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I. Introduction

National statistics derived from marriage records are more limited than those based on birth and death records and this study is being done to test the feasibility of followback survey methodology for expanding national marriage statistics.

The North Carolina study is specifically designed to investigate the completeness and quality of information collected in followback surveys linked to marriage records. Three types of measurement error will be studied:

- Response rates, including response after three consecutive mail questionnaires and personal interviews are attempted with nonrespondents to the mail survey.
- Adequacy of response based on the completeness of information reported on the self-enumeration mail questionnaire, and
- Accuracy and consistency of response based on comparison of information reported in personal interview for a subsample of respondents to the mail survey.

The population to be studied consists of all brides whose marriage license is filed with the North Carolina State Board of Health during the calendar year 1968 and the first four months of 1969. The study is being done in two phases (1) the pretest involving 192 brides and (2) the feasibility study which will include about 4300 brides.

The pretest was started in March and completed in June 1968. It was designed to test the acceptance and understanding of the pretest mail questionnaires both by mail response as well as by follow-up interviews.

The main purpose of this paper is to give a brief case history of the pretest phase. Some of the results from the stratified sample of 192 brides will also be described. Subsequent sections are:

- II. Study Design
- III. Response Rates
- IV. Completeness and Quality of Responses
- V. Revised Questionnaires
- VI. Discussion.

Followback surveys linked to natality and mortality records have been undertaken since

1960 in a continuing program by the National Center for Health Statistics to expand and improve national vital statistics. Vital record files are the frames for these followback surveys and contacts for further information are sources whose identity and mailing address(es) are reported on the records. Contacting these sources by mail or combinations of mail plus telephone and/or personal interview have been successful in collecting additional data associated with recorded births and deaths, [1, 2, 3, 4, 5, 6]. In using marriage records as the base for followback surveys, the bride and/or groom will be the primary source of information. Conceivably other persons such as the issuing official, the officiant and if shown on the license, as in North Carolina, the parents of the bride or groom are potential secondary sources of data. Pratt[7] conducted a more limited study using marriage records as a base to determine the prevalence of pre-marital pregnancy. There are numerous examples of followback studies in other fields but these will not be considered here.

II. Pretest Study Design

A. North Carolina Marriage Registration

The Register of Deeds for each of the 100 counties in North Carolina is required to submit all marriage licenses filed with him during a month to the Public Health Statistics Section of the State Board of Health by the tenth of the following month. Processing of records in the State Board of Health is started five days later and by the fifth of the next month punched cards for these marriages are ready. Most marriages (about 95 per cent) are filed within the prescribed time limits. Thus, there is an average delay of one month between occurrence and filing of the license and a two month delay before the punched card is available.

In 1967, about 45,000 marriages were recorded in North Carolina. About one in five were of non-whites. In 20 per cent of the marriages the bride and groom were both non-residents of North Carolina. In 85 per cent neither had been previously married. Some 7,800 marriages were recorded for the five contiguous counties in the center of the State, which were included in the pretest.** About 37,000 occurred in the remaining 95 counties which were not included in the pretest but will be covered in the feasibility study.

^{*}This study is being conducted under contract Number PH 43-67-764 with the National Center for Health Statistics and with the cooperation of the North Carolina State Board of Health.

^{**} Alamance, Durham, Guilford, Orange and Wake counties.

B. Pretest - Sample Design

In order to minimize interviewer travel time and increase chances of locating nonrespondents for interview, pretest sampling was restricted to marriages in which the bride was a resident of North Carolina and the marriage had been performed during the months of July-August and October-November, 1967, in one of the five central counties, described above.

Pretest study population marriages were stratified on characteristics of the bride as recorded on the license as follows:

- 1) Race: a) white, b) non-white
- 2) Age (years): a) under 20, b) 20-29,
 c) 30 and over
- 3) Time between marriage (month of marriage) and mail survey: a) five or six months (October and November), b) eight or nine months (July and August)
- Previous marital status: a) never married, b) previously married.

