24	23	1,080	26	26	430
2-2.9 years	28	27	1,103	28	27	454
3-3.9 years	32	32	837	35	34	383
4-4.9 years	35	35	498	34	34	185
5-5.9 years	31	33	303	35	38	140
6 years or more	45	46	737	46	47	397
No births	61	61	3,390	61	61	2,009

¹Adjusted by Multiple Classification Analysis for religious denomination, religious participation, and all other variables in this table; see text and appendix I for further discussion.

²Includes only pregnancies that ended in a live birth.

³Earlier date on each line refers to columns headed "All women," and later date refers to columns headed "Latest birth in 1970-73."

NOTE: See appendix II for definitions of characteristics, and appendix I for discussion of rounding errors.

Table 9. Percent, adjusted percent,¹ and number of women who worked during the last trimester of the latest pregnancy,² by selected characteristics, according to year of latest birth: ever-married women 15-44 years of age who worked during the latest pregnancy, United States, 1973

Characteristic	All women			Latest birth in 1970-73		
	Percent	Adjusted percent ¹	Number in thousands	Percent	Adjusted percent ¹	Number in thousands
<u>Education</u>						
Less than 9 years.....	34	38	181	38	41	90
9-11 years.....	35	41	472	38	47	249
12 years.....	49	48	1,981	53	53	1,105
13-15 years.....	44	42	498	42	39	248
16 years or more.....	51	45	438	58	44	238
<u>Husband's income</u>						
Less than \$3,000.....	44	46	230	45	47	129
\$3,000-\$4,999.....	51	52	131	56	56	88
\$5,000-\$5,999.....	54	54	181	60	63	128
\$6,000-\$6,999.....	39	42	160	42	45	116
\$7,000-\$7,999.....	46	44	235	50	50	168
\$8,000-\$8,999.....	45	46	232	48	49	157
\$9,000-\$9,999.....	48	47	244	57	55	166
\$10,000-\$11,999.....	41	41	472	47	47	279
\$12,000-\$14,999.....	50	48	590	50	46	294
\$15,000-\$24,999.....	40	38	424	42	39	161
\$25,000 or more.....	48	46	142	55	46	52
Respondent not married.....	44	47	516	42	49	182
<u>Parity</u>						
1 live birth.....	50	50	1,690	53	54	1,060
2 live births.....	42	42	986	46	47	521
3 live births.....	42	43	510	44	43	187
4 live births or more.....	37	36	360	34	28	142
<u>Age at birth of child</u>						
Less than 20 years.....	40	39	327	38	36	162
20-24 years.....	44	43	1,493	48	45	868
25-29 years.....	46	47	1,185	50	51	608
30-34 years.....	48	49	433	54	62	222
35 years or more.....	47	51	106	50	58	*58
<u>Race and ethnicity</u>						
White.....	45	44	2,816	49	48	1,555
Black.....	41	47	438	38	47	189
Hispanic.....	46	48	238	51	49	142
Other race or ethnicity.....	69	67	50	*	*	*
<u>Occupation</u>						
Professional.....	49	49	590	55	55	311
Managers.....	63	64	186	72	73	92
Sales.....	42	42	173	52	50	108
Clerical.....	50	48	1,476	52	50	795
Craftsman.....	42	46	*64	38	42	*30
Operatives and transport workers.....	38	39	497	43	46	286
Laborers, except farm.....	*	*	*	*	*	*
Farmers.....	-	-	-	-	-	-
Farm laborers.....	*	*	*	*	*	*
Service.....	34	36	454	32	34	219
Private household.....	58	61	74	*	*	*
Other.....	*	*	*	*	*	*

See footnotes at end of table.

Table 9. Percent, adjusted percent,¹ and number of women who worked during the last trimester of the latest pregnancy,² by selected characteristics, according to year of latest birth: ever-married women 15-44 years of age who worked during the latest pregnancy, United States, 1973—Con.

Characteristic	All women			Latest birth in 1970-73		
	Percent	Adjusted percent ¹	Number in thousands	Percent	Adjusted percent ¹	Number in thousands
<u>Region</u>						
Northeast	45	45	704	53	48	401
North Central	42	42	869	46	47	487
South	46	45	1,306	47	49	708
West	47	48	677	50	51	329
<u>Place of residence</u>						
Metropolitan	45	44	2,504	48	48	1,317
Nonmetropolitan.....	46	46	1,081	49	49	604
<u>Year of latest birth³</u>						
Before 1955 or 1970	28	27	*15	44	47	394
1955-59 or 1971	24	24	88	49	48	572
1960-64 or 1972	45	45	522	46	48	532
1965-69 or 1973	43	44	710	56	52	423
1970-73.....	48	48	1,921	...	...	...

¹Adjusted by Multiple Classification Analysis for religious denomination, religious participation, and all other variables in this table; see text and appendix I for further discussion.

²Includes only pregnancies that ended in a live birth.

³Earlier date on each line refers to columns headed "All women," and later date refers to columns headed "Latest birth in 1970-73."

NOTE: See appendix II for definitions of characteristics.

Table 10. Number of women and percent employed during each month of the latest pregnancy,¹ and median number of months employed during that pregnancy, by race, education, and parity: ever-married women 15-44 years of age who worked during the latest pregnancy whose latest birth was less than 2 years ago, United States, 1973

Month of pregnancy	Total ²	Race		Education			Parity		
		White	Black	Less than 12 years	12 years	More than 12 years	1	2	3 or more
Number in thousands									
All women	2,290	2,033	242	533	1,175	583	1,209	629	453
Percent									
Before pregnancy	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1st.....	96.8	96.6	98.6	95.1	97.0	97.8	98.8	93.7	95.8
2d.....	93.2	93.4	91.6	90.4	94.4	93.6	96.0	89.5	91.1
3d.....	86.5	86.5	85.8	80.8	87.6	86.6	90.2	82.2	82.9
4th.....	76.4	76.7	71.8	67.0	77.9	81.7	81.9	70.6	69.5
5th.....	69.4	70.0	64.8	58.6	74.6	69.1	74.1	62.8	66.4
6th.....	61.0	61.5	56.1	50.3	63.2	62.3	66.4	54.4	55.5
7th.....	48.6	49.2	42.1	38.6	51.7	51.4	54.6	40.9	43.3
8th.....	32.7	33.5	25.9	26.6	31.7	40.3	35.8	27.7	31.2
9th.....	19.2	19.1	19.2	20.9	18.9	18.2	20.5	14.2	22.5
Number									
Median months employed.....	6.9	6.9	6.4	6.0	7.1	7.1	7.2	6.3	6.5

¹Includes only pregnancies that ended in a live birth.

²Includes races other than white or black.

Table 11. Percent, adjusted percent,¹ and number of women who worked since the latest birth, by selected characteristics, according to year of latest birth: ever-married women 15-44 years of age, United States, 1973

