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A study of pregnancy planning of five hundred women at the Yale-New Haven Hospital

Robert Stuart Stern
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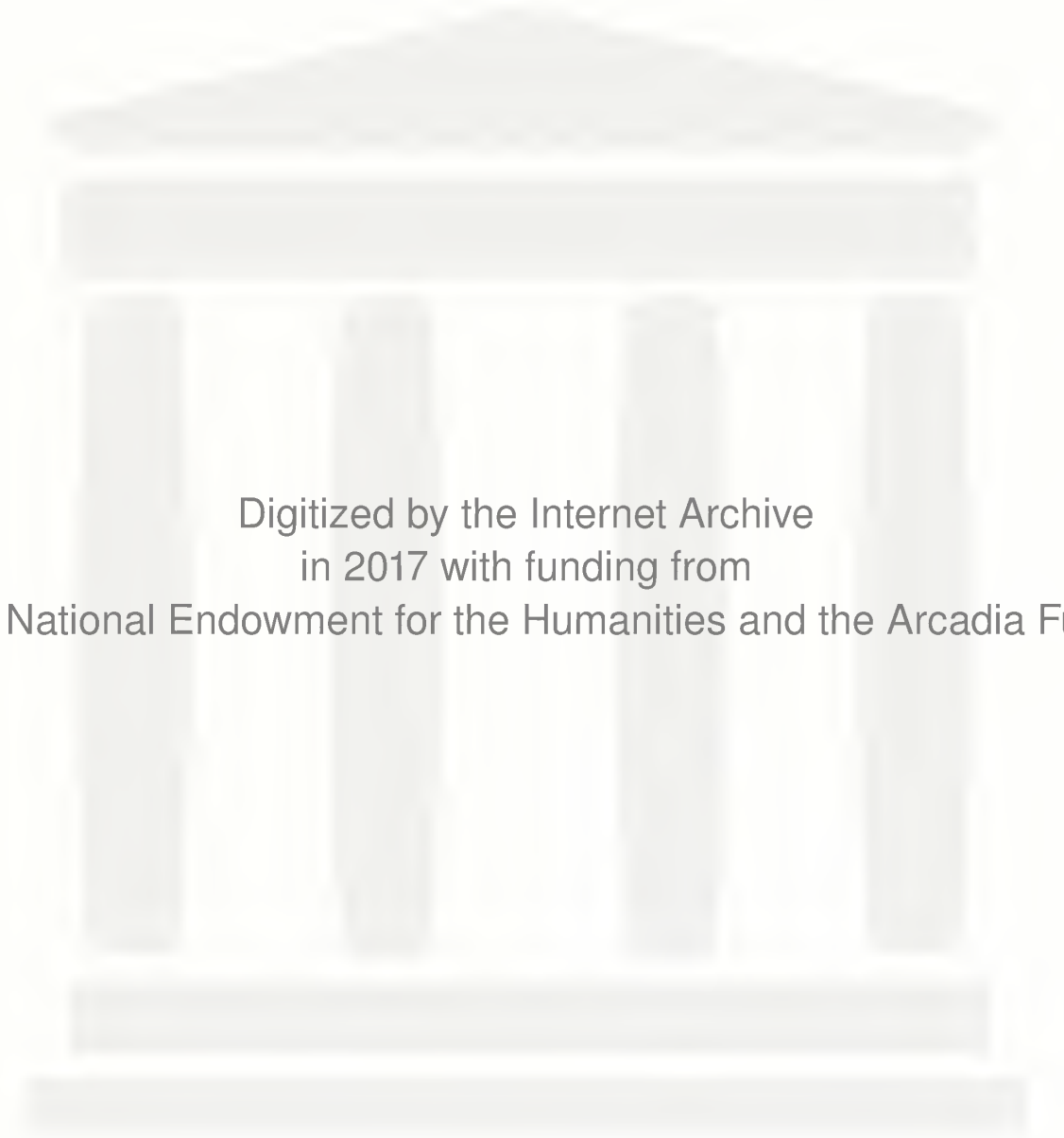

A STUDY OF PREGNANCY PLANNING OF FIVE HUNDRED WOMEN AT THE YALE-NEW HAVEN HOSPITAL

by

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To Lynn,

INTRODUCTION

In this time of talk of a population crisis with tremendous efforts devoted to developing new contraceptive methods and in some circles demands that couples be educated to want fewer children, it is important to know where this community stands today in this area: How many pregnancies are planned? Who uses what contraceptives and when do they fail? How large are the families women desire and how large are the families they now have? With the answers to these questions, this community can better know what should and can be done to deal with the reproductive problems that do exist.

In order to obtain information of this type, newly delivered mothers at the Yale-New Haven Hospital were questioned on their feelings about the pregnancy they had just completed, their past childbearing experience, and their future childbearing plans. To place the information gained from these questionnaires in its social context, information on each patient questioned was obtained from their chart.

On the basis of this information, this paper describes the extent to which five-hundred women delivering babies at Yale-New Haven Hospital planned their most recent pregnancy. This analysis along with related question of desired family size, actual family size, and contraceptive use are compared for these women grouped by a variety of social and economic criteria including: age, race, insurance, clinic status, and martial status.

Although demographers have previously studied desired family size and child spacing, their studies have usually been in homogenous populations of married women. Unlike this study, other researchers have not utilized immediately post-partum women of the variety of social and economic background seen in a community hospital. These women, having just

delivered, are also very much concerned with children and the impact of this child on their own lives and on their family's life.

If is hoped that further investigation into the subject of this paper would be useful in planning and providing future obstetric and birth control services.

MATERIALS AND METHODS

SAMPLE:

In order to study the childbearing experiences and the extent to which given pregnancies are desired in the population served by the Yale-New Haven Hospital, questions are asked about the pregnancies just completed by the women still in residence on the post-partum floor of this hospital. These women are also asked questions about past childbearing experiences, past contraceptive use, and future childbearing plans. The study excludes severly ill mothers (i.e. one mother diagnosed as having a post-partum psychosis) and mothers delivering severely ill babies. This is done to avoid placing any additional stress on these mothers and it is felt that these mothers responses might be influenced by their own or their babies condition after delivery.

In the initial stages of the study, only university service patients are included in the survey. These are mainly clinic (ward) patients. After a number of revisions of the questionnaire, permission to administer it was sought and obtained from virtually all private obstetricians with active practices at the Yale-New Haven Hospital. As a result, the majority of this study's population are drawn from the complete post-partum population of this hospital, thus providing for the representation of mothers of all social and economic backgrounds. This study is also temporally divided with the first hundred respondents being questioned in the spring of 1969 and the remaining four hundred respondents being questioned during the following winter.

TABLE 1

CLINIC VS. PRIVATE DELIVERIES YNHH STUDY

	All Deliveries YNHH*		Deliveries at YNHH Included in this Study	
	Number	Percent	Number	Percent
CLINIC (WARD)	294	25%	240	48%
PRIVATE	923	75%	260	52%

*Based on Monthy Obstetrical Statistics YNHH July - September 1969

In analyzing all breakdowns of the sample by age, race, religion, or any of the other variables used in this paper, it is important to remember that although the women used in this study represent a random selection among both the private and ward services, this study's division between private and ward patients is weighted towards ward patients because of their nearly exclusive use during the initial period of investigation. Therefore, the application of the results of this study to the Yale-New Hospital population as a whole (i.e. such as an estimate of the percent of all pregnancies that are planned) requires that allowance be made for this study's relative bias toward the clinic population. In terms of actual weights, Table 1 shows that clinic (ward) patients make up twice the proportion of the study population than their proportion of the whole population. Correspondingly, private patients are only a little more than two-thirds as well represented in the study as they are in the delivery service as a whole. As a result of this sample selection, both groups are better represented in the study with each having approximately two hundred and fifty subjects included within it. This allows for more detailed breakdowns of both groups using variables such as age, religion, race, and marital status. A breakdown of the characteristics of the sample utilized is given in the concluding section of this chapter.

Although patients approached are generally cooperative, refusals occur in approximately two percent of women approached to fill out the questionnaire. When the demographic characteristics of those refusing to answer the questionnaire are compared to the sample as a whole, no systematic varience is apparent except that a considerably higher percentage of refusers are non-white than for the sample as a whole (60 percent vs. 36 percent).

The reasons for refusal vary. Some women indicated mistrust of the questionnaire's purpose, others felt they have already been bothered too many times by other interviews and inquiries to which post-partum women are exposed in this hospital, and one woman gave as her reason for refusing: "I just don't like questionnaires."

In addition to the small group who refuse to complete questionnaires, another group was excluded because of their inability to read English. In almost all cases, these women were Spanish speaking and the majority of them were born in Puerto Rico. In fact, the majority of Puerto Rican women who delivered babies at the Yale-New Haven Hospital approached by this study do not read English. As a result, no analysis of Puerto Ricans as a separate group is made on the basis of this study. Such an analysis would require a Spanish questionnaire which would be best distributed by a Spanish speaking worker.

SOURCES OF INFORMATION

QUESTIONNAIRE

Of the two principal means used to obtain the information used in this study, the first is a questionnaire which was given to and completed by each of the five hundred women included in this study. The questionnaire is designed for this study by Dr. John McLean Morris and myself with the specific

objectives of simplicity and brevity. It was felt that maximal cooperation and completeness could be obtained if these objectives were met. This would seem to have been the case, for over ninty-eight percent of English speaking women complete questionnaires upon request. The questionnaire was revised extensively after each of the initial trial collections during which patients are specifically asked about any difficulties in understanding the questions. A copy of the final questionnaire is included in the appendix. The following outline gives the type of information obtained from responses to the questionnaire.

QUESTIONNAIRE OUTLINE

1. Extent to which the pregnancy just completed was planned
2. Mother's feeling when she first learned she was pregnant
3. Her feeling now that the pregnancy is completed
4. How the father of the baby felt about the pregnancy
5. Sex of new child preferred by mother
6. Will the baby have its own room at home
7. Did the mother want to breast feed the baby
8. Ages and sexes of the other children in the family
9. Number of additional children desired
10. How soon, if ever, the next child is wanted
11. Method (s) of birth control last used
12. Was the pregnancy a result of a failure of a method of birth control and if so was it a patient failure (i.e. forgetting pills) or method failure (i.e. method used as directed but pregnancy still occured)

RECORDS

The patient's admitting record was used to obtain additional systematic information about each study subject. The admitting record records a variety of social and demographic information including the following items that were utilized for this study:

MOTHER'S ADMITTING RECORD INFORMATION

1. Unit Number - for identification
2. Date of Birth - to obtain mothers age
3. Place of Birth
4. Race
5. Marital Status
6. Type of accomodation - ward, semi-private, deluxe private
7. Clinic Status - ward or private service
8. Next of kin
9. Address of next of kin
10. Insurance or public assistance coverage
11. Religion

In addition to the information noted above, the new child's sex is recorded. Whenever available, any sterilization procedure planned such as a tubal ligation in the post-partum period is noted on that women's record.

METHOD

This study is based on the responses of 500 newly delivered mothers at the Yale-New Haven Hospital to the questionnaire described above and on the variation of these responses among groups differing social, economic, racial and other characteristics.

DATA UTILIZATION

Not including the identifying unit and series numbers, there are a total of up to 39 separate information categories (variables) for each of the five hundred mothers in this series. This resulted in almost 20,000 separate items of information to be analyzed for the study. The storage and numerical analysis of this amount of data is greatly facilitated by the use of an electronic computer; a practical necessity for the anaylsis of samples much larger than the present one.

For this study, a program was used with the IBM 7094 DCS system at the Yale Computer Center. This program permits comparisons of the frequency distributions of questionnaire responses and patient record data.