The top panel of Table 1 shows the number available for sampling in each cell. Notice the limited number in the under 20 year previously married, particularly the nonwhites, and in the strata for those 30 years and over never married.

Distribution of the sample is shown in the second panel of Table 1. The pretest design specified selection of eight marriages from each of the 24 strata and random allocation of two of these eight within each stratum to each of the four versions of the schedule being tested. Because of limited numbers in some strata it was not possible to balance on age. When a population stratum was exhausted, the remaining numbers were selected from the next older age stratum, keeping all other variables constant. Except for age the sample is balanced on the four demographic variables and on the four versions of the schedule.

C. Development of Pretest Questionnaires

Existing self-enumeration and interview schedules used by the National Center for Health Statistics and the Census Bureau, as well as schedules from a number of fertility surveys, were reviewed for content, definitions and possible wording of questions. Fairly rough formulations of possible questions were prepared. Several meetings of National Center for Health Statistics and University of North Carolina staff members were required before deciding on content areas and a reasonable number of items for self-enumeration schedules. Since one of the objectives of the feasibility study is to test the effect of content on response rates, it was decided to use three versions of the schedule in the pretest. The first included only basic demographic data on the couple and their parents, (Version D). The second consisted of Version D plus a section on family planning while the third included Version D plus migration and health sections. In order to partially test the format and wording of questions, a tersely worded form of Version D (Version A) was also developed. All questions were designed to be answered by the bride (wife). The first page of each questionnaire was a cover letter signed by the Director of the National Center for Health Statistics on Public Health Service letterhead. For each version these were identical except for one paragraph describing content. A different cover letter was used for each round of mailing but the questionnaires were exactly the same for every round.

D. Procedures

1) Mail Procedures

Within each pair of sample brides allotted to a particular version the first schedule was mailed to the bride, using her maiden and married

		Poj	oulation		Sample							
Age	Never	Married	Previou	sly Married	Never M	arried	Previously Married					
(years)	White	Nonwhite	White	Nonwhite	White N	Ionwhite	White	Nonwhite				
Eight to Nine Months Since Marriage												
<u>Total</u>	769	234	177	39	24	24	24	24				
Under 20	348	103	4		8	. 8	4					
20-29	403	115	75	14	8	8	12	14				
30 or more	18	16	98	25	8	8	8	10				
]	live to S	ix Months Sir	ice Marri	age						
<u>Total</u>	484	174	174	31	24	24	24	24				
Under 20	259	78	8	1	8	8	8	1				
20-29	214	87	76	7	8	8	8	7				
30 or more	11	9	90	23	8	88	8	16				

Table 1. DEMOGRAPHIC CHARACTERISTICS OF POPULATION AND SAMPLE OF RECENT BRIDES, NORTH CAROLINA MARRIAGE SURVEY PRETEST, FIVE COUNTY AREA*, SPRING, 1968.

"Alamance, Durham, Guilford, Orange, and Wake Counties.

name, at her address as shown on the license, e.g.

Mrs. Mary Jones Brown Bride's address,

and the second was mailed to the bride using only her married name at the groom's address, e.g.

Mrs. Thomas Brown Groom's address.

A stamped return addressed envelope was enclosed for reply.

Three mailing were sent:

- 1) First class mail to total sample,
- Certified mail to all nonrespondents to 1),
- First class mail to all nonrespondents to 1) and 2).

When a first mail letter bounced (was returned by the post office unclaimed or undelivered) from either address, another first mailing was sent immediately to the other spouse's address on the license. The same time interval was allowed for subsequent mailing to these bounces; hence the timing was not the same as for regular mailings.

2) Interview Procedures

Personal interviews of subsamples of nonrespondents as well as respondents to the mail survey were made in order to explore in some detail objections and difficulties experienced by the sample brides in understanding or completing the mail questionnaire. Because of this objective, an attempt was made to simulate partially the mail survey setting. A mail questionnaire was given to the interviewee and she was asked to read the questions in sequence and give verbal answers which were recorded by the interviewer on a separate questionnaire. Interviewers observed and recorded difficulties both with sequence and with content. They also probed where indicated to get details about difficulties.

