BIRTH CONTROL IN LIMA, PERU
ATTITUDES AND PRACTICES

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INTRODUCTION

For the past few decades the rate of population growth in Latin America has been very high, and it is increasing. At first, the implications of the rapid population expansion were not fully realized and official thinking had no room for any positive population policy. In the last few years, however, more has been learned about the effect of this population trend on socio-economic development, and the difficulties of even maintaining present standards of living for a quickly expanding population are seen to be enormous. Moreover, numerous studies, mainly in capital cities, show that certain segments of the population do, in fact, limit the number of their offspring and that other segments do not want the large number of children they are having. The study of Armijo and Monreal showed that in Santiago 31 per cent of pregnancies end in abortion.[1] In Uruguay, the number of abortions may exceed the number of live births.[2] Other studies in Latin America limit themselves to selected population groups, such as hospital patients, but they corroborate the impression that motivation for family limitation may be stronger than official attitudes would suggest.[3,4,5,6]

The extent to which a population favors family planning is essential information for the planning of health programs and for the adoption of a national population policy. The present study attempts

to determine this for the population of women between 20 and 39 years of age in Lima, Peru. The questions posed were: To what extent do the women of Lima favor family limitation? How many have actually attempted to achieve this, either by means of contraception or by means of provoked abortions?

THE PERUVIAN SETTING

The population of Peru was 5 million in 1920, 7 million in 1940,[7] and 10 million in 1960.[8] Between 1950 and 1960, the annual growth rate was 2.5 per cent,[9] about the same as that for the whole of Latin America. The growth rate is increasing and, assuming no change in fertility and a continuing decline in mortality, will reach 3.7 per cent between 1975 and 1980,[10] at which time the population will be around 20 million.[11]

Like other Latin American countries, Peru has no official positive population policy. Health programs are geared exclusively to morbidity and mortality control, and natality is taken as a fact to be adjusted to rather than influenced. Perhaps the first official recognition that population may pose a problem for socio-economic development came in December 1964, when a Center for Studies of Population and Development was created by presidential decree.[12] It is too early at this time to know the direction the Center will take.

Peru is an overwhelmingly Catholic country, and the Church is powerful and influential. Lima, the seat of the Spanish viceroys in colonial times and long known as the "City of Kings," has a more traditional and conservative background than most other Latin American cities. Yet it is an active and fast-growing metropolis, and modern ideas are rapidly replacing traditional values.

Although fertility control is rarely talked about openly, there are indications that many families are attempting to control their fertility: Stycos' study in 1961 showed that the number of live births per married woman 40–44 years of age in Lima varied from 3.8 in the upper class to 7.6 in the lower class, implying some type of fertility control in the former group.[13] Even though Peruvian law forbids the manufacture, importation, and sale of contraceptives,[14] many contraceptives, including condoms, oral pills, and vaginal

contraceptives, are sold in pharmacies without medical prescriptions. A few pharmacies sell diaphragms, at a high price. Induced abortion is illegal and punishable by imprisonment of the woman for a term up to four years.[15] However, the ratio of abortions to deliveries in some Lima hospitals, especially those serving the higher socio-economic groups, is very high.[16]

With these facts as a background, the present study was done to determine as precisely as possible the attitudes and actions of the population with regard to family planning.

METHOD

The 15 districts of Metropolitan Lima and the three districts of the Constitutional Province of Callao form one large urban development whose population, excluding the slums (*barriadas*) was estimated at 1.3 million in 1961.[17] It is estimated that the number of Peruvian-born women 20–39 years of age in this area is around 200,000.[18] This group of women was the universe under study. An area-cluster sampling method was used and 50 blocks of the 5,593 city blocks were chosen in a systematic manner with a random start. In each of these blocks, starting at random at one corner of the block and at random from among the first five houses at the selected corner, every fifth dwelling unit was systematically selected until a total of 10 interviews was obtained. If the selected block did not provide 10 interviews, the adjacent sides of the surrounding blocks were selected in a systematic manner. All Peruvian-born women between 20 and 39 years of age were eligible for the interview. In each house, one such woman was interviewed. If there were no eligible women in the house, the interviewer continued on her way and selected the house five houses away. If two or more eligible women lived in the same house, the one to be interviewed was chosen by a predetermined random process. If a selected woman was absent from home, a minimum of two return visits were made on different days of the week, with at least one visit outside working hours. (More than two visits were generally made in the wealthy areas of the city because of the high refusal rate encountered there.) If these visits were unsuccessful, the woman was considered lost

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from the sample and was replaced by selecting a woman further along the block. In this manner 10 interviews were obtained in each of 50 blocks, making a total of 500 interviews. This sampling method gave a relative overrepresentation of the upper socio-economic groups where fewer houses per block resulted in a higher sampling probability. This had the advantage of including enough women of the upper socio-economic level in the sample to make it possible to draw conclusions about them. Unfortunately, however, not enough data are available about the city to permit an estimate of the degree of this overrepresentation, and this prevents generalization of the results for the city as a whole.

The National School of Social Service facilitated the contracting of 12 fully qualified and experienced social workers for the interviewing. All of them were Peruvians. They were given a series of five training sessions on procedures to be followed in the field and the content of the investigation. Each worker was provided with a credential letter signed by the Dean of the San Marcos University Faculty of Medicine. This letter was used when necessary.

The questionnaire covered the following areas:

General Characteristics of the Woman Interviewed Her Family, and Housing Conditions

The majority of these questions were asked at the beginning of the interview, but a few were interspersed throughout the interview, to provide a respite after tension-producing questions. The question on marital status followed the questions on pregnancy history, and the question on religion was the last one of the interview.

Menstrual History

The main purpose of this inquiry was to introduce the subject of reproduction from a medical point of view.

Reproductive History

Some of the questions were repeated twice in different ways, with the hope of making it rather difficult (although certainly not impossible) to omit completely a pregnancy which had ended in a provoked abortion.

Contraceptive History: Present and Past

The woman was first asked if she was doing anything at the moment to prevent a pregnancy and, if so, what. Then, a list of seven contraceptive methods with a brief explanation of each, couched in terms appropriate to the educational level of the woman, was read aloud by the interviewer, and the woman was asked if she had heard of each method and, if so, if she had ever used it.

Socio-economic Level

This was a personal impression on the part of the interviewer, placing the woman in one of three broad groupings. All interviewers had been trained to do this in more detail for other investigations and the wide differences between socio-economic levels in Lima made the division into only three categories relatively easy.