Characteristic	All women			Latest birth in 1970-73		
	Percent	Adjusted percent ¹	Number in thousands	Percent	Adjusted percent ¹	Number in thousands
<u>Education</u>						
Less than 9 years.....	52	52	905	35	34	282
9-11 years.....	61	56	2,538	45	39	865
12 years.....	58	59	5,853	43	44	2,019
13-15 years.....	56	58	1,514	39	43	465
16 years or more.....	62	65	1,216	42	45	357
<u>Husband's income</u>						
Less than \$3,000.....	50	53	578	34	33	214
\$3,000-\$4,999.....	57	60	635	42	43	291
\$5,000-\$5,999.....	60	61	503	50	48	260
\$6,000-\$6,999.....	53	57	559	40	41	247
\$7,000-\$7,999.....	64	65	780	50	44	352
\$8,000-\$8,999.....	55	57	717	45	44	311
\$9,000-\$9,999.....	57	59	753	44	46	293
\$10,000-\$11,999.....	55	57	1,598	38	39	535
\$12,000-\$14,999.....	57	57	1,787	38	40	496
\$15,000-\$24,999.....	55	55	1,716	33	36	346
\$25,000 or more.....	45	42	436	28	30	85
Respondent not married.....	79	71	1,993	63	57	555
<u>Parity</u>						
1 live birth.....	65	62	3,611	51	47	1,680
2 live births.....	57	56	4,007	40	41	1,267
3 live births.....	56	56	2,401	35	37	518
4 live births or more.....	54	60	2,042	33	38	504
<u>Age at birth of child</u>						
Less than 20 years.....	73	74	1,624	61	59	733
20-24 years.....	64	63	4,867	46	43	1,651
25-29 years.....	54	54	3,865	35	37	1,070
30-34 years.....	47	48	1,383	35	40	419
35 years or more.....	59	46	429	24	31	101
<u>Race and ethnicity</u>						
White.....	57	57	9,521	40	40	3,038
Black.....	73	67	1,642	56	52	553
Hispanic.....	55	62	799	42	50	320
Other race or ethnicity.....	50	61	125	35	45	43
<u>Occupation</u>						
Professional.....	63	65	1,617	43	52	440
Managers.....	75	73	437	50	54	111
Sales.....	64	65	773	46	47	263
Clerical.....	53	55	3,826	37	36	1,241
Craftsman.....	70	68	234	50	50	78
Operatives and transport workers.....	68	66	2,185	53	52	764
Laborers, except farm.....	58	51	118	55	*40	*43
Farmers.....	*	*	*	*	*	*
Farm laborers.....	72	62	121	62	54	*54
Service.....	66	64	2,431	51	49	892
Private household.....	57	56	256	43	41	92
Other.....	1	2	*10	2	*	*11

See footnotes at end of table.

Table 11. Percent, adjusted percent,¹ and number of women who worked since the latest birth, by selected characteristics, according to year of latest birth: ever-married women 15-44 years of age, United States, 1973—Con.

Characteristic	All women			Latest birth in 1970-73		
	Percent	Adjusted percent ¹	Number in thousands	Percent	Adjusted percent ¹	Number in thousands
<u>Region</u>						
Northeast	52	54	2,291	32	37	612
North Central	56	57	3,053	40	39	1,022
South	62	61	4,119	48	45	1,519
West	62	61	2,577	44	45	807
<u>Place of residence</u>						
Metropolitan	57	58	8,378	41	41	2,749
Nonmetropolitan.....	61	60	3,635	45	43	1,242
<u>Year of latest birth²</u>						
Before 1955 or 1970	100	78	97	55	56	1,224
1955-59 or 1971	88	83	874	53	53	1,367
1960-64 or 1972	78	79	2,829	39	39	1,081
1965-69 or 1973	66	68	4,273	16	14	302
1970-73.....	42	42	3,976	...	...	...
<u>Additional children expected</u>						
None	56	57	4,685	35	41	1,110
1.....	56	59	2,562	47	44	1,477
2 or more	63	* 60	4,862	43	41	1,356

¹Adjusted by Multiple Classification Analysis for religious denomination, religious participation, and all other variables in this table; see text and appendix I for further discussion.

²Earlier date on each line refers to columns headed "All women," and later date refers to columns headed "Latest birth in 1970-73."

NOTE: See appendix II for definitions of characteristics, and appendix I for discussion of rounding errors.

Table 12. Percent, adjusted percent,¹ and number of women who returned to work since the latest birth, by selected characteristics, according to year of latest birth: ever-married women 15-44 years of age who worked during the latest pregnancy,² United States, 1973

Characteristic	All women			Last birth in 1970-73		
	Percent	Adjusted percent ¹	Number in thousands	Percent	Adjusted percent ¹	Number in thousands
<u>Education</u>						
Less than 9 years.....	75	65	398	63	46	149
9-11 years.....	79	71	1,066	67	56	439
12 years.....	73	74	2,951	60	63	1,251
13-15 years.....	72	76	814	57	63	336
16 years or more.....	77	87	661	66	71	271
<u>Husband's income</u>						
Less than \$3,000.....	67	64	350	41	38	117
\$3,000-\$4,999.....	73	74	188	62	64	98
\$5,000-\$5,999.....	73	73	245	66	68	141
\$6,000-\$6,999.....	69	71	282	59	59	163
\$7,000-\$7,999.....	78	81	399	68	64	228
\$8,000-\$8,999.....	69	72	355	54	58	177
\$9,000-\$9,999.....	71	73	361	61	64	178
\$10,000-\$11,999.....	72	75	828	59	60	350
\$12,000-\$14,999.....	71	73	837	58	60	340
\$15,000-\$24,999.....	77	75	815	58	59	222
\$25,000 or more.....	73	71	215	65	63	*61
Respondent not married.....	87	81	1,020	80	73	347
<u>Parity</u>						
1 live birth.....	71	71	2,399	58	59	1,160
2 live births.....	74	75	1,737	65	65	736
3 live births.....	80	79	972	64	62	272
4 live births or more.....	81	82	788	70	65	293
<u>Age at birth of child</u>						
Less than 20 years.....	87	90	712	78	79	332
20-24 years.....	74	76	2,511	58	59	1,049
25-29 years.....	72	71	1,855	60	60	730
30-34 years.....	75	70	677	69	63	284
35 years or more.....	68	64	153	54	51	*62
<u>Race and ethnicity</u>						
White.....	73	73	4,568	59	60	1,872
Black.....	84	80	897	73	68	363
Hispanic.....	73	76	377	66	69	184
Other race or ethnicity.....	100	95	72	*	*	*
<u>Occupation</u>						
Professional.....	74	72	891	63	66	357
Managers.....	83	81	245	61	65	78
Sales.....	74	77	305	57	61	119
Clerical.....	69	70	2,036	53	53	810
Craftsman.....	79	77	121	61	63	*48
Operatives and transport workers.....	80	81	1,046	72	71	478
Laborers, except farm.....	70	66	*42	79	*71	*22
Farmers.....	-	-	-	-	-	-
Farm laborers.....	83	73	*49	82	77	*18
Service.....	79	79	1,055	70	66	480
Private household.....	78	78	99	70	62	*44
Other.....	92	85	*9	*91	*60	*5

See footnotes at end of table.

Table 12. Percent, adjusted percent,¹ and number of women who returned to work since the latest birth, by selected characteristics, according to year of latest birth: ever-married women 15-44 years of age who worked during the latest pregnancy,² United States, 1973 - Con.

Characteristic	All women			Latest birth in 1970-73		
	Percent	Adjusted percent ¹	Number in thousands	Percent	Adjusted percent ¹	Number in thousands
<u>Region</u>						
Northeast	71	71	1,111	55	57	416
North Central	72	73	1,490	57	56	603
South	77	77	2,187	68	67	1,024
West	78	77	1,123	63	63	414
<u>Place of residence</u>						
Metropolitan	74	73	4,117	60	59	1,646
Nonmetropolitan.....	77	78	1,810	66	66	813
<u>Year of latest birth³</u>						
Before 1955 or 1970.....	100	93	*55	77	75	690
1955-59 or 1971	94	90	345	74	74	864
1960-64 or 1972	93	90	1,078	60	61	694
1965-69 or 1973	84	85	3,341	28	28	212
1970-73.....	62	62	2,460	...	...	...
<u>Additional children expected</u>						
None	75	75	2,084	61	61	708
1.....	68	74	1,583	59	60	947
2 or more	79	75	2,219	66	64	800

¹Adjusted by Multiple Classification Analysis for religious denomination, religious participation, and all other variables in this table; see text and appendix I for further discussion.

²Includes only pregnancies that ended in a live birth.

³Earlier date on each line refers to columns headed "All women," and later date refers to columns headed "Latest birth in 1970-73."

NOTE: See appendix II for definitions of characteristics.

