

SOCIAL AND PSYCHOLOGICAL FACTORS AFFECTING FERTILITY

VI. THE PLANNING OF FERTILITY¹

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ALTHOUGH it is generally believed that attempts to plan the number and spacing of children are much more common now than formerly among urban married couples, little accurate information is available regarding the proportion of such couples that are involved, nor the results which they achieve. How many try to postpone the first pregnancy until the desired date? How many begin with the second pregnancy, the third, etc? And how many never try to control family size and spacing? What proportion of each group is low in fecundity or completely sterile? Of the fecund couples who try to plan their pregnancies, how many are completely successful in their efforts, partially successful, unsuccessful? How do they compare in number of children? What are the desired intervals between marriage and the first child, the first and second, etc.? Do the various planning groups differ in the physiological ability to bear living children? How much has the birth rate been depressed by the efforts of fecund couples to plan family size? What would happen to this rate if all attempts at family planning were successful?

Partial answers to the foregoing and related questions can be obtained from the data collected in the Study of the Social and Psychological Factors Affecting Fertility. As brought out in previous articles in this series, schedules were completed for 1,080 Indianapolis couples who met certain demographic, religious and educational requirements² and who should be

¹ This is the sixth of a series of reports on a study conducted by the Committee on Social and Psychological Factors Affecting Fertility, sponsored by the Milbank Memorial Fund with grants from the Carnegie Corporation of New York. The Committee consists of Lowell J. Reed, Chairman; Daniel Katz; E. Lowell Kelly; Clyde V. Kiser; Frank Lorimer; Frank W. Notestein; Frederick Osborn; S. A. Switzer; Warren S. Thompson; and P. K. Whelpton.

² Husband and wife native white; both Protestant; married in 1927, 1928, or

typical of a large proportion of our urban population. Of these 1,080 couples, 860 are classified as "relatively fecund" and 220 as "relatively sterile." The latter group includes all couples with three or fewer live births who knew (or had good reason to believe) that they were sterile during a period of at least 24 or 36 consecutive months.³ Other couples are considered "relatively fecund." Because of the sampling procedure utilized, the 860 "relatively fecund" couples for whom schedules were completed are believed to be representative of the 1,444 "relatively fecund" (and apparently cooperative) couples who were found in the first stage of the field work. For the same reason the 220 "relatively sterile" couples for whom schedules were completed are believed to be representative of 533 "relatively sterile" couples.⁴ This analysis is based on the 1,977 couples in the inflated sample, the data for the additional 584 "relatively fecund" and 313 "relatively sterile" couples being obtained by duplicating on a random basis the punched cards for some of the couples in the sample.

A. THE FREQUENCY AND SUCCESS OF ATTEMPTS TO PLAN FERTILITY

For the large majority of couples the problem of how to plan fertility is the problem of how to space the pregnancies wanted and prevent those not wanted. From this standpoint methods of planning fertility can be classified logically into three broad

1929; wife under 30 and husband under 40 at marriage; neither previously married; residents of a large city most of the time since marriage; and both elementary school graduates. See Whelpton, P. K. and Kiser, Clyde V.: *Social and Psychological Factors Affecting Fertility. IV. Developing the Schedules, and Choosing the Type of Couples and the Area to be Studied.* The Milbank Memorial Fund *Quarterly*, October, 1945, xxiii, No. 4, pp. 386-409. (Reprint, pp. 139-162.)

³ A period of twenty-four months was used in classifying never pregnant couples and one of thirty-six months for others. In the absence of more positive information, coitus without some form of contraception "always" or "usually" and not resulting in pregnancy was considered an adequate reason for classifying a couple as "relatively sterile." Sterility includes the lack of ability to deliver a live born child, as well as the lack of ability to conceive.

⁴ Whelpton, P. K. and Kiser, Clyde V.: *Social and Psychological Factors Affecting Fertility. V. The Sampling Plan, Selection, and the Representativeness of Couples in the Inflated Sample.* The Milbank Memorial Fund *Quarterly*, January, 1946, xxiv, No. 1, pp. 49-93. (Reprint, pp. 163-208.)

groups, (1) abstaining from coitus, (2) preventing coitus from resulting in conception, and (3) aborting intentionally and for nontherapeutic reasons. Among the couples under consideration the first and third groups are unimportant both absolutely and relatively. Only fifty-eight of the 1,977 couples (2.9 per cent) reported abstinence,⁵ only nine couples abstained for more than six months at a time (unless because of sickness or separation), and the total duration of abstinence was less than 0.1 per cent of the months when contraception was practiced. Illegal abortions were reported by only thirty-six couples (1.8 per cent), and the total number of such abortions was only eighty-seven, or 2.3 per cent of the number of pregnancies.⁶ The second group, in contrast, is large, for 1,764 of the 1,977 couples reported that they had tried in various ways to prevent coitus from leading to conception.⁷ In addition, seventeen wives who were "relatively fecund" and twenty-seven who were "relatively sterile" insisted they had done nothing to lessen the probability of conception, although they admitted having douched merely "for cleanliness" immediately after coitus.⁸

⁵ The percentage for the 1,444 "relatively fecund" couples is 3.1.

As used in this study abstinence means that coitus did not occur during a period of a month or longer for reasons other than illness or physical separation. The minimum period was set at one month because there is evidence indicating that a majority of women ovulate at intervals of approximately one month.

⁶ Fifty illegal abortions were reported by thirty (2.1 per cent) of the "relatively fecund" couples. One of the "relatively sterile" wives said she had paid a "physician" to perform sixteen "illegal abortions."

While it is believed that most of the illegal abortions which occurred were reported to the interviewers, it is probable that a few were concealed in spite of the interviewers' attempts to ferret them out when their suspicions were aroused by apparent inconsistencies between the replies to various questions. For further discussion of this matter see Whelpton, P. K.: "The Frequency of Abortion" in *THE ABORTION PROBLEM*. Baltimore, The Williams and Wilkins Co., 1944. pp. 15-17.

⁷ Each couple that practiced abstinence or had an illegal abortion also tried to prevent coitus from resulting in conception.

⁸ Because the belief that douching immediately after coitus will not reduce the likelihood of conceiving indicates a serious lack of knowledge of certain phases of reproduction, the interviewers were instructed to question such women carefully in order to make sure that they were not merely trying to avoid admitting that they practiced contraception. Only the women whose attitudes were unshaken were classified as not practicing contraception on a "motive" basis. Some of these women cited the family doctor as the source of their information regarding the lack of effect of a douche. It is probable, however, that "feminine hygiene" advertising is the main reason for this misunderstanding.

Table 1. Interpregnancy interval when contraception was first practiced on "motive" and "action" basis, by "relatively fecund" and "relatively sterile" couples.¹

| BASIS OF CONTRACEPTION, AND FECUNDITY STATUS | TOTAL | NEVER PRAC- TICED CONTRA- CEPTION | PRAC- TICED CONTRA- CEPTION | INTERVAL WHEN CONTRACEPTION FIRST PRACTICED | | | | | | |
|---|-------|---|--------------------------------------|--|--------|-------|--------|-------|-------------------|-----|
| | | | | First | Second | Third | Fourth | Fifth | Sixth to Tenth | |
| PERCENTAGE DISTRIBUTION | | | | | | | | | | |
| "Motive" Basis | | | | | | | | | | |
| "All Couples" | 100.0 | 10.8 | 89.2 | 64.0 | 18.3 | 4.6 | 1.5 | 0.6 | 0.3 | 0.3 |
| "Relatively Fecund" Couples | 100.0 | 1.6 | 98.4 | 69.5 | 21.2 | 5.0 | 1.9 | 0.6 | 0.3 | 0.3 |
| "Relatively Sterile" Couples | 100.0 | 35.6 | 64.4 | 49.2 | 10.5 | 3.6 | 0.6 | 0.6 | — | — |
| "Action" Basis | | | | | | | | | | |
| "All Couples" | 100.0 | 8.5 | 91.5 | 68.9 | 15.8 | 5.0 | 1.2 | 0.5 | 0.2 | 0.2 |
| "Relatively Fecund" Couples | 100.0 | 0.4 | 99.6 | 74.2 | 18.0 | 5.3 | 1.4 | 0.4 | 0.3 | 0.3 |
| "Relatively Sterile" Couples | 100.0 | 30.6 | 69.4 | 54.6 | 9.8 | 3.9 | 0.6 | 0.6 | — | — |
| NUMBER OF COUPLES | | | | | | | | | | |
| "Relatively Sterile" Couples | | | | | | | | | | |
| "Motive" Basis | 1,977 | 213 | 1,764 | 1,265 | 362 | 91 | 30 | 11 | 5 | 5 |
| "All Couples" | 1,444 | 23 | 1,421 | 1,003 | 306 | 72 | 27 | 8 | 5 | 5 |
| "Relatively Fecund" Couples | 533 | 190 | 343 | 262 | 56 | 19 | 3 | 3 | — | — |
| "Relatively Sterile" Couples | 1,977 | 169 | 1,808 | 1,362 | 312 | 98 | 23 | 9 | 4 | 4 |
| "Action" Basis | 1,444 | 6 | 1,438 | 1,071 | 280 | 77 | 20 | 6 | 4 | 4 |
| "All Couples" | 533 | 163 | 370 | 291 | 52 | 21 | 3 | 3 | — | — |

¹ In determining "interpregnancy intervals" in this table, an adopted child is treated the same as a child born to the couple.

From the standpoint of their motives and intentions they may well have been correct in denying that they were practicing contraception, but from the standpoint of their actions it is altogether probable that they were interfering with conception to the same extent as other users of the same douches. On a "motive" basis, therefore, 89.2 per cent of these couples had tried to control their fertility by contraception during part or all of their married life; on an "action" basis 91.5 per cent had done so. The proportions are much higher among the "relatively fecund" couples (98.4 per cent on a "motive" and 99.6 per cent on an "action" basis), and much lower among the "relatively sterile" couples (64.4 per cent and 69.4 per cent respectively).

Over two-thirds of the "relatively fecund" couples and nearly half of the "relatively sterile" couples attempted to prevent or postpone the first pregnancy by means of contraception.⁹ (See Table 1.) In addition, approximately 5 per cent of the "relatively fecund" wives and the same proportion of the "relatively sterile" wives did not intend to use preventive measures before their first pregnancy, but undoubtedly delayed it unwittingly by using a douche "for cleanliness only." Nearly all of the couples who tried to postpone the starting of their families began some type of contraceptive practice at marriage, though a small number waited a few weeks or even longer. Most of the "relatively fecund" couples who delayed their attempts at postponement had relatively little time in which to change their mind, for conception occurred without much delay. Some of the "relatively sterile" wives had a similar experience, but others found that they could not have a child for several months or years, if at all. Of the 712 couples who did not try to postpone the first conception, between 9 and 16 per cent had a premarital conception. Sixty-eight wives admitted they were pregnant when married, and forty-six others may have been, for the date on which the first pregnancy ended

⁹ In the remainder of this discussion abstinence will be considered a form of contraception.

minus the reported length of the pregnancy gives a conception date one to twenty-nine days before marriage.

Between the first and second pregnancies (or between the first pregnancy and the interview), 21.2 per cent of the "relatively fecund" couples began to plan fertility through contraception. This raised the number of contraceptors in the group to 1,309, and the proportion from 69.5 to 90.7 per cent. In other words slightly over two-thirds of the "relatively fecund" couples tried to delay or prevent the first pregnancy, and nearly all of these and three-fourths of the others tried to do so with the second. Over half (72 of 135) of the couples who did not try to prevent or postpone either the first or second conceptions began to use contraceptives when coitus was resumed after the second pregnancy. Twenty-seven joined the group after the third pregnancy, leaving only thirty-six noncontraceptors. Subsequent pregnancies led thirteen additional couples to try to control family growth, and left only twenty-three who failed to do so among those classified as "relatively fecund." As mentioned earlier, however, only six of these had unrestricted fertility, for the other seventeen wives douched "for cleanliness only," that is, they practiced contraception on an "action" but not on a "motive" basis.

For many of the 271 "relatively sterile" couples who did not use contraceptives on a "motive" basis before their first pregnancy, the fertility planning problem was that of becoming able to conceive, rather than that of spacing or preventing pregnancies. One hundred three of these couples never had a pregnancy; they constitute over half of the non-contraceptors in the "relatively sterile" group. Thirteen additional couples conceived only after an abnormally long period of exposure, after being treated for sterility, or both. Most of them did not need to try to space or prevent the second conception; only two attempted to do so. Nearly all of the remaining 155 "relatively sterile" couples not using contraceptives before the first conception had no reason when the first puerperium ended to think the second conception would be unduly delayed, nevertheless,

only 54 of them (34.8 per cent) began contraception in the second interval. A still smaller proportion (16 of 104), of the "relatively sterile" couples who had not used contraceptives before the second pregnancy, and who did not think at the end of the second puerperium that they were low in fecundity or sterile, began attempts to control fertility during the third interval.