Opinion on Family Limitation

"Do you think that all women should have the opportunity to limit their family, or do you think that they should have all the children they are able to conceive?" This was the only opinion question asked.

Interviewer's Control Sheet

This gave date, hour, and result of visits, co-operation of the woman, degree of privacy obtained, etc.

The results were completely confidential. Identification of the woman was by address only. The interview was conducted, so far as possible, in private with only the woman in the room, and she was assured of the purely scientific purpose of the study and the confidential and anonymous nature of the results.

SOURCES OF ERROR

As in all questionnaire studies, the validity of the results depended on the veracity of the respondents' information. The nature of the information sought was such, however, that errors were much more likely to be in the direction of understatement than overstatement, and all the figures in this study may be considered minimum figures.

The one source of error which might produce either understate-

ment or overstatement was the diagnosis of early abortions not requiring medical attention. In these cases, a woman's report of an abortion depended on her judgment as to whether she had been pregnant and aborted, or whether menstruation had only been delayed. Whether mistakes in both directions balanced each other or whether they were of equal importance in all social classes is, of course, not known. A major source of error is in the woman's reporting of abortions known, or at least thought, to have occurred, and this source of error is probably nearly always in the direction of omission. Thus it would be unlikely for a woman to report an abortion if she did not think she had had one, while it would be likely for her to omit reporting an abortion (either willfully or because she forgot) when in fact she knew or thought she had had one. Since the number of abortions was related to the number of live births to calculate the proportion of pregnancies ending in abortion, probably more accurate reporting of live births than abortions again tends to lower the abortion rate.

Reporting of the use of contraceptives, both present and past, is very likely understated, and the figures on contraception may also be considered minimum figures. Thus it would be most unlikely for a woman to report using or having used a method of contraception if she had not in fact used it, whereas it would be more likely for her to deny having used it when in fact she had done so. No attempt was made to assess the accuracy of the woman's knowledge about each method, but it was known to vary greatly. The accuracy of the woman's knowledge was probably lowest for a method such as rhythm, especially in the lower class, and highest for a method such as the condom.

The question on family limitation depended on the woman's understanding of the question. In some cases, the woman probably answered without having really understood the question, as demonstrated by the fact that of the 105 women against family limitation, 15 were using some method of contraception at the time of the interview. Whether the obvious error in this direction is balanced by an equal number of women who stated they were for family limitation, but in fact were against it, is not known.

RESULTS

Characteristics of the Interviews

Eighty-two per cent of the women selected were actually interviewed. This proportion varied from 58 per cent in the two higher socio-economic districts of Lima[19] to 88 per cent in all the other districts. The low proportion of women interviewed in the two higher class districts was not due to the subject matter of the interview, but rather to the difficulty of getting past the servant barrier in the wealthy homes. Refusal because of the subject matter was rare in all the social classes; only 5 women refused to reply or interrupted the interview because of the subject matter. The average duration of the interview was 30 minutes. Co-operation was "very good" or "good" on a four-point scale in 91 per cent of the women interviewed.

General Characteristics of the Women Interviewed

Of the 500 women interviewed, 10.2 per cent were in the upper, 43.4 per cent in the middle, and 46.4 per cent in the lower socio-economic level. Sufficiently detailed data from the 1961 Peruvian National Census is unfortunately not available, and it is impossible to compare the general characteristics of the women interviewed with those for the city as a whole. Data from the 1940 Census are completely outdated since Lima has tripled in size since then.[20]

As can be seen in Table 1, the age distribution of the women was similar in the middle and lower socio-economic groups, but there was a relatively high percentage of older women in the upper socio-economic level. This may be a sampling bias since most of these women came from the two districts where a low proportion of women selected were interviewed.

The proportion of mated women was similar in all three groups: between 80 and 86 per cent, even though the proportion legally married varied greatly.

All of the women in the upper socio-economic group had some secondary or technical school education, whereas only 76 per cent in the middle and 19 per cent in the lower level had such schooling.

In the upper level, 22 per cent of the women were born outside

TABLE I. GENERAL CHARACTERISTICS OF THE WOMEN INTERVIEWED, LIMA, 1964

	Socio-economic Level		
	Upper	*Middle*	*Lower*
Number of women	51	217	232
Percentage distribution			
by age groups:			
20–24	11.8	21.6	22.4
25–29	17.7	23.9	28.4
30–34	29.4	30.4	25.8
35–39	41.2	23.9	23.3
by civil status			
legally married	86.3	79.3	47.0
common-law union	0.0	3.2	37.5
separated, widowed, divorced	5.9	6.4	5.2
single	7.8	11.1	10.3
by educational level			
no schooling	0.0	0.5	11.2
1–6 years primary school	0.0	23.5	69.8
1–4 years secondary or technical school	90.2	63.1	18.1
univ. or other course after secondary	9.8	12.9	0.8
by place of birth*			
born in Lima or Callao	78.0	54.9	29.3
born outside Lima or Callao	22.0	45.1	70.7
by occupation			
housewife	86.3	71.4	71.6
other	13.7	28.6	28.4
by husband's occupation			
professional	64.7	35.9	3.9
office worker—storekeeper	19.6	30.4	8.2
skilled or unskilled worker, laborer	2.0	16.2	72.4
woman has no husband at present	13.7	17.5	15.5
by housing characteristics:			
average no. rooms per dwelling unit	6.9	4.9	2.6
average no. persons per room	0.9	1.2	2.4

* Excludes 8 women for whom this was not stated.

the city, whereas in the lower level 71 per cent were born outside the city. Since it is estimated that 39 per cent of the population of Lima is made up of people who have migrated there in the past 20 years and since most of the new migrants form the lower stratum of the city,[21] these proportions seem reasonable.

Data on the woman's occupation probably slightly overestimate the proportion of housewives because of the greater probability of finding housewives at home on one of three visits. This bias may be greater for the upper class because the extreme difficulty of speaking with the lady of the house probably meant a somewhat less rigorous choosing of eligible women in accordance with the sampling procedure. Data on the husband's occupation and housing characteristics are what would have been expected from a general knowledge of Lima.

More than 98 per cent of the women reported their religion as Roman Catholic, and this is the proportion known to exist in the country.[22]

The percentage of children under 15 years of age in the population sampled, including the women interviewed and all other persons living in the household, was 44. This proportion is higher than that in the 1961 National Census for Metropolitan Lima, which was 37 per cent;[23] this is what would be expected, since the sampling method in this study excluded households with only older people. Until further census data are available, it is, therefore, tentatively concluded that the sample in this study does not contain any gross bias.