Table 13. Number and cumulative percent of women who worked since the latest birth, by number of months since latest birth, according to race, education, and parity: ever-married women 15-44 years of age whose latest birth was 12-23 months ago, United States, 1973

Months since latest birth	Total ¹	Race		Education			Parity		
		White	Black	Less than 12 years	12 years	More than 12 years	1	2	3 or more
	Number in thousands								
All women	2,686	2,388	268	733	1,390	562	1,039	833	815
	Cumulative percent								
2	5.2	5.2	*5.6	*7.9	*4.7	*3.0	*3.6	*5.7	*6.7
4	14.9	14.0	19.7	16.8	15.3	*11.3	16.3	13.5	14.5
6	20.0	18.6	30.6	21.0	21.5	14.8	23.3	17.0	18.8
8	24.6	22.9	38.2	25.9	26.5	18.1	31.3	18.8	21.9
10	28.7	27.1	41.3	30.6	30.6	21.4	34.0	24.4	26.2
12	31.2	29.7	43.6	33.8	32.9	23.5	36.9	26.5	38.8

¹Includes races other than white or black.

Table 14. Number and cumulative percent of women who returned to work after the latest birth, by months since latest birth, according to race, education, and parity: ever-married women 15-44 years of age who worked during the latest pregnancy,¹ United States, 1973

Months since latest birth	Total ²	Race		Education			Parity		
		White	Black	Less than 12 years	12 years	More than 12 years	1	2	3 or more
	Number in thousands								
All women	1,165	1,029	124	266	619	280	603	326	236
	Cumulative percent								
2	9.9	10.0	*10.2	*18.1	*9.5	*3.2	*4.5	*14.2	*17.9
4	26.3	25.3	28.3	32.8	27.4	*17.7	20.9	27.9	38.0
6	34.8	33.0	43.6	41.1	37.4	23.2	30.8	33.9	46.4
8	42.2	40.0	56.0	50.1	44.5	29.8	42.2	36.9	49.7
10	46.5	44.6	57.5	55.3	47.9	35.0	43.7	42.8	58.8
12	49.4	47.6	60.4	57.4	51.6	37.1	46.0	45.6	63.5

¹Includes only pregnancies that ended in a live birth.

²Includes races other than white or black.

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APPENDIX I

TECHNICAL NOTES

Background

This report is one of a series of statistical reports based on information collected from a nationwide sample of women by the National Survey of Family Growth, conducted by the National Center for Health Statistics.

The National Survey of Family Growth (NSFG) utilizes a questionnaire to obtain demographic information and information on fertility, family planning, and health factors related to childbearing. As data relating to various subjects within these broad topics are tabulated and analyzed, separate reports are issued. The present report is based on data collected in the first cycle of the survey which was centered on September 1973.

The population covered by the sample for the NSFG is women 15 to 44 years of age living in households in the conterminous United States at the time of interview who were ever married or had offspring living with them. The sample did not include women living in institutions or group quarters. Personal interviews were conducted by the staff of the National Opinion Research Center (NORC), Chicago, beginning in July 1973 and ending in February 1974.

Statistical Design

The sampling plan for the survey was a multistage probability design. Black households and households of all other races were selected at different probabilities so that the sample was composed of about 40 percent black women and 60 percent women of all other races. The sample was designed so that tabulations could be provided for each of the four geographic regions of the United States.

The first stage of the sample design consisted of drawing a sample of primary sampling units (PSU's). A PSU consisted of a county, a small group of contiguous counties, or a standard metropolitan statistical area as defined by the U.S. Bureau of the Census in March 1971. The second and third stages of sampling were used to select several segments (clusters of about 100 dwelling units) within each PSU. A systematic sample of dwelling units was then selected from each segment. Each sample dwelling unit was visited by an interviewer who listed all household members. If a woman under 45 years of age, ever married, or with offspring in the household, was listed as being in the household, an extended interview was conducted. If more than one woman in the household met the eligibility criteria, one of the women was randomly selected for an extended interview.

Since the design of the NSFG was a complex multistage probability sample, the derivation of estimates involved three basic operations:

1. *Inflation by the reciprocal of the probability of selection.*—The probability of selection is the product of the probabilities of selection from each step of selection in the design (PSU, segment-stratum, listing unit, household, and sample persons within household).
2. *Nonresponse adjustment.*—The estimates were inflated by a multiplication of two factors. The first has the number of sample households in a given PSU and stratum as its numerator and the number of households screened in the PSU and stratum as its denominator. The second factor has as its numerator the number of

screened households having an eligible woman of a specific age and race class and PSU group, and as its denominator, the number of women actually interviewed in the same age and race class and PSU. Screener response for the total survey was 89.8 percent and interview response was 90.2 percent for the total sample, yielding an overall response rate of approximately 81.0 percent.

3. *Poststratification by marital status-age-race.*—The estimates are ratio adjusted within each of 12 age-race cells to an independent estimate of the population for ever-married women. These independent estimates were derived from the U.S. Bureau of the Census Current Population Surveys of 1971-73. The number of single women with offspring living with them were inflated by steps 1 and 2.

All figures are individually rounded; aggregate figures are rounded to the nearest thousand. The sums of aggregates and percents may not add up to the total due to the rounding.

The effect of the ratio-estimating process is to make the sample more closely representative of the population of women under age 45 years, living in households in the conterminous United States, and ever married or with offspring living with them. The final poststratification reduces the sample variance of the estimates for most statistics.

Descriptive material on the sampling design and estimation procedures may be found in another report.⁸

Measurement Process

Field operations for the survey were conducted by NORC as agent for NCHS. Their responsibilities included pretesting the interview schedule, selecting the sample, interviewing respondents, and carrying out quality control checks. The questionnaire was pretested in November 1972 and subsequent smaller field trials were held in March 1973. Interviewers were trained for a week prior to fieldwork and had their first few schedules reviewed thoroughly. During the first part of the fieldwork,

each interview schedule was reviewed for the completeness of certain key items and more intensive review and followup were performed if errors were discovered. Review and followup were reduced to a sample of each interviewer's work in the later part of the fieldwork. A 10-percent sample of all households with telephones was recontacted to verify the interview and the accuracy of a few items. All of these operations were monitored by NCHS.

The parts of the interview schedule applicable to this report are reproduced in appendix III. The complete schedules are available upon request. Two different forms were used, one for interviewing currently married women and the other for interviewing widowed, divorced, separated, or single women with their own children living with them. The two forms differ mainly in wording when reference is made to the husband; there are a few questions in each schedule that do not appear in the other.

Data Reduction

Coding and keying were done by NORC and the U.S. Bureau of the Census. Each coder's work was systematically sampled for verification. Keying at the Bureau of the Census was performed on key-to-disk equipment programed to reject invalid entries. Each keyer's work was systematically sampled for verification. The data were edited by the Bureau of the Census and NCHS to minimize internal inconsistencies. After editing, value entries were imputed to cases with missing data on an item-by-item basis. No item with more than 15 percent missing data was included in the imputation. The imputed value entry for a case was selected from a randomly chosen case with similar characteristics such as race, age, and marital status, using a procedure known as "hot deck" imputation.

Reliability of Estimates

Since the statistics presented in this report are based on a sample, they may differ somewhat from the figures that would have been obtained if a complete census had been taken using the same questionnaires, instructions, interviewing personnel, and field procedures. This chance difference between sample results and a complete count is referred to as sampling

NOTE: A list of references follows the text.

error and is measured by a statistic called the standard error of estimate. The relative standard error of an estimate is obtained by dividing the standard error of the estimate by the estimate itself and is expressed as a percent of the estimate. Included in this appendix are charts and tables from which the relative standard errors can be determined for estimates shown in this report. In order to derive relative errors that would be applicable to a wide variety of health statistics and that could be prepared at a moderate cost, a number of approximations were required. As a result, the charts provide an estimate of the approximate relative standard error rather than the precise error for any specific statistic. The standard errors were computed using a procedure known as balanced half-sample replication.⁸

The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 95 out of 100 that the differences between the sample estimate and a complete count would be less than twice the standard error. In this report numbers and percents that have a standard error more than 25 percent of the estimate itself are considered "unreliable." They are marked with an asterisk to caution the user, but may be combined to make other types of comparisons of greater precision.