Why the percentages should be only 34.8 and 15.4 for these "relatively sterile" couples, but 69.4 and 53.3 for the corresponding couples in the "relatively fecund" group is puzzling. The differences could occur if (a) the early resort to contraception lessens the likelihood of low fecundity or sterility, (b) the characteristics or situations which lead to low fecundity or sterility are associated (before the end result is recognized) with characteristics or situations which are unfavorable to the use of contraception for spacing children or restricting family size, or (c) couples who are low in fecundity or sterile, who have fewer children than they want, and who use contraception while their fertility is normal, have a "guilt complex" about admitting the use of contraception (perhaps because some physicians claim that it causes sterility, or because some religious leaders claim that it is wrong), hence fail to report contraceptive practices to interviewers for such a study. Hypotheses a and b seem highly improbable and hypothesis c rather far-fetched. If subsequent studies show a similar relationship, however, these and other hypotheses should be explored further.

The number of "relatively fecund" couples resorting to contraception on a "motive" basis rose from 1,003 during the first interpregnancy interval to 1,180 during the second,¹⁰ for a variety of reasons which will be analyzed later. There was a rapid decline after the second interval, however, primarily for the simple reason that many of the couples with one pregnancy never had a second, many with two never had a third, etc.

¹⁰ "Interpregnancy interval" is used in this discussion to refer to the time between the last pregnancy and the interview as well as the time between successive pregnancies. For never-pregnant couples it means the interval from marriage to interview.

Table 2. "Relatively fecund" and "relatively sterile" couples practicing and not practicing contraception ("motive" basis) in each interpregnancy interval.

| FECUNDITY STATUS AND BASIS OF CONTRACEPTION | INTERPREGNANCY INTERVAL | | | | | |
|---|-------------------------|--------|-------|--------|-------|-------|
| | First | Second | Third | Fourth | Fifth | Sixth |
| <i>All Couples</i> | 1,977 | 1,657 | 1,163 | 566 | 249 | 106 |
| <i>Percentage that:</i> | | | | | | |
| Thought Themselves Sterile Throughout Interval | 0.2 | 0.8 | 1.7 | 0.5 | 2.0 | 3.8 |
| Thought Themselves Fecund Part or All of Interval Practiced Contraception | 99.8 | 99.2 | 98.3 | 99.5 | 98.0 | 96.2 |
| Did Not Practice Contraception | 64.0 | 82.2 | 88.0 | 83.9 | 91.2 | 86.8 |
| Did Not Douche "For Cleanliness Only" | 35.9 | 17.0 | 10.2 | 10.6 | 6.8 | 9.4 |
| Douched "For Cleanliness Only" | 31.0 | 14.1 | 8.0 | 8.5 | 4.8 | 6.6 |
| 4.9 | 2.9 | 2.2 | 2.1 | 2.0 | 2.8 | |
| <i>"Relatively Fecund" Couples</i> | | | | | | |
| Number | 1,444 | 1,320 | 999 | 502 | 238 | 102 |
| <i>Percentage that:</i> | | | | | | |
| Thought Themselves Sterile Throughout Interval | — | — | 0.2 | — | 1.7 | 3.9 |
| Thought Themselves Fecund Part or All of Interval Practiced Contraception | 100.0 | 100.0 | 99.8 | 100.0 | 98.3 | 96.1 |
| Did Not Practice Contraception | 69.5 | 89.4 | 92.6 | 93.4 | 91.2 | 86.3 |
| Did Not Douche "For Cleanliness Only" | 30.5 | 10.6 | 7.2 | 6.6 | 7.1 | 9.8 |
| Douched "For Cleanliness Only" | 25.8 | 8.2 | 4.9 | 4.2 | 5.0 | 6.9 |
| 4.7 | 2.4 | 2.3 | 2.4 | 2.1 | 2.9 | |
| <i>"Relatively Sterile" Couples</i> | | | | | | |
| Number | 533 | 337 | 164 | 64 | 11 | 4 |
| <i>Percentage that:</i> | | | | | | |
| Thought Themselves Sterile Throughout Interval | 0.6 | 3.9 | 11.0 | 4.7 | 9.1 | — |
| Thought Themselves Fecund Part or All of Interval Practiced Contraception | 99.4 | 96.1 | 89.0 | 95.3 | 90.9 | 100.0 |
| Did Not Practice Contraception | 49.2 | 54.0 | 60.4 | 53.1 | 90.9 | 100.0 |
| Did Not Douche "For Cleanliness Only" | 50.3 | 42.1 | 28.7 | 42.2 | — | — |
| Douched "For Cleanliness Only" | 44.8 | 37.4 | 26.8 | 42.2 | — | — |
| 5.4 | 4.7 | 1.8 | — | — | — | — |

All but 11 of the couples who used contraceptives before the first pregnancy resorted to them before the end of the first puerperium,¹¹ and all but 19 of those who did so between the first and second pregnancies started again before the end of the second puerperium. Three of the eleven couples did not think the second conception would occur less than two to four months after the first delivery, and had not gotten around to resuming contraception. Seven couples wanted the second pregnancy as soon after the first as possible, in five cases because the first pregnancy ended in wastage, and in only two cases so that the children would be only a year or so apart. Of the nineteen couples who did not resume contraceptive practices between the second and third pregnancies, five thought (erroneously) that they had become sterile, three thought that conception would not occur so soon after delivery, seven wanted the third quickly because the second ended in wastage, and four had miscellaneous reasons (didn't know what method to try next, lacked money to buy supplies, etc.).

The proportion of "relatively fecund" couples using contraception jumped from 69.5 per cent during the first interval to 89.4 per cent during the second, reached 93.4 per cent during the fourth interval, declined to 83.3 per cent during the ninth interval, and then rose to 100 per cent for the few couples involved. (*See* Table 2.) The rise from the first to the fourth interval represents the additional couples who decided after the first, second, or third pregnancy that they should begin to try to restrict family size, or at least to space children. The decline from the fourth to the eighth interval results from the success of the efforts to prevent additional childbearing, for a rapidly decreasing number of couples practicing contraception in the fifth, sixth, and subsequent intervals had fifth, sixth, and higher order pregnancies, whereas those who had not begun contraception (or using a douche "for cleanliness only") kept on conceiving, or became sterile. (*See* Figure 1.)

The number of "relatively sterile" couples who utilized re-

¹¹ In this study it is assumed that the puerperium ends one month after delivery.

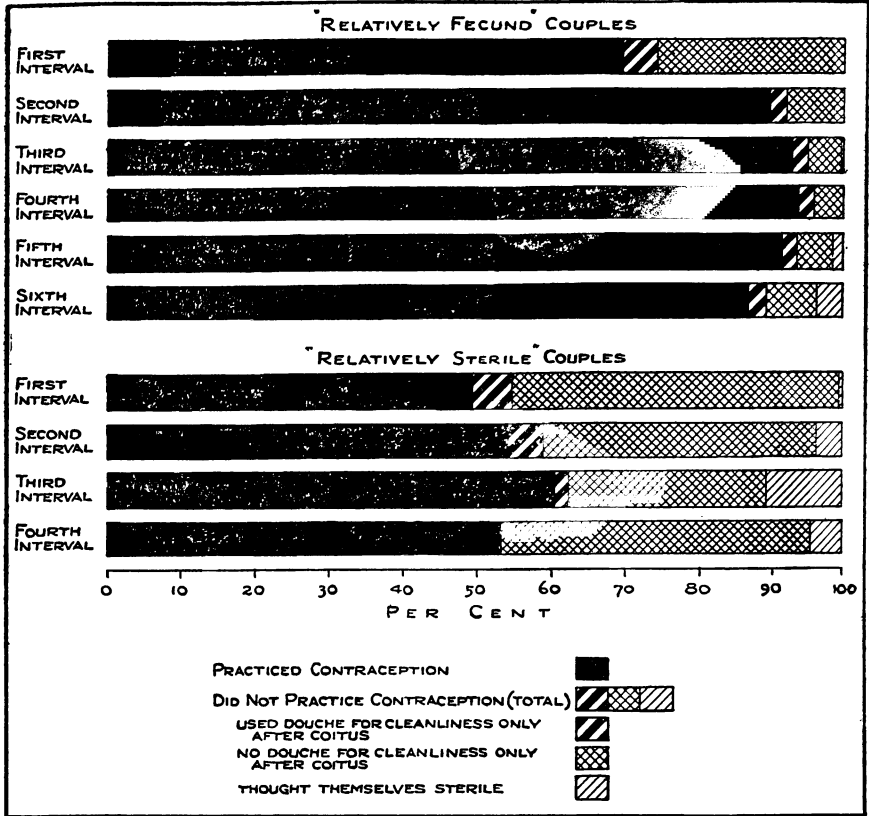


Fig. 1. "Relatively fecund" and "relatively sterile" couples practicing and not practicing contraception during specified interpregnancy intervals. (See Table 2.)

strictive measures was larger in the first interval than in any other. This is not surprising when it is remembered that only 337 of the 533 couples had a second interval, and only 164 a third. (See Table 2.) What may be surprising, however, is the fact that, as among "relatively fecund" couples, the proportion of "relatively sterile" couples practicing contraception during specific intervals tended to vary directly with the order of the interval, rising from 49.2 per cent during the first interval to 60.4 per cent during the third, and to virtual totality for the small number of fifth and sixth intervals that occurred. Two of the three main reasons for this relationship are the same as for the "relatively fecund" couples, namely, an increasing desire after each delivery either to prevent the next conception from

occurring too soon,* or to prevent it entirely because the family was sufficiently large. The third reason—past experience indicated that the wife would have difficulty in carrying another foetus to term and bearing a living child—was limited almost entirely to the “relatively sterile” group.

When considering the extent to which couples resort to contraception, it is desirable to deal at the same time with the “relatively fecund” and “relatively sterile” couples, that is, to look at the population as a whole, as has been done so far. But in discussing the effectiveness of efforts to plan fertility, the relation between size of family and planning status, and related topics, it is helpful to center attention first on the “relatively fecund” couples, and postpone the evaluation of the influence of low fecundity or sterility. Accordingly, the remainder of this article will relate to the “relatively fecund” couples.

Table 3. Success of contraceptive efforts (on “motive” basis) of “relatively fecund” couples during each interpregnancy interval.¹

| SUCCESS OF CONTRACEPTION | INTERPREGNANCY INTERVAL | | | | | |
|---|-------------------------|--------|-------|--------|-------|-------|
| | First | Second | Third | Fourth | Fifth | Sixth |
| <i>Number of Couples Practicing Contraception</i> | 1,003 | 1,180 | 925 | 469 | 217 | 88 |
| <i>Percentage:</i> | | | | | | |
| Unsuccessful | 50.6 | 47.4 | 37.4 | 39.7 | 41.5 | 44.3 |
| Successful | 49.4 | 52.6 | 62.6 | 60.3 | 58.5 | 55.7 |
| Next Pregnancy Planned | 38.0 | 26.8 | 10.5 | 6.4 | 0.9 | — |
| Next Pregnancy Prevented | 11.4 | 25.6 | 52.0 | 53.9 | 57.6 | 55.7 |
| Next Pregnancy Postponed Until Lactation Discontinued | — | 0.3 | 0.1 | — | — | — |

¹ In this table the adoption of a child when contraception was being practiced is considered the equivalent of a planned pregnancy.

* A large majority of the “relatively sterile” couples who had one or more pregnancies did not know at the end of the first puerperium that it would be difficult or impossible to have a second or subsequent conception, or produce a live born child. In addition, some of the couples whose first pregnancy was delayed by low fecundity wished to lessen the likelihood of too short an interval between puerperium and conception. The situation was similar, but more compelling, at the end of the second puerperium.

Of the 1,003 "relatively fecund" couples who tried to delay or prevent the first pregnancy, nearly half (49.4 per cent) accomplished what they desired, that is, either the first conception did not occur before it was planned, or the couple was childless. (See Table 3.) Over three-fourths of the couples who were successful in the first interval had their first conception after contraception was stopped for that purpose.¹² Nearly all of the 114 never pregnant couples in this successful group had not wanted a child during the twelve to fifteen years which had elapsed between marriage and interview, and had practiced contraception regularly and effectively. Three of them, however, had stopped contraception a few weeks or months before they were interviewed, because they decided to try to have their first child.¹³

The fact that 441 couples made no attempt to postpone the first pregnancy does not mean that they did not know how to do so. Of the 409 wives in this category who reported when they first learned about contraception, fifty-three (13.0 per cent) acquired information before marriage and twenty-three (5.6 per cent) "at" marriage. The number of informed bridegrooms probably was substantially larger.

Similarly, the lack of an attempt at postponement by 441 couples does not mean that each of them was anxious to start their family as soon as possible. Couples were not asked how soon after marriage the first pregnancy was wanted, but rather whether it was wanted at the time it occurred. The first pregnancy of 191 of the 441 couples began either before marriage or less than three months afterward; 38.8 per cent of these wives and 44.2 per cent of the husbands were glad to have it so soon,

¹² A few of these wives douched "for cleanliness only" after they stopped what they thought was contraception in order to have the first baby, and presumably delayed conception beyond the date desired.