It was originally planned to seek from other family members or neighbors this general information for women lost from the sample. The lack of co-operation by neighbors, however, made the work involved not worth the small amount of data obtained, and the plan was discontinued. No information is available, therefore, about those women who were lost from the sample.

Characteristics of Menstruation

For the three socio-economic levels the mean age at menarche was reported at 13–14, the mean interval between menstruation as 28–29 days, and the average duration of menstruation as 4–5 days. The proportion of women with menstrual symptoms severe enough to interfere with their usual activities, even with medication, was 12–14 per cent for the three levels. No specific questions were asked about the variability of the menstrual cyle.

Abortion Rates

The 500 women interviewed reported a total of 1,686 pregnancies resulting in 1,423 live births (including 10 sets of twins), 24 stillbirths, and 249 abortions. An abortion was defined as a pregnancy loss up to and including five and a half months of gestation. The proportion of women with a positive history of abortion was 45.1, 33.2, and 34.5 per cent for the upper, middle, and lower socio-economic groups, respectively. The average number of abortions reported per woman with a positive history was 1.5, 1.6, and 1.3 for the three levels, respectively.

The proportion of pregnancies ending in abortion was 20, 18, and 12 per cent in the upper, middle, and lower levels respectively (Table 2). The proportion of pregnancies ending in an admitted provoked abortion was highest in the middle level: 3.4 per cent. However, relatively more abortions were suspected of having been provoked in the upper level: 5.4 per cent of the pregnancies. The basis for suspecting an abortion was provoked, even though the woman reported it as spontaneous, was as follows:

1. A note from the interviewer on the questionnaire, stating her doubts about the veracity of the woman's answer, and the reasons why.

TABLE 2: ABORTION RATE BY SOCIO-ECONOMIC LEVEL, TOTAL STUDY AND YEARS 1959–63 ONLY, LIMA, 1964

	Socio-economic Level		
	Upper	*Middle*	*Lower*
Total Study			
number of pregnancies*	166	623	873
per cent abortions (all types)	19.9	18.0	11.9
admitted provoked	1.8	3.4	1.5
suspected provoked	5.4	2.9	2.3
"spontaneous"	12.7	11.7	8.1
Years 1959–63†			
number of pregnancies	68	273	326
per cent abortions	19.1	19.8	15.0

* Here and in Tables 3–5, the number of pregnancies excludes stillbirths which totaled 24, or 1.4 per cent, of all pregnancies.
† Excludes 2 live births and 29 abortions whose date of occurrence was not stated.

2. The woman admitted considering a provoked abortion when she found herself pregnant, or she admitted having actually attempted to provoke an abortion a few weeks before it occurred.

3. Where an abortion had occurred more than two years prior to the interview in a woman whose fecundity was proved by the fact that she had at least one live birth, yet no pregnancy had occurred after the abortion and, in fact, the couple was now using a contraceptive method.

4. Answers such as "I do not want to say anything about it," or admissions of having taken quinine by mouth with "good results," though refusing to give more details, etc.

The abortion rates are those for the "total study," that is, they include all the abortions reported by the women interviewed and have the defect that the interval between the event and the reporting of it varies and in some cases is very long—theoretically up to 25 years. To eliminate this defect, abortion rates were calculated for the years 1959–1963 only—the five years prior to the interview for all women. These were 19, 20, and 15 per cent, respectively, of the pregnancies for the upper, middle, and lower socioeconomic levels. Therefore, they were fairly similar to the rates for the total study for the upper and middle levels but rose for the lower level, showing that the memory factor was perhaps most important for that group of women. The differences between the social groups in the 1959–1963 rates are not significant by the chi-square test at the 5 per cent level of confidence.

These abortion rates are definitely lower than those found in Santiago, Chile, where a random sample of women between 20 and 44 years of age reported 31 per cent of pregnancies ending in abortion, half of these being admitted provoked abortions.[24] Yet even the Lima rates are high for spontaneous abortions. No data are available on spontaneous abortion rates in Lima. However, a basis for comparison is provided by clinical evidence about spontaneous abortions. In the United States, there is a general consensus among several large studies that the over-all incidence for spontaneous abortions is 8–10 per cent of pregnancies.[25] The rate

does not vary with race or social class.[26] It does increase slightly with age, ranging from about 4 per cent in women 16–19 years of age to about 13 per cent in women 35–39 years of age.[27] There is disagreement as to whether it increases with parity, Eastman saying that it does not,[28] while Javert's series shows an increase from about 6 per cent for the first pregnancy to 15 per cent for the fifth and later pregnancies, when a plateau is reached.[29] Part of this effect is probably due to age, since Javert's figures are not standardized for age. The constancy of the abortion rate, in general, is attributed to the relative unimportance of maternal factors and the importance of fetal factors in causing the abortions.[30] If these clinical facts are true for the United States, they are probably also true for the Peruvian coast, and a spontaneous abortion rate of 8–10 per cent may be used as a tentative basic rate for Lima women.

Table 3 and Figure 1 show the variation in the abortion rate with age of the woman. The figures for 1959–1963 show close agreement with the figures for the total study, except in the upper socio-economic level for women under 20 and 35–39, where the number of pregnancies was very small.[31] For women under 20 in the middle and lower socio-economic levels, the rates are only slightly higher than the rate of 3.8 found by Javert. In the three socio-economic levels, the rates for women 20–29 are about twice as high as Javert's, while for women 30–39 they are well over twice his rates. In each social group, the increase with age is sizable. Until age 35, the lower-class women, in general, have a lower abortion rate than middle- and upper-class women, even though at each age range they have a higher parity than those women (*see* under headings "Initiation of Sexual Life" and "Spacing of Pregnancies").