With these results it is possible to determine the extent to which women state that their childbearing is the result of conscious planning. These results can then be compared with other studies of childbearing practices that were done in different populations and under a variety of circumstances. These data can also be used to obtain a description of the population now having children at the Yale-New Haven Hospital including their social characteristics, their actual family size, their desired family size, and their past contraceptive practices.

QUESTIONNAIRE ADMINISTRATION

Each questionnaire is personally presented to the patient by myself or by Miss Kathy Forest. At the time of presentation, a brief description of the questionnaire and its purpose is given to the patient. Any questions about the form are solicited and answered and the patient is then left to complete the questionnaire which is collected two to five hours later by the same person who distributes the forms.

It is recognized that a woman's responses to questions about their desire for a particular pregnancy may vary over the course of the pregnancy. For this study, the post-partum period is chosen as a period representative of a woman's feelings toward the pregnancy during the last part of the pregnancy when it could be expected that adjustment to the pregnancy is relatively complete. The post-partum period has some very definite advantages for completing a study. By the second post-partum day most women are relatively comfortable, many of the woman's fears about her safety and the baby's safety have been allayed, the mother is accessible to the investigator, and she has time available to answer questions.

It seems that answers obtained after delivery may be very different from those that would have been given just before delivery and as a result not really representative of a mother's feelings at the end of her pregnancy. In order to help exclude this possibility before delivery a small sample of women are verbally asked by a House Officer questions about their planning of this pregnancy, what sex child they preferred, and their ultimate desired family size. Following delivery these women are then interviewed by me in the usual manner with the written questionnaire. The responses to the House Officer's questions and the study questionnaire are compared.

TABLE 2

PRE- AND POST-DELIVERY RESPONSES

QUESTION	No. of Identical Responses	No. of Different Responses
Did you plan to have this baby?	13	0
Do you want this baby?	11	2
Do you want a boy or girl?	13	0
How many more children do you want?	12*	1

* Includes two changes from "Don't Know" to a specific number of children.

The result given in Table 2 suggests a similarity in women's responses about their childbearing attitudes in the period immediately before and after delivery. On the basis of these responses it is argued that the answers obtained in this study's post-partum questionnaire are representative of the feelings these women have toward their pregnancy during its last phases and that these feelings are relatively stable during this specific period.

THE HOSPITAL AND SAMPLE POPULATIONS

As noted above the clinic group was weighted twice as heavily in this study as the fraction of deliveries it makes up in the hospital population. When allowence is made for this fact, a description of the population delivering at the Yale-New Haven Hospital as well as a description of the sample population can be made from the data obtained in this study.

THE SAMPLE GROUPINGS: VARIABILITY IN SAMPLE GROUP SIZES

In Table 3 a detailed breakdown of the characteristics of the 500 women included in this study is given. The distributions of maternal age, marital status, place of birth, religion, and insurance coverage are given for women divided by both clinic status and race.

It is important to note that in Table 3 and all succeeding tables of this paper, the sample size numbers (N) given for the various subgroups (i.e. white private patients, non-white catholic patients etc.) are not identical in all tables. Also, the sum of the subgroup sample sizes in a table do not always equal the total study sample size. The reason for these differences in a sample and subgroup numbers (N) is that among the 500 women making up the complete study sample are women for which some information items or questionnaire responses are lacking. When any information item or questionnaire responses relevant to a comparison being made is absent for a woman, this subject is excluded from that comparison and the table based on that comparison.

For these reasons there is some variation in subgroup sizes (N's) in different tables.

In this study, women listed as never married are called single, unwed, and unmarried. Unless otherwise specified these terms include only never-married women and do not include widowed, divorced, or separated women.

In this study, race is defined as the racial group of a patient according to the hospital defined grouping that appears on the admission information.

TABLE 3

CHARACTERISTICS OF THE POPULATION DELIVERING

LIVE CHILDREN AT THE YALE-NEW HAVEN HOSPITAL

Included in this Study of 500 Women
1967-70

	CLINIC		PRIVATE		ESTIMATE FOR ALL PATIENTS DELIVERING AT YNHH**
MATERNAL AGE	No.	Percent	No.	Percent	
Under 20	76	32%	14	6%	11%
20-24	80	34%	79	30%	32%
25-29	55	23%	104	40%	37%
30-34	21	9%	36	14%	14%
35+	6	2%	27	10%	6%
MARITAL STATUS					
Unwed	89	37%	7	3%	11%
Married	119	50%	250	96%	85%
Widowed, Divorced etc.	32	13%	3	1%	4%
PLACE OF BIRTH					
Northeast U.S.	114	48%	204	78%	70%
Southern U.S.	101	42%	18	7%	16%
Other	21	10%	39	15%	14%
RELIGION					
Protestant	170	73%	92	35%	45%
Catholic	52	22%	122	48%	41%
Jewish	4	2%	31	12%	10%
Other	7	3%	13	5%	4%
INSURANCE					
None	52	23%	35	14%	16%
Commercial	50	22%	211	82%	67%
Public Assistance	129	55%	11	4%	17%
RACE					
White	71	30%	245	95%	79%
Negro	166	69%	14	5%	21%
Other	3	1%	1		
TOTAL	240		260		

TABLE 3 (cont.)

	WHITE		NON-WHITE*	
MATERNAL AGE	No.	Percent	No.	Percent
Under 20	26	8%	64	35%
20-24	102	32%	57	31%
25-29	118	37%	41	22%
30-34	40	13%	17	10%
35+	29	10%	4	2%
MARITAL STATUS				
Married-NEVER	17	5%	79	43%
MARRIED	288	91%	81	44%
WIDOWED etc.	11	4%	24	13%
PLACE OF BIRTH				
Northeast U.S.	255	81%	63	34%
Southern U.S.	9	3%	110	60%
Other	50	16%	10	6%
RELIGION				
Protestant	107	34%	155	87%
Catholic	156	50%	18	10%
Jewish	34	11%	1	
Other	15	5%	5	5%
CLINIC STATUS				
Private	245	78%	15	8%
Clinic	71	22%	169	92%
INSURANCE				
None	57	18%	30	17%
Commercial	221	72%	40	22%
Public Assistance	31	10%	109	61%
TOTAL	316		184	

* Includes 4 non-whites who were other than negro

** Weighted average corrected for relative number of private and clinic patients.

A more detailed analysis of the social and demographic characteristics of the population included in this study will be given in the sections on completed and desired family size. The data given in Table 3 graphically illustrates the difference between the type of person who is a clinic patient and a private patient on the obstetrical service of the Yale-New Haven Hospital.

Although nearly 70 percent of all women delivered here are in their twenties, 17 percent of clinic patients deliver before reaching their 18th birthdays, and nearly one-third of clinic mothers were teenagers at the time of their most recent delivery. While teenage clinic service deliveries are twice as prevalent as those on the private service, private patients are more likely to have children later in life: four times as many children were born to private patients over 35 than to clinic patients of the same age group.

In evaluating the different age distribution in deliveries of the two services, the possibility that former clinic patients as they become older begin to have private physicians must be considered. If this is true the differentials described above would represent changes in the pattern of care over a woman's reproductive life rather than a difference between two distinct populations.

In addition to being younger, the clinic patient is far more likely to be black. While approximately one in five babies born in this hospital are non-white, nearly 70 percent of all clinic mothers are black. In fact more than 80 percent of all black mothers are clinic patients. This sharp division between ward and private services along racial lines is similar to the experience of other hospitals. Studies done in a variety of northeastern metropolitan area hospitals from nine to fifteen years ago showed that in these institutions 75

to 94 percent of non-white deliveries were ward cases (Wolf, 1969). The corresponding percentages for white mothers ranged from 14.5 to 35 (Wolf, 1969). In this hospital only about 10 percent of white mothers are delivered by the ward service. Although the percentage of ward cases is lower here among the whites than it is in earlier studies of metropolitan area hospitals, the percentage of non-whites on the ward service continues to be extremely high. This result would seem to be an indication of the continuing division between whites and blacks in the system of care they utilize (Hill and Jaffe, 1966; Wolf, 1969).

Mainly as a result of this racial division of patients, the proportion of women born in the South is six times higher among ward patients.

As is indicated by the high percentage of clinic patients thought to be eligible for some form of public assistence in paying their hospital expenses (55 percent), the clinic patient is most frequently the low income patient with few assets. While more than four-fifths of private patients have commercial insurance which often accompanies and indicates regular employment, only 22 percent of clinic patients have this coverage. It would seem that economic necessity as much as custom dictates that the non-white or poor white patient attend the clinic rather than procure the services of a frequently more expensive private physician.

More than one-third of clinic mothers have never been married, and only half of all clinic mothers are now living with a husband. In contrast to this, 96 percent of private patients are legally registered as living with their husbands at the time their child is born. Thus, the unmarried mother almost always is found on the clinic service. Although a fuller description of the unwed mother is presented later, it is interesting to note their prevalence;

11 percent of all babies born in this hospital were born to women who have never been married. Another 4 percent of babies were born to women who are widowed, separated, or divorced at the time of their confinements.

Except for the Jews, the religious division between services is largely a reflection of the racial division. Only about 10 percent of non-whites are Catholic. In view of New Haven's Catholic majority among whites, it is not surprising that Catholics predominate among the whites. Their division between clinic and private services is roughly equal to that for white Protestants. The Jews are almost exclusively delivered on the private service.

DECIDING TO BECOME PREGNANT

INTRODUCTION AND LITERATURE REVIEW

Although a great deal of work has been done in hopes of determining both desired and actual family size, very little literature gives information on the extent to which a given pregnancy at a given time is desired. This topic was investigated by asking women if they had been trying to become pregnant at the time they became pregnant. One of the first problems encountered in evaluation data related to "wanted" and "unwanted" pregnancy is defining these terms.

As Edward Pohlman (1965 b) has pointed out, wanting a child involves more than the mother's intention at the time of impregnation. The conscious desire at the time of impregnation is almost all cases a compromise between positive and negative factors that concern the parents at the time of conception. In this study, an attempt is made to avoid these complicated psychological issues by asking only for a report of the woman's conscious intention at the time of conception. In evaluating the responses, it is

assumed that all women who were consciously attempting to become pregnant desired a child at that time and all those who initially considered becoming pregnant "a real mistake" did not desire this pregnancy at the time of its conception. In addition to these two groups who had a definite initial attitude toward the pregnancy, there is the single largest group of mothers who were neither consciously attempting to become pregnant nor considered this event a real mistake. In terms of planning, all of the consciously "decided on" pregnancies were planned pregnancies and all "just happened" and "real mistakes" pregnancies were unplanned pregnancies.

The "just happened" pregnancies can be divided into a variety of categories. Some were the result of contraceptive failure, and others represent timing or spacing errors. These pregnancies, however, may have resulted in the birth of a child that the family eventually hoped to have. Depending on the family's situation and plans, a sooner than intended pregnancy can entail greatly varying degrees of inconvenience. It should also be considered that the more rapidly a woman completes her desired family, the greater the risk she will have additional unintended children. Within the "just happened" group are also women who lack any definite plan for their family and consider pregnancy as an event beyond their direct control.

Among the many factors that influence a woman's desire to have a child at a given time are her age, her work and economic status, the stability of her home situation, the age, sexes and number of children she has, the size family she desires, and her martial status. A woman's sexual activity, especially in the absence of birth control, obviously influences her chances of becoming pregnant. A number of researchers have shown that the rate of sexual relations in many groups is not strongly related to the conscious

desire to have a child. Among them, Rainwater (1960) points out that the poor tend to lack information about birth control and to lack the incentives to limit family size. As a result, he states that "not to plan children" is the logical behavior pattern for this group. If these hypotheses are true, the rate of unplanned pregnancy would be expected to be higher in the lower income groups.