¹³ Although these 114 couples (and the seven couples in which the wife had douched "for cleanliness only" since marriage and did not conceive), are classified as "relatively fecund," it is certain that some of them should be classified as "relatively sterile." In other words their childlessness is due to their low fecundity or sterility rather than to their perfect use of contraceptives. This matter will be discussed in the next paper.

but 55.5 per cent of the wives and 44.8 per cent of the husbands were disappointed—nearly half of them very much so. Among the sixty-seven couples whose first conception occurred three to six months after marriage (and who also made no effort to postpone it) the attitudes were much more favorable, for nearly 65 per cent of the wives and 70 per cent of the husbands wanted it then (a majority of these wanting it “very much”) and less than 25 per cent expressed disappointment. In both cases the desire for an early pregnancy was stronger among wives who learned about contraception (but did not practice it) before the first pregnancy than among those who did not learn about it until a later date.

Efforts to plan or prevent the second pregnancy were only slightly more effective than those for the first. But whereas the couples who planned the first pregnancy outnumber those who prevented it by over three to one, the couples who planned the second pregnancy barely exceed those who prevented it. The most effective planning occurred in the third interval, the number of couples who were successful (579) being more than half again as large as the number who were unsuccessful (345). Most of the former (more than five out of six) are couples who prevented a third pregnancy. With subsequent intervals there is a gradual decline in the proportion of couples achieving what they sought, for few couples who had learned to use contraceptives effectively had a fourth pregnancy, and only two had a fifth. In consequence, all but two of the couples who tried to postpone or prevent the sixth pregnancy either had not tried contraception previously or had been unsuccessful in their efforts. The wonder is that they achieved as high a degree of success as they did.

The planning of fertility should be considered from the standpoint of conceptions, as well as from that of couples. The first conceptions of “relatively fecund” couples are divided fairly evenly among those occurring (a) before positive planning was begun (32.7 per cent), (b) in spite of restrictive measures (37.6 per cent), and (c) when contraception was stopped to

have a child (28.9 per cent). (See Table 4.) Because approximately three-fourths of the couples who had not tried to postpone or prevent the first pregnancy began such efforts before the end of the first puerperium, the proportion of second and subsequent conceptions occurring before the resort to contraception was much lower than that for the first. The relative frequency of planned conceptions was highest for the second (32.0 per cent), then decreased rapidly. Only three of the fifth pregnancies were planned, and none of those of a higher order. The majority of the second and subsequent pregnancies, therefore, occurred in spite of attempts to postpone or prevent them, the proportion rising from 54.3 per cent for the second to 84.1 per cent for the fifth, and reaching 100 per cent for the small number having a ninth pregnancy.

Although a majority of the "relatively fecund" couples who tried to space or restrict pregnancies were not completely successful in their efforts, most of them were partially successful.

Table 4. Conceptions of "relatively fecund" couples by ordinal number, and by contraceptive status.¹

| CONTRACEPTIVE STATUS | ORDINAL NUMBER OF CONCEPTIONS | | | | | |
|---|-------------------------------|--------|-------|--------|-------|-------|
| | First | Second | Third | Fourth | Fifth | Sixth |
| Number of Conceptions | 1,323 | 1,014 | 516 | 248 | 107 | 48 |
| <i>Percentage Occurring:</i> | | | | | | |
| Before Contraception Was Begun | 32.7 | 12.2 | 10.1 | 9.3 | 9.3 | 16.7 |
| In spite of Contraception | 37.6 | 54.3 | 66.5 | 73.0 | 84.1 | 81.2 |
| <i>When Contraception Was Discontinued:</i> | | | | | | |
| For Other Reasons Than to Conceive ² | 0.8 | 1.5 | 3.3 | 4.4 | 3.7 | 2.1 |
| In Order to Conceive | 28.9 | 32.0 | 20.2 | 13.3 | 2.8 | — |

¹ In this table the adoption of a child is considered the equivalent of a planned pregnancy if it occurred when contraception was being practiced, but is ignored if it occurred when the couple was sterile.

² The more common reasons are: (a) the supply of contraceptives was exhausted (usually condom), often because the couple lacked money to buy more, (b) the couple was away from home and could not use conveniently the customary method of contraception (usually douche), and (c) the couple thought they were sterile.

If conception could not be avoided or put off until desired, at least it did not occur until months or years later than it would have occurred if left to nature. Among the 373 couples who did not use contraceptives or douche "for cleanliness only" before the first pregnancy, conception occurred within three months of marriage in more than half the cases and within a year in more than 85 per cent of the cases. (See Table 5.) In contrast, although the 508 couples who practiced contraception with partial success in the first interval had their first pregnancy earlier than they wanted it, only a little over one-fifth of them had it within three months of marriage, barely 56 per cent had it within a year. One-sixth of the couples stopping contraception in order to conceive had their first pregnancy within one year of marriage; 22.3 per cent had it in the second year, 13.1 per cent in the third year, and 19.9 per cent in the fourth or fifth years. Among the wives who maintained that contraception was not practiced, though douching was done "for cleanliness only," the first conception occurred after a somewhat longer interval than that for the partially successful contraceptors, but otherwise the distribution of the two groups was much the same.

The situation between the first and second pregnancies was much like that before the first, except for the influence of the anovulatory period which usually follows a puerperium. Over one-third of the couples not using contraceptives or douche "for cleanliness only" during the second interval had their second conception within six months of the end of the first puerperium, and over two-thirds had it within one year. Among the partially successful contraceptors the corresponding fractions are less than half as large. The couples who planned the second pregnancy spaced it about as long after the first as those who planned the first spaced it after marriage.

The number of couples that did not try to prevent or postpone their third and fourth pregnancies is small, but large differences between their distribution by length of interpregnancy intervals and the distribution of other couples are sta-

Table 5. Length of the intervals preceding the pregnancies of relatively "fecund" couples, by contraceptive practice (on a "motive" basis).¹

| LENGTH OF INTERVAL | COUPLES HAVING PREGNANCY SPECIFIED | COUPLES NOT PRACTICING CONTRACEPTION | | COUPLES PRACTICING CONTRACEPTION ² | |
|---------------------------------------|------------------------------------|---|-------------------------------------|---|------------------------------|
| | | Not Using Douche "For Cleanliness Only" | Using Douche "For Cleanliness Only" | Not Stopping Because Baby Wanted | Stopping Because Baby Wanted |
| MARRIAGE TO FIRST CONCEPTION | | | | | |
| Number of Couples | 1,323 | 373 | 61 | 508 | 381 |
| <i>Percentage of Intervals:</i> | | | | | |
| Less Than 3 Months | 23.4 | 50.4 | 18.0 | 21.5 | 0.3 |
| 3- 5.9 Months | 11.1 | 16.9 | 13.1 | 10.0 | 6.6 |
| 6-11.9 Months | 18.4 | 18.0 | 26.2 | 24.6 | 9.4 |
| 1- 1.9 Years | 14.7 | 7.5 | 9.8 | 14.8 | 22.3 |
| 2- 2.9 Years | 9.5 | 6.4 | 1.6 | 10.0 | 13.1 |
| 3- 4.9 Years | 10.1 | 0.8 | 8.2 | 9.8 | 19.9 |
| 5- 6.9 Years | 6.4 | — | 23.0 | 6.5 | 10.0 |
| 7- 9.9 Years | 4.2 | — | — | 2.2 | 11.5 |
| 10 or More Years | 2.2 | — | — | 0.6 | 6.8 |
| FIRST PUERPERIUM TO SECOND CONCEPTION | | | | | |
| Number of Couples | 1,014 | 108 | 28 | 562 | 313 |
| <i>Percentage of Intervals:</i> | | | | | |
| Less Than 3 Months | 5.7 | 17.6 | — | 5.5 | 2.6 |
| 3- 5.9 Months | 7.3 | 19.4 | (25.0) | 6.8 | 2.6 |
| 6-11.9 Months | 17.0 | 34.3 | (7.1) | 19.0 | 7.7 |
| 1- 1.9 Years | 25.2 | 22.2 | (42.9) | 26.0 | 23.3 |
| 2- 2.9 Years | 13.3 | 2.8 | (14.3) | 13.7 | 16.3 |
| 3- 4.9 Years | 15.1 | 3.7 | (—) | 14.2 | 22.0 |
| 5- 6.9 Years | 8.6 | — | (10.7) | 7.3 | 13.7 |
| 7- 9.9 Years | 5.4 | — | — | 4.3 | 9.9 |
| 10 or More Years | 2.4 | — | — | 3.2 | 1.9 |
| SECOND PUERPERIUM TO THIRD CONCEPTION | | | | | |
| Number of Couples | 516 | 49 | 23 | 347 | 96 |
| <i>Percentage of Intervals:</i> | | | | | |
| Less Than 3 Months | 4.5 | (14.3) | — | 3.2 | 5.2 |
| 3- 5.9 Months | 7.4 | (22.4) | (8.7) | 6.6 | 2.1 |
| 6-11.9 Months | 15.5 | (22.4) | (17.4) | 16.7 | 7.3 |
| 1- 1.9 Years | 27.7 | (36.7) | (30.4) | 27.7 | 21.9 |
| 2- 2.9 Years | 13.0 | (2.0) | (8.7) | 15.6 | 10.4 |
| 3- 4.9 Years | 18.4 | (2.0) | (21.7) | 18.2 | 27.1 |
| 5- 6.9 Years | 7.9 | — | (13.0) | 6.1 | 17.7 |
| 7- 9.9 Years | 5.2 | — | — | 5.5 | 8.3 |
| 10 or More Years | 0.4 | — | — | 0.6 | — |
| THIRD PUERPERIUM TO FOURTH CONCEPTION | | | | | |
| Number of Couples | 248 | 21 | 11 | 186 | 30 |
| <i>Percentage of Intervals:</i> | | | | | |
| Less Than 3 Months | 4.8 | (9.5) | (9.1) | 4.8 | — |
| 3- 5.9 Months | 9.3 | (33.3) | (9.1) | 8.1 | — |
| 6-11.9 Months | 20.6 | (33.3) | (18.2) | 17.2 | (33.3) |
| 1- 1.9 Years | 29.0 | (9.5) | (27.3) | 33.9 | (13.3) |
| 2- 2.9 Years | 12.9 | — | (18.2) | 12.9 | (20.0) |
| 3- 4.9 Years | 14.1 | (4.8) | (9.1) | 14.0 | (23.3) |
| 5- 6.9 Years | 5.6 | (9.5) | — | 5.4 | (6.7) |
| 7- 9.9 Years | 3.6 | — | (9.1) | 3.8 | (3.3) |
| 10 or More Years | — | — | — | — | — |

¹ Percentages based on fewer than fifty couples are shown in parentheses.

² Excludes the 4 pregnancies to wives who used lactation for contraception, and conceived after the baby was weaned.

tistically significant. Whereas 59 per cent of the noncontraceptors not douching "for cleanliness only" had the third pregnancy less than a year after the second and over 75 per cent had the fourth pregnancy equally soon after the third, the corresponding proportions for the partially successful contraceptors are barely 25 and 30 per cent respectively, or less than half as large. Furthermore, over one-third of the partially successful contraceptors, but less than one-sixth of the noncontraceptors not douching "for cleanliness only," postponed their third or fourth conception two or more years. The completely successful contraceptors spaced their third pregnancy much like their first and second, nearly 15 per cent having it within a year and nearly 60 per cent waiting one to five years. The few who planned the fourth pregnancy did not wait as long as for the third, the interval being less than a year for one-third of them, and one to five years for over 55 per cent.

B. CLASSIFYING "RELATIVELY FECUND" COUPLES AS TO THE PLANNING OF FERTILITY

Number and Spacing of Pregnancies Planned. The information regarding contraception discussed in Section A provides a basis for the first steps in classifying couples according to the planning of fertility, for it shows which ones tried to plan, and whether or not their efforts were successful. If fertility is judged according to pregnancies, the most highly planned group of "relatively fecund" couples consists of those who were successful in limiting their pregnancies to the number wanted, and in spacing them. It includes two main subgroups, (a) the couples who never were pregnant because of contraception, and (b) the couples whose conceptions all occurred when contraception was stopped because a child was wanted. It will be referred to in the future as the "number and spacing planned" group.

Number of Pregnancies Planned. The second group in the fertility planning hierarchy consists primarily of couples whose last conception occurred when contraception was stopped for

that purpose, but who had one or more prior conceptions under other conditions. These couples planned the number of their pregnancies, and the length of some (but not all) of the intervals between them. For this reason the group is labeled "number planned." In addition to the foregoing couples it includes a relatively small number with a somewhat different reproductive history. Most of them are couples whose last pregnancy was not planned, but who had stopped contraceptive practices a few weeks or months before the interview because they wanted another child. The few others are couples who used illegal abortion successfully in their fertility planning program. Some of them terminated all of their pregnancies in this manner; the others had at least one planned pregnancy but subsequently had one or more unplanned pregnancies which were all terminated by illegal abortion. The couples who were childless because of illegal abortion could be included in the "number and spacing planned" group if the classification were based on live births, but probably should not be because the results were obtained by a method of belated control which is generally considered much less desirable than contraception.