In this report, sample statistics are compared among subgroups or across years, using the normal deviate test at the .05 level of confidence. A statistically significant difference among comparable proportions or other statistics from two or more subgroups is one sufficiently greater than zero that a difference of that size or larger would be expected in less than 5 percent of repeated samples of the same size and type if there were no true difference in the populations sampled. If the observed difference or a larger one could be expected in more than 5 percent of repeated samples, one cannot be sufficiently confident to conclude that there is a true difference in the populations. When an observed difference is sufficiently greater than zero to be statistically significant, the true difference in the population is estimated to lie

NOTE: A list of references follows the text.

between the observed difference plus or minus two standard errors of that difference in 95 out of 100 samples.

When two or more sample statistics are compared and they have only small, statistically nonsignificant differences among them, they may be referred to as the "same" or "similar." However, where a substantial difference observed is found to be not statistically significant, one should not conclude that no difference exists, but simply that such a difference cannot be established with 95-percent confidence from this sample. Observed differences that are described in terms such as "greater," "less," "larger," "smaller," etc., have been tested and found statistically significant. Lack of comment in the text about any two statistics does not mean the difference was tested and found to be not significant.

The standard error of a difference between two comparative statistics, say the proportion with characteristic *M* among black women compared with white women, is approximately the square root of the sum of the squares of the standard errors of the statistics considered separately.

A formula for the standard error of a difference, $d = P_1 - P_2$, is

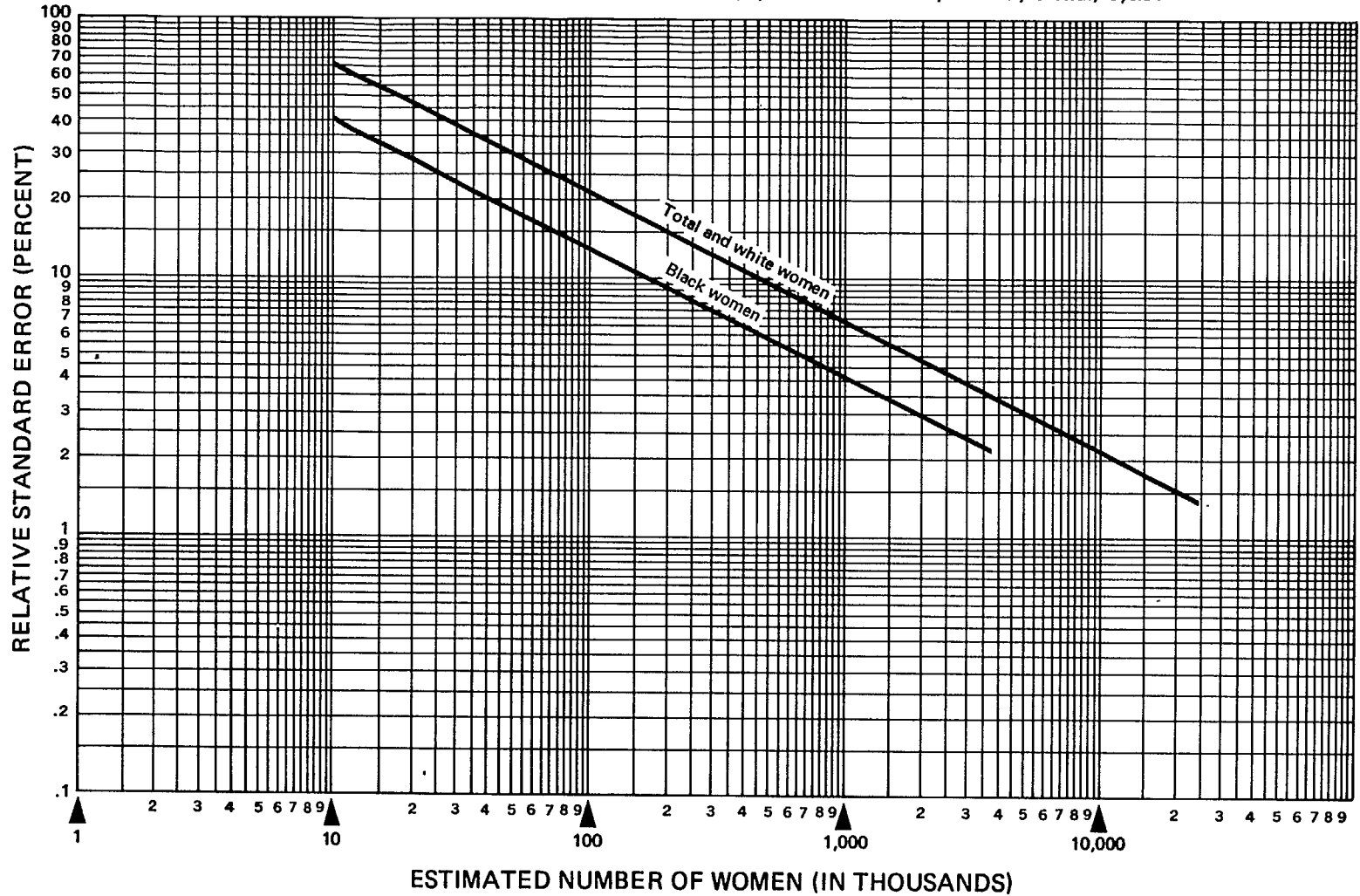
$$\sigma_d = \sqrt{(P_1 V_{P_1})^2 + (P_2 V_{P_2})^2}$$

where P_1 is the proportion for one group, P_2 the proportion for the comparative group, and V_{P_1} and V_{P_2} are the relative standard errors of P_1 and P_2 , respectively. This formula will represent the actual standard error quite accurately for the difference between separate and uncorrelated characteristics, although it is only a rough approximation in most other cases. The relative standard error of various proportions can be estimated from figures I and II and tables I-IV for statistics based on the NSFG.

Nonsampling Error

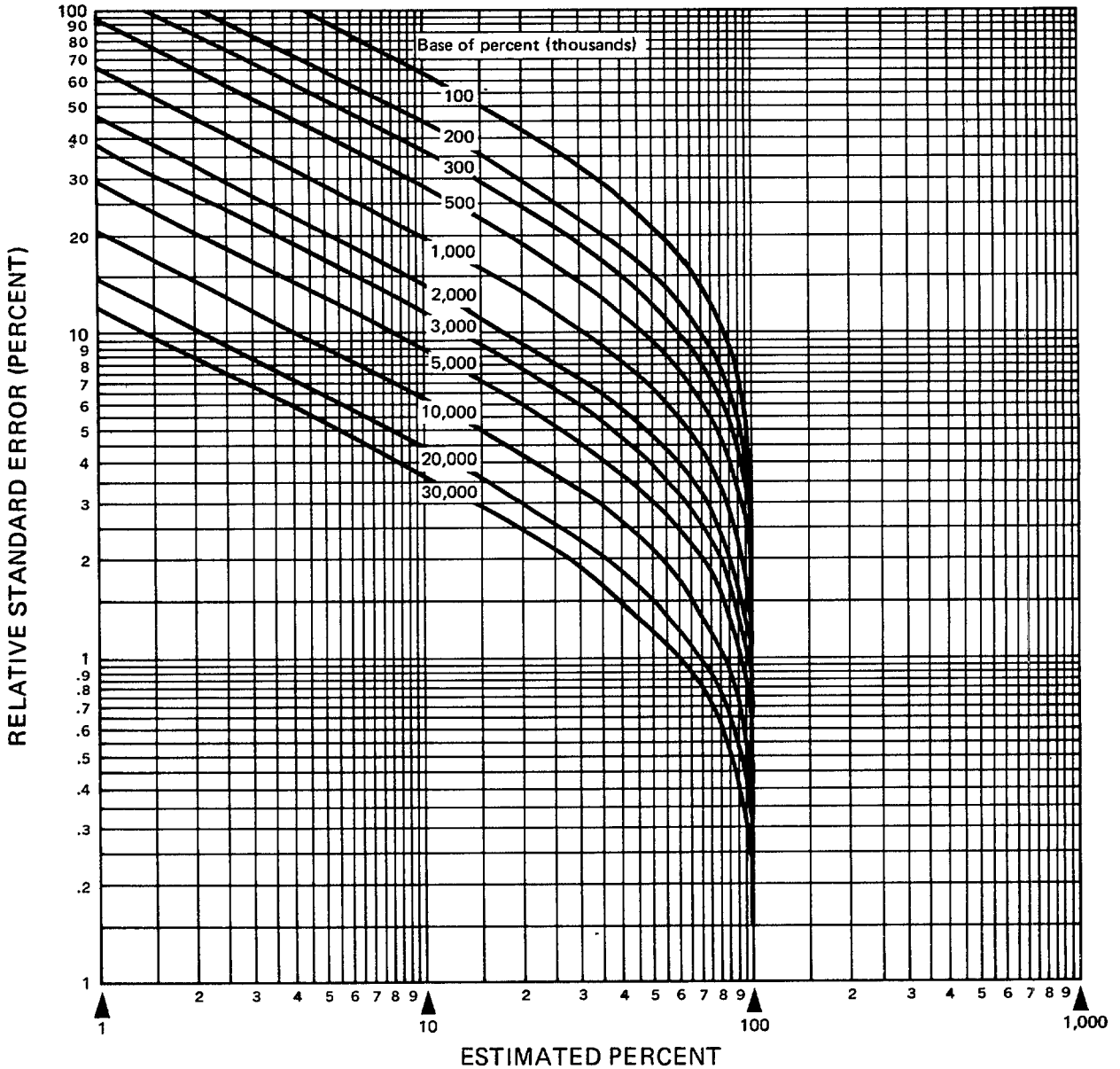
In addition to sampling error, the survey results are subject to several sources of potential nonsampling error, including interview non-response, nonresponse to individual questions within the interview, inconsistency of responses to individual questions, respondent error or misreporting, and errors of recording, coding, or