Not only do few women abstain from intercourse when they do not desire to become pregnant, but even among the middle and upper-middle class urban whites studied by Westoff in The Third Child, only 18 percent of respondents reported ever increasing their frequency of intercourse to increase their chances of becoming pregnant. The chance of a fertile women becoming pregnant from a single unprotected coitus has been estimated at between 2 and 4 percent (Tietzer, 1960). With this significant risk of pregnancy and the large number of women who separate their level of sexual activity and desire to become pregnant, the extent to which birth control is used becomes important for evaluating the extent to which pregnancies are planned. The birth control experiences of the study population are considered in detail later in the paper.

One of the earliest studies of maternal attitudes toward pregnancy was done by Thompson (1942) at this hospital. In this study, interviews with 100 clinic primiparic who were mainly white and lower class revealed that only 19 had planned their pregnancies. By the time the child was born, of the 79 unplanned pregnancies 18 were fully acceptable, 45 partially acceptable, and 16 still unacceptable. Translated roughly into the classification used in this paper, of these 1942 clinic pregnancies 19 percent were planned, 63 percent just happened, 16 percent were real mistakes, and 2 percent were

unknown.

Although they do not give maternal attitudes at the conclusion of the pregnancies, a number of papers illustrate the frequency of ill-timed or unwanted pregnancy. In interpreting this data it is important to consider that even unwanted pregnancies frequently are not considered to be real mistakes at the time of conception.

Of Ryder and Westoff's (1969) 1965 sample of 4810 married mothers, 32 percent of those who intended to have no more children already had more children than they had desired. This study also pointed out that among those so far successful in limiting their number of children, 62 percent had experienced one or more "timing failures", and of the women still hoping to have additional children 67 percent had already had at least one timing error. Beasley's (1966) study of New Orleans Negro mothers showed that 75 percent wanted no more children and 90 percent felt they should be able to plan their families. In this group, however, only 43 percent had used contraception of any kind in the year prior to their last pregnancy.

Other studies report the problems of excess fertility. In one survey, 17 percent of all white couples' most recent children represented excess fertility - i.e. they were not wanted by one or both parents (Pohlman, 1965 a). Excess pregnancies were most frequent in older couples which reflects the fact that most planned childbearing is concentrated in the early years of marriage (Pohlman, 1965 a). Westoff's Princeton study which interviewed white urban wives three and one-half years after the birth of their second child, reports that 22 to 26 percent of these women had at least one unwanted pregnancy in this period. On the basis of these figures, Westoff (1963) estimates that only about half of white married middle class couples limit their family size

successfully.

Among married women timing is also a problem. Nearly half of these women had some of their children earlier than they had planned, and 44 percent of all pregnancies were conceived before contraception was begun by the couples (Goldberg, 1967). Perhaps the most impressive statistic to come from this study is that 28 percent of all children were conceived at a time married couples were not interested in having children.

The special problem of first pregnancies occuring too soon is emphasized by two studies. The first states that 44 percent of all first pregnancies were too soon for the mother (Freedman and Coombs, 1966). The second, a study of college wives before the advent oforal contraception, showed that although two-thirds of these women wished to wait before having children, 60.2 percent were pregnant before the end of the first year of marriage (Poffenberger, 1952).

In addition to the high risk of unwanted pregnancy in non-users of contraceptives, a mathematical model designed by Hulka (1969) has calculated that in spite of consistently using a method of birth control that is 95 percent effective, a fertile woman with a completed family has an 80 percent chance of having an additional child if she remains sexually active for twelve or more years. Also, as is documented later in this paper, many women interupt birth control without desiring to become pregnant at that time.

In assessing the responses to the questions about the extent to which pregnancies were desired, it is important to bear in mind any prejudices which may effect responses to these questions. Although lower socio-economic class mothers show higher rejection of the maternal role, Doty (1967) points out that some of this reported class difference may be the result of more open

expression of negative attitudes in this group. During the course of this study, a small number of women with unplanned or unwanted pregnancies expressed some concern about the appropriateness of their indicating their negative feelings about this pregnancy. These women and all other participants in the study were assured of the desireability of their giving their candid opinions.

UNMARRIED PREGNANCIES

Single women who become pregnant can be divided into three groups, those who obtain abortions, those who marry before the birth of the child, and those who are still unmarred at the time their child is born. A discussion of abortion is beyond the scope of this paper. Although the precise rates for this study group are not known, recent estimates of prenuptial conceptions resulting in live births range from 8 percent in the professional class to 40 percent in unskilled laborers (Richardson and Guttmacher, 1967). Nearly half of women marrying before 20 were pregnant at the time of their marriage (Richardson and Guttmacher, 1967).

The rate of births to unwed women increased in New York City from 3 to 6 percent of all births from 1946 to 1959 (Parkter et al, 1961 a). Such births were more frequent among non-whites who accounted for two-thirds of all unwed mothers and only one-fifth of all births (Parkter et al, 1961 b). For 1962 first births in New York City, 41.3 percent of non-white and 6.4 percent of white births were to unwed mothers (Sheps and Ridley, 1965).

Based on data from this study, approximately 11 percent of all live births at the Yale-New Haven Hospital are to unwed women. Of these women, 78 percent are non-white with 21 percent of all deliveries to non-white women. In New Haven, the unwed mother tends to be young with 54 percent under 20 and 88 percent under 25. If she is white she is more likely to be in her early

twenties. If she is a non-white, she is probably a teenager. Although most never married mothers are Protestant, this is largely a reflection of the large number of non-white, in the group. If she is white she is more likely to be Catholic than Protestant. In more than four out of five cases she will be a clinic patient, and the division between clinic and private patients along racial lines exists for this group as well as for the married women. Although the percentage of white unwed mothers who are private patients is substantially below the corresponding figure for married women (80 percent vs. 24 percent), it is still six times the figure for the unwed black. The single woman's low utilization of private care is correlated with the low socio-economic status of this group.

The majority of these women are living at the same address as their next of kin, and this percentage is even higher for mothers under 20 (88 percent). There does not seem to be any racial difference in the proportion of unmarried women living with their next of kin, but this percentage does decline as the number of children the women has increases. This fact is probably a reflection of the older ages of the multiparous women and the fact that these women frequently establish independent households rather than remaining with their families.

For the majority (62 percent) of unwed mothers included in this study, this was their first pregnancy, and only one in twenty had as many as three children at home. This situation reflects both the youth of the unwed mother and the fact that an illegitimate child is not a bar to marriage later in life. Early multiple illegitimacy is, however, a problem of the unwed mothers in the 16 to 17 age range; 20 percent of these women already have had a previous child and this percentage increases to 32 in the 18 to 19 year old group. There is

no statistically significant difference in the percentages of never married whites and non-whites who are delivering a second or third child out or wedlock.

CONSCIOUS DECISIONS FOR PREGNANCY

With the definitional problems and biases described above in mind, it is possible to discuss the extent to which women delivering babies at the Yale-New Haven Hospital had planned to become pregnant at the time they did. A division of unplanned pregnancies on the basis of initial feeling toward the pregnancy is also made.

THE AGGREGATE EXPERIENCE - PLANNING OF PREGNANCY BY MARITAL STATUS

The following table gives a breakdown of responses as to the extent to which the 500 women in this study specifically decided to become pregnant when they did.

TABLE 4

PREGNANCY PLANNING RELATED TO MARITAL STATUS

PLANNED	All Women* (N=500)	Married (N=369)	Never Married (N=96)
Planned	39%	47%	14%
UNPLANNED	61%	53%	86%
Just Happened	(45%)	(42%)	(55%)
Real Mistake	(16%)	(11%)	(31%)

* Includes married, never-married, divorced, widowed, and separated women.

As shown above, roughly two in five pregnancies among interviewed women were planned pregnancies; the result of a conscious decision to become pregnant. Among married women this fraction increases to nearly one-half. For 14 percent of unmarried women to indicate that they decided to become pregnant may at first seem surprising. This percentage can be explained in a number of ways.

Some single women may have felt intimidated or resentful of the questionnaire and as a result purposefully either gave the answer they felt was "expected" of a "good" mother or gave a wrong answer as a symbol of their defiance. It is also possible that in spite of the explaination of the questionnaire these women may have misunderstood what was being asked of them. For example, some women may feel that sexual relations is identical to "deciding to have" a baby even if the child is not wanted. Some single women may also have consciously wanted and decided on these pregnancies. Some of these women may have stable families without being legally married and others may have felt a child would give them fulfillment that their lives otherwise lacked. As previously indicated, many out of wedlock pregnancies lead to marriage, and some single women may have decided to become pregnant as a way of forcing a marriage but were unsecessful in this effort.

Although one in ten married women considered their pregnancy to have been a real mistake initially, this was much less than the nearly one-third pregnancies to single women that were considered this way. It is not surprising that a woman's initial feeling about a pregnancy varies with the extent to which it is planned. Nearly all women who planned their pregnancy are initially happy about the pregnancy (98.4 percent). For unplanned pregnancies of the "just happened" group, 62 percent are initially happy and the remaining women are equally divided between being initially unhappy and not caring. On the basis of intention and initial feeling, it is possible to divide pregnancies into four categories that give a picture of a woman's initial feeling about her pregnancy. These categories are given in Table 5.

TABLE 5

PLANNING AND INITIAL REACTION TO PREGNANCY RELATED TO MARITAL STATUS

	All Women* (N=495)	Married (N=364)	Never Married (N=96)
Planned	39%	47%	14%
Unplanned and Initially welcome	28%	27%	33%
Unplanned and Initially unwelcome	33%	26%	53%

* Includes divorced, separated, and widowed.

The small group (N=35) of widowed, divorced, and separated women plan their pregnancies more frequently (24 percent) and have fewer real mistakes (29 percent) than the never married group. In the group which considers the pregnancy a real mistake, 18 to 28 percent state that they were initially happy about the pregnancy. This is probably a reflection of a greater willingness of women to admit that a pregnancy was a mistake than to admit that the prospect of motherhood made them unhappy or was a matter of indifference to them.

The extent of unplanned pregnancies that are initially unwanted or of doubtful welcome is large in this community. Over one-third of all women and over one-fourth of married women included in this study initially were other than happy about their unplanned pregnancy. The extent to which pregnancy planning and real mistakes pregnancies vary among various racial, age, and economic groups is the subject of one section of this paper.

RACE

A more detailed discussion of desired and actual family size in different racial, age, and economic groups is provided in a later section of this paper. In this section, the variation in the planning of the pregnancy just completed is discussed for whites and non-whites. Since virtually all non-whites

(98 percent) in this study are negro, the terms non-white, negro, and black are used interchangeably in this discussion. Because of the large fraction of negro mothers that have never married and the large fraction of unwed mothers that are non-white, racial groups are divided by marital status to reduce the influence of this factor on the comparisons. Among the 35 widowed, divorced, and separated women included in this study over two-thirds are non-white.

TABLE 6

PREGNANCY PLANNING RELATED TO RACE

		UNPLANNED	
WHITE	PLANNED	Just Happened	Real Mistake
All* (N=318)	49%	41%	10%
Married (N=290)	51%	41%	8%
Never Married (N=17)	29%	53%	18%
NON-WHITE			
All* (N=181)	30%	50%	20%
Married (N=79)	10%	56%	34%
Never Married (N=79)	20%	53%	27%

* Includes divorced, separated, and widowed.

