

THE REPORT describes an attempt at devising an education programme in family planning for the residents of a small town with a population of about 8,000 in the district of Poona. An efficient medical centre with a dispensary and a maternity hospital is established in the town, and family-planning education is imparted to the residents through the vehicle of medical facilities. The problem then arises: How far can a family-planning clinic attached to such a centre be effective in motivating the residents to the practice of family planning? Can a concentrated effort of this kind be utilized to bring down the birth-rate appreciably within a limited period? This book tries to answer these and similar queries.

Gokhale Institute Studies No. 49

COMMUNICATION IN FAMILY PLANNING

COMMUNICATION IN FAMILY PLANNING

Report on an Experiment

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FOREWORD

THE present publication is a report on an investigation which the Institute undertook with financial assistance from the Population Council, New York, and with active co-operation from the Poona Branch of the Indian Medical Association. Its purpose was to assess the efficacy of a public health centre as a medium of communication in a programme of family planning. With this object in view, the Poona branch of the Indian Medical Association established a dispensary and a small hospital at Manchar, which is a small town of about 8000 population, 38 miles from Poona. A family-planning clinic was attached to the hospital. There was no separate staff for the clinic. The lady doctor in charge of the hospital was expected to give information regarding family planning to all women coming for maternity service and also to anyone who sought such information. The contraceptives were to be supplied free. This was all the responsibility of the Poona Medical Association.

The responsibility of the Institute was confined to conducting an investigation for concurrent evaluation of the work of the family-planning clinic attached to the hospital. For this purpose, we had appointed a lady investigator, who was a trained nurse and a health visitor. However, in the current project, she was not given any public health duties. Her duties were chiefly investigational.

As it turned out, the family-planning clinic did not prove to be a very effective medium of communication. There were difficulties of staffing the dispensary and the hospital. It also became clear that talking to the women on matters of family planning required aptitudes and skills which were not necessary to otherwise competent medical personnel. The period of confinement in the hospital was also found not to be the most suitable period for discussing family planning. If one wanted to discuss contraceptives as distinct from surgical means, it was obviously not the most opportune period. The period was opportune for discussing only the surgical sterilization of the female. This was attempted. However, it soon became clear that the period was too short to prepare the respondent for the surgical operation if the subject was not broached earlier. In brief, the idea to communicate information regarding possibilities of family-planning and -limitation during the period of confinement did not prove successful. As to the other idea of giving information on family planning to those who would visit the family-planning clinic for the purpose, very few visited the clinic on their own.

Thus the initial purpose of the investigation, namely, to assess the efficacy of a family planning clinic as a medium of communication in a programme of family planning in rural area had to be soon given up. It was obvious that a door-to-door canvassing was needed. We therefore decided to use

our lady investigator for giving information by a house-to-house visit and assessing the responses of the persons concerned. The details given in this report are of interest. The investigator talked to only the womenfolk. There were 1255 married women of ages between 18 and 42, and the idea was to visit them all and to explain to them the possibility of family-planning and -limitation, and the different methods used. Only 388 women, i. e. less than one third, were interested. This might appear disappointing. However, the reasons why the others were not interested are worth noting. 163 women had no living child, 205 had only one living child, 169 had no living son, 73 had a child only recently and there was no possibility of immediate child-bearing, 46 were pregnant, 41 had no pregnancy during the past five years, 29 women had naturally long spacings between children, 118 had their husbands away for a major part of the year, 9 women had menopause and 15 Muslim women had religious objections. If one views the situation from the standpoint of the respondents, the reasons given appear to be very reasonable indeed. These results emphasize the importance of a preliminary survey to identify cases where the advice in family planning is needed and is likely to be accepted.

The investigator explained to the women the several methods of family-planning and -limitation. Only 175 out of the 388 women who listened showed immediate interest. The preferences they showed for different methods are of some interest: 92 women preferred surgical method either on the male or female, 63 preferred foam tablets, 15 preferred diaphragm and jelly, and 5 preferred the rhythm method. Obviously, the overwhelming preference was for the surgical method. It meant that family-limitation as distinct from family-planning was more readily understood and accepted.