Figure 2 shows the variation with age in the annual incidence of pregnancies and abortions per 100 women.[32] The highest incidence of pregnancies is in women 25–29. Since the *spontaneous* abortion rate increases only slightly with age, the incidence of abortions should also be highest in the age group 25–29. This was not true in the women studied and the yearly abortion incidence remained more or less constant after 25 years of age. This is, of course, a reflection

TABLE 3. ABORTION RATE BY AGE OF WOMAN AT OCCURRENCE AND SOCIO-ECONOMIC LEVEL; TOTAL STUDY AND YEARS 1959–63 ONLY, LIMA, 1964

	Socio-economic Level	*Time Interval Included*	*Age at Occurrence**				
			Under 20	*20–24*	*25–29*	*30–34*	*35–39*
No. of pregnancies	Upper	Total study	8	51	61	32	8
		1959–63	3	11	26	22	6
	Middle	Total study	68	217	211	85	24
		1959–63	18	61	114	57	22
	Lower	Total study	175	324	259	90	18
		1959–63	22	98	128	62	16
Per cent abortions (all types)	Upper	Total study	25.0	15.7	13.1	21.9	25.0
		1959–63	0.0	18.2	19.2	22.7	16.7
	Middle	Total study	7.4	12.9	15.6	18.8	54.2
		1959–63	5.6	14.8	16.7	22.8	54.5
	Lower	Total study	5.7	8.0	15.4	18.9	27.8
		1959–63	4.5	12.2	14.1	22.6	25.0
Per cent spontaneous abortions, Javert's Series (U.S.A.)			3.8	6.4	6.4	8.6	12.6

* Excludes 2 live births and 29 abortions for which age of mother at occurrence was not stated.

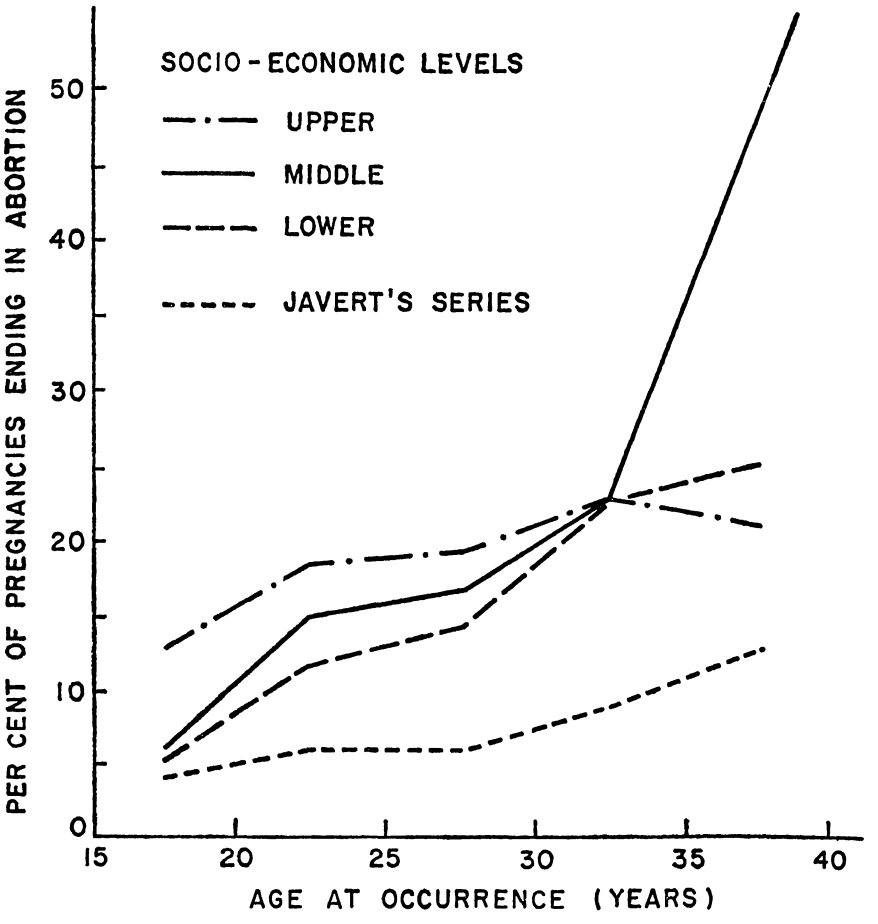

Figure 1. Variation in the abortion rate with age (Lima, Peru).

of the much higher percentage of pregnancies ending in abortion in the older age groups.

Table 4 and Figure 3 show the variation in the abortion rate with the order of the pregnancy. The rate did not vary greatly for the first three pregnancies, but with later pregnancies it showed a remarkable rise, especially in the upper and middle socio-economic levels. The rates for the third, fourth, and fifth and later pregnancies were 6, 30, and 38 per cent, respectively, for the upper

TABLE 4. ABORTION RATE BY PREGNANCY ORDER AND SOCIO-ECONOMIC LEVEL, TOTAL STUDY, LIMA, 1964

	Socio-economic Level	*First*	*Order of Pregnancy* *Second*	*Third*	*Fourth*	*Fifth and Over*
No. of pregnancies	Upper	44	38	32	23	29
	Middle	180	149	108	77	109
	Lower	206	181	146	111	229
Per cent abortions (all types)	Upper	18.2	13.1	6.3	30.4	37.9
	Middle	7.8	16.8	16.7	23.4	33.9
	Lower	7.8	10.0	12.3	12.6	16.6
Admitted and suspected provoked	Upper	0.0	0.0	3.1	13.0	24.1
	Middle	1.2	4.0	5.6	6.5	18.3
	Lower	1.5	2.2	4.1	3.6	7.4
Per cent spontaneous abortions, Javert's series (U.S.A.)		5.7	7.0	9.6	12.4	18.1

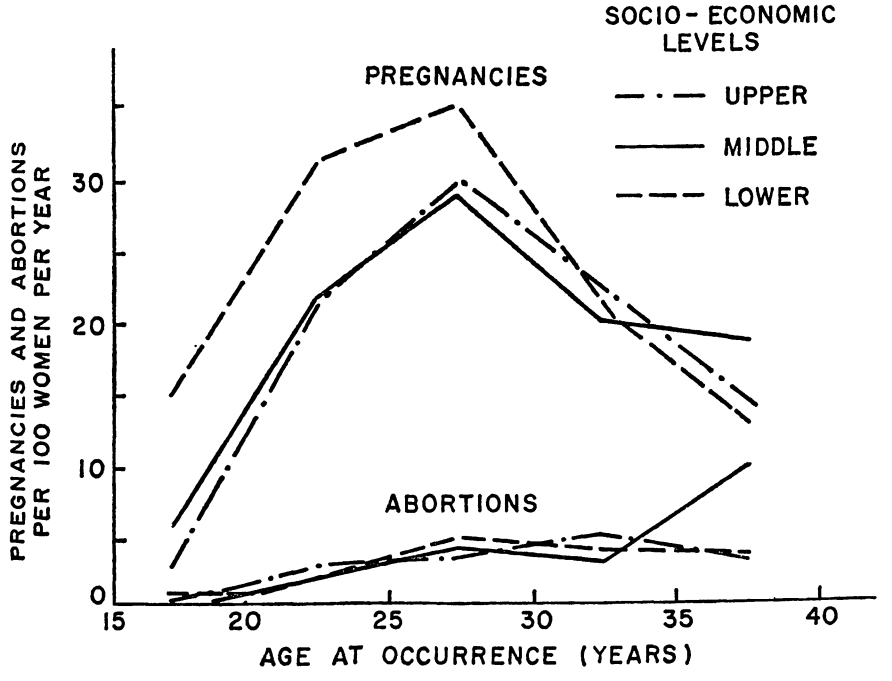

Figure 2. Annual incidence of pregnancies and abortions.