Figure I. Relative standard errors for numbers of women, by race: National Survey of Family Growth, Cycle I



Example of use of chart: An aggregate of 2 million women (on the scale at the bottom of the chart) of all races has a relative standard error of 4.8 percent, or a standard error of 96,000 (4.8 percent of 2 million).

Figure 11. Relative standard errors for percent of total and white women (base of percent shown in curve in thousands): National Survey of Family Growth, Cycle I



Example of use of chart: An estimate of 10 percent (from the scale at the bottom of the chart) of a population subgroup of 1 million women (fifth curve from the top) has a relative standard error of 20.0 percent, or a standard error of 2.0 percent (20.0 percent of 10 percent).

Table I. Approximate standard errors for estimated percents expressed in percentage points for white and total women: National Survey of Family Growth, Cycle I

Base of percent	Estimated percent						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
100,000.....	3.0	4.6	6.4	8.5	9.7	10.4	10.6
500,000.....	1.3	2.1	2.8	3.8	4.3	4.6	4.7
1,000,000.....	0.9	1.5	2.0	2.7	3.1	3.3	3.3
3,000,000.....	0.5	0.8	1.2	1.5	1.8	1.9	1.9
5,000,000.....	0.4	0.6	0.9	1.2	1.4	1.5	1.5
7,000,000.....	0.3	0.5	0.8	1.0	1.2	1.2	1.3
10,000,000.....	0.3	0.5	0.6	0.8	1.0	1.0	1.1

Table II. Approximate standard errors for estimated percents expressed in percentage points for black women: National Survey of Family Growth, Cycle I

Base of percent	Estimated percent						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
5,000.....	7.9	12.3	17.0	22.6	25.9	27.7	28.3
10,000.....	5.6	8.7	12.0	16.0	18.3	19.6	20.0
50,000.....	2.5	3.9	5.4	7.1	8.2	8.8	8.9
100,000.....	1.8	2.7	3.8	5.1	5.8	6.2	6.3
300,000.....	1.0	1.6	2.2	2.9	3.3	3.6	3.6
500,000.....	0.8	1.2	1.7	2.3	2.6	2.8	2.8
700,000.....	0.7	1.0	1.4	1.9	2.2	2.3	2.4
1,000,000.....	0.6	0.9	1.2	1.6	1.8	2.0	2.0

Table III. Approximate standard errors for estimated numbers for white and total women: National Survey of Family Growth, Cycle I

Size of estimate	Relative standard error	Standard error
50,000.....	30.0	15,000
100,000.....	21.2	21,000
200,000.....	15.0	30,000
500,000.....	9.5	47,000
1,000,000.....	6.7	67,000
2,000,000.....	4.8	95,000
5,000,000.....	3.0	151,000
10,000,000.....	2.2	216,000
20,000,000.....	1.5	311,000

Table IV. Approximate standard errors for estimated numbers for black women: National Survey of Family Growth, Cycle I

Size of estimate	Relative standard error	Standard error
25,000.....	25.3	6,000
50,000.....	17.9	9,000
100,000.....	12.7	13,000
150,000.....	10.3	16,000
250,000.....	8.0	20,000
350,000.....	6.8	24,000
500,000.....	5.7	28,000
750,000.....	4.7	35,000
1,000,000.....	4.0	40,000

keying by survey personnel. It is impossible to measure the extent of nonsampling errors accurately. Although some useful approximate measures can be made of some types of nonsampling error, the survey must rely upon several quality control procedures and other methods incorporated into the survey design to minimize nonsampling error.

Estimated numbers of women representing the numerators of the percents shown have been presented in the tables for the readers' convenience. These estimates are subject to somewhat larger rounding differences than usual, since they are the products of the whole percents shown and the corresponding subpopulations of ever-married women 15 to 44 years of age expressed in thousands. Column sums may occasionally differ from their totals by as much as a percentage point or fractionally higher. However, individual figures will be rounded within half a percentage point of the sample value, which is generally well within the sampling variability of the estimate.

Interview Nonresponse

Interview nonresponse, or the failure to obtain whole interviews, arises from several sources—incomplete listing of households for the sampling frame, inability to screen all sample households for eligible respondents, and inability to complete a full interview. Completeness of listing cannot be tested directly as it requires an independent, accurate accounting of the households that should have been listed. In the NSFG, listing accuracy was tested at the time of screening by use of the "half open interval" check for missed households; that is, at designated sample households, the interviewer was required to check for dwelling units between the sample household just screened and the next listed dwelling unit. This procedure resulted in the addition of 781 missed units or an additional 2.4 percent to the original sample of dwelling units to be screened.

Of the original sample of 32,818 dwelling units to be screened, 3,820 were found to be vacant, not dwelling units, or group quarters. Of the remaining dwelling units, 9.7 percent were not successfully screened. This included 2.3 percent refusals to have the household members

listed; 1.6 percent with language problems, illness, or otherwise unavailable in the field period; 4.6 percent where no one could be found at home; and 1.1 percent for other reasons such as refused access to the unit.

Of the 26,177 households for which screening was completed, 10,879 were found to contain an eligible respondent. However, interviews were not completed in 9.8 percent of these cases because of refusals by the eligible respondents (5.0 percent); language, illness, and related problems (2.0 percent); and no contact after repeated calls (2.7 percent).

The nonresponse adjustment for interview nonresponse described above imputes to nonresponding dwelling units and women the characteristics of similar respondent dwelling units and women.

Item Nonresponse

Nonresponse to individual questions (item nonresponse) was less than 2 percent for about half (51 percent) of the items. Item nonresponse occurred when the person refused to answer the question, when the person did not know the answer to the question, when the question was erroneously not asked or the answer not recorded by the interviewer, and when the answer was uncodable. For 37 percent of the items, nonresponse occurred between 2.0 and 10.0 percent. For the remaining 12 percent of the items, nonresponse was greater than 10 percent of persons eligible to answer the items. Half of these high nonresponse items were concentrated in two areas—detailed income questions and questions about the reasons for switching from one contraceptive method to another. The remaining high nonresponse items were generally those asked of small numbers of persons.

The amount of missing data or imputed values for various items will usually be shown with the definition in appendix II, especially where it is substantial. Some illustrative items with their associated nonresponse rates are: the number of children ever born (parity) (no missing data), intentions about having another child (0.7 percent), whether no contraceptive method was used or whether contraception was stopped in order to become pregnant (1.9

percent), highest grade of school attended (0.1 percent), and total family income (6.8 percent).