Before considering the other fertility planning groups, two minor matters should be clarified. First, since the classification under consideration is based on pregnancies rather than live births or living children, a very few couples in the two groups discussed above had more children than they wanted, for the last pregnancy produced twins. Second, a somewhat larger number had fewer children than they wanted. In most cases this occurred because some pregnancies ended in unintentional wastage (miscarriage or stillbirth) or therapeutic abortion, or because some children died, and the losses had not been replaced. With some of the remaining couples, however, the reason was simply that they were still in the "family-increasing" stage. Many of them had stopped contraception a few weeks or months before they were interviewed because they wanted a child; most of the wives probably conceived within a reasonable length of time. Finally, a small number of couples

had fewer pregnancies than desired because the wife thought that she should douche "for cleanliness" immediately after intercourse, and that such action would not interfere with conception. As mentioned previously some of these wives may have failed to conceive or been slow in conceiving because of sterility or low fecundity rather than the use of a douche "for cleanliness only," but because of the efficacy of douching in preventing conception when done for that purpose (to be discussed in a later article) these couples are classified as "relatively fecund." They may be considered as having "planned" fertility because, like the other couples in the "number and spacing planned" and "number planned" groups, they had not had more pregnancies than they wanted. But since they unwittingly had kept family size below that desired, they may also be considered as having "underplanned" fertility. Both concepts will be used in the analysis.

Number of Pregnancies Quasi-Planned. In order to classify the couples whose pregnancies were not "number and spacing planned" or "number planned" as explained above, it is necessary to use additional criteria. Among those available, the most useful are the attitudes of the husband and the wife toward the last pregnancy, and toward a pregnancy after the interview. These attitudes were recorded along a five point scale, ranging from "definitely not" wanting a child to wanting one "very much." In many cases the wife told the interviewer that she and her husband wanted a child when the last pregnancy began, even though contraception was being practiced at the time. If the conception had not occurred when it did, control measures presumably would have been stopped later. In many other cases the husband or wife (or both) did not want a child when the last conception occurred, but both of them wanted another child at some time in the future, and thought they were able to have it (*i.e.*, were not sterile). If their statements are taken at face value, both types of couples did not have more pregnancies than they desired (for either the last pregnancy or an additional pregnancy was wanted), conse-

quently they should be classified as "number planned." But because of the possibility that the reported "wanting" of the last pregnancy was a rationalization rather than a true feeling, and that the expressed desire for another child would never be supported by action (*i.e.*, by the discontinuance or relaxation of contraception in order to conceive), it seems preferable to consider such couples as having "quasi-planned" fertility, that is, as appearing to have planned their fertility, but not having done so in fact.¹⁴

The classification of the couples who said they wanted a certain number of children as soon as possible after marriage, who did not begin contraception until they had that number, and who prevented additional pregnancies, poses a difficult problem. If such postponement of control measures constitutes planning these couples should be assigned to the "number and spacing planned" group, otherwise they should be considered "quasi-planned." The latter seems preferable because stopping contraception to have a child requires positive action (the use of control measures for a time), whereas not starting contraception requires only negative action. It is believed that almost all, if not all, of the couples who reported that they stopped contraception in order to have a child actually did so. These couples would have a valid reason for their action, and would not feel a need to rationalize. In contrast, it is believed that an important proportion of the couples who did not begin control measures until after one or more pregnancies (a) realized the general feeling that pregnancies should be spaced, (b) disliked to admit even to themselves that they had not done so because of ignorance, carelessness, or other unfavorable reason, and (c) rationalized their behavior by reporting (and in many cases believing) that a desire to have one or more children as soon as possible was the motivating factor. If the couples who truly wanted one or more pregnancies as soon as

¹⁴ The "quasi-planned" group also includes a few couples whose last pregnancy was not wanted then or later and was terminated by an illegal abortion, but whose next to last pregnancy (although not planned) was wanted then or later by both the wife and husband.

possible could be distinguished from those for whom such a statement was only a rationalization, they should be included in the completely planned groups. Since this separation is impossible in the present study, it seems preferable to restrict the "number and spacing planned" group to couples who meet the more rigorous test, and to classify those in question as having "quasi-planned" fertility.

Too Many Pregnancies. There remain to be classified the couples in which either the wife or husband did not want a child after the interview or at the time of the last conception. These couples had excess fertility, *i.e.*, one or more pregnancies after the last wanted, and may well be subdivided according to the number of excess pregnancies. Because of the disadvantages of having many groups with a small number of couples, only two categories are used here. In the first, the number of pregnancies after the last wanted by the wife plus the number after the last wanted by the husband equals one, two, or three. In the second, the sum of such pregnancies equals four or more. If the attitudes of the wife and husband are averaged, the number of excess pregnancies is one-half, one, or one and one-half for the couples in the first group and two or more for those in the second. For brevity the former will be referred to hereafter as the "one-too-many" group, and the latter as the "two-plus-too-many" group.

The most striking fact about the distribution of the "relatively fecund" couples by fertility planning status is that those with planned fertility outnumber those with quasi-planned or those with excess fertility. If the classification is made on a pregnancy basis (with no allowance for "underplanning") 42.1 per cent of the couples are in the two "planned" groups, 31.4 per cent in the "quasi-planned" group, and 26.5 per cent in the two "excess fertility" groups. (*See* Table 6.) If the groups are considered individually, the "quasi-planned" couples are found to be most numerous (31.4 per cent) followed closely by the "number and spacing planned" (27.9 per cent). Couples with one too many pregnancies are well behind the foregoing (19.4

per cent), and are followed by those planned as to number but not as to spacing. The smallest group, with at least two excess pregnancies per family, contains only half as many couples as the next larger group. In short, it appears that only slightly more than 25 per cent of the couples studied had more pregnancies than they wanted, and that nearly 75 per cent had the number that they wanted.

Using live births or living children instead of pregnancies as a basis for classifying couples as to the planning of fertility makes no significant difference in the resulting distribution, because pregnancy wastage and deaths of children occurred at much the same rate in each group. Classifying by themselves

Table 6. "Relatively fecund" couples by fertility planning status, according to selected criteria.

| FERTILITY PLANNING STATUS | DISREGARDING "UNDERPLANNING" ¹ | | | ALLOWING FOR "UNDERPLANNING" ¹ | | |
|---------------------------------|--|---------------------|------------------------------|--|---------------------|------------------------------|
| | Preg- nan- cies A | Live Births B | Living Child- ren C | Preg- nan- cies D | Live Births E | Living Child- ren F |
| | PERCENTAGE DISTRIBUTION | | | | | |
| <i>Planned Fertility</i> | | | | | | |
| Number and Spacing Planned | 27.9 | 29.7 | 30.6 | 27.1 | 28.9 | 29.8 |
| Number Planned | 14.2 | 13.7 | 12.8 | 14.1 | 13.6 | 12.7 |
| <i>Quasi-Planned Fertility</i> | 31.4 | 31.5 | 31.6 | 30.8 | 30.9 | 31.0 |
| <i>Excess Fertility</i> | | | | | | |
| One-Too-Many | 19.4 | 19.0 | 19.0 | 19.2 | 18.8 | 18.8 |
| Two-Plus-Too-Many | 7.1 | 6.0 | 5.9 | 7.1 | 6.0 | 5.9 |
| <i>Underplanned Fertility</i> | — | — | — | 1.7 | 1.7 | 1.7 |
| NUMBER OF COUPLES | | | | | | |
| <i>Planned Fertility</i> | | | | | | |
| Number and Spacing Planned | 403 | 429 | 442 | 392 | 418 | 431 |
| Number Planned | 205 | 198 | 185 | 204 | 197 | 184 |
| <i>Quasi-Planned Fertility</i> | 454 | 455 | 457 | 445 | 446 | 448 |
| <i>Excess Fertility</i> | | | | | | |
| One-Too-Many | 280 | 275 | 275 | 277 | 272 | 272 |
| Two-Plus-Too-Many | 102 | 87 | 85 | 102 | 87 | 85 |
| <i>Underplanned Fertility</i> | — | — | — | 24 | 24 | 24 |

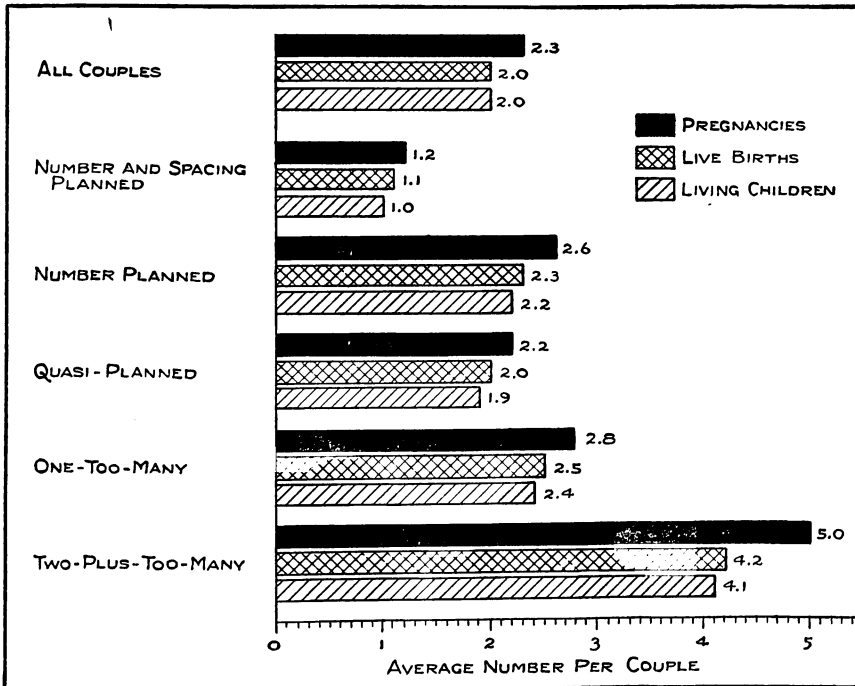
¹ An adopted child is considered equivalent to a planned pregnancy. Couples may be classified as underplanned if the wife is believed to have reduced unintentionally the number of pregnancies, live births, or living children by douching "for cleanliness only."

the “underplanned” couples (those who had fewer pregnancies and children than they wanted, presumably because the wife douched “for cleanliness only”) also makes no significant difference in the distribution, for only twenty-four couples are “underplanned.”

C. FAMILY SIZE AND INTERPREGNANCY INTERVALS, BY PLANNING STATUS OF “RELATIVELY FECUND” COUPLES

As would be expected from the basis of classifying “relatively fecund” couples according to their success in planning fertility, the groups differ in important degree with respect to the number and spacing of pregnancies and live births. At one extreme are the “number and spacing planned” families with an average of 1.2 conceptions and 1.1 births; at the other extreme are the “two-plus-too-many” families with an average of 5.0 conceptions and of 4.2 births. (See Figure 2 and Table 7.) The

Fig. 2. Average number of pregnancies, live births, and living children per couple, by fertility planning status of the couple. (See Table 7.)



other three groups are similar in number of births, the "number planned" averaging 2.3, the "quasi-planned" 2.0, and the "one-too-many" 2.5.¹⁵ Unless additional births occurred after the

Table 7. "Relatively fecund" couples by number of pregnancies, number of live births, and number of living children, by fertility planning status.¹

| FERTILITY PLANNING STATUS | AVERAGE PER COUPLE | PERCENTAGE WITH | | | | | | |
|----------------------------|--------------------|-----------------|------|------|------|------|------|------|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6+ |
| PREGNANCIES | | | | | | | | |
| Number and Spacing Planned | 1.2 | 30.0 | 34.0 | 28.8 | 5.5 | 1.5 | 0.2 | — |
| Number Planned | 2.6 | — | 2.9 | 56.1 | 25.9 | 11.7 | 1.5 | 2.0 |
| Quasi-Planned | 2.2 | — | 28.0 | 43.2 | 17.0 | 6.8 | 3.3 | 1.8 |
| One-Too-Many | 2.8 | — | 13.9 | 23.6 | 38.9 | 16.4 | 5.7 | 1.4 |
| Two-Plus-Too-Many | 5.0 | — | — | 4.9 | 6.9 | 32.4 | 23.5 | 32.4 |
| TOTAL | 2.3 | 8.4 | 21.4 | 34.5 | 18.6 | 9.7 | 4.1 | 3.4 |
| LIVE BIRTHS | | | | | | | | |
| Number and Spacing Planned | 1.1 | 31.3 | 36.7 | 27.8 | 3.0 | 1.0 | 0.2 | — |
| Number Planned | 2.3 | 2.0 | 7.8 | 61.5 | 20.0 | 7.3 | 0.5 | 1.0 |
| Quasi-Planned | 2.0 | 0.9 | 32.4 | 44.3 | 13.9 | 6.8 | 1.1 | 0.7 |
| One-Too-Many | 2.5 | 0.4 | 19.3 | 32.9 | 33.9 | 10.4 | 2.1 | 1.1 |
| Two-Plus-Too-Many | 4.2 | — | — | 8.8 | 22.5 | 31.4 | 18.6 | 18.6 |
| TOTAL | 2.0 | 9.3 | 25.3 | 37.4 | 16.2 | 7.7 | 2.2 | 1.9 |
| LIVING CHILDREN | | | | | | | | |
| Number and Spacing Planned | 1.0 | 31.3 | 38.7 | 26.1 | 3.2 | 0.5 | 0.2 | — |
| Number Planned | 2.2 | 2.0 | 10.7 | 63.4 | 18.5 | 4.9 | — | 0.5 |
| Quasi-Planned | 1.9 | 0.9 | 35.2 | 44.5 | 13.2 | 4.6 | 1.1 | 0.4 |
| One-Too-Many | 2.4 | 0.4 | 20.7 | 33.9 | 34.3 | 8.2 | 1.8 | 0.7 |
| Two-Plus-Too-Many | 4.1 | — | — | 8.8 | 23.5 | 36.3 | 13.7 | 17.6 |
| TOTAL | 2.0 | 9.3 | 27.4 | 37.5 | 16.0 | 6.4 | 1.7 | 1.6 |

¹ The fertility planning classification is based on pregnancies, without an allowance for underplanning. For the number of couples in each group, see Table 6, Column A.

