

Completeness and Quality of Response in the North Carolina Marriage Follow - Back Survey

A pilot survey to study response rates and quality of data
from mail follow-back surveys linked to marriage records.

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FOREWORD

This is a report on a pilot survey of recently married persons that was conducted for the National Center for Health Statistics by the University of North Carolina to test procedures for conducting follow-back surveys linked to marriage records. Dr. Bradley Wells and Dr. Elizabeth Coulter, Department of Biostatistics, School of Public Health, were the project director and deputy project director, respectively, and Dr. Monroe Sirken of the Center was the project officer. Mary Grace Kovar of the Center edited the final manuscript and worked with the Office of Information in preparing the report for publication.

The methodology for conducting follow-back surveys was initially developed by the Center for surveys linked to death records and subsequently the methodology was applied to surveys linked to birth records. The developmental work ultimately resulted in a continuing statistical program for conducting sample surveys linked to birth and death records. The objective of the vital record survey program has been to expand the scope of national natality and mortality statistics beyond the items of information on the vital records themselves.

There is also a need to expand the scope of national marriage statistics in order to measure trends and differentials in various phenomena associated with the family. This need was recognized in a report on "Needs for National Studies of Population Dynamics" prepared by the U.S. National Committee on Vital and Health Statistics,¹ which states that "A marriage follow-back survey would

provide a great deal of the data that is currently lacking." It was also recognized in the report "Population and the American Future" prepared by the Commission on Population Growth and the American Future,² which recommended that the National Center for Health Statistics should:

Undertake a crash program to qualify all States to participate in the marriage and divorce registration areas; to institute follow-back surveys for sample of marriages and divorces, such as the present natality and mortality follow-back surveys; to develop information sources on family formation and dissolution, and the fertility and other demographic consequences of family dynamics.

The results of the pilot study in North Carolina are encouraging with respect to developing procedures for conducting follow-back surveys linked to marriage records. The overall response rate including personal interview follow-up of nonrespondents to the mail survey was about 80 percent. This rate is lower than the response rate (89 percent) in the national surveys linked to records of legitimate births, and it is also lower than the response rate (90 percent) in the national surveys linked to death records. The adequacy of information reported in the marriage follow-back survey compares favorably with that reported in follow-back surveys linked to birth and death records.

In follow-back surveys, files of registered vital events serve as the sampling frames. Informants who provided the information recorded on registration certificates are generally the sources of information queried in the survey. For instance, the brides and grooms are the informants for items recorded on marriage certificates and they would be the sources on information in the follow-back surveys linked to marriage records. Fortunately, the names and addresses of both the bride and groom are recorded on the North Carolina marriage certificate. Although the addresses of both bride and groom are items of information recorded on the U.S. Standard Certificate of Marriage, these items do not appear on the marriage certificates being used in all States. In 12 States, neither the bride's nor groom's mailing address is on the marriage certificate. In 11 of the 12 States however, the local registrars are identified on the marriage certificates and it is possible

that the mailing addresses of the bride and groom could be obtained from them. A comparable problem arises in surveys linked to death records because the address of the death record informant is sometimes missing on the death certificate. The information is invariably obtained in the follow-back surveys linked to death records by writing to the funeral directors who are always identified on the death certificates.

Before planning a national program of surveys linked to marriage records, a feasibility study should be conducted to test procedures for getting the addresses of brides and grooms from local registrars in those States where the addresses do not appear on the marriage records. It would be appropriate to take that occasion to test additional procedures to enhance the survey response rates of brides and grooms.

Monroe G. Sirken

CONTENTS

	Page
Foreword -----	iii
Introduction -----	1
Background -----	1
Objectives -----	1
Study Design-----	2
Questionnaires -----	2
The Study Population and Sample -----	2
Experimental Variables -----	3
Mailing Procedures-----	3
Interview Follow-Up -----	3
Response Rates -----	4
Unweighted Mail Response Rates and Amount Added by Interview -----	4
Weighted Estimates of Mail Response Rates -----	5
The Joint Effects of Duration and Questionnaire-----	5
The Joint Effects of Questionnaires and Demographic Variables -----	5
Comparison of Respondents and Nonrespondents to Mail Survey From Interview Data -----	6
Quality of Data-----	6
Adequacy of Mail Questionnaires Before and After Requery -----	6
Completeness of Response to Individual Items -----	7
Consistence of Responses -----	7
Summary-----	8
References -----	9
List of Detailed Tables -----	10
Appendix I. Forms Used in the Study-----	23
License and Certificate of Marriage-1968-----	23
License and Certificate of Marriage-1969-----	24
Covering Letter for Basic Questionnaire-----	25
Items Common to All Mail Questionnaires-----	26
Health Care Questionnaire Only-----	31
Family Planning Questionnaire Only-----	33
Appendix II. Sampling Procedures, Methods of Estimation, and Standard Errors-----	34
Sampling Procedures -----	34
Multinomial Model for Stratum Response Rates and Variances -----	36
Limitations of Variance Estimates -----	37
Weighted State Estimates of Response Rates and Standard Errors -----	37
Appendix III. Definitions of Certain Terms Used in This Report -----	39
Appendix IV. Estimated Amount Added by Interview Follow-Up of Refusals and Nonrespondents -----	40

SYMBOLS

Data not available-----	---
Category not applicable-----	...
Quantity zero-----	-
Quantity more than 0 but less than 0.05-----	0.0
Figure does not meet standards of reliability or precision-----	*

COMPLETENESS AND QUALITY OF RESPONSE IN THE NORTH CAROLINA MARRIAGE FOLLOW-BACK SURVEY

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Linda S. Wienir,^a *University of North Carolina*

INTRODUCTION

Background

In 1956 the National Office of Vital Statistics, now a part of the National Center for Health Statistics, began a program of research on the methodology for mail follow-back studies linked to birth and death certificates. This led to the establishment of a National Mortality Survey in 1961³ and a National Natality Survey in 1963,⁴ and both have become effective means of supplementing national birth and death statistics.

In 1967 NCHS, as part of its continuing methodology research program, contracted with the Department of Biostatistics at the University of North Carolina to conduct a pilot study of the feasibility of using mail follow-back surveys based on marriage records for collecting supplementary marriage statistics. The Research Triangle Institute's Division of Statistics subcontracted to trace 500 of the brides selected for the mail survey and conduct interviews. The North Carolina State Board of Health agreed to make the marriage records and punchcards available.

The 1968-69 North Carolina study was conducted in two phases: (1) a pretest for development of questionnaires (Spring 1968) and (2) a pilot survey to study response rates and to evaluate the quality of responses (November 1968-June 1969). In both phases samples of brides married in the State were selected from marriage

records filed with the North Carolina State Board of Health and were sent mail questionnaires. In the second phase—the pilot survey—samples of both respondent and nonrespondent brides living in six central North Carolina counties were traced and personally interviewed as part of the effort to evaluate the quality of data collected and to examine potential biases among mail nonrespondents.

A brief report of the pretest results has already been made.⁵ The present report is restricted to presentation of pilot survey results.

Prior to 1967 two other mail follow-back surveys linked to marriage records had been done. Pratt⁶ used the method in studying records of marriages which occurred in the Detroit metropolitan area during 1960. Coulter⁷ carried out a small pilot survey of recently married couples in North Carolina in 1966.

Objectives

The broad objective of the North Carolina study was to investigate the completeness and quality of data obtained in mail follow-back surveys of recently married brides. Specific objectives were to:

Estimate differences in response rates by:

- Age, race, and previous marital status of the bride
- Time duration since marriage
- Questionnaire content
- Certified and regular mail delivery.

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Determine biases due to nonresponse.

Investigate the quality of data by:

Comparing the consistency of data from different sources

Examining the completeness of data for individual items in the mail questionnaire.

STUDY DESIGN

Questionnaires

Mail and interview questions were directed to the bride but included information about both the bride and the groom.

Four mail questionnaires were pretested in a five-county area of central North Carolina. Revisions were then made and the following three questionnaires were used in the pilot survey:

A *basic* version which included the same demographic content as the marriage record and additional questions on income, employment status, religion, residence prior to and after marriage, and household composition.

A *family planning* version which included the same content as the basic version plus a one-page series of questions on number of children desired, whether currently pregnant, when the next child was expected, and contraceptive use by the couple.

A *health care* version which included the same content as the basic version plus a one-page series of questions on current pregnancy status, prenatal care, hospital care since marriage, and health insurance coverage.

Facsimiles of the mail questionnaires are given in appendix I.

The interview questionnaires were designed to collect the same information in essentially the same sequence as in the mail questionnaires. Additional items were added to the interview questionnaire for control purposes and to obtain reactions of the respondents to specific aspects of the mail survey.

The Study Population and Sample

The 48,162 marriage records filed with the North Carolina State Board of Health during the 12-month period February 1968-January 1969 constituted the pilot study population and sampling frame (table 1).

In five-sixths of all marriages the bride was white. In two-thirds of the marriages the bride was white, never married, and under 30 years of age. Only 4.4 percent of the brides were 45 years or older at the time of marriage and 90 percent of those had been previously married.

About one-fifth of the marriages occurred in Alamance, Durham, Forsyth, Guilford, Orange, or Wake Counties. Marriages in these six counties, all readily accessible to interviewers from the University of North Carolina and the Research Triangle Institute, were used to select the sample for personal interviews. Because all comparisons between mail and interview data are based on marriages in these counties, estimates for them are shown separately in the tables.

Geographic stratification was done to assure sufficient numbers of mail respondents and non-respondents for interview follow-up in the six-county area. Stratification by previous marital status, race, and age of bride was deemed essential because of differential mail response rates observed in other studies.

In the pretest, many older brides objected to the prenatal care and family planning questions, hence, in the pilot study, only the basic questionnaire was sent to brides 45 years of age or older. To simplify analysis and presentation of results, this report is restricted to results for brides under 45 years of age unless otherwise noted, thereby reducing the 32 strata in table 1 to 24 strata. Also due to small numbers, previously married brides under age 20 of races other than white are omitted in both geographic strata, further reducing the number of strata to 22 for this report.

The sample design called for equal numbers in each stratum within each area, 144 in each six-

county stratum, and 216 in each rest-of-State stratum and this required different sampling fractions.

A balanced design could not be achieved, however, because of the limited numbers in some strata. Effective sampling fractions in the 22 strata ranged from 100 percent downward to 1.4 percent. Deviations from the sample design tended to occur in those groups which subsequently had low response rates. As a result, somewhat tedious analytical procedures which are described in appendix II along with the sampling procedures were required.

Definitions of terms used in this report are given in appendix III.

Experimental Variables

Within each of the 22 demographic strata, four experimental variables were employed in further poststratification:

Four time durations.—3, 5, 7, or 9 months between marriage and first mail follow-up.

Three questionnaires.—Basic, family planning, and health care.

Two alternate addresses.—Either the bride's or the groom's as shown on the marriage license for first mail query.

Two types of mail.—Certified and regular for the second query to nonrespondents from the first mailing.

The time duration and version of the questionnaire to be sent to each bride were randomly assigned at time of sampling. Within each month of mailing, the choice of the bride's or groom's address for the first mailing was made by alternate assignment. The type of mail used for the second query was randomly assigned to each nonrespondent bride 15 days after the first query.