For most items, an adjustment for missing data was made by one of four imputation procedures. In order of frequency employed they were: (1) "hot deck" imputation, (2) imputation from a sorted file, (3) editing from other data within the same case, and (4) allocation based on technical judgments.

"Hot deck" imputation refers to a procedure in which the file is first randomized. Next a matrix is created for values of items (e.g., race, age, and marital status) judged to be correlated with the item to be imputed (e.g., number of times married). A reasonable "cold deck" value (e.g., 2 = married twice) is assigned to each cell of the matrix in case the first file record with the given characteristics has missing data. The randomized file is processed and each record is identified as belonging to one cell of the matrix (e.g., white, age 25-29, currently married). The item to be imputed is checked: If it is blank—not applicable (e.g., not married before), it is ignored; if it has a missing data code, the code in the matrix is placed in the record. If it has an acceptable code, that code replaces the code already in the matrix, and it remains in the matrix until another record with the same characteristics and a known code is encountered. This insures that the probability of a code being assigned to a record with missing data is the same as the probability of that code occurring among records with the same characteristics but with known data.

For imputation from a sorted file, the records are first sorted by selected characteristics (e.g., marital status, race, and age) so that the first group of records would be currently married, black women aged 15-19, the second group would be currently married black women aged 20-24, etc. An initial value is assigned for the item to be imputed—e.g., 4 (tubal ligation) for type of sterilization—and for any item dependent on the item to be imputed—e.g., 9 (not ascertained) as to whether the operation was for contraceptive reasons. The ordered file is processed and each record is checked. If the item to be imputed is blank—not applicable, it is ignored; if it has a known code, it and its dependent items would replace the existing set of values; if it has a missing data code, it and its

dependent items would be changed to the preset values just stated. This procedure insures that the imputed code is reasonable for the ordering characteristics and that the probability of assignment is the same as in the population in general. There will be some bias, however, as the boundaries between groups are crossed.

Where sampling error affects the precision of survey estimates, nonsampling error introduces bias. Imputation procedures reduce this bias to the extent that the assumptions about the relations between respondent and nonrespondent characteristics are true. But the amount of remaining bias, if any, cannot be measured. Therefore, stringent quality control procedures were introduced at every stage of the survey, including the check on completeness of the household listing mentioned earlier, the extensive training and practice of interviewers, field observations of interviewers, field editing of questionnaires, short verification interviews with a subsample of respondents and missed households, verification of coding and editing, an independent recode of a sample of questionnaires by NCHS, keypunch verification, and an extensive computer "cleaning" to check for impermissible codes, missing data, and response inconsistencies. One source of bias that can be evaluated through special studies but cannot be controlled is respondent error, whether deliberate or unwitting. In this as in other surveys, the data are subject to problems of accurate recall and of the stability of respondents' views from one time to the next.

Standardization.—The overall rate at which an event occurs in a population depends on the distribution of its members in different categories (its "composition"), and the rates at which the event occurs in each category (its "category-specific rates"). For instance, the overall birth rate of a population depends on its age composition and age-specific birth rates. A difference between the overall rates of two populations may result from differences in their compositions, differences in their category-specific rates, or some combination of both; for instance, if the birth rate of a population is higher than that of another, it may be because its population is more concentrated in the young ages which have high birth rates, or because its birth rates are higher at all ages, or both.

Often interest focuses on differences in rates, not differences in composition, so statistics are needed that are unaffected by differences in composition. The category-specific rates, such as the age-specific birth rate, have such characteristics but they pertain only to particular categories, whereas it is often desired to have a single statistic that pertains to the whole population. A variety of techniques has been developed to produce overall rates for populations that are unaffected, or relatively unaffected, by population composition; they may be referred to collectively as techniques of "standardization." Although the several techniques differ in significant details, they have a common strategy: Assume the populations being compared have the same "standard" composition, apply the category-specific rates of each population to the numbers in each category of the standard population, sum the numbers of events that would have occurred in each population under these assumptions, and divide by the total number in the standard population to arrive at a standardized overall rate. The standardized rate is interpreted as the rate that each population would have if its composition were that of the standard population. It is an artificial rate that corresponds to no real rate, but it makes possible interpopulation rate comparisons that are unaffected by differences in compositions.

The Multiple Classification Analysis (MCA) technique used in this report is analogous to standardization just described in that it adjusts rates (through multiple regression) for differences in composition. This procedure was developed at the University of Michigan, and is now widely available as a part of many computer software packages. MCA computes standardized rates for subpopulations, using the total population as the standard. The MCA-standardized rate, like any standardized rate, may be interpreted as the overall rate which the subpopulation would have if it had its own category-specific rates, but the composition of the total population. Because all MCA-standardized rates in a table use the same total population as standard, comparisons between them are unaffected by differences in composition. It is not appropriate, however, to compare MCA-standardized rates from different tables in this report.

The adjusted percents shown in each table have been standardized for all other variables shown in the same table, and, where indicated, by religious denomination and religious participation as well. The categories of religion used in the standardization were: Catholic, Baptist, Lutheran, Fundamentalist, other Protestant denominations, and other and Jewish. The categories of religious participation were: weekly attendance at religious services, once a month or more, occasionally, never, refused an answer, and no religion. A further discussion of the definitions of these variables is found in appendix II. For the employment variables considered, there were few significant differences between groups of women classified by religious denomination and religious participation.

In Multiple Classification Analysis, as in other techniques of standardization, it is assumed that the effect of one variable on a second is the same for all values of any third (or fourth, or fifth, etc.) variable included in the analysis. (In technical terms, it is assumed that the effects are "additive.") In fact, the effect of one variable on a second is sometimes different for different values of a third variable. (In technical terms, there are "interactions" among the variables.) In such cases, interpretations based on assumptions of equal effects may be misleading; that possibility is often outweighed, however, by the gain in interpretive insight derived from standardizing for one or more variables simultaneously.

The relative standard errors of MCA-standardized percents are estimated to be approximately equal to the relative standard errors of unadjusted percents, so the same tables and charts of standard errors may be used.

The Open Interval Problem

For all intervals of time not necessarily completed before the date of interview (all except the interval before marriage), some strategy must be employed to avoid a downward bias in the estimation of the experience of the more recent cohorts when intercohort comparisons are being made. For example, for women married only a few years before interview,

women who have already had a first birth represent those with the shortest intervals and thus the least opportunity to work before their first birth. Among women of the same marriage cohort who will eventually have a first birth, some who have not yet worked since marriage will do so before their first birth.

Two strategies are employed to minimize the potential bias from open intervals. First, labor force participation levels are not considered for the most recent cohorts in which the proportion of closed intervals of all intended intervals is quite low. Thus, although we can examine premarital employment for the 1970-73 marriage cohorts, the series for first-birth intervals necessarily terminates in 1969, and that for second-birth intervals terminates in 1967. Eighty-seven percent of the 1965-69 cohort intending a first birth were at first or higher

parity and 72 percent of the 1965-67 cohort intending a second birth were at second or higher parity.

The second strategy is to include the open interval experience of the remaining women who intend to close the interval in question. Since the previous rule necessarily limits such women to those with longer intervals, any remaining underestimate of their employment experience should be minimal. Thus, included in the measure of "ever worked" for a given interval is the experience since the beginning of that interval of women who intend to close it. For example, the measure of employment before the first birth includes in the numerator zero-parity women who intend to have a child and who have worked since marriage; the denominator includes all zero-parity women who intend to have a child.



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APPENDIX II

DEFINITION OF TERMS

Age.—Age of women at different events in their lives is classified according to the last completed year or age at last birthday. Age is generally calculated by subtracting the reported date (month and year) of birth from the reported date of the event for which age is being calculated. In some instances, the month of an event was unreported and age was then calculated using the years only. In still other instances, the respondent did not recall a given date but did recall her age at the time of the event and reported this directly.

Age of the respondent at the interview (current age) was known for every case, since this was a sampling criterion. However, for other events (such as marriage, the birth of a child, or divorce), the date may not have been completely reported or neither date nor age at the event may have been recorded. In these cases, age was imputed by imputing a year in which the event was presumed to have occurred. These imputations were then checked for consistency with the dates and ages reported at other related events.