Three negro females - one single and two married - two white male graduate assistants and two white married females were recruited as interviewers and given one day of intensive training in Chapel Hill. One of the authors (LW) supervised interviewing and did all of the telephone interviewing.

III. Response Rates

One hundred and eleven (58 per cent) of the total sample brides responded to the mail questionnaire. Five brides returned the mail questionnaire unanswered, refusing to cooperate and they were not contacted for personal interview. Probability samples of 45 of the other 76 mail nonrespondents and 38 of the 111 respondents were chosen for personal interview. Table 2 summarizes the results of follow-up by various methods. Interview results for the 45 sampled nonrespondents were as follows:

Total sample	45
Interview completed	27
Not located	10
Moved out of county	5
Unable to interview	
because of illness, etc.	2

Only the mail response plus interviews of mail nonrespondents are used to estimate rates. For completeness Table 2 includes other details about additional tracing and interviewing, both personal and telephone, of mail respondents and nonrespondents not sampled. These are not discussed further here although some of the responses are included in the Tables in Section IV.

The time pattern of mail responses in relation to the query is shown in Table 3. The number of first queries (i.e. indicated by a Roman Numeral I on the questionnaire) returned is higher than any other. However, about 40 per cent of them were returned after the second query (certified mail). The larger number of second queries returned in the third week, 28, indicated that it is a successful way of stimulating response. However, this does not indicate how effective using first class mail alone for the second query would have been. In addition it is not possible to estimate from these data what response rates would have been to a single one time questionnaire.

The cumulative response rate to the mail questionnaire was 57.8 per cent. The interview rate for mail nonrespondents was 60 per cent bringing the estimated total response rate to 81.5 per cent.

Table 4 shows total frequencies and estimated response rates for the four control variables from the marriage license as well as the different versions of the schedule and the address to which the first mail questionnaire was sent.

The most outstanding difference in total response rates is between marriages of 5-6 months duration, 90 per cent, versus 75 per cent for those of 8-9 months duration. The difference is mainly accounted for in the amount added by personal interview follow-up rather than total mail response. While this suggests that those married longer are more likely to have moved, this may also be related to other differences, (perhaps seasonal) associated with summer versus fall marriages. These differences will be explored in more detail in the feasibility study.

Mail response rates vary much more than total response rates. White rates are significantly higher than nonwhites. Women 20-29 responded at a higher rate than either younger or older age groups. Never married women responded at a somewhat higher rate than previously married women. Mail response rates for the two longer versions, B and C, were higher than for A and D but total response rates are about the same for all versions. Mail as well as total response rates are almost identical for bride's and groom's original mail address.





* Six (6) nonrespondents who were not in the sample were assigned to an interviewer in one county who completed other interviewing early.

Sequence	Tot	Week Received								
of Query			1	2	3	4	5	6	7 or later	
	Number		Per Cent							
<u>Total</u>	111	100.0	13.5	18.9	36.0	12.6	13.5	4.5	0.9	
First Query	58	100.0	25.9	36.2	20.7	8.6	8.6	-	-	
Second Query	42	100.0	-	-	66.7	21.4	4.8	4.8	2.4	
Third Query	. 11	100.0	-	-	-	-	72.7	27.3	. –	

Table 3. DISTRIBUTION OF MAIL QUESTIONNAIRES RETURNED BY QUERY AND WEEK RECEIVED, NORTH CARQLINA MARRIAGE SURVEY PRETEST, SPRING, 1968.