In this table an adopted child is classified as though it were born to the couple.

¹⁵ It should be remembered that the classification scheme places all couples with
(Continued on page 87)

interview, the two groups with lowest fertility ("number and spacing planned" and "quasi-planned") would not reproduce themselves on the basis of current death rates. In contrast, the "number planned" and the "one-too-many" groups had contributed slightly to population growth before they were interviewed, and the "two-plus-too-many" had made a relatively large contribution.

The differences between groups in the average number of pregnancies, live births, and living children are due, of course, to differences in the proportion of couples with zero, one, two, or some other number. Among the "number and spacing planned" couples those with one birth are the most numerous (36.7 per cent), followed by those with no birth (31.3 per cent) and those with two births (27.8 per cent). (See Table 7.) Only 4.2 per cent of the wives had borne more than two children. Among the "number planned" couples, in contrast, a majority (61.5 per cent) had borne two children, families with three births are second (20.0 per cent), and the remainder are divided almost equally between those with none or one and those with four or more. Families with two births lead also in the "quasi-planned" group (44.3 per cent), but those with one birth are second (32.4 per cent) and those with three a poor third (13.9 per cent). Families with four or more births are about as common relatively in this group as in the "number planned" group.

Approximately one-third of the wives in the "one-too-many" group had borne two children, and another third three children. Fewer than one-fifth had borne only one child, barely one-tenth had borne four children, and less than four per cent had borne five or more. According to the classification scheme no couple in the "two-plus-too-many" group could have had less than two pregnancies, and relatively few only two. It is partly for only one planned pregnancy (and none not planned) in the "number and spacing planned" group, hence almost all of the couples in the "number planned" group had two or more pregnancies. (The exceptions are the few couples with one unplanned pregnancy which was terminated illegally.) This virtual exclusion of one-child families from the "number planned" group accounts for the higher average fertility of this group than of the "quasi-planned" group.

Table 8. Length of the intervals preceding the pregnancies of "relatively fecund" couples, by fertility planning status.¹

| LENGTH OF INTERVAL | FERTILITY PLANNING STATUS | | | | | | FERTILITY PLANNING STATUS | | | | | |
|--|------------------------------|----------------|---------------|--|-------------------|----------------------------|------------------------------|---------------|--------------|--|--|--|
| | MARRIAGE TO FIRST CONCEPTION | | | FIRST PUBERPERIUM TO SECOND CONCEPTION | | | MARRIAGE TO FIRST CONCEPTION | | | FIRST PUBERPERIUM TO SECOND CONCEPTION | | |
| | Number and Spacing Planned | Number Planned | Quasi-Planned | One-Too-Many | Two-Plus-Too-Many | Number and Spacing Planned | Number Planned | Quasi-Planned | One-Too-Many | Two-Plus-Too-Many | | |
| Number of Couples Average Number of Months <i>Percentage Reporting:</i> Less than 3.0 Months 3.0-5.9 Months 6.0-11.9 Months 12.0-23.9 Months 24.0-35.9 Months 36.0-59.9 Months 60.0-83.9 Months 84.0+ Months | 282 | 205 | 454 | 280 | 102 | 145 | 199 | 327 | 241 | 102 | | |
| | 54.0 | 16.7 | 17.4 | 17.4 | 6.6 | 39.8 | 39.5 | 30.1 | 30.3 | 16.0 | | |
| | — | 30.7 | 27.8 | 28.2 | 40.2 | 2.8 | 6.0 | 4.9 | 7.1 | 8.8 | | |
| | 6.4 | 9.3 | 11.5 | 11.8 | 24.5 | 4.8 | 3.5 | 7.3 | 9.1 | 13.7 | | |
| | 8.2 | 19.0 | 22.2 | 22.1 | 18.6 | 7.6 | 8.0 | 21.7 | 18.7 | 26.5 | | |
| | 16.3 | 15.6 | 14.1 | 14.3 | 11.8 | 24.1 | 23.1 | 23.1 | 22.8 | 29.4 | | |
| | 12.4 | 13.2 | 7.9 | 8.2 | 4.9 | 18.6 | 15.6 | 12.5 | 11.2 | 8.8 | | |
| | 19.1 | 5.9 | 10.1 | 7.9 | — | 20.0 | 21.6 | 8.3 | 18.3 | 9.8 | | |
| | 12.8 | 4.9 | 5.1 | 5.7 | — | 12.4 | 10.6 | 9.5 | 5.8 | 2.9 | | |
| | 24.8 | 1.5 | 1.3 | 1.8 | — | 9.7 | 11.6 | 7.6 | 7.1 | — | | |
| Number of Couples Average Number of Months <i>Percentage Reporting:</i> Less than 3.0 Months 3.0-5.9 Months 6.0-11.9 Months 12.0-23.9 Months 24.0-35.9 Months 36.0-59.9 Months 60.0-83.9 Months 84.0+ Months | 29 | 84 | 131 | 175 | 97 | 7 | 31 | 54 | 66 | 90 | | |
| | (36.0) | 37.8 | 25.0 | 33.8 | 21.1 | (29.1) | (25.0) | 28.6 | 28.2 | 37.3 | | |
| | — | 3.6 | 3.8 | 2.9 | 10.3 | — | (3.2) | 7.4 | 1.5 | 6.7 | | |
| | (6.9) | 2.4 | 13.0 | 5.1 | 8.2 | — | (9.7) | 9.3 | 18.2 | 3.3 | | |
| | (10.3) | 13.1 | 18.3 | 10.9 | 23.7 | (28.6) | (35.5) | 14.8 | 10.6 | 25.6 | | |
| | (13.8) | 26.2 | 28.2 | 32.0 | 24.7 | (14.3) | (12.9) | 22.2 | 33.3 | 36.7 | | |
| | (13.8) | 9.5 | 13.0 | 13.1 | 15.5 | (28.6) | (12.9) | 14.8 | 15.2 | 8.9 | | |
| | (41.4) | 19.0 | 15.3 | 20.0 | 12.4 | (28.6) | (16.1) | 20.4 | 3.0 | 16.7 | | |
| | (10.3) | 16.7 | 5.3 | 8.0 | 3.1 | (—) | (6.5) | 3.7 | 13.6 | 1.1 | | |
| | (3.4) | 9.5 | 3.1 | 8.0 | 2.1 | (—) | (3.2) | 7.4 | 4.5 | 1.1 | | |

¹ In this table the adoption of a child is considered the equivalent of a planned pregnancy if it occurred when contraception was being practiced, but is ignored if it occurred when the couple was sterile.

this reason that four-child families are most numerous (31.4 per cent), three-child families are second (22.5 per cent), five-child families third (18.6 per cent), and six-child families fourth (14.7 per cent).

Wide variations in the length of interpregnancy intervals would be expected between the fertility planning groups, and are found. Not one of the "number and spacing planned" couples had a first conception less than three months after marriage, but 27.8–40.2 per cent of the couples in the other groups are in this category. (*See* Table 8.) At the other extreme, not one of the "two-plus-too-many" couples had their first conception three or more years after marriage; whereas 12.3–56.7 per cent of the couples in the other groups postponed it to this extent. In general, the greater the success in planning fertility the longer the delay before the first conception.

Similar, but somewhat smaller, differences between groups are found in the length of subsequent interpregnancy intervals. Only 15.2 per cent of the "number and spacing planned" couples had their second conception less than a year after the first puerperium ended, whereas 49.0 per cent of the "two-plus-too-many" couples did so. In contrast, 42.1 per cent of the couples in the "number and spacing planned" group, but only 12.7 per cent of those in the "two-plus-too-many" group, postponed their second conception for three or more years. The other planning groups (with one exception) occupy intermediate positions, as would be expected.

The pattern of distribution by the length of the third and fourth intervals is much like that for the second interval for the "number planned," "quasi-planned," and "one-too-many" groups. (*See* Table 8.) In the "two-plus-too-many" group, however, there is a marked decrease in the proportion of intervals lasting less than six months, and a marked increase for those lasting two years or longer.

Only 108 couples had a fifth pregnancy and only forty-nine a sixth, the large majority being in the "two-plus-too-many" group. Over two-thirds of the fifth conceptions occurred less

than twenty-four months after the fourth puerperium, and nearly three-fourths of the sixth conceptions occurred equally soon after the fifth.

The distribution of the couples in each planning group by the actual length of intervals differs greatly from their distribution by their ideas of the most desirable length of interval. Six per cent of the "number and spacing planned" wives said they thought one year or less was the most desirable time between marriage and the first birth (which ordinarily means three months between marriage and the first conception), but not one of them had a first conception so soon. (Compare Tables 8 and 9.) In contrast, 11.8 per cent of the "two-plus-too-

Table 9. "Most desirable" time between marriage and first birth, and between subsequent births, according to "relatively fecund" wives by fertility planning status.

| "MOST DESIRABLE" TIME | ALL COUPLES | FERTILITY PLANNING STATUS | | | | |
|----------------------------------|----------------|-------------------------------------|-------------------|-------------------|----------------------|-------------------------------|
| | | Number and Spacing Planned | Number Planned | Quasi- Planned | One- Too- Many | Two- Plus- Too- Many |
| BETWEEN MARRIAGE AND FIRST BIRTH | | | | | | |
| Number of Wives | 1,444 | 403 | 205 | 454 | 280 | 102 |
| <i>Percentage Reporting:</i> | | | | | | |
| One Year or Less | 10.3 | 6.0 | 9.8 | 12.8 | 12.1 | 11.8 |
| One or Two Years | 9.6 | 9.0 | 10.7 | 10.2 | 8.2 | 10.8 |
| Two Years | 44.0 | 36.9 | 51.7 | 44.4 | 46.8 | 47.1 |
| Two or Three Years | 13.6 | 16.2 | 10.7 | 12.1 | 15.0 | 11.8 |
| Three Years | 13.5 | 19.5 | 13.2 | 12.4 | 7.5 | 12.7 |
| Three or Four Years | 3.5 | 3.2 | 2.4 | 3.5 | 4.3 | 4.9 |
| Four Years or More | 5.5 | 9.2 | 1.5 | 4.6 | 6.1 | 1.0 |
| BETWEEN SUBSEQUENT BIRTHS | | | | | | |
| <i>Percentage Reporting:</i> | | | | | | |
| One Year or Less | 1.0 | 0.7 | 0.5 | 1.5 | 0.7 | 2.0 |
| One or Two Years | 4.8 | 2.0 | 4.9 | 8.2 | 3.9 | 2.9 |
| Two Years | 41.9 | 42.9 | 42.9 | 40.3 | 42.5 | 42.2 |
| Two or Three Years | 24.2 | 23.7 | 22.4 | 23.7 | 25.7 | 27.5 |
| Three Years | 20.1 | 21.2 | 16.1 | 21.7 | 19.3 | 18.6 |
| Three or Four Years | 4.4 | 5.0 | 5.4 | 3.5 | 3.9 | 4.9 |
| Four Years or More | 3.6 | 4.5 | 7.8 | 1.1 | 3.9 | 2.0 |

many" wives thought a year or less was most desirable, but about 40 per cent (*nearly four times as many* on a relative basis) had a pregnancy ending before the first anniversary of their wedding. Between two and three years was mentioned as the most desirable time by more than two-thirds of the wives in each group, but only a relatively small proportion (one-sixth or less) actually had their first child at that time. Nearly two-thirds of the "number and spacing planned" wives waited longer than three years, and more than three-fifths of the wives in the other groups had their first child in less than two years.

Opinions regarding the most desirable spacing of the second and subsequent children were more alike than those regarding the spacing of the first child, for between 80 and 90 per cent of the wives in each group thought that there should be from two to three years between births. As with first births, however, this ideal was missed much more often than it was met. Considerably more than half of the wives in the "number and spacing planned" and "number planned" groups postponed their second birth until at least three years after the first, whereas approximately 40 per cent of the wives in the "quasi-planned" and "one-too-many" groups and 60 per cent of those in the "two-plus-too-many" group had it within two years. The third and fourth intervals of a slightly larger proportion of couples were within the limits reported most desirable, but here as before, the tendency was for the "number and spacing planned" and "number planned" groups to space their third and fourth children more than three years apart, for the "two-plus-too-many" group to have them less than two years apart, and for the other groups to occupy intermediate positions.