Mailing Procedures

Roughly 600 initial questionnaires were mailed on the first Monday of each month for 6 months, November 1968–April 1969. Response patterns for each month were similar and combined results are shown in the tables. Preliminary

analysis also indicated that mail response rates were similar for addresses of brides and grooms; hence this variable is not considered in the present report.

The first query was sent by first-class mail. Two weeks after the first mailing, all brides for whom no response had been received were randomly subdivided into two groups for the second mailing. To one group the second query was sent by certified mail and to the other it was sent by regular first-class mail. Two weeks later third queries were sent by regular first-class mail to all remaining nonrespondents regardless of what type mail had been used for the second query. A stamped, addressed return envelope was included in each query.

When the Post Office returned a query indicating that it could not be delivered, another first query was immediately mailed to the alternate address on the marriage record if one was shown. After one or two undelivered letters (Post Office returns), if there was no other address, the bride was classified as a nonrespondent.

Questionnaires returned with an indication that the sample bride did not wish to cooperate were classified as refusals and no further mail follow-up was made. For estimation purposes refusals and nonresponses are usually put together.

Completed or partially completed returned questionnaires were classified as responses. Every response was edited within 3 weeks of receipt for completeness and internal consistency and a single requery was sent to the respondent asking for clarification of items judged to be inadequate. Information from returned queries was added to the original return and quality estimates are based on all data.

Interview Follow-Up

Six weeks after the first mail query each sample bride was classified as respondent, nonrespondent, or refusal. Five refusals which were especially strong were excluded, and then samples of mail respondents and nonrespondents and all other refusals for whom the most recent address was within the six-county area were taken for attempted follow-up and personal interview.

Sampling for interviews was done separately within the mail respondent and nonrespondent groups for each month of mailing. A sample of 84 brides (42 refusals and nonrespondents and 42 respondents) was to be taken from each of the 6 months' mail results—a total of 504. The total actually selected was 447 after excluding 43 brides 45 years or older. Of this total, 289 were found and interviewed, as shown in table A.

RESPONSE RATES

Unweighted Mail Response Rates and Amount Added by Interview

Unweighted mail response rates for the major study variables are shown in table 2. Overall first-mail response was about 25 percent and was significantly low for:

- Brides 30-44 years of age
- Brides of races other than white
- Brides who had been previously married
- Brides married 9 months prior to the first mail
- Brides married outside six central counties.

However, after two follow-up mailings, the cumulative response was increased to 59 percent for

those sent certified mail and to 52 percent for those sent regular mail at the second mailing.

Response for all mailings was significantly low for:

- White brides among those sent certified mail
- Brides 30-44 years of age regardless of type of mail
- Brides who had been previously married regardless of type of mail.

While overall refusal rates for the total mail survey were relatively low—3.9 percent for certified mail and 2.9 percent for regular mail, there is some indication in table 3 that certified mail served as a stimulus to refusal as well as to response. The second-mail refusal rate for certified mail was significantly higher than that for regular mail—3.4 percent versus 1.2 percent. Second-mail refusal rates were significantly higher for certified than for regular mail for white brides, for those 30-44 years of age, for those who had been previously married, and for brides who were sent the family planning questionnaire.

Response rates for the sample are low in relation to the weighted estimates described in the next section, but even so most of the sample differences remain significant after the weighting procedure. Before discussing weighted esti-

Table A. Number of brides and interview rates by results of the mail survey for six-county area: North Carolina Marriage Survey, 1968-69

Interview results	Total	Mail survey results		
		Respondent	Non-respondent	Refusal
		Number		
Total-----	447	233	173	41
Interviewed-----	289	187	92	10
Not interviewed-----	158	46	81	31
		Percent		
Interviewed-----	65	80	53	24

mates, however, it is appropriate to consider the increase in response rate due to personal interview of mail survey nonrespondents and refusals.

Detailed analysis of the number of sample persons added by interview is not possible because of the small numbers involved, only 173 nonrespondents and 41 refusals having been interviewed from the six-county area. For the unweighted six-county sample, interview follow-up increased the certified mail response from 59 to 77 percent and the regular mail response from 54 to 80 percent (table 3). The amounts added by interview, however, are not significantly different by type of second mailing. See appendix IV for a more detailed discussion of weighted results.

Although the differences are not statistically significant, there is some indication that the number added by interview may be negatively correlated with mail survey response rates.

Weighted Estimates of Mail Response Rates

Individual stratum estimates were weighted to obtain estimates of response rates which would have been expected with uniform sampling rates from brides married in North Carolina during February 1968-January 1969.

In discussing table 4, differences due to other variables which might influence summary results were not considered. For example, the age distributions of never married and previously married brides are very different, the latter being considerably older than the former. In the following sections differences in response due to the joint effect of some of the major variables are examined in somewhat more detail using weighted estimates.

The Joint Effects of Duration and Questionnaire

Response rates specific for time duration since marriage and the version of the questionnaire which are shown in table 5 generally follow the trends seen in table 4. For each marriage duration the family planning questionnaire response rate for certified mail was lower and the difference between certified and regular mail was less than for the other two questionnaires. However, the certified mail response rates for the family planning questionnaire were signifi-

cantly lower than for the other questionnaires only at 7 months duration.

The Joint Effect of Questionnaires and Demographic Variables

Other weighted rates are shown in tables 6-8. Rates in these tables are interrelated and will be considered together in discussing several variables.

Marital status.—In all possible pairwise comparisons of response rates for brides who had not been married before with those who had been previously married within each type of mail group, all 15 rates in the first mailing, 13 of the 15 in certified mail, and 14 of the 15 in regular mail were higher for the brides who had not been married before (table 7). The three exceptions were among brides 30 years or older of races other than white. This, coupled with the summary rates in table 6 by kind of questionnaire and in table 8 by age, clearly shows that brides who had not been married before responded at significantly higher rates.

Color.—Pairwise comparisons of white brides with brides of other races within age, questionnaire, and type of mail groups (table 7) and the summary rates of tables 6 and 8 provide no conclusive evidence. Brides of races other than white tended to respond to the first query at lower rates than white brides but responded at higher rates to second and third queries, especially with certified mail.

Among brides under age 20 who had not been married before, brides of races other than white responded to the family planning questionnaire at significantly higher rates to both certified and regular mail than did white brides (table 7).

Rates for previously married brides age 30 or older were also generally higher for brides of races other than white than for white brides with both certified and regular mail, and a number of these differences were statistically significant (table 7). Brides of races other than white aged 30 or older who had not been married before responded at a significantly higher rate to certified mail than white brides of the same age and marital status (table 8).

Version of questionnaire.—For certified mail the overall poor response rates to the family plan-

ning questionnaire in relation to the other two questionnaires is due mainly to low response rates for white brides under age 20 who had not been married before and the heavy weight assigned to this group of brides in calculating weighted rates. As described above, the response rates of white brides to the family planning questionnaire were generally low.

Age at marriage.—Response rates for brides aged 30-44 were significantly lower than for brides under age 30 in most of the triple comparisons in tables 7 and 8. Except for white brides under 20 now married for the first time who received the family planning questionnaire, response rates generally were highest for brides under 20, slightly lower for those aged 20-29, and much lower in the 30-44 age group.

Type of mail.—The overall significantly higher response for certified mail over regular mail was due wholly to the better response to the basic and health care questionnaires in most color-marital status groups (table 6). For brides aged 20-29 who had not been married before, a group which counts heavily in calculating weighted rates, regular mail yielded slightly (but not significantly) higher response for the family planning questionnaire while certified mail response rates are considerably (but not significantly) higher for the two other questionnaires. Significantly lower response rates for the family planning questionnaire than for the other questionnaires with certified mail also appear for previously married white brides under age 20 and previously married brides of other races aged 20-29 (table 7). Among brides of other races aged 30-44 years, response for certified mail was significantly better than for regular mail for the basic questionnaires sent to those who had not been previously married and family planning and health care questionnaires sent to those who had been previously married.

Comparison of Respondents and Nonrespondents to Mail Survey From Interview Data

Comparisons of mail respondents with mail nonrespondents on the basis of personal interview responses provide evidence of some slight differences. Brides who responded to the mail

survey tended to have more years of schooling than those who didn't respond (63 percent compared with 58 percent had finished high school). Brides who did not respond to the mail survey tended to live in nuclear rather than extended families (67 percent of the nonrespondents compared with 58 percent of the respondents). Sixty percent of those who responded compared with 51 percent of those who did not respond to the mail survey reported no move since marriage at time of interview follow-up.

QUALITY OF DATA

Overall quality of data for sample persons was examined using three measures:

1. Adequacy of returned mail questionnaires (excluding refusals and Post Office returns)
2. Completeness of answers to individual items on mail questionnaire, i.e., those for which a codable answer was reported
3. Consistency (agreement) of information collected by different sources.

In general quality appears to be positively correlated with response rates.

Adequacy of Mail Questionnaires Before and After Requery

Mail responses were edited to determine whether all priority items had been completed. Those questionnaires with one or more priority items missing were classified as inadequate and were requeryed in an attempt to add the missing data. Priority items for requery were: Date and State of birth, education, usual activity before and since marriage, employment, income, sources of income, residence before marriage, hospitalization insurance coverage of the bride and groom, and household composition after marriage.

The percentage of the questionnaires judged adequate before requery varied from 52 percent for the family planning questionnaire to 56 percent for the basic questionnaire. The requery effort increased the percentage judged adequate to 67 percent for the family planning questionnaire and 72 percent for the basic questionnaire (table 9). Only one inadequate section was required to classify the whole questionnaire as inadequate; hence the percentage of each section which was

classified as adequate was considerably higher than the percentage of questionnaires classified as adequate. Levels of completeness for the whole questionnaire and for sections common to all questionnaires were similar for the three questionnaires. Although differences between questionnaires are not significant, completeness in the common sections was consistently lower for the family planning than for the other two questionnaires.

Adequacy generally declined in successive mailings (table 9) and adequacy for certified and regular mail responses was very similar. Although adequacy levels before requery appear to be different for the three questionnaires, they are based upon relatively small numbers and hence are not statistically significant. Differences are less marked after requery. Adequacy was significantly higher for white brides than for those of other races (table 10).

Completeness of Response to Individual Items

Information on adequacy (or completeness) presented in the preceding section tend to obscure the relatively better levels of completeness for individual items on returned questionnaires. For individual items the only measure considered was completeness after requery. Because one purpose of the study was to examine quality, answers were not imputed for missing data.

Completeness for an individual item refers to the proportion with a specific codable answer after requery other than "no answer" or "unknown." Completeness levels for common items were so similar on each of the three questionnaires that results were pooled.

Generally item completeness was quite good for items common to all questionnaires. Completeness was below 90 percent in only three of 22 items for the bride and in seven of the 22 items for the groom (table B).

In general completeness was slightly better for the bride, who presumably completed the questionnaire, than for the groom. Completeness was much lower for items on details of the groom's previous marriages than for other items. However, items pertaining to age and employment have slightly higher completeness levels for the groom than for the bride. The single item below 90 per-

Table B. Distribution of items according to level of completeness for 22 items for bride, 22 for groom, and 8 for couple: North Carolina Marriage Survey, 1968-69

Percentage complete	Bride	Groom	Couple
Total-----	22	22	8
98.0 or more-----	7	2	2
95.0-97.9-----	3	6	3
90.0-94.9-----	9	7	2
85.0-89.9-----	3	3	-
80.0-84.9-----	-	2	1
Less than 80.0----	-	2	-

cent for couples was the one pertaining to telephone number.