		Cur	nulative				
Characteristics	Total	Mail	Respon	dents	Mail and*	Non-**	Refusals
of Bride or	Number	Within	Specif:	ed Weeks	Interview	responses	
Query		1-2	3-4	5-/			
All Groups	192	18.8	46.9	57.8	81.5	15.9	2.6
Race:							
White	96	20.8	52.1	62.5	81.9	12.9	5.2
Nonwhite	96	16.7	41.7	53.1	81.2	18.8	-
Age:							
Under 20	45	15.6	42.2	51.1	81.9	13.7	4.4
20-29	73	24.7	57.5	65.8	83.5	15.1	1.4
30 and over	74	14.9	39.2	54.1	79.1	18.2	2.7
<u>Marital Status</u> : Previously Married	96	17.7	44.8	56.3	80.7	18.3	1.0
Never Married	96	19.8	49.0	59.4	82.2	13.6	4.2
Months Between Marriage and First Query Five or Six	96	20.8	44.8	56.3	89.5	7.4	3.1
Eight or Nine	96	16.7	49.0	59.4	74.5	23.4	2.1
Version of the Questionnaire A	48	18.8	39.6	47.9	82.6	17.4	-
В	48	16.7	52.1	62.5	80.2	17.7	2.1
C	48	20.8	50.0	62.5	86.8	6.9	6.3
D	48	18.8	45.8	58.3	76.3	21.6	2.1
- Addaean Maad							
Address Used							
Bride	97	18.6	45.4	56.7	83.5	13.4	3.1
Groom	95	18.9	48.4	58,9	79.3	18.6	2.1

Table 4.	RESPONSE	RATES BY	DEMOGRA	APHIC CHAI	RACTERIS	TIC O	F BRIDE	OR	QUERY
NORTH	CAROLINA	MARRIAGE	SURVEY	PRETEST.	SPRING.	1968.	•		

*Per cent added by personal interview = 100 (total nonrespondents in mail subsample X total mail subsample

nonrespondents sampled

****Calculated** by subtraction.

One must recognize the inadequacy of single factor analysis of response rates. Because of small frequencies multiple variable analysis was not attempted in the pretest. Perhaps the most important variable in analyzing response rates is education of the bride and this is available in the pretest only for respondents. However, education was added to the North Carolina marriage license in 1968 and it will be included in the feasibility study.

IV. Completeness and Quality of Response

A major use of the pretest results was in making decisions about questionnaires to be used in the feasibility study. Therefore, special attention was given to questions with relatively large numbers of unknown or incomplete responses in the pretest. These results are examined briefly in relation to:

- 1) type of question
- characteristics of respondents who gave incomplete responses.

It is possible to improve the completeness and quality of data.*(see footnote pg. 6) However, results in this section are based upon results of unqueried mail returns plus personal and telephone interviews.

Questions had no provisions for checking a "don't know" answer, but space was provided for writing in responses other than those given on the form e.g. "Other (Specify)_____."

nonrespondents interviewed,

Since only 48 brides were sampled for each version of the questionnaire, it is difficult to present a detailed analysis of quality by version. However, Table 5 shows some of the items which exhibit a difference (or lack thereof) between versions of the questionnaire in the proportion of unreported responses. Version A seems to stand out in items concerned with relatives as having a higher proportion of unknowns than the other versions, but this difference between versions was not consistent for other items, e.g. religion of the parents and birthdate of the wife and husband.

The most common type of problem that appeared in the pretest was a relatively large number of blank or unknown responses to questions about a relative--the wife's husband, and his or her parents. In case of mail queries the wife

Table	5.	PROPORTIO	NOFI	UNKNOWN	OR	UNREPORTEI	RESP	ONSES	то	SELECTED	ITEMS	IN	QUESTIONNAIRE
BY	THE	VERSION	MAILEI	D, NORTH	C	AROLINA MAR	RIAGE	SURVE	ΞY,	SPRING,	1968.		

	Version of the Questionnaire									
Item	ABasic	BD plus	CD plus migra-	DBasic						
	(tersely worded)	family planning	tion and health	(regular wording)						
Total Number of Questionnaires	34	38	39	37						
Number of younger brothers and sisters:										
Wife Husband	20.6 17.6	10.5 2.6	2.6 _	2.7 2.7						
Number of married brothers and sisters of husband	23.5	NA	NA	NA						
Highest grade of school attended:										
Wife Husband	8.8 26.5	- 5.3	2.6 5.1	8.1 13.5						
Highest grade of school completed:										
Wife Husband	17.6 17.6	2.6 5.3	2.6 7.7	2.7 13.5						
Religious preference of husband	5.9	7.9	5.1	10.8						
Religion ^a :										
Father of wife Father of husband	24.2 30.3	20.0 28.6	12.8 28.2	23.5 26.5						
Mother of wife Mother of husband	15.2 21.2	14.3 22.9	2.6 17.9	11.8 23.5						
Year of birth " : Wife Husband	12.1 15.2	14.3 22.9	12.8 15.4	23.5 20.6						

^aThis item was not used during telephone interviews, so the base number of each version changes slightly (i.e., A = 33, B = 35, C = 39, D = 34).