D. DIFFERENCES IN EFFORTS TO PLAN FERTILITY AS CAUSES OF DIFFERENCES IN FAMILY SIZE

The extent to which the additional children, more closely spaced, of the "two-plus-too-many" families than of the "number and spacing planned" families result from differences in fecundity, or from differences in the desire and ability to con-

trol it, is a highly important question. Most differences in fecundity are due primarily to physiological causes, which on the whole cannot be changed easily. If they dominate the pattern of family size and spacing, this pattern will be relatively stable. In contrast, differences in the number of children planned or in the success of planning are due to a wide variety of socio-economic and psychological factors, many of which may be influenced more easily. If they control the pattern of number and spacing of children, it would be expected to fluctuate in greater degree. The role of fertility planning will be considered first.

If fecund couples are to control conception they must know about one or more methods of doing so, and must use this

Table 10. When "relatively fecund" wives first learned of contraception, by success in planning fertility.¹

| WHEN WIFE FIRST LEARNED OF CONTRACEPTION | SUCCESS IN PLANNING FERTILITY | | | | | |
|---|-------------------------------|-------------------------------------|-------------------|-------------------|----------------------|-------------------------------|
| | All Couples | Number and Spacing Planned | Number Planned | Quasi- Planned | One- Too- Many | Two- Plus- Too- Many |
| Number of Couples | 1,444 | 403 | 205 | 454 | 280 | 102 |
| Not Reporting | 59 | 15 | 3 | 28 | 9 | 4 |
| Reporting | 1,385 | 388 | 202 | 426 | 271 | 98 |
| <i>Percentage of Those Report- ing That:</i> | | | | | | |
| Never Learned of Con- traception | 0.2 | 0.0 | 0.0 | 0.5 | 0.4 | 0.0 |
| Learned of Contraception Before Age 17 and At Least One Year Be- fore Marriage | 4.7 | 4.9 | 5.9 | 3.3 | 3.7 | 10.2 |
| Before Marriage, Other "At" Marriage | 31.1 | 40.2 | 21.3 | 27.7 | 31.4 | 29.6 |
| After Marriage But Be- fore First Pregnancy | 39.1 | 54.4 | 38.6 | 34.0 | 31.4 | 23.5 |
| Between 1st and 2nd Pregnancies ² | 4.6 | 0.5 | 4.0 | 7.5 | 6.3 | 5.1 |
| Between 2nd and 3rd Pregnancies ² | 12.8 | 0.0 | 24.8 | 15.5 | 16.6 | 16.3 |
| After Third Pregnancy | 3.5 | 0.0 | 3.5 | 5.2 | 3.7 | 9.2 |
| After Marriage, Time Not Stated | 1.5 | 0.0 | 0.5 | 1.9 | 2.6 | 5.1 |
| | 2.5 | 0.0 | 1.5 | 4.5 | 4.1 | 1.0 |

¹ In this table douching "for cleanliness only" is not considered contra-
ception.

² Includes those learning between 1st (or 2nd) pregnancy and interview.

knowledge. Most of the husbands in this study had learned of contraception before they were married, but only a minority of wives admitted being equally well informed. The proportion varied considerably between fertility planning groups, from a high of 45.1 per cent for the "number and spacing planned" to a low of 27.2 per cent for the "number planned." (See Table 10.) Marriage brought knowledge quickly to a large number of brides (to all but two in the "number and spacing planned" group), and almost eliminated the differentials between the other groups. Relatively few wives learned of contraception more than a few days after marriage and before the first preg-

Table 11. Interval in which contraception was first practiced (on a "motive" basis) by "relatively fecund" couples, by fertility planning status.

| INTERVAL CONTRACEPTION FIRST PRACTICED | FERTILITY PLANNING STATUS | | | | | |
|--|---------------------------|----------------------------|----------------|---------------|--------------|-------------------|
| | All Couples | Number and Spacing Planned | Number Planned | Quasi-Planned | One-Too-Many | Two-Plus-Too-Many |
| Number of Couples | 1,444 | 403 | 205 | 454 | 280 | 102 |
| <i>Percentage That:</i> | | | | | | |
| <i>Began Contraception:</i> | | | | | | |
| Before First Pregnancy | 69.5 | 98.3 | 57.1 | 59.9 | 59.6 | 50.0 |
| Between First and Second Pregnancies | 21.2 | — | 36.1 | 27.1 | 28.2 | 29.4 |
| Between Second and Third Pregnancies | 5.0 | — | 4.9 | 7.0 | 7.5 | 8.8 |
| Between Third and Fourth Pregnancies | 1.9 | — | 1.0 | 2.6 | 2.5 | 5.9 |
| Between Fourth and Fifth Pregnancies | 0.6 | — | — | 0.9 | 0.7 | 2.0 |
| Between Fifth and Sixth Pregnancies | 0.1 | — | — | 0.2 | — | — |
| After Sixth Pregnancy | 0.1 | — | 1.0 | — | — | 2.0 |
| Never Practiced Contraception | 1.6 | 1.7 ^a | — | 2.2 | 1.4 | 2.0 |
| <i>Cumulative Percentages:</i> | | | | | | |
| <i>Began Contraception:</i> | | | | | | |
| Before First Pregnancy | 69.5 | 98.3 | 57.1 | 59.9 | 59.6 | 50.0 |
| Before Second Pregnancy | 90.7 | 98.3 | 93.2 | 87.0 | 87.8 | 79.4 |
| Before Third Pregnancy | 95.7 | 98.3 | 98.1 | 94.0 | 95.3 | 88.2 |
| Before Fourth Pregnancy | 97.6 | 98.3 | 99.1 | 96.6 | 97.8 | 94.1 |

^a Each of these wives began to douche "for cleanliness only" before the first pregnancy.

nancy, but many learned between the first and second pregnancies. By the time the second pregnancy occurred the informed wives included about 85 per cent of the "two-plus-too-many" group, and 88 per cent or more of each of the other groups.

Knowing about contraception is one thing; practicing it may be another. All except seven of the "number and spacing planned" couples began to practice contraception at marriage¹⁶ but some of the couples in the other groups were less prompt in putting their knowledge into practice. Most of the latter soon discovered that the first pregnancy had begun. In the "number planned," "quasi-planned," and "one-too-many" groups, approximately 70 per cent of the wives learned of contraception before the first conception, but less than 60 per cent of the couples tried to postpone it. (Compare Tables 10 and 11.) Such a lag occurred more frequently in the "two-plus-too-many" group, for whereas 68.4 per cent of the wives had learned about contraception before the first pregnancy, only 50 per cent of the couples utilized their knowledge. In all groups a large majority of the couples who did not use contraceptives before the first pregnancy began to do so when it ended. By the time the second conception occurred 93.2 per cent of the "number planned" couples had attempted birth control, and even in the "two-plus-too-many" group the proportion was nearly 80 per cent. The differential was narrowed further between the second and third pregnancies, the proportion of couples practicing contraception during or prior to the third interval rising to 98.1 per cent in the "number planned" group and to 88.2 per cent in the "two-plus-too-many" group. By the time the fourth pregnancy occurred the percentage for the latter had risen to 94.1, putting all groups on approximately the same basis in this respect.

As explained in the description of the planning groups, the "number and spacing planned," "number planned," and "quasi-planned" couples, with an average (respectively) of 1.2, 2.6,

¹⁶ The seven wives began to douche "for cleanliness only" with equal promptness.

and 2.2 pregnancies per couple, had no more children than planned or desired. The other couples, however, had more than they desired. If the purpose of contraception had been to prevent rather than space pregnancies, and if it had been practiced continually and successfully from the time it was first begun, there would have been 0.6 instead of 2.8 pregnancies per couple in the "one-too-many" group and 1.0 instead of 5.0 in the "two-plus-too-many" group.¹⁷ In other words, under such conditions these couples would have had the smallest families. It is clear, therefore, that the differences between the planning groups as to the time of first learning about contraception, or the time of first practicing it, had no major effect in causing the differences which were found in size of family.

The next matter to be considered is the effectiveness of the efforts to postpone conception or prevent it entirely. In this part of the analysis the intervals after the first pregnancy will be combined, but the interval preceding the first will be con-

¹⁷ The average number of pregnancies per couple in each planning group which there would have been if no conception had occurred after the practice of contraception was started is computed by dividing (a) the sum of the numbers of couples not practicing contraception in or prior to given intervals by (b) the number of couples in the planning group. (Note that (a) is equivalent to the sum of the pregnancies occurring before contraception was ever started.) The data for the two groups mentioned are as follows:

| Contraception Not Practiced on "Motive" Basis In or Prior To the: | Number of Couples in Planning Status Group | |
|---|--|---------------------|
| | "One-Too-Many" | "Two-Plus-Too-Many" |
| First Interval | 113 | 51 |
| Second " | 34 | 21 |
| Third " | 13 | 12 |
| Fourth " | 6 | 6 |
| Fifth " | 3 | 4 |
| Sixth " | 2 | 4 |
| Seventh " | 2 | 4 |
| Eighth " | 2 | 1 |
| Ninth " | 0 | 0 |
| Total (= Sum Pregnancies Before Starting Contraception) | 175 | 103 |
| Number of Couples in Group | 280 | 102 |
| Average Number of Pregnancies Per Couple if None Occurred After the Beginning of Contraceptive Practice | 0.63 | 1.01 |

sidered separately because normally it does not contain an anovulatory period during which conception is impossible as do the intervals which follow pregnancies. Furthermore, douching "for cleanliness only" will be classified as a contraceptive practice, for the experience of the women in this study shows that the effectiveness of douching in preventing conception is

Table 12. Effectiveness of contraceptive efforts (on an "action" basis) of "relatively fecund" couples before and after the first pregnancy, by fertility planning status.¹

| EXPOSURE AND CONCEPTIONS | FERTILITY PLANNING STATUS | | | |
|---|---------------------------|-------------------|------------------|-----------------------|
| | Number Planned | Quasi- Planned | One-Too- Many | Two-Plus- Too-Many |
| | BEFORE FIRST PREGNANCY | | | |
| Months of Exposure With Contraception | 2,890 | 6,699 | 4,092 | 477 |
| Number of Conceptions During This Exposure | 120 | 252 | 132 | 55 |
| Months of Exposure per Conception | 24.1 | 26.6 | 31.0 | 8.7 |
| <i>Exposure With Contraception Per Cent of This Exposure During Which Contracep- tives Were Used:</i> | | | | |
| "Always" | 76.2 | 81.5 | 88.8 | 63.9 |
| "Usually" | 21.2 | 15.6 | 8.2 | 15.9 |
| "Sometimes" | 2.6 | 2.9 | 3.1 | 20.1 |
| | AFTER FIRST PREGNANCY | | | |
| Months of Exposure With Contraception | 21,826 | 51,970 | 30,402 | 10,094 |
| Number of Conceptions During This Exposure | 88 | 445 | 409 | 343 |
| Months of Exposure per Conception | 248.0 | 116.8 | 74.3 | 29.4 |
| <i>Exposure With Contraception Per Cent of This Exposure During Which Contracep- tives Were Used:</i> | | | | |
| "Always" | 97.5 | 91.8 | 92.1 | 87.6 |
| "Usually" | 2.2 | 7.5 | 7.0 | 9.9 |
| "Sometimes" | 0.3 | 0.6 | 0.9 | 2.4 |

¹ In this table a douche "for cleanliness only" is, and lactation is not, considered a contraceptive. Adopted children are omitted.

not influenced in important degree by the motive involved. Finally, since by definition conceptions occurred in the "number and spacing planned" group only when contraception was stopped because a baby was wanted (although a very few of the wives continued to douche "for cleanliness only"), the contraceptive efforts of these couples were highly effective and need no further consideration here.

The attempts of the "two-plus-too-many" couples to postpone or prevent the first pregnancy were relatively unsuccessful, for conceptions occurred at the rate of one per 8.7 months of exposure with contraceptives. (See Table 12.) The other three groups were approximately three times as successful, the months of contraceptive exposure per conception varying between 24.1 for the "number planned" group and 31.0 for the "one-too-many" group. These differences can be explained in part by differences in the regularity of use of contraceptives. The couples in the "number planned," "quasi-planned," and "one-too-many" groups practiced contraception "always" or "usually" during more than 96 per cent of the period when they were trying to postpone or prevent the first pregnancy; they neglected contraception frequently during less than 4 per cent of this exposure.¹⁸ In contrast, those in the "two-plus-too-many" group took chances frequently during more than 20 per cent, and were diligent contraceptors during less than 80

¹⁸ In this study periods of contraception are classified as follows with respect to regularity of use of contraceptives:

- (a) Contraception practiced "always," *i.e.*, with no omissions, or with rare omissions numerically or relatively (not more than three or four times a year or 3 or 4 per cent).
- (b) Contraception practiced "usually," *i.e.*, omitted more often than in "a" but less than (approximately) one-fourth to one-third of the time when intercourse occurred.
- (c) Contraception practiced "sometimes," *i.e.*, omitted more often than in "b" but not discontinued entirely.