What followed made it clear that the preference for the surgical methods was also more deliberate and purposeful than that for other means. Out of the 92 cases preferring the surgical method, in 46 cases the sterilization was actually performed. In addition, there were 8 cases which opted for sterilization after having tried other means. Out of the 54 sterilizations thus performed, 44 were on men and 10 on women. As compared to this, the response of the women who preferred other means was most passive. They were advised to visit the hospital to obtain foam tablets, diaphragms, jelly, etc., and to receive instruction in their use. No one turned up. So the investigator had to go round to distribute the material and keep up the supplies by monthly visits. It was suspected that many women did not use the material but threw it away. Within three months, half the women admitted that they were not interested. The remaining began to avoid the investigator. The monthly visits by the investigator were not welcome. It was obvious that the programme was making little progress.

The superiority of the surgical method from the standpoint of both its acceptability and its efficacy was thus obvious. The Government of Maharashtra also had then come to the same conclusion, and, beginning with November 1960, had undertaken a massive programme of popularizing the

male sterilization. In view of the importance of this programme, there is included in this report an analysis of 3465 cases of sterilization completed in the Government programme in one single district, namely Ahmednagar, during July 1959 to January 1962. There is also presented in this report an analysis of the after-effects of nearly 1200 cases of sterilization performed in Sangli district by a private family-planning organization during 1950 and 1961. Both these analyses will be found of interest.

Since the advent of the intra-uterine device, the emphasis has shifted. The principal defect of the surgical method is its irreversibility. From this point of view the intra-uterine device is evidently to be preferred. More experience is needed regarding its acceptability, efficacy and possible after-effects. From the reports presently available, it seems that there is not a negligible proportion of women who do not wear the intra-uterine device with comfort and that some of them positively reject it. There are also suspicions that the device may have more serious undesirable after-effects. In these circumstances, it appears that it will be advisable to maintain in the field at least for some time to come, both the programmes, namely, sterilization and intra-uterine device, and thus offer real choice to the people.

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CHAPTER ONE

Scheme and the Objectives

THE DEMOGRAPHY SECTION of the Gokhale Institute of Politics and Economics conducted attitude surveys in various districts of the old State of Bombay since 1951. The surveyed area has passed through a series of developments during the last 12 years. The developments range from almost no active interest on the part of government in 1951 to inclination to provide contraceptives, either free of charge or at a low price, in 1955, and to pushing the family-planning programme and sterilization in November 1960, by offering 20 rupees to the sterilized as a compensation for work-days lost in taking rest after the operation. In fact, while in 1958, the government did not take any action to promote sterilization, November 1960 was regarded as a 'vasectomy month' to conduct a vasectomy campaign. Thus the change in the policy of the government was enormous. This no doubt, was expected to have effect on the attitudes of people towards practising contraception, as the whole health-programme of government showed a corresponding change. The enquiries of the Institute bear an impress of this development. The attitude enquiries of 1951 developed into 'communication and action research' at the close of the decade.

During 1951-55, a series of 12 studies in the attitudes towards family-planning and-limitation was conducted by the demography section of the Institute. It included consideration of the acceptability of alternative contraceptives. The results of most of these studies have been published in the three publications¹ of the Institute. In all cases, the studies in family planning formed part of a general demographic survey of the population concerned, and were confined to either a sub-sample or a relevant sub-group of the population covered by the general demographic survey. The studies covered a total population of 90,000, spread over 10 districts most of which belonged to the State of Bombay.

The important findings of this series of studies with respect to family planning may be summarized as follows : The population did not suffer

¹ Dandekar, V. M. and Kumudini Dandekar, *Survey of Fertility and Mortality in Poona District*, Gokhale Institute Publication No. 27.

Sovani, N. V. and Kumudini Dandekar, *Fertility Survey of Nasik, Kolaba and Satara (North) Districts*, Gokhale Institute Publication No. 31.

Dandekar, Kumudini, *Demographic Survey of Six Rural Communities*, Gokhale Institute Publication No. 37.

from any religious dogma opposed to family planning. The principal handicap was the ignorance of people regarding the possibility of family-planning and -limitation. Even the instinctive opposition to family planning, to the extent it appeared, was mostly on account of ignorance, as contraception was generally misunderstood to mean nothing more than induced abortion. Therefore the most urgent need in the field seemed to be the communication of knowledge regarding contraception. Moreover, for a study of the popular attitudes towards the subject, it was necessary to make available the requisite facilities. This was supposed to be facilitated with the co-operation or association of competent medical personnel. In an earlier study, this was tried on the 'health-visitor' level and was found to work well, depending on the personality of the investigator who could do health-visiting along with the work of collecting demographic data. It was, however, thought desirable to put this on a firmer footing in the following studies.