NA = not applicable

^{*} Enough requering was done in the pretest to find that incompleteness can be decreased considerably in this way. Of the lll mail survey respondents 84 omitted or gave inadequate answers to one or more items on the questionnaire. Details for items with the highest frequencies were discussed in Section IV. Because of the tight time schedule in the pretest, requeries were mailed to only 50 of the 84 and 32 (64 per cent) were returned. Return rates were highest for those including inadequate response to migration questions. Lowest return rates were for those which included questions about income. In view of this experience we estimate that sending requeries to all 84 respondents with inadequate responses and incorporating the results into this paper, would have reduced most of the unknown or don't know frequencies in Section IV by 50 to 70 per cent.

Ttem	Number of Re the Item	espondents to Which was Applicable	Proportion Unknown or Not Answered			
	Wife	Husband	Wife	Husband		
Birthdate:			,	•		
Year	137	137	16.1	19.0		
Month	137	137	15.3	16.8		
Day	137	137	16.1	19.0		
Number of younger brothers and sisters	144	144	4.9	9.0		
Highest grade of school attended	144	144	4.9	12.5		
Highest grade of school completed	144	144	6.3	11.1		
Income	144	144	12.5	18.8		
Source(s) of Income	108	143	33.3	35.0		
Month of first marriage						
of previously married	74	57	10.8	36.8		
Year of first marriage	74	57	10.8	35.1		
Month first marriage ended	74	57	13.5	42.1		
Year first marriage ended	74	57	12.2	33.3		
Education of parents						
Father	137	137	29.9	42.3		
Mother	137	137	23.4	43.8		
Religion of parents						
Father	137	137	20.4	29.2		
Mother	13/	137	10.9	21.9		
Date of death of deceased father	54	48	25.9	47.9		
Date of death of	25	40	20.1	40.0		
deceased mother	25	40	20.1	40.0		
Separation of parents	141	141	10.6	13.5		
Year of s eparation of separated parents	20	16	50.0	25.0		
Divorce of parents	37	36	51.4	41.7		
Year of divorce of <u>divorced parents</u>	12	13	41.7	38.5		

Table 6.	PROPORT	CION OF	UNI	KNOWN	OR N	IOT	REPORTED	RESP	ONSES	FOR	SPECIE	TED	ITEMS	(ALL
VERSI	ONS) FOR	R MAIL	AND	INTE	RVIEW	I QI	UESTIONNA	IRES,	NORTH	CAR	OLINA	MARR	IAGE	SURVEY
PRETE	ST, SPRI	NG, 19	68.											

presumably had an opportunity to discuss the questionnaire with her husband or possibly parents, while interview responses were given in most cases without her husband or other relative participating. However, information about parents was incompletely reported in both mail and interview responses.

Various questions about the husband resulted in relatively high frequencies of blank or unknown responses as compared with the wife. These questions were about the husband's number of younger brothers and sisters, his education, date and duration of previous first marriage and residence prior to marriage (See Tables 6 and 7). The pattern is similar yet the difference is less for the question on the highest grade of school completed.

When the couple had separated because the marriage had not worked, the wife experienced special difficulty with the items about her estranged husband, and his parents. One mail respondent who was legally separated refused to cooperate for this reason and three interview respondents who were no longer living with their spouse because of marital problems also indicated their reluctance to discuss these particular items.