While nearly half of white women planned their pregnancies and only 10 percent considered the pregnancy a real mistake, the figures for non-white pregnancies present a much different picture of planning for this group. Among all blacks in the study, 20 percent planned their most recent pregnancy, and a substantially larger percentage (27 percent) initially felt these pregnancies to be real mistakes. When matched by marital status, planned pregnancies are more prevalent among whites than blacks (51 percent vs. 30 percent). This difference is statistically significant with $p < .01$. Among married blacks the rate of real mistakes was two and one-half times higher than for comparable whites (20 percent vs 8 percent). Thus, in this

hospital study only a minority of married blacks delivering had decided to become pregnant, and of the 70 percent of all non-white pregnancies that were unplanned, 41 percent were considered to be real mistakes intially. Among whites, 19 percent of unplanned pregnancies were considered to be real mistakes. The greater acceptance of unplanned pregnancies among whites may be a reflection of their higher economic status; a wealthier family is more able to cope with an unplanned pregnancy.

Because of the small number of unmarried whites in this sample, no statistically significant comparisons can be made using this group. Comparisons of the wed and unwed non-white groups can, however, be made. The percentage of planned pregnancies is far higher in the married group (30 percent vs. 10 percent), but the percentage of "real mistakes" is relatively not as much higher in unmarried than married non-whites (34 percent vs. 20 percent).

Among the questions that the variation in rates of planning between the races brings forward are to what extent is the higher frequency of unplanned and unwanted pregnancies among blacks a function of their economic status, age, and religion. These issues are discussed in the next sections of this paper.

ECONOMIC STATUS - CLINIC STATUS

Since information on income and savings is not directly available from hospital records and it is felt that directly asking for this information might reduce the number of replies to the questionnaire, an indirect measure of economic status are used in attempting to show the variation in pregnancy planning in different economic groups. The variables related to economic for which data is collected include clinic status (i.e. ward (clinic) or

private service), insurance (no insurance, commercial insurance, or public assistence), and type of room accomodation (ward, semi-private, private, or deluxe private). In most cases only private patients are allowed to choose their accomodation so this variable is only applicable to this group and because of the small number of patients in private and deluxe private rooms no separate analysis is included for them. Insurance status tends to be well correlated with clinic status; only 4 percent of private patients are candidates for public assistence and nearly four times more of the private than the clinic patients have some form of insurance (82 percent vs. 21 percent). As a result, clinic status is used as the indicator of the patient's economic status.

As is discussed above, it should be remembered that black women of higher socio-economic status are more likely to be clinic patients than white women of similar status. Acting as something of a counter balance to this effect is the fact that a disproportionate number of the poorest patients are black. Still a division based on clinic status does give an indication of the variation of planning on groups of different economic status.

TABLE 7

PREGNANCY PLANNING RELATED TO CLINIC STATUS

MARRIED WOMEN ONLY

		UNPLANNED	
CLINIC (WARD)	PLANNED	Just Happen	Real Mistake
All (N=119)	30%	51%	19%
White (N=50)	40%	46%	14%
Non-White	23%	54%	23%
PRIVATE			
All (N=249)	55%	38%	7%
White (N=239)	54%	39%	7%
Non-White (N=10)	80%	20%	

When clinic and private groups are compared, the very much higher incidence of planning in the private group is evident (55 percent vs. 21 percent). In order to correct for the higher percentage of unplanned pregnancies among unmarried clinic patients, a comparison of only married women is also made. Although the planning differential for these groups is smaller it is still exist (55 percent planned for private married vs. 30 percent planned for clinic married women). The fraction of pregnancies considered by clinic patients to have been "real mistakes" is also substantially higher than the corresponding figure for private (19 percent vs. 7 percent).

When only white patients are compared, there remains a substantial difference in the percentage of pregnancies planned and considered real mistakes in the clinic and private groups. Among married white women 14 percent more private than clinic patients had decided on this pregnancy (54 percent vs. 40 percent), and only half the percentage of private married whites considered the pregnancy to initially be a "real mistake" as had the corresponding clinic group (7 percent vs. 14 percent). It appears that among white married women, the wealthier private patient is both a more frequent planning and more accepting toward unplanned pregnancies than similar clinic patients. This apparent difference could be due to a variety of factors. Better planning among these private patients could reflect better motivation and hence more effective use of contraception. It could also reflect differences in age and family size between private and clinic groups. The higher incidence of "real mistakes" among clinic patients may also be in part due to the relative financial inability of the poorer family to deal with the unintended pregnancy. In order to separate these groups according

to maternal age and family size a much larger population sample would be required.

Very few non-white patients are delivered on the private service. Still a comparison of non-white married clinic and private patients is suggestive even if there is not sufficient statistical documentation of the substantial differences in planning practices among non-whites of different economic status. The married non-white private patients, who probably represent the socio-economic elite of non-whites, have a very high rate of planned pregnancy (80 percent). Within this sample group, none of the pregnancies were consiered to be real mistakes. These percentages are markedly different from the 23 percent decided upon and 23 percent real mistake pregnancies for the married clinic non-whites. Thus, within both the non-white and white groups, there appears to be a direct realtion between higher economic status and a greater degree of planning pregnancies.

When married clinic patients of both races are compared, the white women have a higher rate of planned pregnancies than do the non-whites (40 percent vs. 23 percent). The percentages of pregnancies considered real mistakes is lower in whites than non-white clinic patients (14 percent vs. 23 percent). Among the poorer members of this community, it appears that there is a racial difference in the degree to which pregnancies are planned with negroes being less frequent planners than whites. It is, however, the clinic patient in general, and especially the unmarried patient, who has the highest number of initially undesired children. This group also most frequently relies on public assistence, one inidcator of relatively low economic status.

Among the more affluent private patients, a racial difference in planning appears to be absent. Perhaps the racial difference in planning success disappears when non-whites reach higher economic status.

MATERNAL AGE

The variation in the maternal age at which children are born to mothers of different economic and racial groups has already been pointed out. In general, however, younger women have fewer children, and as a result are less likely to have exceeded their maximum ultimately desired family size than are older women of the same group. Therefore, it might be expected that younger married women would be less likely to consider an unplanned pregnancy a real mistake. In certain groups, however, the young women, especially the teenager, have very few resources to deal with an unplanned pregnancy and might be more likely to consider such a pregnancy a real mistake. This might be expected to be especially true of the younger unmarried women.

TABLE 8

PLANNING PREGNANCY RELATED TO MATERNAL AGE

		UNPLANNED	
UNDER 20 YEARS	PLANNED	Just Happen	Real Mistake
All* (N= 90)	22%	54%	24%
Married (N=37)	38%	49%	13%
20-24 YEARS			
All* (N=159)	37%	29%	14%
Married (N=108)	44%	49%	7%
25-29 YEARS			
All* (N=157)	50%	35%	15%
Married (N=142)	54%	34%	12%
30 YEARS AND OVER			
All* (N=90)	38%	46%	16%
Married (N=81)	43%	43%	14%

* Includes married, single, divorced, widowed, and separated.

The aggregate figures relating maternal age and pregnancy planning are obviously biased by the greatly varying percentage in different age groups of unmarried women who most frequently did not plan their pregnancies and often considered them to be real mistakes. When only married women are

compared, the lowest rate of decided upon pregnancies is found in the teenage group (38 percent); many of whom may have married after becoming pregnant or may be having a second child far sooner than they had desired. The rate of planned pregnancies increases through the twenties, reaching its peak in the 25 to 29 year old group who planned 54 percent of their pregnancies. This highest rate of planned pregnancies in the late twenties may in part reflect a large number of educated and fanancially more secure women who marry later in life than their poorer counterparts and postpone their pregnancies through contraception until this time in their lives. When by their 30's many women may have already completed their desired families, there are fewer specifically planned pregnancies than in the preceeding period.

For many of the same reasons that planned pregnancies are lowest among teenagers, the high rate of real mistakes (14%) in this young group is not surprising. The lowest rate of real mistakes occurs in the early twenties (7 percent). This low rate may reflect both the more stable family life of these slightly older women and the fact that in this age 20-24 group still relatively few women have with this pregnancy exceeded their upper limit of desired family size. As a result, unplanned pregnancies in the early twenties are more likely to represent only timing errors. In contrast to this by the late twenties or thirties many unplanned pregnancies result in the expension of the family beyond its desired size, and the higher rate of real mistakes (12 percent and 14 percent) for these age groups is not surprising.

A comparison of the percentage of unplanned pregnancies that are considered to be real mistakes shows that this percentage is higher in the late twenties and early thirties than in the teenage years. Although unplanned pregnancies are less frequent in these older women, if such a pregnancy occurs it is more

likely to represent a real mistake than it does for younger women who are confronted with more unplanned pregnancies but accept the great majority of them (81 percent).

TABLE 9

PREGNANCY PLANNING RELATED TO AGE AND RACE

- MARRIED WOMEN ONLY -

		UNPLANNED	
UNDER 20	PLANNED	Just Happened	Real Mistake
White (N=24)	37%	46%	17%
Non-White (N=13)	38%	54%	8%
20-29			
White (N=199)	54%	40%	6%
Non-White (N=51)	31%	47%	22%
30 and over			
White (N=66)	48%	41%	11%
Non-White (N=15)	20%	53%	27%

Although the age effect, as discussed above, would seem to explain the variation in pregnancy planning with age, the variation in the percentage of women of different age groups who are white makes a breakdown of age groups by race useful. It would also be useful to compare women of different economic status and parity for each group, but a larger number of subjects would be needed to made such a comparison meaningful.

In Table 8 is illustrated the relatively younger ages of married non-whites having children. Although non-whites make up over one-third of births to married teenagers, by the thirties they account for less than one in ten births. Because of the small numbers involved, data for the group under 20 are not statistically significant. Data for the group 20-29 is statistically significant with $P < .01$, and in the 30 and over group, the significance level is $P < .10$. On the basis of the small teenage sample, however, there does

not appear to be a great deal of difference between white and non-white planning for this age group.

In the twenties, a very difinite difference in planning by married women of the two races is apparent. Less than one third of blacks in this group plan their pregnancies and 22 percent of all pregnancies are considered real mistakes. The white experience in this age group is that the majority of pregnancies are decided upon and only 6 percent were considered real mistakes. The planning gap between the races is largest in the 30 and over age group. In this group, more black women consider their pregnancies real mistakes than decide to become pregnant. The extent to which this apparent racial difference is a reflection of the economic differences in the two groups can not be established here.

The decline in the relative fertility of blacks with increasing age raises a methodological question: are older blacks in this community a far smaller percentage of women in their age group or is there an actual decrease in black fertility relative to white fertility with increasing age? The second reason seems more likely, for in the city of New Haven itself the percentage of non-white women increases with increasing age though this is probably in part a reflection of white family's exodus to the suburbs (U.S. Dept. of Comm., 1967). It would be extremely interesting to know to what extent this decline in relative non-white fertility is a reflection of better contraceptive practices, sterilization, infertility secondary to disease, or a decrease in coital frequency for these women.

Although it would be desirable to relate completed family size to maternal age in discussing pregnancy planning, such a comparison is not possible here because of the relatively small sample size. The next section describes the variation of pregnancy planning with family size.

FAMILY SIZE

Although there is substantial variation in desired family size among individual women, a comparison of past completed family size with the desire for and planned nature of the pregnancy just completed can give an indication of the variation of the frequency of the decision to become pregnant with increasing family size.