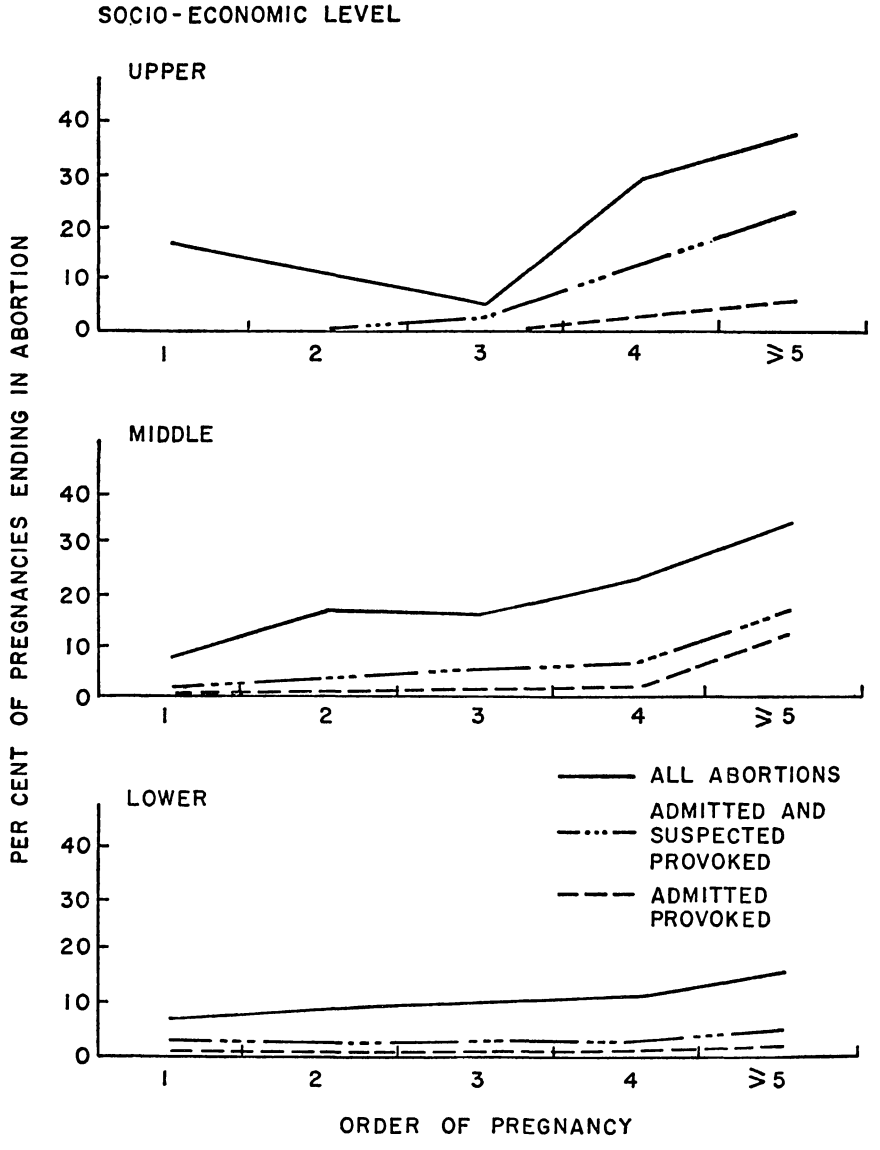

Figure 3. Abortion rate by order of pregnancy and socio-economic level.

level, 17, 23, and 34 per cent in the middle level, and 12, 13, and 17 per cent in the lower level, respectively. There were relatively more admitted provoked abortions in the middle level and relatively more suspected provoked abortions in the upper level. In the fifth and later pregnancies the proportion of the abortions, either admitted or suspected provoked ones, was 64, 54, and 45 per cent in the upper, middle, and lower levels, respectively.

For each pregnancy, the woman was asked if contraception was being practiced when pregnancy occurred, and if provoking an abortion was considered when she found herself pregnant. If an "unwanted" pregnancy is defined as one in which the woman answered affirmatively to either one or both of these questions, then 42 per cent of the pregnancies occurring in women with five or more living children were "unwanted," and in this group of women 61 per cent of all the abortions were either admitted or suspected provoked abortions. The detail is shown in Table 5, where it is seen that "unwanted" pregnancies rose from 8 to 17 to 25 to 42 per cent of all pregnancies when there were none, 1–2, 3–4, and 5 or more living children, respectively. Similarly, the admitted and suspected provoked abortions rose from 2 to 4 to 8 to 13 per cent of all pregnancies when there were none, 1–2, 3–4, and 5 or more living children, respectively.

TABLE 5. ABORTION RATE AND "UNWANTED" PREGNANCIES BY NUMBER OF LIVING CHILDREN, TOTAL STUDY, LIMA, 1964

	*Number of Livir g Children**			
	None	*1–2*	*3–4*	*5 or more*
Number of pregnancies	513	715	314	108
Per cent "unwanted" (total)†	8.2	16.8	25.0	42.3
contraception used (only)	5.4	12.9	12.8	21.6
provoked abortion considered (only)	2.0	1.0	2.8	9.3
both of the above	0.8	2.8	9.4	11.3
Per cent abortions (all types)	10.1	14.3	19.4	21.3
admitted and suspected provoked	1.8	3.8	7.7	13.0

* Excludes 12 pregnancies with number of living children not stated.
† Excludes 88 pregnancies for which there was no information. These were distributed as follows: 16, 35, 26, and 11 when there were none, 1–2, 3–4, and 5 or more living children, respectively.

From these data, it may be concluded that:

1. Provoked abortions are a means of fertility control in all socio-economic groups; they are more frequent in the upper and middle socio-economic levels, where one out of every two abortions may be a provoked one, and less frequent in the lower socio-economic level, where one out of every three abortions may be provoked.