Completeness for five selected items is shown by major study variables in table 11. Except for the "work last week" question, the level of completeness declined with successive mailings, and there was little difference between certified mail and regular mail. Area differences except for "telephone number" were quite small. The level of completeness improved with increased education.

The level of completeness for family planning items was mixed (table 12). Questions about number of children desired by the bride, whether the bride can have children if she doesn't expect any, current pregnancy status, and use of contraception elicited a response of 90 percent or higher. Questions related to future plans—number of children actually expected, year next child expected, and future use of contraception by couples who had not previously used it—had completeness levels of 81 percent or lower. Health care and health insurance questions had levels of completeness of 95 percent or higher.

Consistency of Responses

Three potential sources for the same data made a number of consistency checks possible. Marriage records were available for both mail respondents (1,999) and nonrespondents (1,592),

and interview records were available for 187 mail respondents and 102 mail nonrespondents including 10 refusals.

Consistency checks were made between interview and mail survey and between vital record and mail survey. Comparison was restricted to those cases for which answers to the specific question were available in both records. The index of consistency is the percentage of cases in which the codes assigned agreed.

Consistency percentages are shown in table 13 for a number of items common to all questionnaires. In general, consistency was slightly but not significantly better for mail survey and interview than for mail survey and vital record data for items available on all three record sources. Consistency levels were good or very good except for individual years of education and income. Consistency levels for the small number of respondents to the family planning and health care questions were moderately good except for poor consistency on questions on "number of children you (or your husband) would like to have" and health insurance for hospital care or doctor. Consistency generally appeared to be positively correlated with completeness of response to individual items.

SUMMARY

Response rates and quality of response were studied in a follow-back survey of marriages recorded in North Carolina from February 1968 through January 1969. Three kinds of questionnaires each with five to six pages were used in a mail survey of about 3,600 brides under 45 years of age which was conducted during the period November 1968-March 1969. As many as three mailings were made to each bride in the survey and personal interviews of samples of respondents and nonrespondents to the mail survey were conducted to study the quality of the data.

Response rates were significantly higher for brides being married for the first time than for those who had been married before, for brides under age 30 than for those 30-44 years of age, and for brides to whom the second mailing was sent certified than for those to whom it was sent by regular mail. The basic and health care questionnaires yielded significantly higher total response rates than the family planning ques-

tionnaire when certified mail was used for the second mail. Total mail response rates were slightly lower for white brides than for those of other races even though first wave responses were considerably higher for white brides. First wave response rates were significantly higher at 5 months than at shorter or longer durations between marriage and first mail query, and there was a slightly, but not significantly, higher response rate at 5 months for all waves combined.

Interview follow-up of nonrespondents to the mail survey added an estimated 14-23 percent to mail response rates, yielding overall response rates between 75 and 85 percent. Interviews showed that nonrespondents tended to have slightly lower incomes and education levels than respondents but distributions were not significantly different.

Completeness of information on returned questionnaires was quite good for most items except income for the bride, income for the groom, and selected family planning items.

Completeness of information for certain items was significantly higher for responses to initial queries than for responses to second and third mailings and for white respondents than for respondents of other races. In general completeness appeared to vary in the same directions as response rates. Less effort was required to get the white brides to respond and, although their response rates generally were lower than for brides of other races, completeness of response was better.

Consistency indexes comparing vital records with mail survey data and mail survey data with interview data were quite good except for income, certain family planning items, and number of years of education.

Overall, response rates and quality of data indicate that it is feasible to use mail follow-back surveys linked to marriage records to collect supplementary data from brides for whom this was the first marriage. Poor response to the family planning questionnaire with certified mail follow-up and poor response of older brides and those who had been married before demonstrates the need for additional research for improved survey techniques or for subject matter which would stimulate response from these groups.

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LIST OF DETAILED TABLES

Table	1. Distribution of brides in study population and sample by area and age, previous marital status, and color of bride: North Carolina Marriage Survey, 1968-69-----	11
	2. Unweighted cumulative mail response rate per 100 brides by selected characteristics: North Carolina Marriage Survey, 1968-69-----	12
	3. Unweighted mail response rate and increase due to interview per 100 brides by selected characteristics and type of second mail: Six-county area, North Carolina Marriage Survey, 1968-69-----	13
	4. Weighted mail response rate per 100 brides, by selected characteristics and type of second mail: North Carolina Marriage Survey, 1968-69-----	14
	5. Weighted mail response rate per 100 brides by time duration since marriage, type of second mail, and version of questionnaire: North Carolina Marriage Survey, 1968-69-----	15
	6. Weighted mail response rate per 100 brides by color and previous marital status of bride, version of questionnaire, and type of second mail: North Carolina Marriage Survey, 1968-69-----	15
	7. Weighted mail response rate per 100 brides by color, age, and previous marital status of bride, version of questionnaire, and type of second mail: North Carolina Marriage Survey, 1968-69-----	16
	8. Weighted mail response rate per 100 brides by color, age, and previous marital status of bride, and type of second mail: North Carolina Marriage Survey, 1968-69--	17
	9. Adequacy of mail questionnaire by wave of response, type of second mail, and version of questionnaire: North Carolina Marriage Survey, 1968-69-----	18
	10. Adequacy of mail questionnaire by wave of response, type of second mail, and color of bride: North Carolina Marriage Survey, 1968-69-----	19
	11. Percent of selected items completed on the mail questionnaire, by wave of response, type of second query, version of questionnaire, and selected characteristics of the bride: North Carolina Marriage Survey, 1968-69-----	20
	12. Percent of selected items completed on family planning and health care questionnaires: North Carolina Marriage Survey, 1968-69-----	21
	13. Percent of agreement of information obtained for selected items on all mail questionnaires with corresponding data on the vital record and the interview questionnaires: North Carolina Marriage Survey, 1968-69-----	22

Table 1. Distribution of brides in study population and sample by area and age, previous marital status, and color of bride: North Carolina Marriage Survey, 1968-69

Age of bride	Six-county area				Rest of State			
	Never married		Previously married		Never married		Previously married	
	White	Other	White	Other	White	Other	White	Other
	Number in study population							
Under 20 years-----	2,921	751	62	5	15,572	2,416	255	8
20-29 years-----	2,862	938	607	72	11,002	2,433	2,416	181
30-44 years-----	104	86	452	100	397	268	1,866	291
45 years and over-----	22	17	307	80	123	52	1,279	227
	Percent of total study population							
Under 20 years-----	6.1	1.6	0.1	0.0	32.3	5.0	0.5	0.0
20-29 years-----	5.9	1.9	1.3	0.1	22.8	5.0	5.0	0.4
30-44 years-----	0.2	0.2	0.9	0.2	0.8	0.5	3.9	0.6
45 years and over-----	0.0	0.0	0.6	0.2	0.2	0.1	2.6	0.5
	Number in sample							
Under 20 years-----	144	144	62	5	216	216	192	8
20-29 years-----	146	143	144	62	216	216	216	179
30-44 years-----	103	86	144	100	215	204	217	213
45 years and over-----	20	17	49	44	70	45	72	73

Table 2. Unweighted cumulative mail response rate per 100 brides by selected characteristics: North Carolina Marriage Survey, 1968-69

Characteristic	Total number questionnaires mailed	First wave	Certified mail		Regular mail	
			Second wave	Third wave	Second wave	Third wave
Total-----	3,591	24.4	47.5	59.0	38.0	52.2
<u>Area</u>						
Six-county area-----	1,283	27.4	46.4	59.0	40.7	54.3
Rest of State-----	2,308	22.8	48.2	59.1	36.5	51.0
<u>Age of bride</u>						
Under 20 years-----	987	30.0	53.0	65.8	46.7	60.3
20-29 years-----	1,322	26.5	50.0	60.6	39.0	54.1
30-44 years-----	1,282	18.1	40.9	52.2	30.4	44.1
<u>Color of bride</u>						
White-----	2,015	25.9	46.2	56.0	37.8	50.9
Other-----	1,576	22.6	49.2	62.8	38.4	54.0
<u>Previous marital status of bride</u>						
Never married-----	2,049	29.2	52.5	65.2	44.4	59.8
Previously married-----	1,542	18.2	41.1	50.9	29.6	42.2
<u>Time duration since marriage</u>						
3 months-----	930	24.4	48.7	59.3	38.0	54.2
5 months-----	870	27.4	50.6	60.9	41.4	55.2
7 months-----	865	24.4	46.2	57.0	38.2	51.1
9 months-----	926	21.8	44.8	59.0	34.6	48.2
<u>Version of questionnaire</u>						
Basic-----	1,201	25.7	47.3	60.0	38.8	53.6
Family planning-----	1,196	24.1	46.3	57.1	36.9	51.2
Health care-----	1,194	23.5	49.1	60.0	39.3	52.7

Table 3. Unweighted mail response rate and increase due to interview per 100 brides by selected characteristics and type of second mail: Six-county area, North Carolina Marriage Survey, 1968-69

Characteristic	Total, mail plus interview		Mail response		Amount added by interview			
	Certi- fied	Regu- lar	Certi- fied	Regu- lar	Nonrespond- ents		Refusals	
					Certi- fied	Regu- lar	Certi- fied	Regu- lar
	Response rate per 100 brides							
Total, six-county area-----	76.7	80.4	59.0	54.3	16.3	25.5	1.4	0.6
<u>Age of bride</u>								
Under 20 years-----	79.0	84.4	65.4	65.3	12.7	19.1	0.9	0.0
20-29 years-----	81.2	81.3	59.9	55.6	19.9	24.6	1.4	1.1
30-44 years-----	69.2	76.3	52.6	44.0	14.8	31.7	1.8	0.6
<u>Color of bride</u>								
White-----	73.8	79.2	59.0	54.2	12.4	24.4	2.4	0.6
Other-----	80.3	81.8	58.8	54.4	21.3	26.8	0.2	0.6
<u>Previous marital status of bride</u>								
Never married-----	82.6	84.9	66.2	63.0	15.3	20.9	1.1	1.0
Previously married-----	68.3	73.2	48.4	41.1	18.0	32.1	1.9	0.0
<u>Time duration since marriage</u>								
3 months-----	76.2	75.0	58.2	55.4	15.9	19.0	2.1	0.6
5 months-----	74.5	77.1	58.7	58.9	14.8	17.2	1.0	1.0
7 months-----	80.1	84.7	57.2	55.1	21.1	29.6	1.8	0.0
9 months-----	74.8	86.6	61.5	48.2	12.7	37.6	0.6	0.8
<u>Version of question-naire</u>								
Basic-----	70.6	80.9	54.5	57.2	14.8	23.7	1.3	0.0
Family planning-----	81.3	78.2	62.3	51.2	17.4	25.0	1.6	2.0
Health care-----	78.9	83.0	60.1	54.5	17.5	28.5	1.3	0.0

Table 4. Weighted mail response rate per 100 brides, by selected characteristics and type of second mail: North Carolina Marriage Survey, 1968-69