The project, which is the main theme of the present publication, was therefore chiefly devoted to the communication of knowledge and techniques of family planning to the population, with the co-operation of competent medical personnel. The purpose of the project was to observe the effect of this communication on the practice of family planning. In other words, the proposed study was conceived to be in the nature of what is called 'Action Research', wherein is noted the active response of the people to the offer of family-planning facilities. It was thought desirable that the action and research should be divorced as far as possible. This, it was expected, would make the action technically more competent and simulate more closely the field conditions under which action on a larger scale may, in fact, be possible. It was also expected to make the research, presumably, more objective.

The experience gained in the earlier enquiries into attitudes of people towards family limitation, was convincing on a number of points, and deserved attention in future enquiries. Firstly, the attitudes of people towards family planning, their behaviour after they have been given information on various methods of family-planning and -limitation, the success with which they practise these methods, etc., must be tested over a longer period than a year. Secondly, it should be possible to offer to the villagers all the known methods of birth control including vesectomy and, by some extra arrangement, even salpingectomy, if asked for. The following project, presented as it was on paper by the middle of 1958, was therefore devised for the proposed 'Communication and Action Research':

To provide a competent medical centre it was decided to persuade some competent medical body to undertake the task of organizing an adequate centre for the type of work envisaged, and to request it to carry it out under its expert guidance. One or two investigators trained for the purpose were to be associated with the centre to collect and maintain the required data

over a period of three to four years. The inquiry was planned, the centre and the sample population were selected, and the necessary information was to be gathered. The work of giving medical advice, including birth control, was to be supervised and organized by the medical body. A survey was planned for a three-to-four-year period.

The nearest approachable medical body was the Poona Branch of the Indian Medical Association. One or two of its senior officers were contacted to test their reaction and ascertain the possibility of securing their co-operation. Two extended discussions between the Director of the Gokhale Institute and the Secretary of the Association and one other senior member of the Poona Branch of the Indian Medical Association revealed that both the doctors were keenly interested in the programme of family planning and were of the opinion that the Managing Committee of the Association could be easily persuaded to adopt such a project, provided it was financed by the Institute. They were also confident of getting clearance for the project from the local health authorities and of securing the necessary medical personnel. As a result of these discussions, the following project was formulated, the budget for which was drawn up in consultation with the Poona Branch of the Indian Medical Association.

As a base of operations, a centre was to be chosen in a biggish village of at least 2,000 population, preferably in the Poona district. The base and the surrounding villages were to be served by the centre, the objective being ultimately to cover about 10,000 people or 2,000 households. At the central village a medical unit was to be set up, staffed with a well-qualified physician, a nurse and a peon, and equipped with adequate medical supplies to treat common ailments. The centre was also to have equipment to perform minor surgery. Skilled surgical personnel was to be made available from Poona or elsewhere, whenever necessary.

The centre was to give free medical service³ to all that came to it from the demarcated area of operation. An elderly, active medical doctor was to be put in charge; a person with genuine interest in social welfare work was thought preferable. The preference for an elderly person was to elicit quicker and better confidence from the village folk. One investigator of the Institute, male or female, was to help the medical staff to collect and maintain the necessary information and records.

During the first four months, there was not to be any insistence on collection of data. The aim was to establish rapport with people of the area under survey, after which the investigator would start collecting the usual routine data from families on fertility history, recent performance in that field, etc. Simultaneously, the investigator and the medical staff were to give informative lectures or talks to villagers about disease, epidemics, importance

³ In the actual programme, free service could be made available only to those who could not afford to pay the regular nominal charges. On the occasion of the opening of the Centre by the Chief Minister of Maharashtra, this was made quite clear to the public.

of cleanliness and hygienic habits, etc. The subject of family limitation was then to be introduced with detailed explanations of available means, with their advantages and disadvantages. No particular method was to be pushed, but, as far as possible, all methods were to be made available at the centre. Appliances and instructions for use were to be made available without charge at the centre to those who wanted them and requested for them, except that certain restrictions such as age limit, minimum number of living children, etc., would be imposed on males and females seeking surgical remedies. The consequences of radical surgical methods were to be fully explained once again before the actual operation which would be performed by skilled surgeons from Poona or elsewhere with adequate equipment and personnel. In cases of salpingectomy perhaps, some arrangement to take the females to Poona was to be worked out as the centre would not be equipped for such major surgical operations.³