2. Provoked abortions are most frequent in women over 30 years of age.

3. They are most frequent after the fourth or fifth pregnancy.

Data on the duration of gestation at the time of the abortion, the proportion of abortions with fever, and the proportion of abortions for which hospitalization was required lend corroborative evidence to these conclusions. Of the admitted and suspected provoked abortions, 92 per cent occurred within the first three months of pregnancy, while only 83 per cent of the "spontaneous" abortions occurred during that period. It is probable that if a woman is going to have a provoked abortion, she will have it within the first three months. Fever was reported to have been present in 21 per cent of the admitted and suspected provoked abortions and in 17 per cent of the "spontaneous" abortions. Although a slight degree of fever often accompanies spontaneous abortions, it is likely that a slight fever of short duration would not have been noticed or remembered by the women, and that where fever was reported it was an obvious symptom. If this is the case, both of these percentages are very high. According to Danforth, whenever a significant degree of infection is present in an abortion criminal interference should be strongly suspected.[33] The proportion hospitalized was 27 per cent of the admitted and suspicious cases of provoked abortions and 37 per cent of the cases of "spontaneous" abortions. In the city of Lima, 66 per cent of all births are estimated to occur in hospitals.[34] The proportion of women hospitalized for abortion is probably much lower and it may be that more women with spontaneous than with provoked abortions are hospitalized because of the fear of legal repercussions.

The abortion rate did not show any consistent trend when tabulated according to the length of time the mother had been in Lima. Since each group included women of widely different ages, the strong variation in the abortion rate with age may have obliterated any minor variation in the rate with length of stay in Lima. The numbers were not sufficient to do the analysis holding the age of the woman constant.

Contraception

The proportion of women exposed to the risk of pregnancy who were using contraception at the time of the interview was 68, 54, and 38 per cent for the upper, middle, and lower socio-economic levels, respectively (Table 6). These differences are significant by the chi-square test at the 5 per cent level of confidence. The condom was one of the two most popular methods of contraception in each of the three socio-economic levels. In the upper level, it was used by the same proportion as the rhythm method. In the middle level, it was the most commonly used method, followed by the rhythm method. In the lower level, it was second to douching, with coitus interruptus being almost as commonly used as these other two methods. Of the women who reported their religion as Catholic and who were using contraceptives, 78 per cent were using a method not approved of by their Church—that is, a method other than rhythm or various degrees of abstinence.

Figure 4 shows the percentage of women who had heard of the four most commonly known methods of contraception. The proportion of women who had heard of rhythm, the condom, and coitus interruptus was highest in the upper level and decreased with lower socio-economic level. About two-thirds of the women in all three levels had heard of douching. Of the women who had heard of each method, the proportion who had actually made use of it is shown in the lower part of the graph. As for the rhythm and condom methods, if upper- and middle-class women had heard of them they were more likely to have used them than lower-class women. However, if lower-class women had heard of coitus interruptus and douching, they were more likely to have used them

TABLE 6. PRESENT USE OF CONTRACEPTION AND TYPE OF METHOD BY SOCIO-ECONOMIC LEVEL, LIMA, 1964

	Socio-economic Level		
	Upper	*Middle*	*Lower*
Use of contraception			
no. of women exposed to risk of pregnancy*	41	159	175
no. using a contraceptive method	28	86	67
not stated	—	3	—
per cent of exposed women using a method	68.3	55.1	38.3
Type of method used	100.0	100.0	100.0
rhythm	28.6	22.1	14.9
douching	0.0	15.1	23.9
coitus interruptus	3.6	4.7	20.9
condom	28.6	32.6	22.4
vaginal tablets or suppositories	0.0	2.3	1.5
diaphragm	10.7	2.3	0.0
oral pills	10.7	11.6	6.0
other	17.9	9.3	10.4

* The women not considered exposed to the risk of pregnancy were those: (1) without sexual experience, (2) pregnant at the time of the interview, (3) previously surgically sterilized.

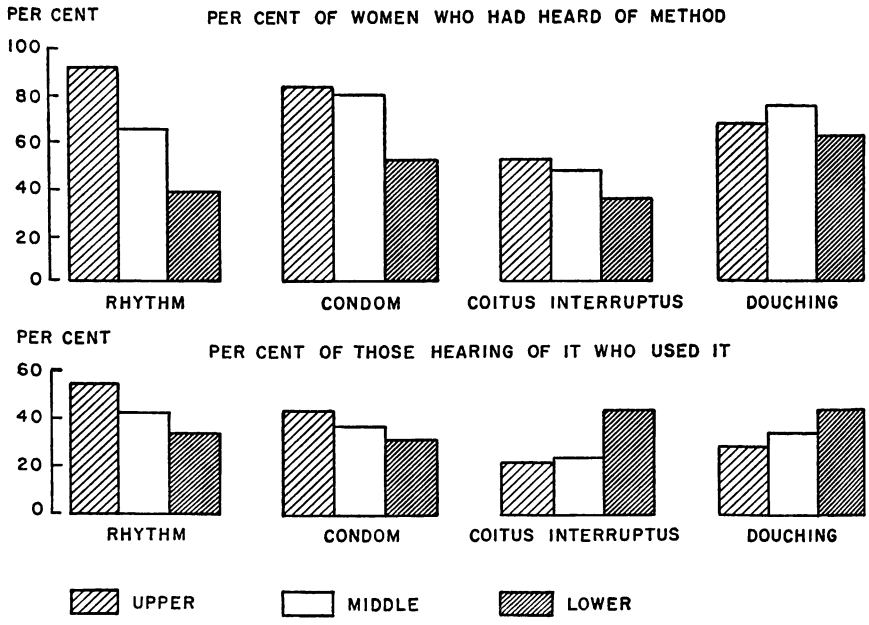

Figure 4. Percentage of women who knew of four contraceptive methods, by socio-economic level.

than the upper-class women. It seems that coitus interruptus and douching are acceptable methods to the lower-class women.