TABLE 10

PREGNANCY PLANNING RELATED TO PREVIOUS FAMILY SIZE

- MARRIED WOMEN ONLY -

		UNPLANNED	
CHILDREN AT HOME	PLANNED	Just Happened	Real Mistake
None (N=130)	57%	38%	5%
One (N=100)	62%	31%	7%
Two (N=70)	34%	47%	19%
Three of more (N=68)	18%	60%	22%

Single women, of whom 60 percent are having their first child during this confinement, are too small a group to divide by parity. Because of single women group's different parity and decision pattern, it is most useful to consider married women separately. For married women, there is a definite relationship between deciding to become pregnant and the number of children already at home ($P < .01$). First pregnancies are almost always accepted by married women. Of the small number of pregnancies (5 percent) considered to be real mistakes in this group, half were in women under 20, who may have been forced into an unwanted marriage by the pregnancy or may not have felt ready for a child so soon in their marriage. There is no racial difference in the rate of "real mistakes" among married women who are having their first child.

Only a slight majority of first pregnancies were planned to occur at the time they did (57 percent). It is possible that the "just happened"

first pregnancies in many cases represent a failure by newly married couples to postpone childbearing as long as they had originally intended. Consciously deciding to become pregnant is most frequent among mothers with one child already at home (62 percent), and the percentage of these mothers considering the unplanned pregnancy a real mistake is still quite small (7 percent). The desire for second children and the comparable numbers of women having first and second children suggest that most women desire at least two children. Higher planning rates for women with one child already at home may be in part explained by the increased use of birth control in the interval after the first birth (Westoff, 1963).

Once the family has two children, the percentage of planned pregnancies sharply declines (34 percent) and ther percentage of real mistakes sharply increases (19 percent). Within the initially disappointed group of mothers having their third child, are women who only wished to have two children and women who have had their children in such rapid succession they did not want another child as soon as they had it. The small percentage of planned pregnancies may reflect, in part, the difficulty many women have in spacing their children.

In spite of their past childbearing experiences women with three and more past pregnancies seldom actually planned their most recent pregnancy, and in this group the number of real mistakes was greater than the number of decided upon pregnancies (22 percent vs. 18 percent). Thus, the woman having a large family at home who becomes pregnant probably did not wish to become pregnant at the time she did.

Although it is based on a small sample, Table 11 shows that the percentage of non-whites considering their fourth or later pregnancy to be a real mistake

to be higher than for whites. Also the percentage of non-white multiparous women deciding to become pregnant is lower than for whites, and non-whites make up a relatively higher percentage of married women with three or more children (40 percent) than they do of all married women in the study (22 percent).

TABLE 11

PREGNANCY PLANNING BY WOMEN WITH THREE OR MORE CHILDREN RELATED TO RACE

		UNPLANNED	
	PLANNED	Just Happened	Real Mistake
White (N=41)	22%	61%	17%
Non-White (N=27)	11%	59%	30%

Although it would be most useful to compare total desired family size and present familys size with the extent to which the pregnancy just completed was intended, for racial, age, and marital status subgroups, this study's sample size does not yield sufficiently large numbers for such divisions. Still, the relationship between the number of additional children desired and pregnancy planning can be shown.

TABLE 12

PREGNANCY PLANNING RELATED TO ADDITIONAL CHILDREN DESIRED

No. of Additional Children Desired		UNPLANNED	
MARRIED	PLANNED	Just Happened	Real Mistake
No More (N=140)	32%	48%	20%
One or More (N=169)	55%	40%	5%
Do Not Know (N=60)	58%	35%	7%
NEVER MARRIED			
No More (N=47)	9%	51%	40%
One or More (N=28)	21%	54%	25%
Do Not Know (N=21)	14%	67%	19%

The results given in Table 12 indicates that women who are considering having at least one more child are more likely to have planned the pregnancy just completed. These women also seldom considered their just completed pregnancy to be a real mistake. The relatively constant percentages of married women who are at least considering another child who planned or initially regretted the last pregnancy regardless of the number additional children seems to indicate that just wanting another child is often an important determinant of a woman's attitude toward her last pregnancy. Many women who desire no more children may have already reached their maximum desired family size before the occurence of the pregnancy they have just completed. As a result, the relatively high percentage of these women who initially considered their last pregnancy a real mistake is not altogether surprising.

While it is difficult to determine a meaningful measure of intended family size among unwed mothers, an interesting observation emerges from the above data for single women. Unwed mothers who indicate that they are at least considering having additional children are far less likely to have considered their past pregnancy "a real mistake".

Since the percentage of unplanned pregnancies that were initially considered real mistakes is far lower among women who are at least considering having another child, it can be argued that not exceeding the number of children desired is far more important to women than error in the timing of a pregnancy.

RELIGION

Much of the previously cited literature emphasizes religious differences in intended and actual fertility. To what extent planning of a particular

pregnancy varies among religious groups is a question less frequently considered. There is, however, the old image of the Catholic as the non-user of birth control, and if this image is correct it would seem reasonable that this group's pregnancies would be less often planned. Religious group variation in family size and birth control use are discussed in later sections of this paper.

TABLE 13

PREGNANCY PLANNING RELATED TO RELIGION

		UNPLANNED	
RELIGION	PLANNED	Just Happened	Real Mistake
Protestant (N=270)	35%	44%	21%
Catholic (N=175)	37%	52%	11%
Other* (N=55)	64%	29%	7%

* Note: Principally Jews and None in this group

It is apparent from Table 13 that the most successful planners in this hospital are in the "other" group which is composed principally (64 percent) of Jews who are almost invariably private patients, and people indicating their religions as "none". When Protestants and Catholics are compared, it appears that Catholics in this population are better planners, but these aggregate figures do not allow for racial and economic differences. Making provision for these differences by comparing married women matched by race and clinic (economic) status yields more useful information about planning for different religious groups.

TABLE 14

PREGNANCY PLANNING RELATED TO RELIGION

- MARRIED WOMEN ONLY -

		UNPLANNED	
WHITE PROTESTANT	PLANNED	Just Happened	Real Mistake
All (N=100)	64%	27%	9%
Private (N=81)	63%	31%	6%
Clinic (N=19)	69%	10%	21%
WHITE CATHOLIC			
All (N=142)	36%	54%	10%
Private (N=116)	40%	51%	9%
Clinic (N=26)	19%	69%	12%

Since the black group is relatively small and is overwhelmingly Protestant, religious comparisons between races are limited here. Although this data is difficult to interpret because of small numbers, black Catholics appear to be better planners than black Protestants.

Comparisons among white married women, show that for both clinic and private patients Protestants more frequently planned their last pregnancy. It also appears that white clinic Protestants plan their pregnancies as frequently as their private counterparts. The rate of pregnancies considered to be "real mistakes" is substantially higher for clinic than private Protestants.

In contrast to the Protestant experience, white married private Catholics planned their last pregnancy twice as frequently as did clinic patients in this group. The rate of pregnancies considered initially as real mistakes is similar in both of these groups. This finding may be one indication of the general acceptence most unplanned pregnancies have among Catholics.

Since planning rates are substantially different for private and clinic patients, religious differences in planning rates do not seem explicable and

on the basis of differences in economic status. The narrowing of the religious differential in planning rates for women who are private patients may reflect the greater acceptence of bith control among more educate and wealthier Catholics.

Although pregnancies considered to be real mistakes are less frequent among white Protestants, the percentage of unplanned pregnancies that are considered to be real mistakes is higher among white married Protestants than Catholics (25 percent vs. 16 percent). This may be an additional indication of the Catholics greater acceptance of the pregnancy that "just happens". The relatively greater acceptence of unplanned pregnancies among Catholics may also be reflected in the fact that Catholics less frequently specifically decide to have a child at a particular time.

BIRTH PLACE

In comparing fertility between the races in a northern city, the question of to what extent negro fertility is a reflection of southern rural values arises. Although rural versus urban origin is not available, a comparison among negro women divided by their place of birth is made.

TABLE 15

PREGNANCY PLANNING RELATED TO BIRTH PLACES

- NON-WHITES ONLY -

		UNPLANNED	
MARRIED	PLANNED	Just Happened	Real Mistake
Southern Born (N=53)	24%	57%	19%
Not Southern Born (N=26)	42%	35%	23%
SINGLE			
Southern Born (N=45)	9%	56%	35%
Not Southern Born (N=34)	12%	56%	32%

The majority of non-whites delivering at his hospital were born in the South. Relatively more married than single non-white mothers are southern born, and this probably reflects the younger age of single mothers. When the extent to which the last pregnancy was planned is compared by place of birth, there is no statistically sigificant difference for either married or single women ($P < .20$ for married, $P < .50$ for single). Thus it appears that the failure to plan pregnancies among blacks occurs in women of both (rural) and (urban) northern birth.

DESIRED FAMILY SIZE

In contrast to limited literature dealing with the extent to which given pregnancies are planned, the literature relating to desire family size is quite extensive. Because it is based on data obtained in the immediate post-partum period from women with a variety of racial, marital, age, and previous childbearing backgrounds, this study's determination of desired family size differs in method from that used in most other studies.

A variety of factors limit the accuracy of any data about desired family size. A Detroit study of a heterogenous group of people demonstrats that over the course of their reproductive years as many as two-thirds of couples change their minds about how many children they wish to have (Goldberg et al, 1959). Another study showed that even relatively well educated informants have a great deal of difficulty in accurately remembering their past responses to questions about desired family size (Sheps and Ridley, 1965).

When desired and actual family size are compared, it becomes apparent that individuals, who may have determined an ideal family size, are still very poor predictors of their actual eventual family size (Whelpton et al, 1966) One study, using a 20 year follow-up, shows the correlation between desired and

actual family size to be at 0.30 level (Dice, et al, 1964). Other studies state, however, that the women's desired family size is the best predictor of eventual family size (Westoff, 1963).

In spite of the uncertainties about the accuracy and predictive value of data on desired family size, a comparison of desired family size for different social, economic, and racial groups is of interest. Within the literature of the 1960's there is general agreement that for most couples having children from two to four children is considered the ideal number (Westoff, 1963).

A number of studies advance the thesis that religious preference is the most important determinant of desired family size (Westoff, 1963). Roman Catholics, especially those of higher socio-economic status, desire larger families than their cohorts with other religious preferences (Parkter, 1961 b; Freedman, 1955). This religious difference is desired family size could not be accounted for by differences in age at marriage.

TABLE 16

DESIRED NUMBER OF CHILDREN RELATED TO RELIGION

RELIGION	Study 1	Study 2	Study 3
Catholic	3.6	5.6	3.3
Protestant	3.0	3.5	2.7
Jewish	2.7	3.4	
None		3.2	

Study 1: Westoff, 1963 Mean Desired Number of Children
Study 2: Westoff, 1967 Average Desired Number of Children
Study 3: Freedman, 1955 Desired Number of Children

Although at least one study asserts that higher education exerts little influence on desired family size, three other studies show higher ideal family sizes for higher income families (Westoff, 1967; Freedman 1955; Beasley, 1966). Another study shows a positive correlation between rising socio-economic status

and larger family size for Catholics and third-generation urban Protestants, but establishs a small negative correlation for other groups (Westoff, 1963).

In spite of the larger average completed family size for non-whites that is documented in the next secion of this paper, married non-white women have smaller average desired family sizes than do their white counterparts.

TABLE 17

AVERAGE DESIRED FAMILY SIZE RELATED TO RACE

Average Total Children Wanted

RACE	All U.S. 1.	Northeast U.S. 1.	Detroit 2.
White	3.3	3.5	3.05
Non-White	2.5	2.9	2.28

References 1. Campbell, 1965
2. Freedman et al, 1955

The national study cited in Table 17 also showed that white women who had moved from rural to urban homes have lower average desired family size than other urban whites, but this is not the case for non-whites. The Detroit area study concluded that urban born women had higher average desired family size than women who had lived part of their lives in the South, most of the women born in the South included in this study were non-white. These studies conclude that urban population is more likely to desire larger families than a population of migrants from a rural area.