Characteristic	First wave	All waves		
		Certified mail	Regular mail	Difference certified-regular
Response rate per 100 brides				
Total-----	30.3	66.6	59.0	+7.6
<u>Area</u>				
Six-county area-----	34.3	66.6	61.2	+5.4
Rest of State-----	29.3	66.7	58.4	+8.2
<u>Age of bride</u>				
Under 20 years-----	30.7	68.6	62.2	+6.5
20-29 years-----	32.1	68.3	58.7	+9.6
30-44 years-----	16.6	44.9	40.4	+4.4
<u>Color of bride</u>				
White-----	30.7	66.3	58.1	+8.2
Other-----	27.8	68.5	63.2	+5.3
<u>Previous marital status of bride</u>				
Never married-----	31.7	69.8	62.0	+7.8
Previously married-----	18.0	47.0	39.7	+7.3
<u>Time duration since marriage</u>				
3 months-----	27.8	69.0	58.5	+10.5
5 months-----	34.4	70.0	63.5	+6.5
7 months-----	31.5	64.7	58.5	+6.2
9 months-----	27.3	62.9	55.4	+7.5
<u>Version of questionnaire</u>				
Basic-----	32.1	73.0	60.4	+12.6
Family planning-----	29.5	56.8	57.9	-1.1
Health care-----	29.2	70.2	58.6	+11.6

Table 5. Weighted mail response rate per 100 brides by time duration since marriage, type of second mail, and version of questionnaire: North Carolina Marriage Survey, 1968-69

Version of questionnaire and time duration since marriage	First wave	All waves		
		Certified mail	Regular mail	Difference certified-regular
<u>Basic questionnaire</u>		Response rate		
3 months-----	30.9	70.3	61.8	+8.5
5 months-----	36.0	79.6	67.4	+12.2
7 months-----	31.6	75.7	56.8	+18.8
9 months-----	30.0	66.2	55.5	+10.7
<u>Family planning questionnaire</u>				
3 months-----	28.7	62.6	55.0	+7.7
5 months-----	32.8	60.1	61.9	-1.8
7 months-----	29.1	47.9	57.5	-9.6
9 months-----	27.3	56.6	57.1	-0.4
<u>Health care questionnaire</u>				
3 months-----	23.8	74.0	58.6	+15.3
5 months-----	34.8	70.3	61.1	+9.2
7 months-----	33.7	70.4	61.1	+9.3
9 months-----	24.6	65.9	53.6	+12.3

Table 6. Weighted mail response rate per 100 brides by color and previous marital status of bride, version of questionnaire, and type of second mail: North Carolina Marriage Survey, 1968-69

Color of bride and version of questionnaire	Never married		Previously married			
	First wave	All waves		First wave	All waves	
		Certified mail	Regular mail		Certified mail	Regular mail
<u>White</u>						
Response rate per 100 brides						
Basic-----	35.2	78.9	63.4	18.6	40.9	44.7
Family planning-----	31.7	56.6	58.9	14.6	45.1	35.4
Health care-----	31.9	73.9	61.9	21.2	51.9	37.4
<u>Other</u>						
Basic-----	29.5	72.2	59.9	¹ 20.4	¹ 58.8	¹ 51.9
Family planning-----	32.7	67.7	73.2	¹ 13.3	¹ 57.4	¹ 38.2
Health care-----	24.8	68.9	61.6	¹ 14.1	¹ 52.1	¹ 43.0

¹Based on response experience for ages 20-44 years.

Table 7. Weighted mail response rate per 100 brides by color, age, and previous marital status of bride, version of questionnaire, and type of second mail: North Carolina Marriage Survey, 1968-69

Age and color of bride and version of questionnaire	Never married			Previously married		
	First wave	All waves		First wave	All waves	
		Certi-fied mail	Regu-lar mail		Certi-fied mail	Regu-lar mail
<u>UNDER 20 YEARS</u>						
<u>White</u>						
Basic-----	34.1	75.4	63.9	24.6	54.2	53.5
Family planning-----	25.0	49.2	52.8	19.7	46.5	49.9
Health care-----	32.4	80.1	67.3	23.8	61.9	48.2
<u>Other</u>						
Basic-----	31.2	70.8	63.9	*	*	*
Family planning-----	40.6	71.5	79.5	*	*	*
Health care-----	27.6	75.8	60.4	*	*	*
<u>20-29 YEARS</u>						
<u>White</u>						
Basic-----	37.2	84.9	63.1	24.3	46.0	49.7
Family planning-----	40.8	66.6	67.4	13.9	49.9	32.0
Health care-----	31.6	66.5	54.9	21.5	54.3	37.6
<u>Other</u>						
Basic-----	28.4	73.9	57.6	21.7	58.2	51.1
Family planning-----	26.6	65.5	70.0	19.2	40.5	43.1
Health care-----	23.4	64.0	64.7	17.9	45.9	53.3
<u>30-44 YEARS</u>						
<u>White</u>						
Basic-----	19.5	43.6	53.0	10.4	32.5	36.9
Family planning-----	25.0	50.0	48.7	14.9	38.5	37.8
Health care-----	25.4	47.7	56.5	20.5	47.4	35.7
<u>Other</u>						
Basic-----	24.6	68.0	45.1	19.6	59.3	52.4
Family planning-----	19.6	53.5	47.6	9.6	67.9	35.2
Health care-----	12.9	55.0	43.7	11.8	55.9	36.7

Table 8. Weighted mail response rate per 100 brides by color, age, and previous marital status of bride, and type of second mail: North Carolina Marriage Survey, 1968-69

Color and age of bride	Never married			Previously married		
	First wave	All waves		First wave	All waves	
		Certi- fied	Regu- lar		Certi- fied	Regu- lar
	Response rate per 100 brides					
White-----	32.9	69.8	61.4	18.2	46.0	39.1
Under 20 years-----	30.5	68.2	61.4	22.7	54.2	50.6
20-29 years-----	36.5	72.7	61.7	19.9	50.1	39.7
30-44 years-----	23.3	47.1	52.7	15.3	39.5	36.8
Other-----	29.0	69.6	64.9	¹ 15.9	¹ 56.1	¹ 44.4
Under 20 years-----	33.1	72.7	67.9	*	*	*
20-29 years-----	26.1	67.8	64.1	19.6	48.2	49.1
30-44 years-----	19.0	58.9	45.5	13.7	61.0	41.4

¹Based on response experience for ages 20-44 years.

Table 9. Adequacy of mail questionnaire by wave of response, type of second mail, and version of questionnaire: North Carolina Marriage Survey, 1968-69

Wave of response and type of second mail	All questionnaires	Version of questionnaire		
		Basic	Family planning	Health care
Number of responses				
Total-----	1,999	683	648	668
First wave-----	878	309	288	281
Certified:				
Second wave-----	421	131	135	155
Third wave-----	209	77	66	66
Regular:				
Second wave-----	240	78	75	87
Third wave-----	251	88	84	79
Percent of questionnaires adequate before requery				
Total-----	53.8	55.8	51.8	53.6
First wave-----	57.8	58.3	58.0	57.3
Certified:				
Second wave-----	52.5	60.3	48.1	49.7
Third wave-----	46.4	40.3	45.5	54.5
Regular:				
Second wave-----	52.1	65.4	46.7	44.8
Third wave-----	49.4	45.5	46.4	57.0
Percent of questionnaires adequate after requery				
Total-----	70.1	72.3	67.0	71.0
First wave-----	75.0	75.1	70.8	79.4
Certified:				
Second wave-----	69.1	77.1	65.2	65.8
Third wave-----	63.2	61.0	60.6	68.2
Regular:				
Second wave-----	65.0	74.4	65.3	56.3
Third wave-----	65.3	63.6	63.1	69.6

Table 10. Adequacy of mail questionnaires by wave of response, type of second mail, and color of bride: North Carolina Marriage Survey, 1968-69

Wave of response and type of second mail	Number of responses		Percent of question- naire adequate before requery		Percent of question- naire adequate after requery	
	White	Other	White	Other	White	Other
First wave-----	522	356	66.9	44.7	82.4	64.3
Certified:						
Second wave-----	206	215	62.6	42.8	79.6	59.1
Third wave-----	99	110	56.6	37.3	72.7	54.5
Regular:						
Second wave-----	119	121	61.3	43.0	77.3	52.9
Third wave-----	131	120	61.1	36.7	72.5	57.5

Table 11. Percent of selected items completed on the mail questionnaire, by wave of response, type of second query, version of questionnaire, and selected characteristics of the bride: North Carolina Marriage Survey, 1968-69

Study variable	Total mail re- spond- ents	Item					
		Work last week		Number of months at address before marriage	Day of birth	Addi- tional children not in house- hold	Tele- phone number
		Bride	Groom				
				Groom	Bride		
		Percent					
Total-----	1,999	89.3	88.0	85.2	91.7	90.8	80.2
<u>Wave of response and type of mail</u>							
First wave-----	878	88.4	87.9	88.5	94.3	92.5	81.0
Certified:							
Second wave-----	421	91.0	88.4	84.6	92.2	91.4	80.3
Third wave-----	209	88.0	87.1	80.4	84.7	88.0	78.9
Regular:							
Second wave-----	240	92.5	89.2	84.2	90.8	90.8	82.5
Third wave-----	251	88.0	86.9	80.1	88.4	86.1	76.5
<u>Area</u>							
Six-county area-----	727	89.8	87.6	84.9	91.9	92.0	85.0
Rest of state-----	1,272	89.0	88.1	85.4	91.6	90.0	77.5
<u>Color of bride</u>							
White-----	1,077	92.5	89.7	89.4	94.7	93.9	86.5
Other-----	922	85.7	85.9	80.4	88.2	87.2	72.9
<u>Age of bride</u>							
Under 20 years-----	623	90.8	90.1	85.7	93.9	92.7	78.7
20-29 years-----	758	90.8	87.3	87.1	93.3	92.2	81.8
30-44 years-----	618	86.0	86.5	82.5	87.5	87.0	79.9
<u>Version of questionnaire</u>							
Basic-----	683	89.4	89.1	85.0	91.5	89.3	81.2
Family planning-----	648	89.4	86.1	85.5	90.8	90.9	80.4
Health care-----	668	89.5	88.5	85.2	92.8	92.2	79.0
<u>Education of bride¹</u>							
9 years or less-----	217	79.2	89.4	80.2	81.6	87.6	69.1
10-11 years-----	306	86.6	88.5	81.4	86.3	89.2	69.6
12 years-----	576	92.2	87.7	87.0	94.8	91.5	81.4
13 years or more-----	405	94.6	88.4	90.1	95.3	93.8	91.9

¹Based upon 1,504 brides because education was not available 495 vital records.