According to a strict interpretation of "always" a couple who omitted contraception once during the twelve to fifteen year period studied could not be classified as practicing it "always." Early in the field work, however, it was discovered that rare omissions were emphasized by wives if they thought that conception occurred as a result, but were not mentioned otherwise. Because wives reported that contraception was practiced "always" during periods with infrequent omissions and no conception, it was necessary to include in this category the periods with rare omissions which were believed to have resulted in conception. Few wives admitted more than one such omission.

per cent, of the corresponding period. It appears, therefore, that the frequent neglect of contraception by the "two plus-too-many" couples, and its less effective practice when not neglected, were responsible in important degree for the first pregnancy beginning so soon after marriage for this group as compared with the others. The less frequent neglect of contraception by the "one-too-many" couples than by the "quasi-planned" or "number planned" couples should have made the first interval longer for the "one-too-many" couples than for the others but apparently was offset by other factors.

After the first pregnancy the regularity with which contraception was practiced increased significantly in all groups, the proportion in the "always" category rising several points, and the proportion in the "usually" and "sometimes" categories decreasing correspondingly. In other words, nearly all couples decided that if they were going to try to postpone or prevent additional pregnancies they should not be careless. For this reason (and for others which will be analyzed in a later article) the effectiveness of contraceptive efforts in each of the planning groups was substantially higher after the first pregnancy than previously. The gains varied widely, however, being smallest for the "two-plus-too-many" couples and much the largest for the "number planned" couples. Among the former, contraceptive efforts after the first pregnancy failed frequently (at the rate of once in only 29.4 months), but among the latter they failed rarely (at the rate of once in 248.0 months). Such differences are much greater than those before the first pregnancy. They explain in large measure why the couples classified as having one more, or at least two more, pregnancies than they desired are in those groups rather than in one of the "planned" groups. Likewise they account for the larger families of the couples with "excess" rather than "planned" fertility.

E. DIFFERENCES IN THE FECUNDITY OF "RELATIVELY FECUND" COUPLES AS CAUSES OF DIFFERENCES IN THEIR FERTILITY

An adequate evaluation of the importance of differences in

fecundity as causes of the differences in fertility between the planning groups is a much more difficult task than the foregoing. There is little basis for saying anything regarding the fecundity of the couples in this study who used contraceptives "always" and who had no pregnancy; a clinic staff of expert gynecologists, urologists, endocrinologists, and other scientists, using the best laboratory techniques, could not be sure of classifying many such couples correctly. In contrast, the couples who did not use contraceptives (or douche "for cleanliness only") part or all of the time can be classified fairly accurately as to fecundity during portions of their married life by relating the months of exposure without contraception to the number of conceptions which occurred during this exposure. For such couples it is important to consider separately periods prior to the first use of contraceptives and periods when contraception was discontinued in order to conceive, because the first type of exposure usually begins at marriage, and the second type some months or years later. In consequence, the two types of periods usually differ in frequency of coitus, completeness of entrance, and other conditions affecting the likelihood of conceiving. Moreover, exposure after a pregnancy but prior to the first use of contraceptives usually begins a few weeks or months before the resumption of ovulation. In contrast, contraception is seldom discontinued in order to have another child until a sufficient time has elapsed since the previous puerperium to permit the resumption of ovulation.

Only two couples in the "number and spacing planned" group had any exposure to the risk of conception prior to the beginning of contraception (or of douching "for cleanliness only"), and the number of months involved was only two. Each of the other planning groups had many more such couples (between forty-four and 152), who had in the aggregate between 194 and 1,027 months of such exposure. The average number of months per conception under these conditions was lowest in the "two-plus-too-many" group (4.4) and highest in the "quasi-planned" group (6.8). (*See* Table 13.) The differ-

Table 13. Exposure and conceptions without contraception (on an "action" basis) of "relatively fecund" couples by fertility planning status.¹

| EXPOSURE AND CONCEPTIONS | NUMBER AND SPACING PLANNED | NUMBER PLANNED | QUASI-PLANNED | ONE-TOO-MANY | TWO-PLUS-TOO-MANY |
|---|----------------------------|--------------------|---------------|--------------|-------------------|
| BEFORE FIRST PREGNANCY | | | | | |
| Total Number of Couples | 403 | 205 | 454 | 280 | 102 |
| Number of Couples With Exposure Before Contraception Began | 2 | 73 | 152 | 106 | 44 |
| Months of This Exposure | 2 | 462 | 1,027 | 605 | 194 |
| Number of Conceptions During This Exposure | 0 | 71 | 152 | 106 | 44 |
| Months of Exposure Per Conception | — | 6.5 | 6.8 | 5.7 | 4.4 |
| Number of Couples with Exposure While Contraception Stopped to Have a Child | 280 | 14 | 40 | 40 | 3 |
| Months of This Exposure | 1,170 ² | 64 | 101 | 73 | 3 |
| Number of Conceptions During This Exposure | 274 ² | 14 | 40 | 40 | 3 |
| Months of Exposure Per Conception | 4.3 | (4.6) | 2.5 | 1.8 | — |
| AFTER FIRST PREGNANCY | | | | | |
| Total Number of Couples | 282 | 205 | 454 | 280 | 102 |
| Number of Couples With Exposure Before Contraception Began | 0 | 12 | 49 | 34 | 21 |
| Months of This Exposure | 0 | 237 | 819 | 660 | 523 |
| Number of Conceptions During This Exposure | 0 | 22 | 66 | 55 | 45 |
| Months of Exposure Per Conception | • — | (10.8) | 12.4 | 12.0 | (11.6) |
| Number of Couples with Exposure While Contraception Stopped to Have a Child | 149 | 188 | 20 | 29 | 6 |
| Months of This Exposure | 947 ² | 1,053 ³ | 117 | 81 | 12 |
| Number of Conceptions During This Exposure | 174 ² | 203 ³ | 21 | 31 | 8 |
| Months of Exposure Per Conception | 5.4 | 5.2 | (5.6) | 2.6 | — |

¹ In this table a douche "for cleanliness only" is, and lactation is not, considered a contraceptive. Adopted children are omitted.

Rates shown in parentheses are based on from ten to twenty-five couples. None are shown for fewer than ten couples.

² Excludes one couple whose first three conceptions occurred when contraception had been stopped for that purpose, but who did not report how long it had been stopped.

³ Excludes one couple with one planned pregnancy after first but the months of planned exposure not reported.

ence of 2.4 between these extremes, and that of 2.1 between the "two-plus-too-many" and the "number planned" groups, are moderately significant statistically, but the differences between the other groups are too small to be statistically significant for the number of cases involved. The largest of these differences in months of exposure without contraception per conception (2.4 months) could account for less than one-fourth of the difference of 10.8 months between the "quasi-planned" and the "two-plus-too-many" groups in the average length of the interval from marriage to first conception. (Compare Tables 8 and 13.) The second largest difference in months of exposure per conception (2.1 months) is barely one-fifth of the difference in the average length of the interval.

In comparing the fecundity of the planning groups on the basis of exposure when contraception was stopped to have the first child it is necessary to omit the "two-plus-too-many" group because it contains only three couples with this exposure. In the other groups the average months of such exposure per conception varies from a high of 4.6 for the "number planned" group to a low of 1.8 for the "one-too-many" group. Although the base is small in each case (fourteen and forty couples respectively) the difference of 2.8 months between these rates is significant statistically. Its effect was more than offset by those of other factors, however, for the difference between the average length of the first interval for these two groups is 0.7 months in the other direction.

As brought out earlier, most of the couples who did not practice contraception before the first pregnancy began to do so soon afterward, hence after the first pregnancy none of the "number and spacing planned" couples and only twelve to forty-nine of those in the other groups had exposure to the risk of conception prior to the first use of contraceptives. But because some of these couples did not begin contraception until after the third (or later) pregnancy, the aggregate amount of such exposure is fairly large (237 to 819 months). Variations between groups in months of this exposure per conception are

small, the highest rate being 12.4 (the "quasi-planned" group) and the lowest 10.8 (the "number planned" group). The difference between these rates (1.6 months) is not significant statistically, and seems to have had little influence on the difference between the average length of the second and third intervals for the two groups, because the more fecund group according to this test had a second interval 9.4 months longer, and a third interval 12.8 months longer, than the less fecund group.

The fourth comparison of fecundity utilizes the exposure when contraception was stopped in order to have the second (or subsequent) pregnancy. Such exposure was reported by many couples in the "number and spacing planned" and "number planned" groups (149 and 188 respectively) but by a small number (six to twenty-nine) in each of the other groups. The average months of exposure per conception is nearly the same for the "number and spacing planned," "number planned," and "quasi-planned" groups (5.4, 5.2, and 5.6, respectively), but is much lower (2.6) for the "one-too-many" group. The differences between this measure of fecundity for the "one-too-many" and the corresponding rates for each of the other groups are not significant statistically, and appear to have little relation to the differences in average length of the second, third and fourth intervals for the groups. Instead of having the shortest intervals, as indicated by this test, the "one-too-many" group had about as long a second interval as the "quasi-planned," and a substantially longer third interval.

In summary, three of the four comparisons just made show statistically significant differences between the fertility planning groups in the time required to conceive when contraception was not practiced, but all the differences are small. Moreover, the ranking of the groups is not the same in each case, *e.g.*, in the "quasi-planned" group the first conception occurred relatively quickly (2.5 months) when contraception was stopped for that purpose, but the second and subsequent conceptions relatively slowly (5.6 months). Finally, and most important,

most of the differences in rapidity of conception either are small compared with those in the average length of the interval or appear unrelated to them, some even being in the opposite direction. It is clear, therefore, that during the periods covered by these tests the fecundity of the women concerned was approximately the same in one fertility planning group as in another, and played little, if any, part in causing the observed differences in the spacing of pregnancies.

F. MEASURING THE ACTUAL AND THE DESIRED EFFECT OF FERTILITY PLANNING ON REPRODUCTION

The actual effect of fertility planning on reproduction may be measured by comparing for each planning status group the average number of pregnancies or live births which were reported per couple and the number which would be expected if contraception had not been practiced. In computing the latter the months of exposure which would be required for each conception are estimated from the data in Table 13. Secondly, the average length of each additional pregnancy is assumed to be the same as the average for the pregnancies which were reported. Finally, one month is allowed for each puerperium. The results are shown in Table 14 and Figure 3.

If all the "relatively fecund" couples had refrained from contraception and been exposed to child-bearing under the foregoing conditions, the number of conceptions per couple would have varied very slightly with planning status (from 8.0 in the "number planned" group to 7.4 in the "quasi-planned" group), and would have averaged 7.7 for all couples. (See Table 14.) The actual number was much smaller (less than three) in each of the groups except the "two-plus-too-many," in which the average was five. It appears, therefore, that the desire to plan fertility, implemented by contraception, reduced the average number of conceptions and live births per couple in the "number and spacing planned" group by nearly 85 per cent, in the "two-plus-too-many" group by less than 40 per cent, and in the other three groups by between 63 and 71 per cent during the

| EXPOSURE, PREGNANCIES, AND PER CENT REDUCTION | ALL COUPLES | FERTILITY PLANNING STATUS | | | | |
|--|----------------|-------------------------------------|-------------------|-------------------|----------------------|-------------------------------|
| | | Number and Spacing Planned | Number Planned | Quasi- Planned | One- Too- Many | Two- Plus- Too- Many |
| 1. Number of Couples | 1,444 | 403 | 205 | 454 | 280 | 102 |
| 2. Average Months Married* Pregnancies and Live Births | 155.4 | 156.9 | 153.6 | 154.8 | 154.7 | 158.1 |
| Assuming no Attempts to Plan Fertility | | | | | | |
| 3. Average Months Re- quired for First Conception ¹ | 5.0 | 4.3 | 6.2 | 5.9 | 4.6 | 4.2 |
| 4. Average Months for First Pregnancy and Puerperium ² | 9.6 | 9.6 | 9.5 | 9.5 | 9.6 | 9.6 |
| 5. Average Months Af- ter First Puer- perium ³ | 140.9 | 143.0 | 138.0 | 139.4 | 140.5 | 144.3 |
| 6. Average Months Re- quired for Each Second and Subse- quent Conception ⁴ | 11.9 | 11.6 | 10.8 | 12.4 | 12.0 | 11.6 |
| 7. Average Months for Each Second and Subsequent Preg- nancy and Puer- perium ⁵ | 9.2 | 9.5 | 9.0 | 9.3 | 9.2 | 9.2 |
| 8. Average Number of Pregnancies After First ⁶ | 6.7 | 6.8 | 7.0 | 6.4 | 6.6 | 6.9 |
| 9. Average Total Num- ber of Pregnan- cies ⁷ | 7.7 | 7.8 | 8.0 | 7.4 | 7.6 | 7.9 |
| 10. Average Total Num- ber of Live Births ⁸ Actual Pregnancies and Live Births | 6.8 | 7.2 | 7.0 | 6.7 | 6.7 | 6.8 |
| 11. Average Number of Pregnancies | 2.3 | 1.1 | 2.6 | 2.2 | 2.8 | 5.0 |
| 12. Average Number of Live Births | 2.0 | 1.1 | 2.3 | 2.0 | 2.5 | 4.2 |
| 13. Per Cent Reduction in Pregnancies and Live Births | 70.4 | 85.2 | 68.0 | 70.4 | 63.1 | 37.6 |

* Periods of sterility and of separation when not pregnant are omitted.