Race.—Women are classified as white, black, or "other races" according to the interviewer's observations at the time of interview. Agreement between this classification and the respondent's own reports of ethnic origin, also obtained in the interview, was very high; for instance, of those classified as "black" by interviewer observation, 100 percent reported their ethnic origin as at least partly "black, African, or Negro;" and of those who reported their ethnic origin as "black, African, or Negro," 96 percent were classified as "black" by interviewer observation. Race was imputed for 10 cases.

Ethnicity.—Information about ethnic origins was obtained for the woman and her husband by

asking, "What is your (his) origin or descent?" Persons were classified as being of Hispanic origin if any of the following responses were given: Mexicano, Chicano, Mexican American, Puerto Rican, Cuban, Hispano, or any other Spanish origin or descent. Persons who did not give any of those responses were classified as being not of Hispanic origin. Persons may have more than one origin or descent, and multiple responses to the questions were recorded. However, any of the responses listed above resulted in classification of the person as being of Hispanic origin, regardless of any other responses that may have accompanied it. It should be noted that in this report the classifications of race and ethnicity are independent; each ethnic category may include persons of all races, and each racial category may include persons of all ethnic groups. Ethnicity was reported for more than 99 percent of respondents and husbands.

Region of residence.—Data are classified by region of residence into the four major Census regions: Northeast; North Central, South, and West. Sample size very greatly restricts the possibility of meaningful analyses by social characteristics among smaller geographic divisions. The areas comprising these four major geographic regions are:

<i>Geographic region and division</i>	<i>States included</i>
Northeast	
New England	Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut

Middle Atlantic	.....New York, New Jersey, Pennsylvania
North Central	
East North Central	...Ohio, Indiana, Illinois, Michigan, Wisconsin
West North Central	..Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas
South	
South Atlantic	.....Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida
East South Central	...Kentucky, Tennessee, Alabama, Mississippi
West South Central	..Arkansas, Louisiana, Oklahoma, Texas
West	
Mountain	.....Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada
Pacific	.....Washington, Oregon, Alaska, California, Hawaii

Metropolitan-nonmetropolitan residence.—The population residing in standard metropolitan statistical areas (SMSA's) constitutes the metropolitan population. Except in New England, an SMSA is a county or group of contiguous counties that contains at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. In addition to the county or counties containing such a city or cities, contiguous counties are included in an SMSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central county. In New England, SMSA's consist of towns and cities, rather than counties. The metropolitan population in this report is based on SMSA's as defined

in the 1970 census and does not include any subsequent additions or changes. For a detailed discussion see the Bureau of the Budget publication, *Standard Metropolitan Statistical Areas: 1967*.⁹

Marital status.—Marital status was a criterion of sample selection. The NSFG sampled women who were currently married at the time of interview, had ever been married, or had never been married but had offspring (i.e., children born to them) in the household. Current marital status was recorded in seven categories in response to the question, "Is (PERSON) now married, widowed, divorced or annulled, separated, or has he/she never been married?" The seven categories in which answers were recorded were: married, informal union, widowed, divorced or annulled, separated, single with own children, and never married. Women in the last category were not eligible for the survey.

Married women include those, legally or formally married, whose husbands are living in the household or are temporarily absent on business, illness, vacation, etc. and those who are informally married or "living together" with a male partner whose usual residence is the same household. Women currently in informal unions were reported separately but are too few to be separately classified for analytical purposes. Information on informal unions was obtained only if volunteered by the respondent in the course of listing household members and their relationship to the head of the household.

Divorced women include those legally separated from their former spouses by a legal decree of divorce or annulment and free to remarry. Although those legally separated but without freedom to remarry belong in the later category of separated, there was no direct question in the interview to establish the issue of freedom to remarry, with certainty. The term "divorce" is presumed to refer most generally to "absolute" decrees.

Widowed women are those previously married women whose most recent spouses are deceased.

Separated women are those legally or informally separated from their former spouses. Included here would be cases of desertion,

NOTE: A list of references follows the text.

informal separation by mutual agreement, and legal separations in which the partners are not free to remarry.

Single with own children is a category of women who have begun their childbearing and have never been married. However, some of these women were probably missed in the survey because this category was not identified by a direct question. These are single women who have one or more children born to them and living with them in the household. Single women who gave a child up for adoption or who board the child elsewhere, and those who have not had a live birth are not included in the survey.

Marriage cohort.—A group of women who were first married in a specified calendar period constitutes a marriage cohort. Because the information for classifying women in marriage cohorts comes from a sample at one point in time, the sample of all women who married in a specific period may be biased. Women who were married in a specific period but who were outside the ages included in the sample, 15 through 44 years, would not be represented in the marriage cohorts constructed from these data. This bias is negligible for recent cohorts, but is significant for earlier cohorts; in early cohorts, many women who were of relatively advanced age at the time of their marriage were past age 45 at the time of interview, and are not represented in the sample. The effect of their omission is to overrepresent early-marrying women in the early cohorts constructed from the sample data. For that reason, marriage cohorts earlier than 1955 are not considered in this report.

Employment in life-cycle stages.—In addition to her current employment status, respondents were asked: "Did you ever work for pay?" in various, specified earlier periods as appropriate: before first marriage, since first marriage, between marriage and first birth, between first and second birth, between second and third birth, and between the third and last birth. Within these periods, women were classified as employed if they worked for pay and not employed if they did not. The rate of nonresponse to these questions was low, its maximum being for questions about employment between the births of the third and the last child: Em-

ployment status was not ascertained for 3 percent of women asked about the period, and duration of employment was not ascertained for 9 percent. Missing values were imputed.

Employment before and after last birth.—To determine the relationship between pregnancy, childbirth, and employment, women who had had a live birth were asked: "How long before the birth of your last child did you stop working?" and "In what month and year did you begin to work after your (last) child was born?" Women who reported they stopped work 9 months or less before the last birth were classified as having been employed during that pregnancy; if they reported stopping 3 months or less before the birth, they were classified as having worked in the last trimester of the pregnancy. These classifications assume a 9-month pregnancy before the last birth, and, therefore, may produce erroneous classifications of women whose pregnancies were significantly longer or shorter; in the aggregate, however, these errors would tend to cancel one another out.

Responses to the second question, about starting work after the last birth, were used in conjunction with the reported date of the last birth to compute the number of months between the birth and subsequent employment.

About 7 percent of women to whom these questions applied could not be classified because of missing data; values were imputed for those cases.

Occupation.—Occupation was determined by asking women: "What (is/was) your (main) occupation? That is, what (is/was) your job called? What (are/were) your most important activities or duties? What kind of place (do/did) you work for? What do they make or do?" The answers to those questions were recorded verbatim and used by coders to find the most appropriate standard job title in the 1970 U.S. Census occupation classification. If the responses indicated more than one occupation, the primary occupation was coded. If none was primary, the first-mentioned occupation was coded. Although the classification used was very detailed, occupations have been grouped into major categories for this report, according to the practice of the U.S. Bureau of the Census. For a

more detailed discussion, see the Department of Commerce publication, *1970 Census of Population, Detailed Characteristics, U.S. Summary*.¹⁰

Income.—To determine the husband's income, currently married women whose husbands had worked in the past 12 months were asked: "In the past 12 months—that is since (MONTH) 1972—what did your husband earn in wages, salary, or in his own business or profession?" For the 44 percent of women who did not know their husband's income or who refused to answer the question the interviewer continued:

"Here is a card showing amounts of weekly and yearly incomes. Next to each amount is a letter. Would you tell me what *letter* represents the income before taxes and other deductions that your husband earned in wages, salary or in his own business or profession during the past 12 months."

Weekly incomes were converted to annual amounts. Husband's income was determined for all but 7 percent of the women asked these questions, and values were imputed for them. Since the questions ask only about wages, salary, and business and professional income, this measure of income does not include other forms of income, such as unemployment compensation, social security income, welfare payments, and dividends. Information was obtained on these other sources of income by other questions, but was not used for this measure of income.