It was thought that carefully-kept records of all cases that would ask for birth-control advice and show willingness to practise it, would enable one to see over a sufficiently long period, whether the choice of a contraceptive once made was final or was changed with experience and why. The after-effects of surgical remedies, both psychological and physical, could also be studied. The effectiveness with which birth control would be practised, or would be given up after the initial enthusiasm, could be observed. With the other data that would be gathered about past and current fertility-patterns, it was thought possible to assess the effect on fertility, on making available birth-control devices, free of charge, to a rural population which was to be informed and instructed about their use. It was also thought that a careful record of medical treatment given to patients that would come to the centre would show the common pattern of illnesses in the rural areas of the region, thus making valuable data available for the planning of medical relief.

The Gokhale Institute was to guide and supervise the information collected. It was to design the questionnaires and the record forms in consultation with the Medical Association and the hospital staff. The data was to be tabulated and analysed by the Institute, and ultimately embodied in a publication or publications of the Institute. In short, the project was to be fully an Institute undertaking.

The Poona Branch of the Indian Medical Association agreed to undertake the project and set up a permanent Standing Committee to look after it. The following budget was drawn up in consultation with the Committee appointed by the Branch of the Association. Initially, financial support was sought for a period of three years. At the end of two or two-and-a-half years, progress was to be reviewed, and if satisfactory, financial support for another period of two to three years was to be considered.

The budget as presented below is approximate. After the first year, there was to be no non-recurrent expenditure.

³ Arrangements were made even for salpingectomy in the Manchar medical centre.

	I year	II year	III year
Salaries	15,000	15,000	15,000
Supplies	5,000	5,000	5,000
Travel	3,000	3,000	3,000
Running expenses	2,000	2,000	2,000
	25,000	25,000	25,000
Furniture and equipment	5,000	—	—
	30,000	25,000	25,000

It is to be noted that since the framing of this scheme in 1958, there were enormous changes in the policy of the government regarding family planning, and the significance of the present project was diminished. Opening a medical centre seemed an essential part in 1958 in order to provide people with the information regarding family planning and contraceptives free of charge while doing health work. In fact, health work was to be the vehicle of popularizing family-planning practice. Once the government started this work by 1960, our medical centre proved to be just one of so many others working all over the state. Hence the scheme was discontinued at the end of 1961, after its initial stipulated period of three years.

An outline of the project is presented above. It is obvious that many of the problems and details were left unanswered in this outline. For instance, who was to disseminate information regarding family planning? The project seemed to be based on the hypothesis that local residents would be coming to the clinic for knowing about family-planning practice, but what if they did not turn up? If the knowledge regarding contraception and the contraceptives was to be transported to the home of people, what part the doctors, or for that matter even the medical centre, could play in the project was not foreseen.

A number of problems arose as the project was launched and these have been described in this report. Our objective in planning the project was to have a medical centre in the area where the attitudes of people regarding family planning were being assessed or were being changed with some effort. What was the attitude of the people towards the medical centre? Was ignorance regarding various ways of contraception a major factor in the rare practice of family planning as found in our earlier surveys? Or, what was the level of motivation among the people that they approached the medical centre on their own, once they heard about the available facilities at the centre? Our project could not be just 'passive watching' of what occurred in Manchar. It had to be, what is called, the 'Trial and Error

Action Programme' so that ways of approaching people to motivate them towards the use of family-planning clinic or family-planning devices could be found out. The reactions of the people to various approaches therefore paved the way of the project. This needed the whole set-up of the medical centre to be much more flexible than it could afford to be. The following pages describe the experiences in the matter.

CHAPTER TWO

Manchar

MANCHAR, A TOWN 38 miles north of the city of Poona was chosen by the Indian Medical Association as a suitable site for the project. Besides very good communication with nearby regions, it was close enough to Poona for medical experts from the Indian Medical Association at Poona to go to the centre in case of emergency. Even more important was the prospect of getting a dispensary and a building for the maternity hospital in Manchar. They belonged to a trust controlled by important businessmen and leaders in the town, and could be transferred to the Indian Medical Association on the grounds that the Association would provide better control of the dispensary and the hospital.