Table 12. Percent of selected items completed on family planning and health care questionnaires: North Carolina Marriage Survey, 1968-69

Version of questionnaire and question	Number of respondents for whom question applicable	Percent completed
<u>Family planning</u>		
Has the bride ever thought about number of children she would like to have?-----	648	83.8
Number of children desired by:		
Bride-----	462	98.9
Groom-----	462	88.5
Number of children bride actually expects-----	648	80.7
Does the bride think she can have children if none expected?-----	113	96.5
Is the bride pregnant?-----	589	93.9
Year next child expected if bride not pregnant and thinks she can have children-----	408	76.5
Has bride or groom ever used methods to keep from having children?-----	648	91.0
Specific methods of contraception used-----	358	100.0
Is future contraception by bride or groom anticipated if neither has used it?-----	230	70.4
<u>Health care</u>		
Is the bride now expecting a baby?-----	668	98.7
Has the bride had a miscarriage since the present marriage?--	668	96.1
Has the bride been in the hospital overnight since the present marriage?-----	668	97.2
Do the bride and groom have insurance for payment of hospital bills-----	668	97.5
Does any available insurance for hospital bills provide for costs of care for delivery of a baby?-----	462	94.8
Do the bride and groom have insurance to pay for bills of physicians?-----	668	94.8
Does any available insurance for bills of physicians provide for expenses of delivering a baby?-----	400	96.5

Table 13. Percent of agreement of information obtained for selected items on all mail questionnaires with corresponding data on the vital record and the interview questionnaire: North Carolina Marriage Survey, 1968-69

Item	Mail survey and vital record		Mail survey and interview	
	Total, item reported on both sources	Percent agreement	Total, item reported on both sources	Percent agreement
Previous marital status:				
Bride-----	1,946	98.4	184	98.9
Groom-----	1,923	97.8	184	98.9
Number of times married:				
Bride-----	1,934	97.3	181	98.9
Groom-----	1,912	96.2	182	96.7
How first marriage ended (for previously married):				
Bride-----	666	98.0	64	96.9
Groom-----	392	96.7	41	100.0
State of birth:				
Bride-----	1,984	95.0	181	98.9
Groom-----	1,880	90.1	177	96.5
State of residence before marriage:				
Bride-----	1,984	95.0	186	98.9
Groom-----	1,880	90.1	172	96.5
Year of birth of bride-----	1,826	95.7	166	97.6
Education of bride ¹ -----	1,495	72.0	185	77.8
Income: ¹				
Bride-----	...	...	173	69.4
Groom-----	...	...	168	60.1
Year of birth of child delivered since marriage ¹-----	...	...	180	91.1

¹Not adjusted for time delay between mail survey and interview.

APPENDIX I

FORMS USED IN THE STUDY

LICENSE AND CERTIFICATE OF MARRIAGE — 1968

State of North Carolina

	COUNTY	
GROOM—NAME FIRST MIDDLE LAST		
1. RESIDENCE—STATE COUNTY CITY, TOWN, OR LOCATION INSIDE CITY LIMITS (Specify Yes Or No)		
2a. STREET AND NUMBER 2b. 2c. DATE OF BIRTH (Month, Day, Year) 2d. AGE		
3. STATE OF BIRTH (If Not In U.S.A., Name Country) 4a. 4b. MOTHER—MAIDEN NAME STATE OF BIRTH (If Not In U.S.A., Name Country)		
5a. RACE—GROOM NUMBER OF THIS MARRIAGE FIRST, SECOND, ETC. (SPECIFY) 5b. IF PREVIOUSLY MARRIED 5c. LAST MARRIAGE ENDED BY Death, Divorce, or Annulment (Specify) 5d. DATE MONTH YEAR 5e. EDUCATION—SPECIFY HIGHEST GRADE COMPLETED 5f. ELEMENTARY 5g. HIGH SCHOOL 5h. COLLEGE		
7. BRIDE—NAME FIRST MIDDLE LAST MAIDEN NAME (If Different)		
11a. RESIDENCE—STATE COUNTY CITY, TOWN, OR LOCATION INSIDE CITY LIMITS (Specify Yes or No)		
12a. STREET AND NUMBER 12b. 12c. DATE OF BIRTH (Month, Day, Year) 12d. AGE		
13. STATE OF BIRTH (If Not In U.S.A., Name Country) 14a. 14b. MOTHER—MAIDEN NAME STATE OF BIRTH (If Not In U.S.A., Name Country)		
15a. RACE—BRIDE NUMBER OF THIS MARRIAGE FIRST, SECOND, ETC. (SPECIFY) 15b. IF PREVIOUSLY MARRIED 15c. LAST MARRIAGE ENDED BY Death, Divorce, or Annulment (Specify) 15d. DATE MONTH YEAR 15e. EDUCATION—SPECIFY HIGHEST GRADE COMPLETED 15f. ELEMENTARY 15g. HIGH SCHOOL 15h. COLLEGE		
17. GROOM—PARENT'S ADDRESS		19. BRIDE—PARENT'S ADDRESS
21.		22.

To any ordained minister of any religious denomination, minister authorized by his church, or any Justice of the Peace or Magistrate, you are hereby authorized, at any time within 60 days from the date hereof, to celebrate the proposed marriage at any place within the said county.

	REGISTER OF DEEDS	(DEPUTY/ASSISTANT)
DATE ISSUED MONTH DAY YEAR		
I CERTIFY THAT THE ABOVE NAMED PERSONS WERE MARRIED ON:		
15a. OFFICIAL—SIGNATURE		15b. PLACE OF MARRIAGE—COUNTY
15d. WITNESS—SIGNATURE		15c. STATE
16a.		15e. DATE SIGNED (MONTH, DAY, YEAR)
		15f. OFFICIAL—Religious or Civil (Specify)
		16b. WITNESS—SIGNATURE

The minister or other person celebrating this marriage is required within 10 days to fill out and sign both copies of this Certificate of Marriage, and return them to the Register of Deeds who issued the license. Failure to do so constitutes a misdemeanor and also subjects person celebrating the marriage to a forfeiture of \$200.00 to anyone who sues for the same.

RETURNED TO REGISTER OF DEEDS:

DATE

REGISTER OF DEEDS/DEPUTY OR ASSISTANT

LICENSE AND CERTIFICATE OF MARRIAGE — 1969

State of North Carolina

LICENSE NUMBER _____		COUNTY _____									
GROOM-NAME		FIRST		MIDDLE		LAST					
GROOM	1. RESIDENCE-STATE		2b. COUNTY		2c. CITY TOWN, OR LOCATION		2d. INSIDE CITY LIMITS (Specify Yes Or No)				
	2e. STREET AND NUMBER			3. BIRTHPLACE (COUNTY & STATE)		4a. DATE OF BIRTH (Month, Day, Year)		4b. AGE			
	5a. FATHER-NAME			5b. STATE OF BIRTH		5c. ADDRESS (If Living)					
	6a. MOTHER-MAIDEN NAME			6b. STATE OF BIRTH		6c. ADDRESS (If Living)					
	7. RACE-GROOM		8. NUMBER OF THIS MARRIAGE FIRST, SECOND, ETC. (SPECIFY)		9a. IF PREVIOUSLY MARRIED LAST MARRIAGE ENDED BY Death, Divorce, Or Annulment (Specify)		9b. DATE MONTH YEAR		10. EDUCATION-SPECIFY HIGHEST GRADE COMPLETED ELEMENTARY HIGH SCHOOL COLLEGE (0, 1, 2, 3, 4, . . . or 8) (1, 2, 3, or 4) (1, 2, 3, 4, or 5)		
	11a. BRIDE-NAME		11b. FIRST		11c. MIDDLE		11d. LAST		11e. MAIDEN SURNAME (If Different)		
	BRIDE		12a. RESIDENCE-STATE		12b. COUNTY		12c. CITY TOWN, OR LOCATION		12d. INSIDE CITY LIMITS (Specify Yes Or No)		
12e. STREET AND NUMBER			13. BIRTHPLACE (COUNTY & STATE)		14a. DATE OF BIRTH (Month, Day, Year)		14b. AGE				
15a. FATHER-NAME			15b. STATE OF BIRTH		15c. ADDRESS (If Living)						
16a. MOTHER-MAIDEN NAME			16b. STATE OF BIRTH		16c. ADDRESS (If Living)						
17. RACE-BRIDE			18. NUMBER OF THIS MARRIAGE FIRST, SECOND, ETC. (SPECIFY)		19a. IF PREVIOUSLY MARRIED LAST MARRIAGE ENDED BY Death, Divorce, Or Annulment (Specify)		19b. DATE MONTH YEAR		20. EDUCATION-SPECIFY HIGHEST GRADE COMPLETED ELEMENTARY HIGH SCHOOL COLLEGE (0, 1, 2, 3, 4, . . . or 8) (1, 2, 3, or 4) (1, 2, 3, 4, or 5)		

DATE ISSUED _____ REGISTER OF DEEDS _____ (DEPUTY/ASSISTANT)

To any ordained minister of any religious denomination, minister authorized by his church, or any Justice of the Peace or Magistrate, you are hereby authorized, at any time within 60 days from the date hereof, to celebrate the proposed marriage at any place within the above named county.

OFFICIANT	I CERTIFY THAT THE ABOVE NAMED PERSONS WERE MARRIED ON:			PLACE OF MARRIAGE-CITY, TOWN, OR TOWNSHIP, COUNTY	
	21a. OFFICIANT-SIGNATURE	MONTH	DAY	YEAR	21b.
WITNESSES	21c. SIGNATURE OF WITNESS		21d. TITLE		21e. ADDRESS
	22a. NAME OF WITNESS (Please Print)		23a. SIGNATURE OF WITNESS		23b. NAME OF WITNESS (Please Print)
	22b. ADDRESS		23b. ADDRESS		23c. ADDRESS
	22c.		23c.		

The minister or other person celebrating this marriage is required within 10 days to fill out and sign both copies of this Certificate of Marriage, and return them to the Register of Deeds who issued the license. Failure to do so subjects person celebrating the marriage to a forfeiture of \$200.00 to anyone who sues for the same.

DATE RETURNED TO REGISTER OF DEEDS: _____

RECEIVED BY: _____

FORM VS-80
REV. 1/1/69

COVER LETTER FOR BASIC QUESTIONNAIRE
(TEXT MODIFIED SLIGHTLY FOR OTHER VERSIONS)



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

NATIONAL CENTER FOR
HEALTH STATISTICS

This questionnaire is being sent out by the University of North Carolina to help the U. S. Public Health Service gather certain new facts about couples recently married in North Carolina. The survey has been approved by the Director of the North Carolina State Board of Health and is paid for by the U. S. Public Health Service.

Your name was selected from the marriage certificates recently filed in North Carolina in such a way that answers from a relatively few recent brides would give an accurate cross-section for the whole State. But since only one out of every 10 brides is chosen, it is especially important that we get a reply from each particular person who received a questionnaire.

Some of the questions we are asking are quite personal and your reply to these or any of the questions is entirely voluntary. However, we would like to point out two things. First, the replies will be used only for statistics, i.e. absolutely no use will be made of your reply except to put it together with other replies. Second, the information is really very badly needed and the only person who can give it to us is you. Some of the purposes for which it is to be used are listed below.

1. Learning where and with whom people live after they get married, a matter of interest in planning schools, housing, highways, and health and recreational facilities.
2. Learning about the background of the married couples, including their ages, education, and religious preferences, in order to plan better health and community programs.

Let me repeat that all information you provide about yourself, your husband, or any member of your family will be kept completely confidential, as we are bound to do by official regulations of the U. S. Public Health Service. It will not be disclosed to any person or other government agency except for those working on the study, and will be used by them for statistical purposes only.

Your cooperation in providing the U. S. Public Health Service with the requested information and in avoiding further and costlier follow-up procedures is greatly appreciated. By filling out and returning this questionnaire in the enclosed envelope you will be helping greatly to make this survey a success, and your government will thereby be better able to serve your needs and those of your family.

Sincerely yours,

Theodore D. Woolsey
Theodore D. Woolsey
Director

File Number _____

A-I

PART II. INFORMATION ABOUT YOUR HUSBAND

In this part, we are interested in obtaining information about your husband such as his birthplace, employment, and marital history. If you are now separated from your husband, you may skip this part.