Education.—Education is classified according to the highest grade or year of regular school or college that was completed. Determination of the highest year of regular school or college completed by the respondent is based on responses to a series of questions concerning (a) the last grade or year of school attended, (b) whether or not that grade was completed, (c) whether any other schooling of a vocational or generally nonacademic type was obtained, and (d) whether or not such other schooling was included in the years of regular school or college reported in (a). Information on education was reported almost completely: Only about 1 percent of the data was imputed.

NOTE: A list of references follows the text.

Education at marriage.—In addition to the questions about education at the time of the interview, women were asked: "What was the highest grade or year of regular school (or college) you had *completed* at the time of your (first) marriage?" Although the followup questions that asked about current educational attainment were not asked about education at marriage, responses were coded in the same categories. Response to this item was nearly complete, with less than 1 percent of values being imputed.

Religion.—Women were classified by religion in response to the question: "Are you Protestant, Roman Catholic, Jewish, or something else?" In addition to the three major religious groupings, two other categories—other and none—were used. Since the category of Protestant includes numerous individual denominations, these respondents were further asked to identify the denomination to which they belonged. Those who answered "other" to the original question and then named a Protestant denomination were included with their own groups. Although specific denominational names were obtained and recorded, the numbers of cases for most denominations were too few to produce reliable estimates, so they have been combined in larger categories. Data on religious denominations were reported for all but 26 respondent cases, or more than 99 percent, and these few cases were imputed.

Religious participation.—Roman Catholic women were asked: "How often do you receive communion?" Women in other religious groups were asked: "About how often do you usually attend religious services?" For only 63 women, less than 1 percent, uncodable answers were obtained, and values were imputed for them. For the purposes of this report, it was assumed that the question asked Catholic women, and the question asked other women, were enough alike to be regarded as measuring the broadly equivalent aspects of behavior, so there is one religious participation measure for all religious groups.

Parity.—Parity is the fact or condition of having borne children and is specified in terms of the number of live births a woman has had. A woman with no live births is referred to in

obstetrical and demographic terminology as "nulliparous" or of "zero parity"; a woman with one live birth is referred to as "primiparous" or of "first parity," and so forth. A woman's parity in these surveys is determined from the questions: "Have you given birth to a baby at any time?" and, if yes, "Altogether, how many babies have you given birth to, including any who died very young?" The accuracy of this information is further verified by obtaining detailed data about each pregnancy and additional information on those pregnancies ending in live issue. A complete pregnancy history was a primary focus of the survey and information on the number of live births and number of pregnancies was obtained for 100 percent of the respondents.

Timing of first birth.—The first live birth is classified as occurring before or after the first or only marriage. If the first birth preceded marriage, a woman is classified as having had a premarital birth.

Timing of first pregnancy.—If a woman's first pregnancy ended before marriage, or less than 7 months after marriage, she is classified as having had a premarital pregnancy.

Additional births expected.—The number of children a woman expects to give birth to in the future, including current pregnancy (if applicable) is termed, "additional births expected." Women who were sterile or married to sterile men were classified as expecting zero additional births. Those physically able to have births were asked whether they and their husbands intended to have any babies in the future and, if so, how many. Women who did not know whether they intended any future births, or did not know a

particular number they intended to have, were asked for the smallest and largest numbers they expected to have. Women who reported a particular number of children they intended to have were asked how sure they were about having specifically that number. Those uncertain of having that specific number were also asked for the maximum and minimum numbers they expected to have.

For each woman, there is a maximum, minimum, and central number of additional births expected. If a woman reported a specific number she intended to have, that was considered the central number she expected. If she was sure about it, that was also the minimum and maximum number she expected. For a woman who was not sure of having just her intended number, the smallest and largest numbers she expected were her minimum and maximum numbers, respectively. For a woman who did not report any specific number of intended future births, the average of the smallest and the largest numbers became her central expected number. In this report, discussion of additional births expected refers to the central number unless specifically identified otherwise.

Since this datum was generated from basic interview data for which missing data had already been imputed, there were no missing data for additional births expected. It should be noted, however, that imputed data were used in generating additional births expected for about 6 percent of the cases.

Last child intended.—If a woman had one or more live births, and she was sterile or intended to have no more children, then her most recently born child was the last child intended.



APPENDIX III

ITEMS ON QUESTIONNAIRE RELATING TO EMPLOYMENT OF MOTHERS
IN INTERVALS BEFORE, BETWEEN, AND AFTER BIRTHS

142.	Before you were (first) married, did you ever work for pay?	Yes . . . (ASK A) . . . 1	59
		No 2	
A.	IF YES: Altogether, how long did you work before you were (first) married?	<u> </u> (YEARS)	60 61
		Less than one year . 00	
<hr/>			
143.	IF R HAS NEVER HAD A LIVE BIRTH, SKIP TO Q. 148 (SEE RECALL CHART ©); OTHERWISE CONTINUE.		
	Between the time of your (first) marriage and the birth of your (first) child, did you ever work for pay?	Yes (ASK A) . . . 1	10
		No 2	
A.	Altogether, how long did you work between the time of your (first) marriage and the birth of your (first) child?	<u> </u> (YEAR)	11 12
		Less than one year . 00	
<hr/>			
144.	IF R HAS HAD ONLY ONE LIVE BIRTH, SKIP TO INTERV. CHECK ITEM BELOW (SEE RECALL CHART ©); OTHERWISE CONTINUE.		
	Between the birth of your first child and the birth of your second child, did you ever work for pay?	Yes (ASK A) . . . 1	13
		No 2	
A.	Altogether, how long did you work between the birth of your first child and the birth of your second child?	<u> </u> (YEARS)	14 15
		Less than one year . 00	
<hr/>			
145.	IF R HAS HAD ONLY TWO LIVE BIRTHS, SKIP TO INTERV. CHECK ITEM BELOW (SEE RECALL CHART ©); OTHERWISE CONTINUE.		
	Between the birth of your second child and the birth of your third child, did you ever work for pay?	Yes (ASK A) . . . 1	16
		No 2	
A.	Altogether, how long did you work between the birth of your second child and the birth of your third child?	<u> </u> (YEARS)	17 18
		Less than one year . 00	

146. IF R HAS HAD ONLY THREE LIVE BIRTHS, SKIP TO INTERV. CHECK ITEM BELOW (SEE RECALL CHART ©); OTHERWISE CONTINUE.

Between the birth of your third child and the birth of your last child, did you ever work for pay? Yes . . . (ASK A) . 1 19
 No (SKIP TO Q. 149). 2

A. Altogether, how long did you work between the birth of your third child and the birth of your last child? _____ (YEARS) 20 21
 Less than one year . 00

INTERVIEWER CHECK ITEM

MORE THAN ONE LIVE BIRTH:

DID R WORK BETWEEN BIRTH OF NEXT TO LAST CHILD AND LAST CHILD?

Yes CHECK & CONTINUE WITH Q. 147.
 No CHECK & SKIP TO Q. 149.
 Don't know . CHECK CONTINUE WITH Q. 147.

ONLY ONE

LIVE BIRTH:

DID R WORK BEFORE BIRTH OF CHILD?

Yes CHECK & CONTINUE WITH Q. 147.
 No CHECK & SKIP TO Q. 149.

147. How long before the birth of your (last) child did you stop working?

Less than one month (SKIP TO Q. 149) . 00 22 23
 Number of months _____ (SKIP TO Q. 149)
 One year or more (SKIP TO Q. 149) . . 12

148. Since you were (first) married, have you ever worked for pay? Yes (ASK A) 1 24
 No 2

A. Altogether, how long have you worked since your (first) marriage? _____ (YEAR) 25 26
 Less than one year . 00

154. IF NO LIVE BIRTHS, SKIP TO Q. 157 (SEE RECALL CHART ©); OTHERWISE CONTINUE. Have you worked for pay at any time since your (last) child was born? Yes 1 41
 No . (SKIP TO Q. 157) . 2

155. Altogether, how long have you worked since the birth of your (last) child? Less than one year 00 42 43
 Number of years . . _____

156. In what month and year did you begin to work after your (last) child was born? 44 47
 (MONTH) (YEAR)

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