Manchar was a town by census definition. In 1941, it had a population of 6,000. In 1951, its population was 7,782. In the earlier half of the year 1959, when the Gokhale Institute conducted the initial demographic survey, the population of the town, excluding one inaccessible hamlet, was found to be 8,111. The town of Manchar was the biggest town in Ambegaon Taluka, a sub-division of Poona district, and the tenth biggest town of the district in which there were 40 towns with a population of more than 5,000. The population of the town of Manchar was not located in one place. About 50 per cent of it was found on the main village site and the rest was spread over a number of small localities called hamlets, situated at a distance of one to three miles from the main village. These hamlets were not on bus-routes, and hence the communication between the various portions of Manchar was not easy. In our investigation one particular hamlet, virtually disconnected from Manchar except for revenue, was of necessity omitted. The shortest access to it comprised about a mile-long foot-track, an up-and-down-hill climb, and then a walk of about a mile through a very solitary area. Moreover, because this hamlet was reportedly engaged in the illicit distillation of liquor, outsiders were regarded with suspicion and were often assaulted. The investigator therefore could not easily go to this hamlet. Our enquiry therefore covered Manchar without this hamlet, which meant a coverage of 8,111 population comprising 1,255 households.

The main village of Manchar was on several bus-routes starting from the City of Poona to a number of towns in the north of Poona district and in the Nasik district which was also to the north. During a day, 85 buses passed through Manchar, giving an 'urban' look to the area of

the bus station. Except for this portion which seemed the life of the town, Manchar appeared much like other villages in these parts. In fact, by census definition, Manchar was a village two decades ago; it grew to be a small town because of its position as a trading centre in potatoes, chillies and garlic. More recently, it gained importance as a transport-and-communication centre.

While the main village had a heavy bus-traffic, the hamlets were very quiet localities. In sharp contrast to the rural atmosphere of the hamlets, the main village-site contained many facilities and institutions usually found within urban areas. For instance, the post office with a postmaster and two assistants handled about 400 letters coming to the town and a thousand leaving it. There were 30 money orders a day and about 15-20 telephone calls, all related to Manchar as a trading centre.

The urban aspect of Manchar was further manifested by the number and variety of shops, besides the marketing facilities the town offered to nearby areas. On Sundays, there was a weekly bazaar, Manchar being an important distribution centre for potatoes, garlic and millet. The offices of various co-operative societies—a multi-purpose society, a purchasers' and sellers' society, a teachers' society, a weavers' society—as well as the office of the union that supervised the work of 64 societies in nearby areas, were located in Manchar. There were 24 hotels selling snacks, and two inns that provided meals. The number of provision and grain stores was 30. Eight shops rented out or sold bicycles, and 12 shops sold cloth. Seventeen persons did tailoring, and 14 were lorry or taxi owners.

These figures disclose the trading aspect of Manchar, which, in turn, affected the occupational composition of Manchar. In 1959, only about half of the 1,255 households covered by the initial demographic survey were engaged in agriculture, compared to a usual proportion of 70 per cent or more in the rural areas. Table 2.1 gives the occupational distributions for households in Manchar obtained in the 1951 Census and at the time of the demographic survey in 1959.

The percentage of households depending on cultivation increased from 46 per cent to 50 per cent during 1951 to 1959. So also there was a marked increase in the percentage of households living on salaried services. Such features as these were important from the point of view of economic change. On the whole, however, equal dependence on the non-agricultural and agricultural occupations in Manchar showed the heterogeneity of interests of its residents as compared to that of the residents in the rural areas.

The caste composition of Manchar that is presented in Table 2.2 also showed the heterogeneity of population in Manchar. There was an appreciable number of Muslim households in Manchar, which formed 10 per cent of the total number of households. 4.6 per cent of the total households belonged to Nava Boudhas. They were Mahars (a community among the scheduled castes) who got converted to Buddhism in 1956. These two

TABLE 2.1 : *Distribution of families in Manchar by occupation of the head in the Census of 1951* and in the 1959 demographic survey*

Occupation	Percentage distribution	
	1951	1959
Cultivation	45.7	50.0
Other production	7.5	4.1
Artisan services	9.2	9.3
Trade and Transport	19.6	12.7
Salaried services	9.0	12.3
Law, medicine and such skilled services	0.4	0.4
Others including migrants, unemployed, disabled, etc.	8.6	11.2
Total	100.0	100.0

* Data regarding occupations of heads in 1951 were taken from the National Register of Citizens in the 1951 Census.