¹ The number of months of exposure without contraception before the first pregnancy (the sum of line 3 and 7 of Table 13) divided by the number of first conceptions during this exposure (the sum of lines 4 and 8 of Table 13).

² Based on the reported first pregnancies, with an arbitrary allowance of one month for the puerperium.

³ Line 2 minus the sum of lines 3 and 4.

⁴ The average months of exposure for each conception after the first is taken from Table 13, line 14, (months of exposure after the first pregnancy but before contraceptive practices were begun, divided by the number of second and subsequent conceptions occurring during this exposure). For the "number and spacing planned" couples (who had no such exposure) the simple average of the corresponding values for the "number planned" and "quasi-planned" groups is used, because the months of exposure per conception when contra-ception was stopped to have a child for the "number and spacing planned" group is the simple average of the corresponding values for the "number planned" and "quasi-planned" groups. (See Table 13, line 18.)

⁵ Based on data for the actual pregnancies after the first. One month is allowed for each puerperium.

⁶ Line 5 divided by the sum of lines 6 and 7.

⁷ Line 8 plus one for the first pregnancy.

⁸ Line 9 multiplied by the ratio of li

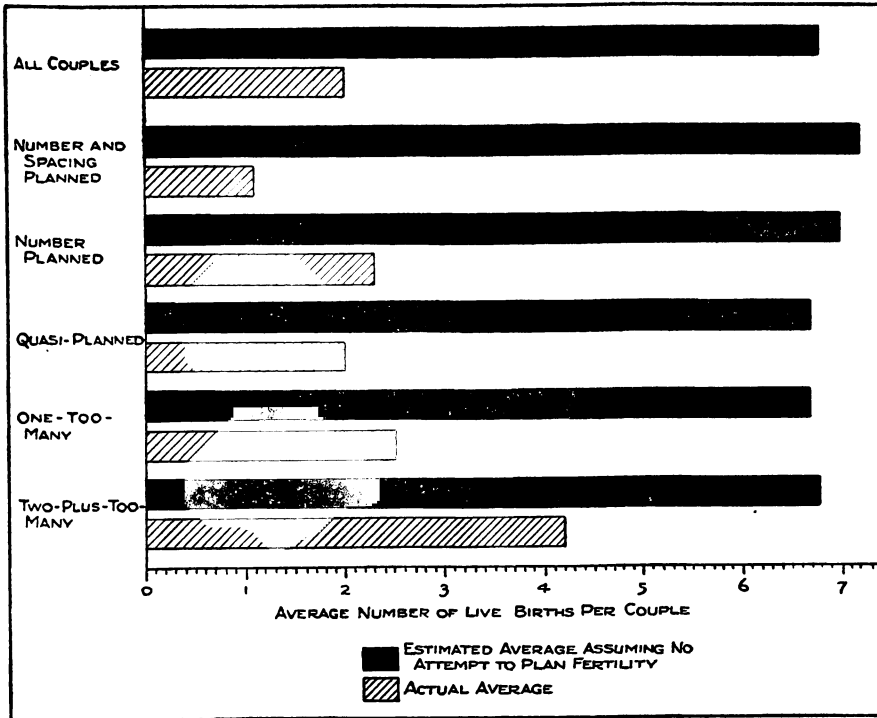


Fig. 3. Actual average number of live births per couple and “expected” number under assumptions of no contraceptive practice, by fertility planning status. (See Table 14.)

twelve to fifteen year period studied. For the “relatively fecund” couples as a whole the reduction is approximately 70 per cent. In other words the “number and spacing planned” group had less than one-sixth as many conceptions as it probably would have had without efforts to plan fertility, the “two-plus-too-many” group had slightly over three-fifths of the expected number, and all the “relatively fecund” couples had about 30 per cent of those expected.

Because of the classification system used the couples in three of the planning groups had no more pregnancies than they planned or wanted; from this standpoint the actual effect of the efforts to plan fertility was the same as the desired effect for these three groups. The couples composing the other two groups, in contrast, had a larger number of pregnancies than they planned or wanted. To determine the desired effect of

efforts to plan fertility it is necessary to deduct from the actual number of pregnancies the number occurring after the last wanted. In the "one-too-many" group there were 790 pregnancies, of which 244 occurred after the last wanted by the wife, and 256 after the last wanted by the husband. If the conception rate had been controlled in accordance with the wishes of the former there would have been 546 pregnancies, if the husband's wishes had governed there would have been 534 pregnancies. The number of pregnancies wanted by the wife and husband, therefore, was approximately 70 per cent of the number they had. In this group the actual practice of contraception reduced the pregnancy rate by about 65 per cent; the successful practice of contraception would have reduced it another 30 per cent or a total of 75 per cent, which is very close to the average for the three "planned" groups. The average number of pregnancies per couple for this group would then be 2.0 if the wife's desires prevailed, or 1.9 if those of the husband were dominant. This is fewer than the number desired by the "number planned" and "quasi-planned" couples but slightly more than the average for these and the "number and spacing planned" couples combined.

In the "two-plus-too-many" group there were 506 pregnancies, the number after the last wanted being 282 for the wife and 288 for the husband. If these couples could have controlled their fertility according to their wishes they would have had between 218 and 224 pregnancies. Partially effective contraceptive practices reduced the number of pregnancies by 36.7 per cent; contraception sufficiently effective to give the control desired would have reduced it by about 73 per cent, nearly as much as in the case of the other four planning groups. This group would then have averaged 2.2 pregnancies per couple, as compared with the desired number of 1.9 or 2.0 for the "one-too-many" couples and the actual number of nearly 1.9 for the three "planned" groups combined.

Improvement in the ability to control fertility would have a much smaller effect on the birth rate of all the "relatively

fecund" couples in the study, because less than 30 per cent of them are in the two groups just discussed. Nevertheless, if no couple had had more pregnancies than desired the average number for all couples would have been 1.9 instead of 2.3, a reduction of 17.4 per cent. If opinions regarding the number of children wanted remain as reported by the "relatively fecund" couples in this study a decline in the birth rate approaching this amount (17.4 per cent) would be expected merely from an improvement in the effectiveness of contraception.

Although a further decrease of about 17 per cent in the fertility of urban couples like those in this study is sufficiently large to have important consequences, it is small compared to the changes which could result from an increase or decrease in the number of children desired. If half of the childless couples had had one child and those with one, two, or three had had another, the birth rate would be higher by over 34 per cent. In contrast, if each of the couples with one or more pregnancies in the "number and spacing planned" and "number planned" groups had omitted the last (which could have been done by nearly all on the basis of their contraceptive practice) the pregnancy rate would be lower by nearly 15 per cent.

It is altogether probable, therefore, that future changes in the fertility of such a group will depend primarily on changes in their attitudes toward having none, one, two, or other numbers of children. Information regarding these attitudes and the factors influencing them was gathered in this study, and will be analyzed in subsequent articles.

SUMMARY

A large majority (nearly 90 per cent) of the couples included in this study tried to control the number of children and their spacing by means of contraception. Nearly all of those who did not make this effort were "relatively sterile," for over 98 per cent of the "relatively fecund" couples practiced contraception. About two-thirds of the couples began their attempts to plan fertility at marriage; about half of the remainder began before the end of the first puerperium.

Approximately half of the "relatively fecund" couples who tried to prevent or postpone the first or second pregnancy were successful in their efforts; between 58 and 63 per cent were successful with respect to the third, fourth, and fifth. In the interval before the first pregnancy "success" consisted in postponement rather than prevention in over three-fourths of the cases, but by the time the interval after the third pregnancy was reached prevention constituted success in nearly 90 per cent of the cases. Most of the couples who failed to prevent a pregnancy or delay it as long as desired were able to lengthen the interpregnancy intervals greatly in comparison with the noncontraceptors.

"Relatively fecund" couples can be classified as to the planning of fertility on the basis of the effectiveness of their use of contraception, and their attitudes toward each pregnancy. The categories used in this analysis are:

(a) "Number and spacing planned."¹⁹ These couples succeeded in preventing pregnancies altogether, or conceived only when contraception was stopped because a child was wanted.

(b) "Number planned." The last pregnancy, but not all of the preceding pregnancies, of most of these couples began when contraception was stopped to have a child.

(c) "Quasi-planned." The last pregnancy of these couples was not planned, but either it or another pregnancy was wanted by both the wife and husband.

(d) "One-too-many." The average of the number of pregnancies after the last wanted by the wife and the number after the last wanted by the husband is one-half, one, or one and one-half.

(e) "Two-plus-too-many." The average of the number of excess pregnancies according to the wife and according to the husband is two or more.

Approximately 28 per cent of these "relatively fecund" couples are "number and spacing planned," 14 per cent "num-

¹⁹ The labels for categories (a) and (b) are not strictly accurate descriptions of each couple in those groups, since there were certain borderline cases.

ber planned," and 31 per cent "quasi-planned." Less than 20 per cent are in the "one-too-many" group and only about 7 per cent are in the "two-plus-too-many" group. If the classification is based on live births or living children instead of pregnancies the distribution differs only slightly from the foregoing.

There is a strong relation between size of family and success in planning fertility. The average number of pregnancies per couple is lowest (1.2) in the "number and spacing planned" group, highest (5.0) in the "two-plus-too-many" group, and between 2.2 and 2.8 in the three intermediate planning groups. Live births and living children vary similarly. Few of the "number and spacing planned" couples, but most of the "two-plus-too-many" couples had more than two children.

Opinions as to the spacing of children are quite uniform. Between 68 and 76 per cent of the couples in each group said the "most desirable" time for the first child is two to three years after marriage. Between 81 and 89 per cent said the "most desirable" time between subsequent children is two to three years. The actual spacing of children, in contrast, varied widely from group to group and from the reported "most desirable" spacing. A large majority of the couples in the "number and spacing planned" group postponed their first child more than three years, but a large majority of those in the other groups had it within two years. Subsequent intervals tended to be longer than "most desirable" among the "number and spacing planned" and "number planned" couples, and shorter than "most desirable" among the "two-plus-too-many" couples.

Nearly all of the husbands but only a little more than one-third of the wives knew of one or more methods of contraception before marriage. Nearly all of the other wives obtained similar information before the second pregnancy. In consequence, variations in time of learning about contraception were of only minor importance in determining the fertility planning status of couples, and the average size of family for the planning groups. Differences in the rapidity of putting knowledge into

effect were of some importance, however. The couples in the "number and spacing planned" group began at once their attempts to space pregnancies on a "motive" or "action" basis, but 40 to 50 per cent of the couples in the other groups waited until after the first pregnancy or later.

The fertility planning groups appear to have differed only slightly in fecundity—the ability to conceive and bear a child. The differences which can be found are too small to have accounted for an important part of the differences in the success of fertility planning, or in size of family.

Variations in the ability to use contraception effectively were responsible for most of the differences in average size of family among these "relatively fecund" couples. There were no accidental conceptions to the 403 couples in the "number and spacing planned" group during the 56,613 months that they practiced contraception. But among the "two-plus-too-many" couples there was one accidental first conception for every 8.7 months when contraceptives were used, and one accidental second or subsequent conception for every 29.4 months of such exposure. Because of these differences in ability to control family size and spacing by means of contraception the fertility of the "number and spacing planned" couples was reduced by nearly 85 per cent, that of the "number planned," "quasi-planned," and "one-too-many" couples by 63 to 71 per cent, but that of the "two-plus-too-many" couples by less than 40 per cent. If fertility had been left to nature the number of pregnancies per couple probably would have averaged between 7.4 and 8.0 in each group. But as a result of planning there were only 1.1 pregnancies per couple in the "number and spacing planned" group, 2.2 to 2.8 in the "number planned," "quasi-planned," and "one-too-many" groups, and 5.0 in the "two-plus-too-many" group.

In spite of the foregoing reductions in fertility the couples in the last two groups had larger families than they desired. If they had been able to prevent the conceptions which occurred after the last wanted by the wife or husband they would

have lowered their fertility by 75 and 73 per cent respectively, or about as much as all the other couples. The average number of pregnancies per couple would then have been 1.9 or 2.0 for the "one-too-many" group and 2.2 for the "two-plus-too-many" group (or very slightly more than that for all other couples) and the fertility rate of all the "relatively fecund" couples would have been reduced about 17 per cent.

With less than one-fourth of the "relatively fecund" couples in such an urban group having more children than they want and nearly three-fourths having just the number they want, it is evident that the future trend of the birth rate for the entire group is going to depend in important degree on the changes which take place in the number of children wanted. It is extremely important, therefore, to try to determine which social and psychological factors influence the number of children desired, and analyse their effectiveness. Information on these matters was collected in the Study, and will form the basis for subsequent articles in this series.