Four types of information about the parents of the wife or husband were poorly reported-education, religion, dates of death of deceased parents, and whether separated and year of separation of parents and whether divorced and

Table 7. PROPORTION OF UNKNOWN OR NOT ANSWERED MIGRATION ITEMS IN RESPONDENTS TO MIGRATION QUESTIONNAIRE (VERSION C) MAIL AND INTERVIEW QUESTIONNAIRES, NORTH CAROLINA MARRIAGE SURVEY PRETEST, SPRING, 1968.

Item	Number of	Questionnaire	Proportion Wife	Unknown or	Not Answered Husband
State of Residence Before Marriage		39	-		20.5
Number of Months at Address Before Marriage		39	2.6		33.3
Number of Years at Address Before Marriage		39	2.6		33.3
Living Arrangements Before Marriage*		39	· -		25.6

*Lived alone, with parents, or with others.

year of divorce of parents.

The proportion of unknown or unreported answers was somewhat less for income than for some of the questions related to parents of the couple. Sources of income had a relatively larger number of incomplete answers; some responded "None" (i.e. no sources) when income had been previously reported, some others skipped the item or responded "don't know".

The difference between the proportion of unknowns for the wife and the husband is especially marked for the migration questions related to residence prior to marriage where there is about a ten fold ratio of unknowns for the husband as compared with the wife (Table 7). The proportion of unknowns is generally higher for interviewed mail nonrespondents as compared with mail respondents but the numbers interviewed are too small for meaningful comparisons.

The proportion of unknown or unreported education and religion is higher among nonwhite than among white respondents, (Table 8) and there is a striking increase in proportions of unknown or unreported results with the age of the respondents, (Table 9).

Table 10 shows unreported and unknown answers to questions on family planning in the questionnaire returned by the brides who responded to the family planning version of the questionnaire. While frequencies are high they are

Tab1	е	8.	PRC	POR	TION	OF	RES	SPON	DENTS	FOR	WHO)M 🛛	EDUC	CATI	ON	OR	RELIG	ION	OF
	PA	RENT	CS W	IAS	UNKN	own	OR	NOT	REPO	RTED	BY	CO	LOR	OF	RES	SPON	IDENT,	NO	RTH
	CA	ROLI	INA	MAR	RIAG	E SI	JRVI	EY PI	RETES	r, si	PRIN	IG,	196	58.					

Parents		l Respo	Mail ondents	Interview Respondents					
		White	Nonwhite	White	Nonwhite				
Number of Q Returned	uestionnaires	60	51	11 ^a	15				
		Education							
Father of:	Bride Groom	21.7 30.0	31.4 45.1	36.4 54.5	53.3 73.3				
Mother of:	Bride Groom	25.0 28.3	19.6 47.1	18.2 72.7	33.3 73.3				
			Reli	lgion					
Father of:	Bride Groom	10.0 18.3	31.4 33.3	18.2 45.5	26.7 46.7				
Mother of:	Bride Groom	3.3 11.7	17.6 21.1	9.1 18.2	20.0 40.0				

^aOne interviewed white respondent was not asked these questions and is excluded from this table and the next one.

Parents		Mail Respondents			Interview Respondents		
		<20	20-29	30+	<20	20-29	30+
Total Number of Responses		23	48	40	8	7	11
				Education			
Father of:	Bride Groom	17.4 26.1	16.7 29.2	42.5 52.5	12.5 37.5	57.1 71.4	63.6 81.8
Mother of:	Bride Groom	8.7 26.1	14.6 27.1	40.0 55.0	_ 62.5	14.3 57.1	54.5 90.9
		Religion					
Father of:	Bride Groom	21.7 17.4	10.4 18.8	30.0 37.5	12.5 37.5	42.9 42.9	18.2 54.5
Mother of:	Bride Groom	8.7 8.7	6.3 12.5	15.0 35.0	_ 25.0	14.3 14.3	27.3

Table 9. PROPORTION OF RESPONDENTS FOR WHOM EDUCATION OR RELIGION OF PARENTS WAS UNKNOWN OR NOT REPORTED BY AGE OF RESPONDENT, NORTH CAROLINA MARRIAGE SURVEY PRETEST, SPRING, 1968.