TABLE 2.2 : *Caste composition of households in Manchar as found in the 1959 demographic survey*

Caste	Percentage
Brahmins	4.0
Advanced Hindus	3.8
Marathas	59.7
Intermediate Hindus	10.0
Other Hindus including Mang, Dhor, etc.	3.0
Muslims	10.5
Others (mostly Nava Boudhas)	4.7
Not given	4.3
Total	100.0 = 1246

communities of Muslims and Nava Boudhas in Manchar seemed fairly conscious of their religion, especially while investigating their attitudes towards contraception.

In Manchar the agriculturists were spread over a number of localities and their leaders were not strong enough. Though they formed the single biggest group, others like traders were not negligible in number and were more moneyed and influential. Their educational level and the contact with outside world was comparatively larger as seen from the telephone calls and telegraphs going from Manchar everyday. This seemed to affect the strength of leadership in Manchar as reported in about 30 interviews with school teachers, traders and a few men employed in salaried services.

In villages, the strength of leadership is likely to be more than in a town like Manchar. One of the government officers working nearby Manchar once said: "Places on bus-routes cannot often afford a strong leader."

Manchar had good medical facilities. It had four medical practitioners before opening the Rural Health Institute (R.H.I.). Out of them, three were qualified, though their standards varied, and the fourth one was a hakim, an expert in indigenous medicine. From the three qualified ones, the best qualified was practising in Manchar for 8 years and the second best for 30 years. The third was there only for two years. The hakim was well established for more than 10 years.

It is clear from the information presented above that medical facilities were available in Manchar even before the Rural Health Institute came into existence. The new additions with the opening of the R.H.I. were the Maternity Hospital and the facilities for surgical operations that could be conducted by appointment beforehand. A highly qualified surgeon visited the R.H.I. in Manchar twice every week regularly and conducted surgical operations. The analysis of the records of the dispensary, the maternity hospital and the surgical ward has been presented in a later chapter. Here it may only be mentioned that any specialist from the Poona Branch of the Indian Medical Association could be had at the R.H.I. by previous appointment. An eye specialist visited the R.H.I. regularly every week. The earlier practitioners were afraid that the opening of the R.H.I. in Manchar would affect their practice.

The educational facilities at Manchar were of high order as compared to neighbouring rural areas. There were three schools in the main village and three in the hamlets. Of the three schools in the main village, one was exclusively for girls with a strength of 344 students. Girls were charged no fees. Girls passing the seventh standard attended the high school in Manchar, where girls and boys learnt together. There was one Urdu school in Manchar; it had 100 students (boys and girls) and was meant for the Urdu-speaking, i.e. the Muslim community in Manchar. But this school was only up to 5th standard. Hence those who really wanted to get higher education, went to other schools from the beginning. The high school had 260 students on the roll.

It is worthwhile noting the literacy level of people in Manchar, as that could help to determine the kind of approaches that were open for disseminating information regarding family planning. If high literacy prevailed, printed word could be employed as a preliminary step to impart family-planning knowledge to people⁴. From Table 2.3 it is quite clear that the

⁴ Even with low levels of literacy, printed word may be used to expose the people to it and this may as well be one of the means of raising the level of literacy or of saving the people from lapse into illiteracy due to no exposure to printed word.

TABLE 2.3 : Percentage distribution of individuals in Manchar by sex and age according to level of education

Age	Educational Level										Total	
	Illiterate		School-going		Standard 1-4		Standard 5 to below 11th		Matriculation and above Tech.-education		Male	Female
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female		
Under 12	62.7	79.7	35.5	18.3	1.4	1.2	.4	.8	—	—	100=1726	100=1610
13—22	30.7	67.9	36.0	8.8	9.4	14.3	21.7	8.9	2.2	.1	100= 765	100= 717
23—32	42.2	84.8	0.5	—	14.8	4.9	35.5	9.2	7.0	1.1	100= 553	100= 608
33—52	60.9	89.8	—	—	11.2	5.3	25.3	4.9	2.6	—	100= 663	100= 550
53 and above	71.5	98.5	—	—	9.2	.9	18.2	.6	1.1	—	100= 357	100= 530
Total	54.5	82.2	21.8	8.9	7.0	4.6	14.8	4.1	1.9	0.2	100=4064	100=4015