1. Where was your husband born?

City	County	State or Foreign Country
------	--------	--------------------------

2. How many brothers and sisters does your husband have? (include those who are now dead)

Number _____

3. What is the highest grade (or year) of school that your husband has finished?

(Circle highest grade COMPLETED)

None _____

Public or other regular school	1	2	3	4	5	6
College or University	1	2	3	4	5+	

Other (Specify) _____

4. What is your husband's religion?

Protestant (Specify denomination) _____

Roman Catholic

Jewish

None

Other religion (Specify): _____

5. a. Has your husband ever been married before?

Yes No → *Please skip to question 6 above*

b. How many times was your husband married before this present marriage?

1 2 3 or more

c. What was the date of your husband's first marriage?

Year

d. What was the date that your husband's first marriage ended?

Year

e. Did his first marriage end by death, divorce or annulment?

Death Divorce or annulment

f. How many children did your husband have by that first marriage?

Number _____

Go to question 6

6. What was your husband's usual activity just before your present marriage?

Working

Attending School

Armed Forces (Army, Navy, etc.)

Other (Specify) _____

7. What is your husband's usual activity since marriage?

Working

Attending School

Armed Forces (Army, Navy, etc.)

Other (Specify) _____

8. a. Did your husband work at any time last week?

Yes → b. Please check how many hours he worked:

35 or more

15 to 34 hours

less than 15 hours

No → c. If your husband did not work last week, does he have a job?

Yes No

d. If he did not work last week, was he looking for a job or on lay off?

Yes No

9. What is your husband's present annual total income?

<input type="checkbox"/> None	<input type="checkbox"/> \$5,000 - \$6,999
<input type="checkbox"/> Under \$1,000	<input type="checkbox"/> \$7,000 - \$8,999
<input type="checkbox"/> \$1,000 - \$2,999	<input type="checkbox"/> \$9,000 or more
<input type="checkbox"/> \$3,000 - \$4,999	

10. From which of the following sources does your husband receive income?

Wages, Salary (pay check)

Parental help

Other (Specify) _____

PART III. MIGRATION

In this section we would like to obtain information about the places where you and your husband lived before you got married and since you have been married.

YOURSELF	YOUR HUSBAND
<p>1. a. Just <i>before</i> you were married, where did you live? (home residence not P.O. Box)</p> <p style="text-align:center;">_____</p> <p style="text-align:center;">Street</p> <p style="text-align:center;">_____</p> <p style="text-align:center;">City County State or Foreign Country</p> <p>b. How long did you live there? _____</p> <p style="text-align:center;">Months Years</p> <p>c. With whom did you live?</p> <p><input type="checkbox"/> Alone <input type="checkbox"/> With other relative(s)</p> <p><input type="checkbox"/> With your parent(s) <input type="checkbox"/> With other person(s)</p> <p><input type="checkbox"/> With your children <i>Go to question 2</i></p>	<p>2. a. Just <i>before</i> your husband was married, where did he live? (home residence not P.O. Box)</p> <p style="text-align:center;">_____</p> <p style="text-align:center;">Street</p> <p style="text-align:center;">_____</p> <p style="text-align:center;">City County State or Foreign Country</p> <p>b. How long did he live there? _____</p> <p style="text-align:center;">Months Years</p> <p>c. With whom did he live?</p> <p><input type="checkbox"/> Alone <input type="checkbox"/> With other relative(s)</p> <p><input type="checkbox"/> With his parent(s) <input type="checkbox"/> With other person(s)</p> <p><input type="checkbox"/> With his children</p>

3. Just *after* your marriage, with whom did you and your husband live?

<input type="checkbox"/> With your parent(s)	<input type="checkbox"/> With other relative(s)
<input type="checkbox"/> With his parent(s)	<input type="checkbox"/> Alone, just the two of you
<input type="checkbox"/> With your or your husband's children	<input type="checkbox"/> Other (Specify) _____

4. Please list below each of the addresses at which you and your husband have lived *since* your marriage.

	<u>Street' or RFD</u>	<u>City and County</u>	<u>State or Foreign Country</u>
Present address	_____	_____	_____
(If moved since marriage) Address before that	_____	_____	_____
Address before that	_____	_____	_____
Address before that	_____	_____	_____
Address before that	_____	_____	_____

PART IV. INFORMATION ABOUT YOUR HOUSEHOLD

In this part, information is asked about all the persons currently living in your household.

1. List below everyone who is living in your household at the present time. In addition to yourself, be sure to list your husband (if he lives at home), as well as your children (if any), other relatives and nonrelatives living with you. Do not include persons visiting you temporarily.

For each person, provide the information requested below:

<u>Name</u>	<u>Relationship to Yourself</u>	<u>Date of Birth</u>	<u>Marital Status</u>
Enter your name on the first line; enter the names of all other persons who live with you on the following lines: (First name)(Middle initial)(Last name)	Relationship to you (husband, daughter, son, father-in-law, nephew, stepson, adopted daughter, lodger, etc.)	(Month-Day-Year)	Specify one of the following: Single (never married), Married, Separated, Widowed, Divorced, or Annulled
	Yourself		

(If more space is needed, please continue on the back of pamphlet)

<p>2. Who is the head of your household?</p> <p><input type="checkbox"/> Your husband</p> <p><input type="checkbox"/> Another person → <table border="1" style="display: inline-table; width: 150px; height: 20px; vertical-align: middle;"><tr><td align="center">Name of head</td></tr></table></p>	Name of head	<p>3. Is your husband presently serving in the Armed Forces on active duty?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
Name of head		

4. a. Have you ever had any babies or children in addition to those listed above?

Yes → b. Please give the following information for each child who is not living with you now.

No → Go to the next page

<u>Name of child</u> (first name) (last name)	<u>Sex</u>	<u>Month and Year</u> <u>of birth</u>	<u>Is the child still living?</u>
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No

(If more space is needed, please continue on back of pamphlet)

PART V PERSON COMPLETING THIS FORM

FULL NAME _____

ADDRESS _____

Street or RFD

City

State or Foreign Country

TELEPHONE NUMBER _____ DATE OF COMPLETION _____

NOTES AND COMMENTS

HEALTH CARE QUESTIONNAIRE ONLY

PART V. HEALTH CARE

In this section and the next section, we are particularly interested in finding out about any recent or future medical care for pregnancy.

1. Are you now expecting a baby?

- Yes No -> Skip to question 3

2. a. Have you ever received medical care during this pregnancy?

Yes/No branches leading to questions b-g about medical care received or planned, including provider types and timing.

3. a. Have you lost a baby because of a miscarriage since your present marriage?

- Yes No -> Go to question 4

b. If so, please give the number of months you had been pregnant for each miscarriage.

First Miscarriage Month of Pregnancy Second Miscarriage Month of Pregnancy

4. a. Have you been in the hospital overnight since you were married?

- Yes No -> Go to question 5

b. If so, what was wrong? (Briefly describe)

5. a. Do you and your husband have health insurance to pay for all or part of a hospital bill?

- Yes No -> Go to question 6

b. If yes, would this insurance pay for all or part of the cost of care for the delivery of a baby?

- Yes No

6. a. Do you and your husband have health insurance to pay for all or part of a doctor's bill?

- Yes No -> Go to next page

b. If yes, would this insurance pay for all or part of a doctor's bill for delivery of a baby?

- Yes No

PART VI. PERSON COMPLETING THIS FORM

FULL NAME _____

ADDRESS _____

Street or RFD

City

State or Foreign Country

TELEPHONE NUMBER _____ DATE OF COMPLETION _____

NOTES AND COMMENTS

FAMILY PLANNING QUESTIONNAIRE ONLY

PART V. FAMILY PLANNING

These questions relate to your plans for having children.

1. a. Have you ever thought about how many children you would like to have in the future?
 Yes → b. How many children would you like to have? _____
Number

c. How many children would your husband like to have? _____
Number

No → Go to question 2

2. a. How many children do you think you will actually have in the future? _____
Number

b. If NONE, do you think you are able to have children?
 Yes No → Skip to question 4

3. a. Are you pregnant now?
 Yes → b. When do you expect your baby? _____
Month Year

No → c. When do you think you will have a baby?
 1969
 1970
 1971
 1972 or later

4. a. Have you or your husband ever used any methods to keep you from having children?
 Yes → b. Please check each method you or your husband have used to keep you from having children. }
 No → c. Do you think that you or your husband will use some methods to keep you from having children?
 Yes → d. Please check each method you think you or your husband will use to keep you from having children. }
 No → Go to Part VI on next page

- Rhythm, safe period
- Rubber, condom, safe
- Diaphragm
- Jelly or cream
- Foam (Emko, Delfen foam, etc.)
- Douche
- Oral contraceptive (the pill, Enovid, Ovulin, etc.)
- Coil, loop, intrauterine device (IUD)
- Sterilization (tying tubes, etc.)
- Withdrawal
- Other _____
(Specify)

PART VI. PERSON COMPLETING THIS FORM

FULL NAME _____

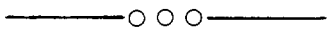
ADDRESS _____
Street or RFD

_____ City _____

_____ State or Foreign Country _____

TELEPHONE NUMBER _____ DATE OF COMPLETION _____

NOTES AND COMMENTS



APPENDIX II

SAMPLING PROCEDURES, METHODS OF ESTIMATION, AND STANDARD ERRORS

Sampling Procedures

About 97 percent of marriage licenses issued in North Carolina are filed in the State Board of Health within 10 days after the end of the calendar month in which the marriage occurred. Two months after the month of marriage the records have been processed and punched cards are available for use in sampling as well as other processing of marriage data.

Sampling for the mail survey was done separately for each principal month of marriage, i.e., using all licenses filed for a given month including roughly 3 percent which had occurred in an earlier month but were filed with the Register of Deeds during that calendar month. Table I shows the study population and the combined sample for the whole study period. In this appendix the details of the sampling procedure and the way the combined sample was obtained will be illustrated using data for the principal month of June 1968 marriage records.

For each principal month of marriage the tabulating unit of the North Carolina State Board of Health

sorted the punched cards into the strata shown in table I, counted them, and prepared a listing in State file number sequence within each stratum. The number of marriages required by the sample design^b was selected at random within each stratum. This number was either six, 12, or 18 marriages for the six-county area (Alamance, Durham, Guilford, Orange, Wake, and Forsyth Counties) or nine, 18, or 27 marriages for the rest of the State, depending on whether one, two, or three time duration subsamples were to be taken from that month's records. Table II shows how time duration subsamples were chosen from each principal month of marriage, e.g., February, March, December, and January each contributed only one subsample, while April, May, October, and November contributed two subsamples each and the remainder, June, July, August, and September, contributed three subsamples each.

^bNote that the required numbers for women 45 years of age and over were a third of those for the other ages because they were sent only one of the three questionnaires.

Table I. Stratification of brides by previous marital status, race, and age of bride, and area: North Carolina Study Population, June 1968

Age of bride	Six-county area				Rest of State			
	Never married		Previously married		Never married		Previously married	
	White	Other	White	Other	White	Other	White	Other
Total-----	902	196	136	30	3,870	592	599	65
Under 20 years-----	391	65	7	1	2,156	265	26	1
20-29 years-----	497	123	59	14	1,657	292	235	16
30-44 years-----	13	7	44	18	44	31	192	26
45 years and over-----	1	1	26	7	13	4	146	23

¹Because of small frequencies for brides other than white, previously married brides under 20 years of age and in age groups under 30 years of age were combined to form one stratum for sampling.