A high proportion of women in all socio-economic levels had heard of at least one or two methods of contraception (Figure 5). In the upper and middle socio-economic levels, over 86 per cent of the women knew a "reliable" method of contraception, that is, either the condom, vaginal tablets or suppositories, diaphragm, or oral pills. This proportion was 62 per cent for the lower-class women. This difference between the social classes is significant by the chi-square test at the 5 per cent confidence level. Among the lower level women, 13 per cent knew only an "unreliable" method,

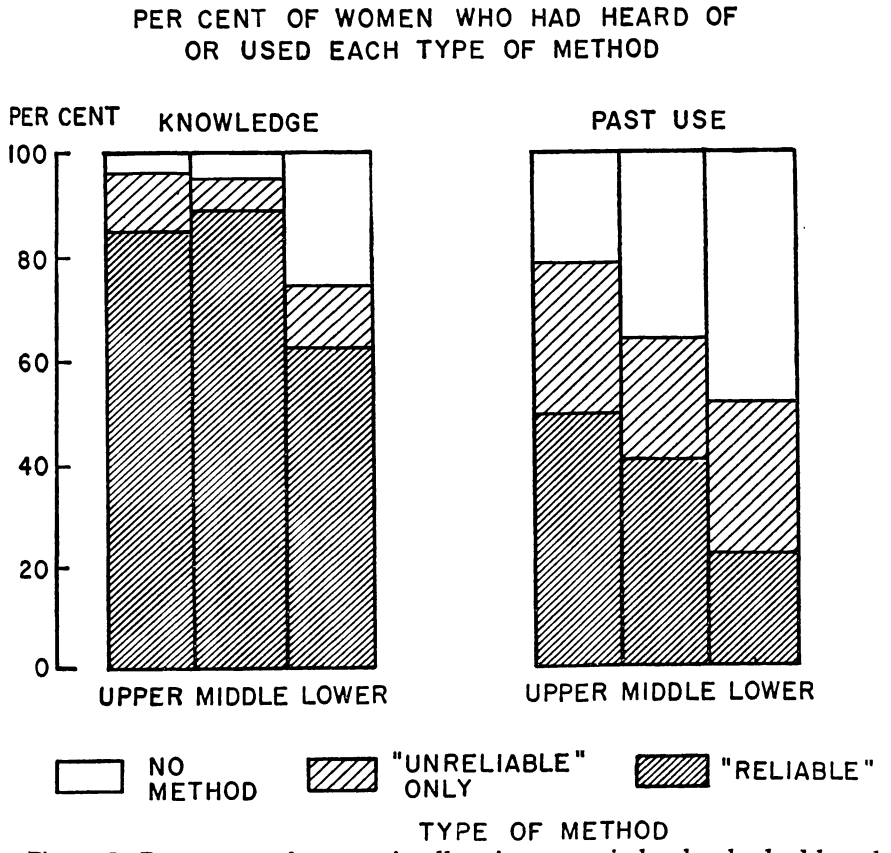

Figure 5. Percentage of women in all socio-economic levels who had heard of at least one or two methods of contraception.

that is rhythm, douching, coitus interruptus, or a folk remedy, and 25 per cent knew of no contraceptive method whatever.[35] Even if a woman in this level knew of a "reliable" method, she was less likely to have used it than a woman in the upper or middle level: only 35 per cent of the lower-class women who knew a "reliable" method had ever used one, whereas 45 per cent of the middle-class and 57 per cent of the upper-class women who knew of such a method had used it.

It may be concluded that rhythm, the condom, douching, and coitus interruptus are the four most commonly known and used methods of contraception in Lima. The rhythm method and the condom are relatively more acceptable to the upper and middle socio-economic groups, while douching and coitus interruptus are relatively more acceptable in the lower socio-economic groups. A high proportion of the women knew of at least one method of contraception, but the higher socio-economic groups made better use of their knowledge of reliable methods than did the lower groups.

Initiation of Sexual and Reproductive Life

The women in the lower socio-economic level were found to have initiated their sexual experience before women in the higher levels. The proportion of women who reported having had their first sexual experience before the age of 20 was 28, 33, and 60 per cent in the upper, middle, and lower socio-economic levels, respectively. No specific question was asked about age at marriage. Reproductive life also started earlier for the lower-class women: the proportion of women who had already had a delivery before reaching the age of 20 was 16, 23, and 47 per cent for the upper, middle, and lower socio-economic groups, respectively. These differences between the social groups are all significant by the chi-square test at the 5 per cent level of confidence.

Spacing of Pregnancies

The length of each interpregnancy interval was calculated. The three socio-economic levels gave very similar results: The average interval length was 24.0, 25.3, and 24.0 months for the upper,

middle, and lower levels, respectively, and the median interval length was 17.6, 18.8, and 18.6 months for the three levels. As Figure 6 shows, the curves of the relative frequency of each interval length were similar for the three social classes. These intervals are very close to what would be expected in a population breast-feeding but not practicing contraception. In a Punjabi village in India, where contraception is not used to space pregnancies but where breast-feeding is usual, Wyon found an average interpregnancy interval of 19.4 months when the first pregnancy ended in stillbirth and 29.7 months from live birth to live birth.[36] In the Indianapolis study in the United States, the median interval between the puer-

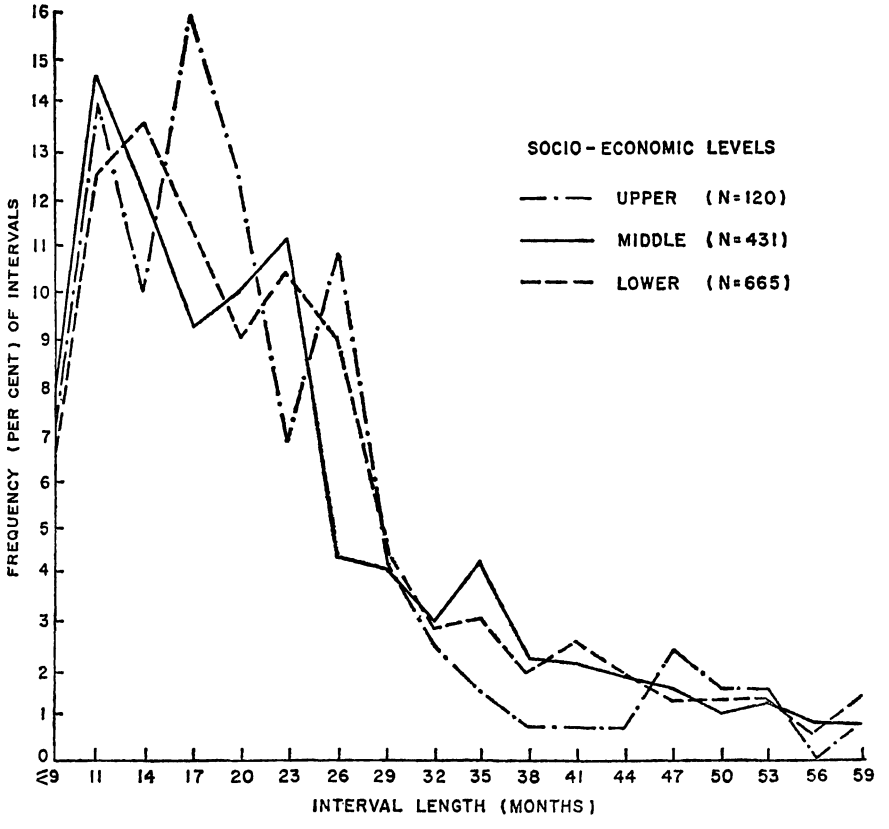

Figure 6. Curves of relative frequency of intervals between pregnancies, by socio-economic levels.