level of literacy was appreciably low for depending on the printed word, and particularly so among females. The most relevant group, from our point of view, was the age-group 23 to 52. Among those aged 33 to 52, 61 per cent males and 90 per cent females were illiterate. Even in the younger age-group of 23 to 32 years, 42 per cent males and 85 per cent females were illiterate. These percentages of illiterate persons seemed lower when compared with those of the nearby urban areas. For instance, in the census of 1951, such areas had an illiteracy rate of 51 per cent among males and of 86 per cent among females of ages 25 to 34. It seemed that the contact outside had raised the literacy level of males, but not so of females in Manchar. The Social Welfare Board had a centre in Manchar with two paid workers to organize a nursery and a women's club. There were 68 pupils in the nursery which was supposed to be attended by children of ages 3 to 6. But only about a half attended. In the women's club, there were facilities for adult education. Women were taught hygiene and nursing for the household. Thirty women were members of this institution. So far as the form was concerned, the club did not seem to lack anything. But such institutions were foreign to these areas and some time had to pass before women could show interest in them. It was in this women's club that the investigator tried to establish contacts by being an active participant, as contacts with villagers were very essential for the work-programme. She tried to start a hand-written magazine for women, but only one issue could be out.

An important point to note in connection with social-welfare activities in Manchar was that a number of agencies concerned with the problems of over-burdened families, including the community development and the agricultural extension services, seemed to remain silent on the issue of family planning which they tended to regard as part of the public-health programme. Social-welfare activities in Manchar consisted of efforts to train the residents in tailoring and sewing, and to encourage road construction, education, health, and better living-habits.

Although the income reports could not be relied upon as they were not verified, the reported incomes have been presented in Table 2.4. As will be seen from the table, 13 per cent of agricultural and 17 per cent of non-agricultural households failed to report income. Among the latter, most of the non-reporters included households of migrants, the unemployed, or the disabled. About 63 per cent of the households had an annual income of less than a thousand rupees, an amount which perhaps could barely offer a subsistence level. It is interesting to note that while only about 11 per cent had an annual income of more than 1,500 rupees, 22 per cent of the agricultural households had that level of income. The explanation is that among the 141 agricultural households with an income of rupees 1,500 and more, 61 households had also non-agricultural pursuits, particularly commerce. Thus the economically best-placed in the community combined agriculture and commerce.

TABLE 2.4 : *Percentage distribution of agricultural and non-agricultural households in Manchar by income*

Annual income	Occupation	
	Agricultural	Non-agricultural
—550	39.4	39.4
551—1050	23.2	23.9
1051—1550	1.6	7.9
1551—2050	3.8	6.1
2051—2550	0.5	1.0
2551 and over	18.3	4.2
Not reporting	13.2	17.5
Total	628 : 100	618 : 100

A number of points may be noted regarding living conditions in the town. Muslims lived in one contiguous portion of the town as did Nava Boudhas, mostly on the main village-site. The average house lacked light and ventilation due to the usual absence of windows, but the number of dilapidated houses was not large, in the main town as well as in the hamlets. The houses of the well-to-do were large, clean and often well-ventilated. Uncovered gutters ran throughout the town and the well-known difficulties of latrines were present. Twenty-seven houses had latrines, but the sweeper service was inadequate. Due to the short water-supply, particularly in summer, there was little possibility of improving this situation. The river that ran by was three miles away from Manchar proper. Drinking-water, specially, was in short supply and often had to be bought. Hygienic conditions could not be good with the short supply of water.

In a town such as this, the Rural Health Institute was opened. Certain features, for example, facilitated the supervision from the Poona Branch of the Indian Medical Association. The general character of the town, however, with its heterogeneous community and somewhat urban bearing, with four already established medical practitioners, was not particularly congenial to the work programme of popularizing family planning. Although the agriculturists composed the largest group, others such as traders, were not negligible in numbers, and were more moneyed and influential. With their higher education level and contact with the outside world, they exerted greater leadership, as reported in the 30 interviews mentioned earlier. While the communications of Manchar offered many advantages, the atmosphere did not seem specially favourable to an experiment of the kind in hand.

CHAPTER THREE

Demographic Findings

IT WAS NECESSARY to know the initial demographic setting of Manchiar in order to guide the action-programme and to facilitate the measurement of change produced by the programme of the R.H.I. Basic demographic information was therefore collected for all residents of Manchiar during the first half of 1959. A questionnaire presented at the end of this chapter covered all the households in Manchiar excluding one hamlet. Although an elaborate enquiry was not attempted, socio-economic data regarding all individuals in the household, in addition to fertility histories of all women under 52 years of age, were obtained. The findings, with comparisons, from the 1951 and the 1961 census, are presented in the following sections of this chapter.