Table II. Time duration in months since marriage for subsamples by principal month of marriage and month of mailing: North Carolina Marriage Survey, 1968-69

Principal month of marriage	Month of mailing					
	1968		1969			
	November	December	January	February	March	April
<u>1968</u>	Number of months					
February-----	9	-	-	-	-	-
March-----	-	9	-	-	-	-
April-----	7	-	9	-	-	-
May-----	-	7	-	9	-	-
June-----	5	-	7	-	9	-
July-----	-	5	-	7	-	9
August-----	3	-	5	-	7	-
September-----	-	3	-	5	-	7
October-----	-	-	3	-	5	-
November-----	-	-	-	3	-	5
December-----	-	-	-	-	3	-
<u>1969</u>						
January-----	-	-	-	-	-	3

Table III. Number of sample brides by time duration since marriage, month of mailing, area, and marital status and race of bride: North Carolina Marriage Survey, June 1968-69

Time duration since marriage, month of mailing, and age at marriage of bride	Six-county area				Rest of State			
	Never married		Previously married		Never married		Previously married	
	White	Other	White	Other	White	Other	White	Other
<u>5 MONTHS SINCE MARRIAGE</u>								
<u>November 1968 mailing</u>								
Under 20 years-----	6	6	3	1	9	9	9	15
20-29 years-----	6	6	6	6	9	9	9	8
30-44 years-----	4	2	6	6	9	9	9	3
45 years and over-----	1	-	2	2	3	2	3	
<u>7 MONTHS SINCE MARRIAGE</u>								
<u>January 1969 mailing</u>								
Under 20 years-----	6	6	2	12	9	9	8	15
20-29 years-----	6	6	6	6	9	9	9	9
30-44 years-----	5	2	6	6	9	9	9	3
45 years and over-----	-	1	2	2	3	1	3	
<u>9 MONTHS SINCE MARRIAGE</u>								
<u>March 1969 mailing</u>								
Under 20 years-----	6	6	2	12	9	9	9	16
20-29 years-----	6	6	6	6	9	9	9	9
30-44 years-----	4	3	6	6	9	9	9	3
45 years and over-----	-	-	2	2	3	1	3	

¹Because of small frequencies for brides other than white, previously married brides under 20 years of age and in age groups under 30 years of age were combined to form one stratum for sampling.

Three time duration subsamples (5,7, and 9 months in table II) were chosen from June 1968 marriages and were included in November, January, and March mailings, respectively. These are shown for illustration in table III. For the full strata 18 or 27 marriages were selected from each stratum of table I and were randomly allocated to the three time duration subsamples as shown in table III.

Thus month of marriage is partially confounded with time duration since marriage and winter months were overrepresented at the extremes of 3 and 9 months' duration while spring and summer were overrepresented at 5 and 7 months' duration.

Strata which were not full were sampled at the rate of 100 percent.^c For sampling purposes previously married brides other than white who were under 30 years of age were considered as one stratum although for analytical purposes they were subdivided.

Within each sample stratum of table III, brides under age 45 were subdivided into three subgroups, each to be sent one of the three versions of the questionnaire. Brides over 45 were sent only the basic questionnaire. On the first mailing every other questionnaire was sent to the bride at her address and the next was sent to the bride at the groom's address. Thus when all 6 months of mailing were combined as indicated in table II, the "full" strata had 36 and 54 marriages for the six-county area and rest of the State, respectively, divided uniformly among the three questionnaires.

Two weeks after the first mail query, which was always sent by regular mail, nonrespondents were randomly subdivided into two subsamples for testing the effect of certified versus regular mail on follow-up response. For the second mailing one subsample was sent certified mail and the other regular mail. Two weeks later a third questionnaire was sent by regular mail to all remaining nonrespondents regardless of what type mail had been used for the second mailing. This feature of the design made analysis of differences between certified and regular mail response more complicated because of the built-in correlations between first wave and later results.

Multinomial Model for Stratum Response Rates and Variances

Type of response, timing of response, and type of second mail query were combined and condensed to create six multinomial "response categories" for classifying sampled brides.

^cNote that month to month variations in the size of some strata may have resulted in less than 100 percent in the combined sample because no more than the required number were taken when strata were full.

All told, there were 24 area by marital status by race by age strata under age 45 years. Elimination of previously married brides other than white under age 20 years reduced this to 22 strata. Within each of these 22 strata there were 12 questionnaires by time duration strata, yielding a total of 264. Within each of the 264 sample strata the brides were classified as follows:

Response category, time and type of response, and type of mail for second query	Stratum	
	Frequency	Proportion
Total, all waves--	1n_i	$\hat{p}_i = 1$
FIRST WAVE (15 days or less)		
No second mailing		
1---Respondent-----	n_{i1}	\hat{p}_{i1}
2---Other-----	n_{i2}	\hat{p}_{i2}
SECOND OR THIRD WAVE (16 days or more)		
Certified mailing		
3---Respondent-----	n_{i3}	\hat{p}_{i3}
4---Other-----	n_{i4}	\hat{p}_{i4}
Regular mailing		
5---Respondent-----	n_{i5}	\hat{p}_{i5}
6---Other-----	n_{i6}	\hat{p}_{i6}

NOTE: n_i for each full stratum was 12 and 18 for the six-county area and for the rest of the State respectively.

Where n_{ij} refers to the number of brides in the j th response category of the i th stratum ($i = 1, 2, \dots, 264$). $\sum_{j=1}^6 n_{ij} = n_i$, the sample size for the i th stratum. $\hat{p}_{ij} = \frac{n_{ij}}{n_i}$.

Within each stratum, multinomial sample proportions and their covariance matrix were used to estimate first wave and all wave cumulative response rates separately for certified and regular mail and for the difference between regular and certified mail. Cumulative response rates can be expressed as follows:

Through first wave (I): $\hat{r}_{i1} = \hat{p}_{i1}$

Cumulative response through third wave (III):

Certified: $\hat{r}_{ci} = \hat{p}_{i1} + w_{ci} (\hat{p}_{i3})$

Regular: $\hat{r}_{ri} = \hat{p}_{i1} + w_{ri} (\hat{p}_{i5})$

Where:

w_{ci} = reciprocal of the proportion sent certified mail

$$= \frac{6}{\sum_{j=3}^6 \hat{p}_{ij}} \frac{4}{\sum_{j=3}^4 \hat{p}_{ij}}$$

and w_{ri} = reciprocal of the

proportion sent regular mail = $\frac{6}{\sum_{j=3}^6 \hat{p}_{ij}} \frac{6}{\sum_{j=5}^6 \hat{p}_{ij}}$

Under the simplifying assumption that the weights, w_{ci} and w_{ri} , are nonstochastic, estimates of variances (ignoring finite population corrections) were made for each stratum of table I as follows.

$$\text{var} (\hat{r}_{ci}) = \frac{1}{n_i} \left[\hat{p}_{i1} (1 - \hat{p}_{i1}) \right],$$

$$\text{var} (\hat{r}_{ci}) = \frac{1}{n_i} \left[\hat{p}_{i1} (1 - \hat{p}_{i1}) + 2w_{ci} (-\hat{p}_{i1} \hat{p}_{i3}) + w_{ci}^2 (\hat{p}_{i3}) (1 - \hat{p}_{i3}) \right]$$

$$\text{var} (\hat{r}_{ri}) = \frac{1}{n_i} \left[\hat{p}_{i1} (1 - \hat{p}_{i1}) + 2w_{ri} (-\hat{p}_{i1} \hat{p}_{i5}) + w_{ri}^2 \hat{p}_{i5} (1 - \hat{p}_{i5}) \right]$$

And since

$$\hat{r}_{ci} - \hat{r}_{ri} = w_{ci} \hat{p}_{i3} - w_{ri} \hat{p}_{i5},$$

$$\text{var} (\hat{r}_{ci} - \hat{r}_{ri}) = \frac{1}{n_i} \left[(w_{ci})^2 (\hat{p}_{i3}) (1 - \hat{p}_{i3}) - 2w_{ci} w_{ri} (-\hat{p}_{i3} \hat{p}_{i5}) + (w_{ri})^2 (\hat{p}_{i5}) (1 - \hat{p}_{i5}) \right]$$

Estimates from "full" sample strata, i.e. $n_i = 12$ or 18 for six-county area or rest of State, respectively, were tabulated separately by area and type of second

mail and for the difference between certified and regular mail. There were 73 and 101 full strata for six-county area and rest of State, respectively. Averages are shown in table IV.

Thus rather than using individual variances for each stratum, estimated average variances of rates within stratum were used as follows:

$$\text{var} (\hat{r}_{ci}) = (0.1751)/n_i,$$

$$\text{var} (\hat{r}_{ri}) = \text{var} (\hat{r}_{ci}) = (0.5329)/n_i,$$

$$\text{var} (\hat{r}_{ci} - \hat{r}_{ri}) = (1.2276)/n_i.$$

Limitations of Variance Estimates

Properties of the asymptotic estimates $\text{var} (\hat{r})$, are unknown. Assuming that the weights w_c and w_r (the inverses of sampling fractions for the second mailing) were nonstochastic may have caused underestimation of sampling variances. Use of the arithmetic mean of all sample variances caused underestimation. Ignoring finite population correction factors causes overestimation of sampling variances. The relative extent to which these factors influence results of this study is not known. However, the estimates are assumed to be accurate enough for the purposes of this pilot study.

Weighted State Estimates of Response Rates and Standard Errors

Because of the small frequencies in each stratum it was not possible to interpret the response rates directly. Therefore small stratum estimates were combined to obtain estimates for major variables using the

Table IV. Average variance of cumulative response rates by mailing and area: North Carolina Marriage Survey, 1968-69

Area and number of strata	First mailing	Type of second mail (all waves)		
		Certified	Regular	Difference
	$n_i [\overline{\text{var} (\hat{r}_{ci})}]$	$n_i [\overline{\text{var} (\hat{r}_{ci})}]$	$n_i [\overline{\text{var} (\hat{r}_{ri})}]$	$n_i [\overline{\text{var} (\hat{r}_{ci} - \hat{r}_{ri})}]$
Six-county area: (73 strata, $n_i = 12$) -----	0.1851	0.5147	0.5267	1.2263
Rest of State: (101 strata, $n_i = 18$) -----	0.1678	0.5411	0.5112	1.2285
Weighted mean variance-----	0.1751	0.5329	0.5177 0.5301	1.2276

Table V. Approximate standard error of unbiased rates of tables 4-8: North Carolina Marriage Survey, 1968-69

Table and variable	First wave	All waves	
		Certified or regular	Difference certified-regular
<u>Table 4</u>			
Total-----	1.3	2.2	3.3
Six-county area-----	2.1	3.4	5.9
Rest of State-----	1.8	2.9	5.4
Marital status of bride-----	1.9	3.1	5.6
Color of bride-----	1.9	3.1	5.6
Age of bride-----	2.3	4.0	6.0
Version of questionnaire-----	2.2	3.7	5.8
Time duration since marriage-----	2.5	4.3	6.7
<u>Table 5</u>			
Version of questionnaire x time duration since marriage-----	4.4	7.5	11.5
<u>Table 6</u>			
Version of questionnaire x color of bride x previous marital status of bride-----	3.0	5.0	7.5
<u>Table 7</u>			
Version of questionnaire x color of bride x age of bride previous marital status of bride-----	4.7	7.8	12.0
<u>Table 8</u>			
Color of bride x age of bride x previous marital status of bride-----	2.9	4.6	7.1
Color of bride x previous marital status of bride-----	1.6	7.9	5.6

corresponding proportion of brides in the study population (table 1) as weights. Equal weights were used in averaging over questionnaires or over durations (one-third for questionnaires and one-fourth for duration).^d In general weighted estimates of a response rate were expressed as:

$\hat{R} = \sum_{i=1}^k \ell_i \hat{r}_i$ where for convenience the wave subscripts *l*, *c*, and *r* have been omitted. And the ℓ_i are weights based upon population proportions, questionnaires, and/or time durations as appropriate.