DETERMINING DESIRED FAMILY SIZE - Methodology

In order to determine desired family size for the women included in this study, the following technique is utilized. From all respondants to the questionnaire, only women having a first, second, or third child who gave a definite reply to the question on the number of additional children desired are used in calculating desired family size (number of children). This

figure was obtained by adding the number of children a woman has to the number of additional children she desires. Unless otherwise specified, the figures calculated in this way are used in the study's tables of desired family size. Therefore, in interpreting data on desired family size it is important to remember that these figures were calculated for only parity 1 to 3 women who knew how many more children they desired. This approach was used partly because it seems highly probable that some women who wanted no more children (42 percent of the whole study group) have with the birth of this or a previous child already exceeded their desired family size. In spite of these methodological limitations, a comparison of desired family size for a variety of groups within this study can be made using this data. Quantitative comparisons with other groups are difficult.

In addition to the large number of women who in the past-partum period indicate they want no additional children, more than one in six women who have just delivered a child indicate they "Do Not Know" how many additional children they desire to have. This group is also of necessity excluded from calculations of desired family size. It would seem reasonable to assume that few women who responded in this manner have already exceeded their desired family size with the birth of their most recent child.

Before comparing desired family size for various groups of patients, the distribution of the number of additional children desired for women of varying parities is presented in Table 18.

TABLE 18

NUMBER OF CHILDREN RELATED TO NUMBER OF ADDITIONAL CHILDREN DESIRED

	NO. OF ADDITIONAL CHILDREN DESIRED					
NUMBER OF CHILDREN	None	1	2	3	4+	Don't Know
1 (N=189)	14%	28%	26%	8%	5%	19%
2 (N=136)	37%	19%	16%	4%	2%	22%
3 (N= 86)	72%	12%	2%		2%	12%
4 (N= 39)	77%	8%	2%			13%
5 or more (N=46)	89%		2%			9%

Although most primipara (86 percent) are considering having another child, few women (11 percent) with 3 or more children definitely want an additional child. For women with large families (5 or more children), only one of forty-six definitely want another child. Among women with three or fewer children now, 80 percent wish to have no more than three children. Within this study, only 71 percent of women delivering were having their first, second, or third child. Therefore, it appears that actual fertility exceeds desired family size for the women seen in this hospital. It would be interesting to determine by extended follow up how many of the 43 percent of women delivering here who want no more children do not have additional children.

MARITAL STATUS

A comparison of married and unmarried women including divorced, widowed, and separated women, shows that for women with one or two children married women desired more additional children. This difference in desired family size may reflect the age, race, or economic differences in the two groups or may reflect negative attitudes toward pregnancy among unmarried women. It is interesting to note that 35 percent of unmarried women having their first child indicate they want no more children. Only 5 percent of married primigravida want no more children.

RACE

Although a higher percentage of non-whites (26 percent) than white women (20 percent) delivered their fourth or more child during this confinement, many more non-white (67 percent) than white (42 percent) women who already have two or three children wished to have no more children.

TABLE 19

TOTAL DESIRED FAMILY SIZE RELATED TO RACE*

DESIRED FAMILY SIZE	All (N=335)	White (N=217)	Non-White (N=118)
1	8%	3%	18%
2	30%	26%	38%
3	41%	46%	31%
4 or more	21%	25%	13%

* Based only on Parity 1 to 3 women giving a definite answer as to how many more children were desired.

It appears on the basis of Table 19 that for women who do not yet have large families, whites tend to desire larger families than non-whites. In both groups, however, the great majority of women delivering here desire two or three children. The relatively high percentage of non-whites (18 percent) who state they wish to have only one child may be a result of the relatively high number of unmarried mothers in the non-white group and the fact that unwed mothers most frequently indicated they desired no additional children.

With the percentage of each group indicating they "Don't Know" the number of additional children they desire approximately equal (18 percent non-white vs. 16 percent white), the certainty with which members of both races know the size family they wish appears similar.

For purposes of illustrations assuming that all women who indicate they want four or more children desire an average of 4 1/3 children each, average

desired family size is 2.8 children for the sample survey. This number is less than that obtained in a number of the other surveys (Table 17). This may reflect this study's exclusion of women who already have more than three children from the calculation of desired family size. Average family size for all women indicate a definite number of additional children desired in this study was 3.2. This number is close to figures given in Table 17 for average desired family size. Using Table 19 for only parity 1-3 mothers, with the resultant underestimating of average desired family size, it is possible to compare the relative average desired family size of whites and non-whites. Whites had an average desired number of children of 2.3. The differential in desired family size between whites and non-whites obtained from these estimates (.7 children more for whites than non-whites) is very similar to the racial differentials in desired family size cited above (0.6 to 0.8) in Table 17.

CLINIC STATUS

Because of the higher percentage of clinic patients that are unmarried, and the lower average desired family size of unwed mothers, only married clinic and private patients of parity one to three are compared in Table 20. The comparison of clinic and private patients given here is still influenced by the lower average number of children desired by non-whites who are predominantly clinic patients.

TABLE 20

TOTAL DESIRED FAMILY SIZE RELATED TO CLINIC STATUS

- MARRIED WOMEN ONLY -

DESIRED FAMILY SIZE	Clinic (N=69)	Private (N=175)
1 child	4%	2%
2 children	22%	26%
3 children	52%	46%
4 + children	22%	26%

Private patients desire more children on the average (3.1 children) than do clinic patients (2.9 children), and higher percentage of private patients who wish to have families of four or more account for most of this difference.

RELIGION

TABLE 21

DESIRED FAMILY SIZE RELATED TO RELIGION

- MARRIED PARITY 1-3 WOMEN -

DESIRED FAMILY SIZE	White Protestants (N=66)	Non-White Protestants (N=40)	White Catholics (N=96)
1 child	2%	10%	
2	32%	35%	18%
3	45%	40%	54%
4 +	21%	15%	28%

In Table 21, the division of Protestants by race helps to reduce the influence of the non-whites who are largely Protestant and have a lower desired average family size (2.7) than white Protestants (2.9). The number of non-white Catholics was too small in this sample to calculate comparable figures. Married Catholics not only have the largest desired average family size (3.2), but also are more likely (28 percent) to desire families of four or more even when their families are still small. This finding is in accord with Westoff's finding (1963) that Catholic's want larger families all through their reproductive lives. Only about half as many Catholics as Protestants wish to have two or fewer children.

Married Catholics and Protestants have nearly equal percentages of women being unsure of how many additional children they wish to have (Protestants - 17 percent, Catholics - 15 percent). Among married women who already

have four or more children, the percentage of Catholics and Protestants definitely wanting to have at least one more child was the same (8 percent).

MATERNAL AGE

TABLE 22

TOTAL DESIRED FAMILY SIZE RELATED TO MATERNAL AGE

DESIRED FAMILY SIZE	All Less Than 20 (N=76)	Married Only Less Than 20 (N=33)	All 20-29 (N=222)	All 30+ (N=30)
1 child	26%	9%	4%	3%
2 children	37%	34%	28%	28%
3 children	19%	22%	45%	59%
4 + children	18%	30%	23%	10%

Because of the large number of unmarried women among mothers less than 20 years old and the lower average family size desired for this group, a separate calculation for married women under 20 is made. The older age groups have relatively few unmarried mothers within their ranks. The percentage of women in each age group not sure of how many additional children they desire is quite similar, ranging from 17 to 19 percent. When only married women are compared, more women over 20 prefer three children than any other family size. In the under 20 age group, the most popular family size is 2. This difference may be in part explained by the fact that by age 20 few women have more than 2 children, but by the late twenties and thirties many women already have 3 children and hence indicate this as their desired family size. The low number of women over 30 of parity less than 3 who desired 4 or more children is not surprising, for fewer than 20 percent of all women in this older age group definitely wish to have another child. However, average desired family size among married women is relatively constant in all age groups, ranging from

2.8 to 3.0 children for mothers of parity of 3 or less at the time of the survey.

SEX DISTRIBUTION AND DESIRED FAMILY SIZE

In spite of the relative uniformity in desired average family size, a tremendous variety of factors including income, size of family of origin, place of residence may influence an individual couples decision about what size family it desires. The question of whether the desire to have at least one child of each sex influences the number of children desired is one which can be answered by comparing the number of children desired in families with two or more children which have all children of the same sex and in comparable size families which have children of both sexes. If the desire to have at least one boy and one girl in a family influences ultimately desired family size, it could be expected that a higher percentage of families with all children of the same sex would desire additional children than in similar sized families with both sexes already represented. This is shown to be the case in Table 23. Thus, it seems reasonable to assume that for some families the desire for children of both sexes results in larger desired families than if children of both sexes had already been born.

TABLE 23

PERCENT DESIRING ADDITIONAL CHILDREN RALATED TO SEXES OF PRESENT CHILDREN

NUMBER OF CHILDREN	Both Sexes Now Represented	All Children Same Sex
2	46%	59%
3	15%	22%
4+	5%	0

ACTUAL FAMILY SIZE

Although the two or three child family is most commonly desired by all groups, not all groups are equally successful in limiting their families to the size their members desired early in their reproductive lives. With the limited use couples may make of family planning methods, it is not surprising that many women may fail to limit their families to the size they desired. The unplanned nature of many pregnancies is shown in an earlier section of this paper, and as is also pointed out the degree to which pregnancies are planned varies greatly among groups. In addition, the New Orleans study of clinic women showed that only 5 percent of still fertile women succeeded in not having any children they did not intend to have (Beasley, 1966). Among white urbanites from 22 to 29 percent of couples wanting no additional children had at least one more child in the 36 to 42 month follow-up period of Westoff's 1963 study. Although a variety of factors would seem to influence actual reproductive performance, personality characteristics and actual fertility were found to be unassociated in this study.

A variety of studies do point out the differences in fertility for various groups. In some groups, the actual number of children had is very different from the originally desired family size.

The younger the woman at marriage; the larger the size of her completed family and the more likely her actual family size will exceed her desired family size. This is apparently due to older women's greater success in limiting pregnancies and the shorter period of exposure to the risk of pregnancy and lower fertility of women who marry later in life (Westoff, 1963).

Data on socio-economic class and fertility shows that higher class women regardless of race have fewer children than their age-matched cohorts of

lower economic standing (Mitra, 1966 c). The percentage of families that are completely successful in planning their families also varies with socio-economic class. In one study, the percentage of couples planning successfully ranges from 15 in the next lowest socio-economic status group to 48 in the high socio-economic group (Westoff, 1963).

Some authors feel that socio-economic group differences in fertility reflect differences in (urban or rural) background. Both Westoff (1963) and Goldberg (1958) claim that the negative correlation of fertility and higher socio-economic class no longer exists when allowance is made for the (urban or rural) background of the subjects.

Within the literature, there is considerable debate as to the association of education and fertility. Some authors state that higher educated groups have fewer children (Kiser, 1968). Other authors do not agree and argue that although there was a significant difference in fertility by educational group, this differential has declined dramatically for both whites and non-whites (Mitra, 1966 c; Beasley, 1966). Both birth rates and the average number of children per married women are higher for non-whites than whites and racial differentials in fertility still exist (Leasure and Schroak, 1964). Married non-white couples, have lower desired average family sizes, average from 0.7 to 1.0 more children than similar whites (Mitra, 1966 c). While fertility among poorer whites has decreased with urbanization, non-white fertility has increased in the last 25 years in spite of the increasing urbanization of this group (Westoff and Potter, 1961).