Table 10. PROPORTION OF RESPONDENTS FOR WHOM SPECIFIED FAMILY PLANNING QUESTIONS IN MAIL AND INTERVIEW SURVEYS WAS SPECIFIED AS UNKNOWN OR NOT ANSWERED, NORTH CAROLINA MARRIAGE SURVEY PRETEST, SPRING, 1968.

Question	Number for Whom Requested	Proportion of Unknown Responses
Ever Thought About Number of Children?	35	17.1
Number Children Desired by Wife?	24	20.8
Number Children Desired by Husband?	24	20.8
Number Children Actually Expected by Couple?	26	30.8
Year Next Child Expected?	16	43.7
Prior Use of Contraceptives?	35	14.3
Type of Contraceptive Used?	19	26.3
Use of Contraceptives Expected if Not Used Previously?	21	38.1

not quite as great as for some questions on parents of the couple. Items which had the highest proportion of unknowns in this section were those about projections of future events, such as the number of children the wife thinks the couple will actually have, the year the next child is expected, and future use of contraceptives.

V. Revised Questionnaires

Three basic changes have been made for the

feasibility study:

 Version A, the tersely worded basic version, has been discarded--mainly on the basis of a lower mail response rate and a higher frequency of no response or unknown answers to individual questions. Thus only three versions will be used in the feasibility study.

- 2. The sections for the parents of the bride and groom have been omitted. This was done because of the high frequency of unusable answers to returned questionnaires and the responses to personal interviews.
- The section on migration, formerly Part V of Version C, has been incorporated into the basic questionnaire and hence will be asked of all brides.

Other minor changes have also been made. All of these changes have resulted in a basic questionnaire for the feasibility study about one page shorter than the one used in the pretest. This will be called Version A and two other versions will be used: Version B will be Version A plus the section on family planning; Version C will be Version A plus a section on medical care.

VI. Summary and Comments

The objective of the pretest was limited primarily to developing a better mail questionnaire. Some of the specific pretest results, many of which could be predicted from previous experience in mail surveys, can be summarized as follows:

- The second mailing stimulated response rates, perhaps because of certified mail.
- Higher socio-economic groups apparently responded more completely and accurately than others.
- Responses to questions on income were very incomplete (perhaps if such questions had been omitted, response rates would have been higher).
- 4. Usually more complete answers were given for questions about the respondent than for those about relatives.
- 5. Younger brides provided better quality responses than older brides.
- Replies from mail survey respondents were more complete than those of nonrespondents to mail survey who were subsequently interviewed.
- 7. The tersely worded version of the basic questionnaire appeared to be less satisfactory than the less abbreviated version covering the same content.

More generally it was concluded that the pretest results were sufficiently encouraging to proceed with the feasibility study. Total response rates in the pretest were about 82 per cent and elimination of the questions about parents of the bride and groom should substantially increase response rates. Furthermore a systematic edit and requery system will reduce the relative high rates of missing or unknown answers in returned questionnaires.

Much more information was collected in the pretest than was needed to estimate response rates from combined mail and personal interview follow-up as indicated earlier in Table 2. Had a combination of mail, telephone, and personal interview in that sequence been used response rates might have been different. With adequate cost data on telephone personal interview and mail questionnaires and more precise estimates of response rates more efficient designs, perhaps including all three methods of followup, can be developed.

It is possible to study the effect of questionnaire content on response rates only in a limited way with the design used. Because of the unlimited number of possible kinds and combinations of content, decisions for this study were based on prior experience and the priorities for additional data about recently married couples. The influence of the sequential arrangement of content on response rates have not been tested in this study. For example income questions come near the beginning of the questionnaire in all versions.

There are numerous other factors such as color of paper, method of addressing the envelop, auspices, stamped versus prepaid return envelopes, method and size of printing, as well as the number and frequency of follow-up mailings and the type of mail e.g. certified versus first class, which might also be included in more elaborate study designs to estimate the impact on response rates. To study so many factors adequately at once will reuqire much more sophisticated sample designs.

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