Approximate variances were calculated as follows:

$$\text{var}(\hat{R}) = \sum_{i=1}^k \ell_i^2 \text{var}(\hat{r}_i).$$

^dThe sample design gave essentially equal weight to each questionnaire. However, time durations of 5 and 7 months were underrepresented and hence equal weights yield unbiased State estimates.

Standard errors for rates in detailed tables 4-8 are shown in table V above.

APPENDIX III

DEFINITIONS OF CERTAIN TERMS USED IN THIS REPORT

Principal month of marriage (occurrence).—The monthly period in which the vital record was filed with the State Board of Health.

Area of occurrence.—The two study groups of counties within North Carolina in which marriages took place; the six-county area consisted of central counties of Alamance, Durham, Forsyth, Guilford, Orange, and Wake, and the rest of the State consisted of the other 94 counties in North Carolina.

Time duration since marriage.—The average elapsed time in months between the principal month of marriage and the month of mailing the initial survey questionnaire.

Wave (time) of response.—First wave respondents returned a completed questionnaire within 15 days from the day of the initial mailing; second wave respondents returned a completed questionnaire within 15 to 28 days of the first mailing; and third wave respondents returned a completed questionnaire within 29 to 100 days of the initial mailing.

Certified mail.—The type of additional postage (costing \$.30) which was used for one-half of the first follow-ups (second wave). A receipt was signed by the addressee or someone at that address when the questionnaire was delivered; otherwise, the addressee was notified to pick it up at the local Post Office. The Post Office returned letters which were not picked up approximately 2 weeks after the initial notice.

Post Office return.—A questionnaire which was returned by the Post Office stamped undeliverable, no forwarding address, no such addressee, no such address, unclaimed, or refused.

Adequate response.—A returned questionnaire in which the information on all priority items was reported.

Priority items common to all three versions of the questionnaire included State of birth, education, usual activity before and since marriage, employment, income, sources of income, residence before marriage, household structure after marriage, and date of birth for both bride and groom. Hospitalization coverage for the health care version was the only other priority item.

Requery.—Special forms mailed to respondents who did not return an adequate response. Those items which were not completed properly were checked and the respondent was asked to complete and return the form.

Color.—The division of the population into two major groups on the basis of information reported on the marriage certificate. Races other than white include persons of Negro, American Indian, and Asian Indian races.

Age.—Age at marriage based on date of birth.

Previous marital status.—The marital status of persons prior to the current marriage (never married or previously married) as reported on the marriage license.

Income.—The present annual total income of the bride and the groom recorded separately.

Household structure.—The type of group of one or more related or unrelated persons who occupy the same dwelling unit. A household with no relatives other than head, spouse, and children is classified as nuclear. A household including parents, relatives, and other persons is defined as "extended."

Query.—The mailed questionnaires used in the survey.

Percent consistent.—Percent of consistent responses to an item common to two record sources for which information was provided on each record.



APPENDIX IV

ESTIMATED AMOUNT ADDED BY INTERVIEW FOLLOW-UP OF REFUSALS AND NONRESPONDENTS

Both respondents and nonrespondents were sampled for interview follow-up. Respondents were interviewed to test the consistency and the quality of data elicited in the mail survey and on the marriage record. Results for respondents were reported in the text and are not included here. This appendix is limited to estimating the increase in response which would result from interviewing samples of refusals and nonrespondents.

The number of cases on which the estimates are based is very limited, 41 refusals and 173 nonrespondents from the mail survey. These exclude those clas-

sified as sampled, i.e., not eligible because the most recent address, either on the refusal or on the marriage record, was outside the six-county area. These cases are shown in table VI along with the notation which will be used to explain the estimation procedure.

Because certified and regular mail categories were established only at the time of the second mailing, this sampling fraction as well as the interview rate must be taken into account in estimating the amount which would have been added if the mail sample had been carried out completely with either certified or regular mail.

Table VI. Distribution of mail survey sample by interview sampling and eligibility status and mail survey wave and response category: North Carolina Marriage Survey, 1968-69

Interview sampling and eligibility status	Total	Mail survey wave and response category								
		First wave			Second and third waves					
		Re-spond-ent	Re-fusal	Non-re-spond-ent	Certified mail			Regular mail		
					Re-spond-ent	Refusal	Non-re-spond-ent	Re-spond-ent	Refusal	Non-re-spond-ent
Total----	1,283	351	8	13	206	28	229	170	18	260
Not sampled----	711	205(n ₁)	1(n ₅)	8(n ₉)	113(n ₁₃)	3(n ₁₈)	138(n ₂₁)	85(n ₂₅)	1(n ₂₉)	157(n ₃₃)
Sampled: Not eli- gible-----	125	45(n ₂)	1(n ₆)	1(n ₁₀)	26(n ₁₄)	4(n ₁₈)	11(n ₂₂)	20(n ₂₆)	3(n ₃₀)	14(n ₃₄)
Eligible: Inter- viewed-----	289	79(n ₃)	2(n ₇)	2(n ₁₁)	54(n ₁₅)	6(n ₁₉)	36(n ₂₃)	54(n ₂₇)	2(n ₃₁)	54(n ₃₅)
Not inter- viewed-----	158	22(n ₄)	4(n ₈)	2(n ₁₂)	13(n ₁₆)	15(n ₂₀)	44(n ₂₄)	11(n ₂₈)	12(n ₃₂)	35(n ₃₆)

Within each of the 6 months of mailing interview subsamples were selected at random (and at different rates) from the three categories—respondent, refusal, and nonrespondent—without regard to the wave (or time) at which the result had been categorized. Sampled cases were then classified as eligible for interview if the address was in the six-county area. Eligible cases were then classified as interviewed or not interviewed depending on results. At that stage the results were tabulated in the detail shown in table VI for all cases.

Using the notation above the total number of cases in the six-county area = $\sum_{i=1}^{36} n_i = 1283$,

Total cases, all classes, in the first wave = $\sum_{i=1}^{12} n_i = 372$,

Total, all classes, second and third waves combined are:

for certified mail = $\sum_{i=13}^{24} n_i = 463$

for regular mail = $\sum_{i=25}^{36} n_i = 448$, etc.

It was assumed that interview rates among those not eligible would have been the same as among eligibles if they had been traced. Thus the amounts added by interview were estimated as follows:

$A_1 = \left(\frac{n_7}{n_7 + n_8} \right) \frac{7}{5} \sum n_i$
= amount added by interview of first wave refusals,

$A_2 = \left(\frac{n_{11}}{n_{11} + n_{12}} \right) \frac{12}{9} \sum n_i$
= amount added by interview of first wave nonrespondents

$A_3 = \left(\frac{n_{19}}{n_{19} + n_{20}} \right) \left(\frac{\sum_{i=19}^{20} n_i / \sum_{i=1}^{36} n_i}{1} \right) \left(\frac{\sum_{i=13}^{36} n_i / \sum_{i=13}^{24} n_i}{13} \right)$
= amount added by interviewing certified mail refusals,

$A_4 = \left(\frac{n_{23}}{n_{23} + n_{24}} \right) \left(\frac{\sum_{i=21}^{24} n_i / \sum_{i=1}^{36} n_i}{1} \right) \left(\frac{\sum_{i=13}^{36} n_i / \sum_{i=13}^{24} n_i}{13} \right)$
= amount added by interviewing certified mail nonrespondents,

$A_5 = \left(\frac{n_{31}}{n_{31} + n_{32}} \right) \left(\frac{\sum_{i=29}^{32} n_i / \sum_{i=1}^{36} n_i}{1} \right) \left(\frac{\sum_{i=13}^{36} n_i / \sum_{i=25}^{36} n_i}{13} \right)$
= amount added by interviewing regular mail refusals, and

$A_6 = \left(\frac{n_{35}}{n_{35} + n_{36}} \right) \left(\frac{\sum_{i=33}^{36} n_i / \sum_{i=1}^{36} n_i}{1} \right) \left(\frac{\sum_{i=13}^{36} n_i / \sum_{i=25}^{36} n_i}{13} \right)$

Estimates based upon the data in table VI, i.e., relative to the totals, are:

Amount added by interview of:	Percent
First wave refusals, A_1 -----	0.2
Certified mail refusals, A_3 -----	1.2
$A_1 + A_3$ -----	(1.4)
First wave nonrespondents, A_2 ----	0.5
Certified mail nonrespondents, A_4 -	15.8
$A_2 + A_4$ -----	(16.3)
First wave refusals, A_1 -----	0.2
Regular mail refusals, A_5 -----	0.4
$A_1 + A_5$ -----	(0.6)
First wave nonrespondents, A_2 ----	0.5
Regular mail nonrespondents, A_6 --	25.0
$A_2 + A_6$ -----	(25.5)

Thus the total amounts added by interview of refusals and nonrespondents are:

Certified mail: $A_1 + A_2 + A_3 + A_4 = 17.7$ percent, and

Regular mail: $A_1 + A_2 + A_5 + A_6 = 26.1$ percent

Similarly, estimates of amounts added by interview were made by race, age, and marital status. These are shown in table VII with weighted results from table 8.

It is clear that the largest estimates of amounts added by interview are for those groups making up the smallest fractions of the study population of brides. For example, never married white brides accounted for 70 percent of the marriages in the State. When weighted according to the proportions in the study pop-

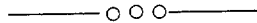
Table VII. Estimated amount added by interview of refusals and nonrespondents: North Carolina Marriage Survey, 1968-69

Previous marital status, color, and age of bride	Weighted percent mail response		Amount added by interview		Total	
	Certi- fied	Regular	Certi- fied	Regular	Certi- fied	Regular
<u>Never married</u>						
<u>White</u>						
Under 20 years-----	68.2	61.4	13.1	13.3	81.3	74.7
20-29 years-----	72.7	61.7	6.1	9.5	78.9	70.2
30-44 years-----	47.1	52.7	5.3	14.1	52.4	66.8
<u>Other</u>						
Under 20 years-----	72.7	67.9	20.4	19.0	93.1	86.9
20-29 years-----	67.8	64.1	3.7	-	81.5	64.1
30-44 years-----	58.9	45.5	24.2	46.8	83.1	92.3
<u>Previously married</u>						
<u>White</u>						
Under 20 years-----	54.2	50.6	6.6	37.6	60.8	88.2
20-29 years-----	50.1	39.7	9.9	11.6	60.0	51.3
30-44 years-----	39.5	36.8	25.7	32.7	65.2	69.5
<u>Other</u>						
Under 20 years-----	*	*	*	*	*	*
20-29 years-----	48.2	49.1	37.0	23.7	85.2	72.8
30-44 years-----	61.0	41.4	14.3	37.9	75.3	79.3

ulation the total amounts added in a random sample would be:

Certified: 11.0 percent
Regular: 13.4 percent

Even so it would appear that combined mail-interview response rates of 80 percent or higher are possible except for white brides who were previously married and/or over 30 years of age.



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