perium and the next conception in couples not practicing contraception was between seven and 10 months.[37] Probably a good proportion of the women in Lima in all socio-economic groups breastfeed, and these short interpregnancy intervals suggest that contraception is not used to space pregnancies. Latin American culture and values make it rather unlikely that contraception is much used before the first conception takes place. It would seem that in Lima contraception and provoked abortions are principally means of limiting the family, once it has reached the desired size, rather than of spacing children.

Opinion on Family Limitation

In each of the social classes, the majority of the women were in favor of family limitation. The proportion in favor of it was 71, 90, and 67 per cent in the upper, middle, and lower socio-economic groups, respectively. In the upper socio-economic level, 12 per cent of the women stated that they had no opinion on the subject, whereas this percentage was less than 1 in the other two groups. It is interesting that the middle-class women felt most strongly that families should be limited. Only 9 per cent of them were against family limitation, in contrast to 18 per cent of the upper-class women and 33 per cent of the lower-class women. How strongly the women felt about this question no doubt varied greatly, but the many requests for contraceptive information, especially from middle- and lower-class women, show that many of them would appreciate such information.

IMPLICATIONS

The implications of this study for future social, economic, and political developments in Peru are significant. A striking impression was the central importance of the subject in the lives of all women. Practically without exception, they showed interest, concern, and willingness to talk about their pregnancies. Most talked frankly and openly about contraception, and the greater resistance encountered with the subject of abortions was probably due to more severe possible repercussions than in the case of contraception. The many

refusals of the interview in the higher socio-economic group were not due to the subject matter, but to the general inaccessibility of these women to any type of interview by means of house calls. It is sometimes said that for lower-class women additional children are regarded with unconcern, requiring little care and receiving the minimum. It is said that the additional child is like "an additional chair in the house." This impression was not substantiated by this study. Children, their numbers and their future represented a vital area in the women's lives and voluntary maternity, the bearing of children when the mother desires it, seemed a widely held ideal.

The proportion of women favoring family limitation, the many requests for contraceptive information, and the proportion of women who had used some contraceptive technique are important data which may well influence future official policy. They show, at least in Lima, that a sizable segment of the population feels a need for family limitation, a need which could be satisfied at a relatively low cost, without an extensive educational campaign. The level of motivation for contraception probably varies greatly, but an easy, simple, and nonrepetitive method would probably receive wide acceptance in this group of women.

The high rate of provoked abortions, especially in the upper and middle socio-economic groups, shows that at these levels the need for family limitation is very strong, indeed, and does not go unsatisfied, even at the risk of high social, health, and legal costs. If values and motivations of the lower socio-economic levels are modeled on those of the higher socio-economic levels, the findings would suggest that the provoked abortion rate may well increase in the years to come. The implications for health programs are obvious.

The rapid population expansion presents the Latin American countries with a crisis. How that crisis will be resolved is one of the major questions confronting these countries today. Chances for a rational and successful solution depend on the accuracy of knowledge about the attitudes and actions of the people concerning their own personal population—their families. People are a country's

most important resource and the very reason for all efforts toward socio-economic development. The seriousness of a government's effort toward development may well be measured in terms of the importance with which it regards its population trends and the implications these may have on the people's standard of living.

SUMMARY

A study was made of pregnancy histories and contraceptive practices of a sample of 500 women in Lima, Peru. For the five years prior to the interview, the percentage of pregnancies ending in abortion was found to be 19, 20, and 15 in the upper, middle, and lower socio-economic levels, respectively. Although there were few admitted provoked abortions, the total abortion rate seemed high and was thought to include many unadmitted provoked abortions. This suspicion was substantiated when the abortion rates were tabulated by the age of the woman and the order of pregnancy. It may be concluded that provoked abortions are a means of fertility control in Lima, especially in the upper and middle socio-economic levels, and that they are resorted to mainly by women over 30 who already have 3–4 children.

Contraception was found to be widely used, especially by the upper and middle socio-economic groups. The proportion of women exposed to the risk of pregnancy who were using contraception at the time of the interview was 68, 54, and 38 per cent in the upper, middle, and lower socio-economic groups, respectively. The condom was one of the two most popular methods of contraception in the three socio-economic levels. In the upper and middle levels, rhythm was also commonly used, while in the lower level douching and coitus interruptus were also commonly used. In all social groups, the majority of the women were in favor of family limitation.

APPENDIX

TABLE A: DELIVERIES AND FETAL DEATHS, INCLUDING ABORTIONS, IN SIX HOSPITALS IN METROPOLITAN LIMA, 1961–1963

Socio-economic Level Served	*Hospital*	*Number of Deliveries*			*Ratio of Fetal Deaths (Including Abortions) to Deliveries*		
		1961	*1962*	*1963*	*1961*	*1962*	*1963*
Low	Maternidad de Lima	25,791	25,877	27,092	7.7	4.3	4.0
	Seguro Obrero	1,846	2,202	2,984	4.4	4.8	3.4
Middle	Seguro del Empleado	6,268	7,567	8,561	1.7	1.8	2.1
	Policía	754	969	1,100	23.3	22.0	22.0
High	Clínica Delgado	724	623	633	4.4	18.9	17.9
	Clínica Anglo-Americana	347	410	373	19.0	16.1	27.9

TABLE B: NUMBER OF WOMEN RETROSPECTIVELY OBSERVED BY INTERVIEW (BASIS FOR CALCULATION OF THE INCIDENCE OF PREGNANCIES AND ABORTIONS BY AGE AT OCCURRENCE) LIMA, 1964

Socio-economic Level	*Age of Occurrence*				
	Under 20	*20–24*	*25–29*	*30–34*	*35–39*
Upper	51	48	41	29	11
Middle	217	194	144	85	26
Lower	232	206	147	84	27

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