Religion and family size are strongly associated. As has been pointed out, Catholics desire larger families, and among white Catholics have the largest families. Westoff (1963) sums up the association of religion and

childbearing pattern in his study of white urbanites saying "Religious preference ... is the strongest of all major social characteristics in its influence on fertility..." and ".....Catholics by and large appear to have the large families they want".

PARITY OF THE STUDY POPULATION

The distribution of the study population by parity is given in Table 24.

TABLE 24

PARITY RELATED TO MARITAL STATUS

NUMBER OF CHILDREN	All Women* (N=496)	Married (N=368)	Single (N=96)
1	38%	35%	61%
2	27%	27%	25%
3	17%	19%	8%
4 or more	18%	19%	6%

* Includes divorced, widowed, separated as well as married and single women.

As has been pointed out, the single woman most frequently is having her first child, and relatively few single women have as many as 3 children. Nearly 10 percent of the study population has 5 or more children which is considerably in excess of the percentage of parity 1 to 3 women who desire families of this size. Although few women are completing a sixth pregnancy (approximately 1 percent of women delivering), nearly one in the five women delivering already have at least three children at home.

Since the percentages of women having third and fourth or more children are approximately equal, it can be argued that the women delivering her third child in this hospital will on the average have one more child. This conclusion assumes no change in reproductive pattern. In contrast to this expected average addition of one more child for each woman having her third child, 72 percent of these women desired no more children and only 5 percent

want more than one additional child. These figures would seem to indicate that higher parity women frequently have more children than they had originally intended. This hypothesis is also supported by the fact that in this population only 18 percent of pregnancies in women having a fourth or more child were planned.

RACE

TABLE 25

PARITY RELATED TO RACE

	NUMBER OF CHILDREN			
ALL WOMEN	1	2	3	4 or more
White (N=316)	39%	29%	18%	14%
Non-White (N=179)	36%	25%	16%	23%
MARRIED WOMEN ONLY				
White (N=288)	38%	30%	18%	14%
Non-White (N=79)	24%	19%	23%	34%

When all women regardless of marital status are compared according to their race, there is little apparent difference in the percentage of women of each parity delivering. When only married women are compared there is a significant difference ($P < .01$) in the parity pattern of whites and non-whites delivering at this clinic. One in seven births to married white women represent a fourth or more child. Among non-whites, the corresponding figure is one in three. If is is assumed that the population delivering at this hospital is relatively stable, it can be argued that a non-white women now having a third child will on the average have more than one more child. This is not the case for whites, for there are fewer women in this group having fourth or more children than third children.

Non-whites also tend to have their children younger than whites with 67 percent of deliveries by non-whites and 41 percent of deliveries by whites

here to women under 25. The non-white groups earlier childbearing is also reflected in the fact that 49 percent of non-whites delivering between ages 25 and 29 are having their fourth or more child. For whites the corresponding figure is 13 percent, and it is not until the thirties that forth children represent a large percentage of white deliveries. In women over 30, 38 percent of white and 76 percent of non-white deliveries result in the birth of a fourth or more child.

MATERNAL AGE

TABLE 26

PARITY RELATED TO MATERNAL AGE

	NUMBER OF CHILD BORN			
AGES IN YEARS	First	Second	Third	Fourth
Less than 20 (N=90)	73%	22%	4%	1%
20-24 (N=159)	50%	28%	17%	5%
25-29 (N=157)	21%	34%	23%	22%
30 or over (N=90)	11%	20%	21%	48%

While the fact that older women are more likely to already have more children is hardly surprising, the percentage of women over 30 for whom this is the fourth or more child (48 percent) seems noteworthy. This indicates that many women having children in their thirties already have large families, and with 61 percent of pregnancies in women over 30 unplanned it seems likely that many of these pregnancies represent excess and unwanted fertility to these women. With nearly one-fourth of all women in the 25-29 age range delivering a fourth or more child, the question of further childbearing and resultant very large families for these women can be raised.

CLINIC STATUS

TABLE 27

PARITY RELATED TO CLINIC STATUS

	PARITY			
ALL WOMEN	1	2	3	4 or more
Private (N=260)	38%	31%	18%	13%
Ward (N=237)	38%	23%	17%	22%
MARRIED ONLY				
Private (N=250)	38%	31%	18%	13%
Ward (N=119)	30%	19%	21%	30%

When just married women are compared, ward patients are more likely to be having a third, fourth or more child. Since ward patients have lower average ages, the higher parity of this group can not be explained by older age. With 53 percent of ward patients and 8 percent of private patients in the 25-29 age group delivering their fourth or more child, ward patients have larger families at younger ages than do private patients. Therefore, it appears that the ward patient is more likely to have a larger family and have her children more rapidly than does the private patient. This is in direct contrast to the lower average desired number of children for clinic patients and in part may reflect the lower rate of planned pregnancies in this group.

When only whites are compared by clinic service, there is relatively little difference in the parity of women delivering on private and clinic services. This apparent similarity in parities on the two services is, however, influenced by the younger age of white clinic (60 percent under 25) than private (36 percent under 25) patients. This data may also indicate that as white patients become older they are more likely to be delivered on the private service. This change in clinic status with age is not apparent for

non-whites who are in almost all cases clinic patients. When only whites over age 24 are compared, the percentage of women delivering their fourth or more child is twice as high on the clinic than private service (38 percent vs. 19 percent). When correlated by age, clinic patients apparently have larger families than private patients.

RELIGION

TABLE 28

RELIGION RELATED TO PARITY

	PARITY			
ALL WOMEN	1	2	3	4 or more
Protestant (N=268)	37%	26%	17%	20%
Catholic (N=174)	36%	29%	19%	16%
Other	49%	27%	17%	7%
WHITE ONLY				
Protestant (N=112)	34%	32%	19%	15%
Catholic (N=157)	38%	28%	18%	16%

The religious group with the smallest families are, the "other" group which is composed principally of Jews who are almost always private patients. A comparison of white Catholics and Protestants shows little difference in the parity distribution of these women. There is one interesting difference in the pattern of delivery of white Catholics and Protestants it appears that with 48 percent of catholic births and 32 percent of protestant births to women under 25, Catholics tend to have their children at younger age than Protestants.

CONTRACEPTIVE METHODS

In examining the reproductive performance of a population, knowledge about past contraceptive use within this population is relevant. The methods of contraception last used by women delivering in the Yale-New Haven

Hospital is discussed in this section, and a discussion of failures of contraception is presented in the next section.

Differences in reproductive rates for various groups may, in part, reflect differences in the utilization of contraception. A number of studies have shown that birth control utilization rates vary with marital status, socio-economic class, race, parity, and age (Wolf, 1969). In spite of this group's stated desire to be able to plan their pregnancies, only 57 percent of non-white New Orleans women ever used birth control in the year before becoming pregnant (Beasley, 1966). Among white married urbanites, about half use contraception before their first pregnancy, and this fraction increases with succeeding pregnancies to 88 percent using some contraceptive method before their second pregnancy (Westoff and Ryder, 1968). White urbanites who do not use any contraceptive method before the birth of their third child tend to desire large families (Westoff, 1963).

Prior to the introduction of oral contraceptives, condom, diaphram, and rhythm methods were the most widely used means of birth control in the United States. While Protestants relied mainly on condoms and diaphrams in this pre-pill era Catholics used the rhythm method most frequently (Westoff and Potter, 1961). By 1965 nearly half of non-catholic married women in their twenties had some experience with oral contraceptives, and more than one-third of Catholics in this age group had also used pills (Westoff and Ryder, 1966). In 1965, the utilization of oral contraceptives varied greatly among different groups. These rates varied with age and race as well as religion. In married women with three or more children, 9 percent of non-whites and 29 percent of whites had some experience with birth control pills. Drop-out rates were also higher among non-whites than whites (Westoff

and Ryder, 1968). Women who had larger (3 or more children) families were also likely to discontinue their use than were low parity women. In Westoff and Ryder's (1968) study, 65 percent of women stopped pills because of side effects, 15 percent stopped for other reasons associated with pill use such as anxiety about forgeting, and 20 percent stopped for reasons not connected with pill use, principally wanting to become pregnant.

Although not legally recognized as a method of birth control in the United States, abortions can play a significant role in birth limitation. Their utilization may vary with social class, age, or religion, and this variation may in part be responsible for some of the differences in the reported rate of unplanned pregnancies in various groups. Based on the Swedish experience, the legalization of abortion could be expected to decrease the number of pregnancies ending in live births (Huldt, 1968). The effect of such a policy on contraceptive use and pregnancy planning is not known.

In evaluating the role that birth control plays in the reproductive behavior of women included in this study, there are two questions: The method of birth control last used? Does this pregnancy represent a failure of that method of birth control? If the pregnancy does not represent a failure of birth control, it is assumed that no birth control method was being used at the time conception occurred.

Because of the variety of birth control methods used within this community and this study's small sample size, to facilitate comparisons birth control methods were divided into three categories: no birth control, oral contraceptives, and all other methods of birth control. The "all other methods" category includes diaphram, rhythm, IUD, withdrawal, vaginal jelly and foam, condoms, and douche.

MARITAL STATUS

TABLE 29

METHOD OF CONTRACEPTION LAST USED RELATED TO MARITAL STATUS

METHOD	All Women* (N=498)	Married (N=368)	Never Married (N=96)
None	28%	24%	48%
Pills	36%	36%	29%
Other Method	36%	40%	23%

* Includes widowed, dovorced, separated as well as married and single.

The higher percentage of never married women who have not used any method of birth control can be related to a number of factors. Unmarried mothers tend to be the youngest women and are most frequently having their first child. Regardless of marital status women under 20 and primipara do tend to be among the least frequent users of birth control. Among the questions raised by the fact that 52 percent of never married women had some experience with birth control is: Why do single women stop using birth control and risk pregnancy?

RACE

TABLE 30

METHOD OF CONTRACEPTION LAST USED RELATED TO RACE

METHOD LAST USED	All Women (N=497)	White (N=316)	Non-White (N=181)
None	28%	23%	37%
Pills	36%	38%	33%
Diaphram	5%	7%	3%
Rhythm	8%	11%	3%
IUD	3%	3%	5%
Withdrawal	5%	4%	5%
Vaginal Jelly or Foam	6%	5%	8%
Condom	5%	6%	3%
Douche	2%	1%	2%
Other, Not Given	2%	2%	1%

Although the majority of women of both races have used some method of contraception, a higher percentage (77 percent) of whites than non-whites (63 percent) have used some birth control method. This difference may reflect the higher average age of white women delivering in this hospital. The percentage of contraceptive users in both races who last used pills is nearly equal (52 percent of non-white and 49 percent of white contraceptive users).

For some methods, there are significantly different utilization rates among whites and non-whites. These differences, which may reflect the groups are greatest for rhythm and diaphram which are more popular among whites.

Among non-whites, those born in the northeast are most likely to have used some method of birth control. Among northeastern born non-whites 71 percent have used one method of birth control and of these 60 percent last used oral contraceptives. For southern born whites 59 percent have used a contraceptive method and of these 42 percent last used pills. In fact, the

percentage of northern born non-whites who last used pills for contraception (43 percent) is higher than the corresponding percentage of whites (38 percent).

CLINIC STATUS

TABLE 31

METHOD OF CONTRACEPTION LAST USED RELATED TO CLINIC STATUS

	None	Pills	Other Method
Clinic (N=239)	40%	31%	29%
Private (N=260)	18%	40%	42%

The older, more frequently white and married, private patient is the more frequent user of birth control. When only women under 20 are compared, private patients are still only half as likely never to have used contraception as clinic patients (25 percent private vs. 49 percent clinic). Even in the 25-29 group which is the age group most often having some experience with birth control, clinic patients are twice as likely to have not used birth control (26 percent) as are private patients (13 percent). Among both clinic and private patients who have used contraceptives, the percentage of these groups who last used pills is very similar (clinic - 52 percent, private - 49 percent).

MATERNAL AGE

TABLE 32

METHOD OF CONTRACEPTION LAST USED RELATED TO MATERNAL AGE

METHOD	Under 20 Years (N=92)	20-29 Years (N=316)	Over 30 Years (N=90)
None	45%	24%	27%
Pills	25%	42%	28%
Diaphram		5%	12%
Rhythm	5%	8%	11%
Withdrawal	10%	3%	5%
Vaginal Jelly or Foam	3%	6%	8%
Condom	5%	5%	7%
Other*	7%	7%	2%

* Methods used by less than 5 percent of women. Includes IUD, Douche, not given.

The lowest rates of birth control utilization are for women under 20. This finding agrees with Westoff who showed that birth control use increases with higher age and parity. A possible reflection of the increased acceptance of birth control is that women still in their twenties (76 percent) are more likely to have used some form of birth control that women over 30 (73 percent). Also younger birth control users are far more likely to have used oral contraceptives last than are women over 30 who more often used diaphrams, rhythm, and vaginal jellies.

RELIGION

TABLE 33

CONTRACEPTIVE LAST USED RELATED TO RELIGION

METHOD	Protestant (N=269)	Catholic (N=175)	Other* (N=55)
None	31%	28%	18%
Pills	36%	33%	44%
Diaphram	4%	3%	14%
Rhythm	4%	15%	4%
IUD	5%	2%	2%
Withdrawal	6%	4%	2%
Vaginal Jelly or Foam	7%	5%	5%
Condom	3%	7%	7%
Other**	4%	3%	4%

* Includes 35 Jews and 20 none or other
** Methods used by less than 5% of all groups

The "other" group is both the most experienced in terms of past contraceptive use and the group with the highest percentage of planned pregnancies. This "other" group is also remarkable for the popularity of diaphrams among its members.

When rhythm and withdrawal are excluded, the percentage of women using some method of contraception not now sanctioned by the Catholic Church is

higher for Protestants than Catholics. Pill use is, however, nearly equal in these two groups. When all contraceptive methods are considered, it appears that approximately equal percentage of Protestant and Catholic women here made some effort in the past to prevent pregnancy.

PARITY

TABLE 34

CONTRACEPTIVE LAST USED RELATED TO PARITY

- MARRIED WOMEN ONLY -

	Number of Children			
METHOD	1 (N=189)	2 (N=136)	3 (N=86)	4 or more (N=86)
None	39%	21%	20%	23%
Pills	33%	38%	45%	30%
Other	28%	41%	35%	47%

As has been shown in the studies discussed above the percentage of women using birth control increases with larger family size. The percentage of women using oral contraceptives is higher for the lower parity usually younger women than for women with four or more children. High parity women more frequently rely on other methods of birth control.

CONTRACEPTIVE FAILURES

Within this study, 13 percent of women report their last pregnancy is the result of contraceptive failure. However, on the basis of this study, it is not possible to calculate the rates of accidental pregnancy for women using various types of birth control. This rate reflects both the inherent effectiveness of the birth control method and the deligence with which couples use the method. For example, when used as directed oral contraceptives, are virtually 100 percent effective, but improper use of this method can still result in pregnancy.

Accidental pregnancy rates (per 100 women years) have been calculated by authors for a variety of contraceptive methods. In studies, which excluded the pill, these rates range from 4.5 pregnancies per 100 women years for diaphram to 42.8 pregnancies per 100 women years for foam tablets (Kiser, 1962). There is also a wide range in the calculated rates of accidental pregnancy for a given method. For example these rates for diaphram users range from 4.5 to 32.6 pregnancies per 100 women years (Kiser, 1962). Much of this variation is attributed to differences in the reliability of the groups studied.

Gordon (1967) divided contraceptive failures into four groups: primary failures -- failures of a birth control method used consistently; secondary failure -- irregular use of contraceptives; negligence -- no contraceptives, and rhythm. Without providing information of the relative utilization of various contraceptive methods, Gordon (1967) reported that of 149 unwanted or unsought pregnancies 18 percent were primary failures, 25 percent were secondary failures, 25 percent were negligence, and 32 percent were rhythm failures. Potter, Westoff, and Sagi (1962) state that one-half of rhythm users report at least one contraceptive failure.

When choosing a contraceptive, many women do not seem to give much consideration to method effectiveness (Westoff, 1963). In fact, this study points out that women with two past contraceptive failures often continue to use the same method. Contraceptive failure rates are most highly correlated with the number of children desired; the more children desired the greater the chance for contraceptive failure (Westoff, 1963).

The final questionnaire form, which was administered to 400 women, had a separate question which asked whether the pregnancy just completed

was a result of a failure of the birth control method last used. The replies to this question serve as the basis of the discussion of birth control failures. Birth control failures included here are the result of both patient failure to use a method properly and of method failure.

Within the final questionnaire study sample, 13 percent of women indicate that their last pregnancy was the result of a contraceptive failure, and this is 18 percent of all women in this sample who indicate they have some past experience with contraceptive use. It is assumed that the other 82 percent of contraceptive users discontinued contraceptives before their most recent conception.

A relatively high number of pill failures (percent of all failures) is a reflection of both the popularity of this method and the fact that any method of contraception is only effective when used as directed. Even if a pregnancy is a result of a patient's failure to use a contraceptive correctly, this pregnancy still in many ways represents a failure of that birth control method. The requirements for its successful use were too high for this patient, and she did not obtain the results she desired from it.

PATIENT AND METHOD FAILURES

Of the 53 women indicating that their pregnancies represent failures of birth control, 35 indicate whether this failure is, in their opinion, the result of patient or method failure. In this sample, 46 percent are patient failures, 38 percent are method failures, 16 percent are not definitely known to be patient or method failures. Among oral contraceptive users, no failures are definitely known to be due to method failure, and two-thirds of "pill failures" are the result of admitted

patient error in their use. Rhythm and condoms together accounted for over half the reported method failures that result in pregnancy.

MARITAL STATUS

If the rates of pregnancies, for women who have used birth control, resulting from contraceptive failure are related to marital status, there is no significant difference in these rates for married (18 percent) and single women (19 percent). When only women who last used some method of contraception other than pills are compared, there were relatively more pregnancies among the single (36 percent) than the married group (24 percent) that are attributed to birth control failure.

RACE

There is no statistically significant difference in the percentage of white (13 percent) and non-white pregnancies (14 percent) that are considered failures of birth control. Althoug based on a small sample group (N=59), single white women (27 percent) had a higher percentage of pregnancies considered to be birth control failures than did the corresponding group of non-whites (6 percent). This difference is not statistically significant with $P < .20$.

CLINIC STATUS

Among private patients 12 percent of all pregnancies are considered to represent contraceptive failures. The corresponding figure for clinic patients is 16 percent. When only women with past contraceptive experience are considered, the rate of birth control failures is substantially higher for clinic (26 percent) than private (16 percent) patients in this group. This difference is significant at the level of $P < .05$.

RELIGION

In spite of the high number of failures occuring among women who have used rhythm and who are usually Catholics, there is no significant difference by religion in the percentage of pregnancies resulting from birth control failure. If only women who last used a birth control method other than oral contraceptives are compared, a higher percentage of Catholic (32 percent) than Protestant (19 percent) births in this group are considered the result of birth control failure. This difference is explainable by the high number of rhythm method failures.

MATERNAL AGE

With higher maternal age there is an increase in the percentage of pregnancies considered to be the result of contraceptive failures. This finding may reflect two age related trends in birth control use. Although younger women less frequently utilize birth control, they are more likely to use oral contraceptives (51 percent of contraceptive users under age 25), than are older women (38 percent of contraceptive users over age 30). Ther percentage of women using birth control also increases with higher maternal age.

Reflecting these age differences in type and utilization rates of birth control, is the 17 percent of all pregnancies in women over 25 which are attributed to contraceptive (method or patient) failure. Among teenagers the corresponding rate is 6 percent and in the 20-24 year age group the contraceptive failures represent 10 percent of all births. Because of small sample size this data must be interpreted cautiously.

SUMMARY

1. A total of 500 women delivering children at the Yale-New Haven Hospital in 1969-70 were asked about the extent to which the pregnancy just completed are planned. A variety of other facts are also determined including their past contraceptive practices.

3. Among all respondants 39 percent plan their pregnancies and 16 percent consider them to be a real mistake. A total of 71 percent of all pregnancies are unplanned.

3. Married women (47 percent) plan their pregnancies more frequently than never married women (14 percent).

4. Whites (49 percent) plan their pregnancies more frequently than non-whites (20 percent). When only married women are compared a planning differential still exists with whites planning 51 percent and non-whites 30 percent of pregnancies.

5. For married women, the wealthier private patients (55 percent) plan their pregnancies more frequently than the clinic patients (30 percent).

6. With regard to family size, planned pregnancies are most frequent (54 percent) for women with one child already at home and least frequent for women with four or more children (11 percent).

7. Most women in this study (71 percent), who now have three or fewer children, eventually wish to have a total of two or three children.

8. Whites with three or fewer children have a higher average desired family size than non-whites, and whites (25 percent) more frequently than non-whites (13 percent wish to have four or more children).

9. Fewer white Protestants (66 percent) eventually want to have families with three or more children than white Catholics (82 percent).

10. Few women (11 percent) after delivering a third or more child ever wish to have another child.

11. A higher percentage of married non-whites (34 percent) than married whites (14 percent) are delivering their fourth or more child during this confinement.

12. Among married women, a larger fraction of ward (30 percent) than private patients (13 percent) have four or more children.

13. In this study, 72 percent of women indicated some prior experience with a method (s) of contraception.

14. Half of all women who have used any form of birth control used oral contraceptives as their last birth control method.

15. Lack of any experience with contraceptive techniques is most prevalent among the single women (46 percent).

16. Private patients (82 percent) use birth control more often than did the poorer clinic patients (60 percent).

17. Nearly half (45 percent) of never married women delivering children in this hospital have never used birth control.

18. Failures of birth control account for 13 percent of all births included in this study.

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APPENDIX

Sample Questionnaire

It would be very helpful to us if you would answer the questions below by checking the answer that best describes your own feeling.

1. Nine months ago: did you decide to have a baby? Yes ☐
   or did it just happen? ☐
   or was it a real mistake? ☐

2. When you first learned you were pregnant were you happy ☐ unhappy ☐ did not care ☐

3. How do you feel about this pregnancy? happy ☐ unhappy ☐ do not care ☐

4. How does the baby's father feel about the pregnancy? happy ☐ unhappy ☐
   did not care ☐ don't know ☐

5. Did you want a boy ☐ girl ☐ did not care ☐

6. Will the baby have its own room at home? yes ☐ no ☐

7. Would you like to breast feed the baby? yes ☐ no ☐

8. Not counting this child, what age are the children you already have?

Age	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Boys	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Girls	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

9. How many more children would you like? none ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
   more than 5 ☐ don't know ☐

10. How soon would you like to have your next child? never ☐ within 1 year ☐ 2 years ☐
    in more than 2 years ☐ don't know ☐

11. What type of birth control did you last use?
    pills ☐ vaginal jelly ☐
    diaphragm ☐ rubber condom ☐
    rhythm method ☐ douche ☐
    intrauterine device (loop) ☐
    withdrawal ☐ none ☐

12. Was this pregnancy the result of a failure in the birth control method last used.
    Yes ☐ No ☐

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