The present demographic enquiry found 1,255 households with 8,111 persons in Manchiar (excluding one hamlet) in the first half of 1959. According to the national census, the population of Manchiar was 6,000 in 1941, 7,782 in 1951, and 9,219 in 1961. These figures represent an average annual rate of growth of 2.6 per cent during the decade 1941-51, and of 1.7 per cent during the 1951-61 decade.

In the course of the present house-to-house enquiry, because 153 women reported their husbands to be away, an impression was formed that an appreciable number of males probably emigrated from Manchiar in search of work, leaving their families behind. The finding on sex-ratio, however, does not support this impression. Excluding 32 male students living as student groups in nine households, the survey counted 4,015 females and 4,064 males, giving a sex-ratio of 98.8 females per 100 males. It was found, on further analysis, that there were immigrants from nearby rural areas just as there were emigrants from Manchiar. These data, however, will be presented in a separate study.

The age composition of the male and female population in Manchiar in 1959 is set out in Table 3-1. The sex-ratio of females to 1,000 males in each age-group is given in the last column of the table. The number of females in the age-group 13 to 17 years is about 75 per cent of the males in the same age-group. Similarly in the age-group 48 to 52, the number of females is only 27.7 per cent of the males. There is possibly some underenumeration of females in the age-group 13-17. It is generally believed that males as well as females are under-enumerated in the age-group 13-17,

TABLE 3.1 : *Number of males and females in Manchar in various age-groups and their sex-ratio as found in the demographic survey**

Age group	No. of males	No. of females	Total No.	No. of females per 1000 males
below 12	1,692	1,608	3,300	950.4
13—17	423	318	741	751.8
18—22	344	399	743	1,159.9
23—27	281	290	571	1,032.0
28—32	271	318	589	1,173.4
33—37	201	184	385	915.4
38—42	200	208	408	1,040.0
43—47	125	120	245	960.0
48—52	137	38	175	277.4
53 & above	390	532	922	1,364.1
Total	4,064	4,015	8,079	987.9

* 32 male students living in groups were excluded from this table.

in all the census reports in India. In the present case, however, there is an excess of females in the age-group 18-22, which may partly be explained by a possible over-reporting of ages of females in the age-group 13-17. As for the smaller number of females in the age-group 48 to 52, the over-reporting of ages of women in that age-group is obvious and is balanced by a marked excess of females in the age-group 53-and-above.

Table 3.2 presents the percentage age distribution of males and females
TABLE 3.2 : *Percentage distribution of males and females in Manchar, by age, in the 1951 and the 1961 census and in the 1959 Demographic Survey*

Age group	Percentage distribution					
	1951		1959		1961	
	Male	Female	Male	Female	Male	Female
—12	39.6	38.1	41.6	40.1	40.7	39.1
13—17	8.9	7.7	10.4	7.9	10.9	8.6
18—22	9.6	8.8	8.5	9.9	8.7	9.2
23—27	5.9	6.7	6.9	7.2	6.2	7.2
28—32	6.1	8.5	6.7	7.9	6.8	7.7
33—37	5.6	6.4	4.9	4.6	4.1	5.2
38—42	6.1	6.8	4.9	5.2	5.2	6.2
43—47	4.6	4.1	3.1	3.0	3.6	4.4
48—52	5.4	3.3	3.4	1.0	4.0	3.8
53 & over	8.2	9.6	9.6	13.2	9.8	8.6
Total	100=3,965	100=3,849	100=4,064	100=4,015	100=4,692	100=4,527

as found in the survey, and in the 1951 and the 1961 census. It will be noticed that in 1959 and in 1961, persons under 18 constituted half the population in Manchur, the percentage having increased somewhat since 1951. The general observation is that the younger and the older age-groups increased at the expense of the proportion of persons in the middle years of life. The increase in the proportion of young men may be found in such factors as reduced mortality, and an excess of immigration over emigration of young people. A detailed study of these factors would lead beyond the scope of this report; however, their economic implications have an important bearing on the problem under study. Some light would be thrown on this matter in a separate study that discusses larger dependence on agriculture by the end of the decade.

Table 3.3 gives marital status by sex for various age-groups as found in the demographic survey, and in the 1951 and the 1961 census. The data indicate appreciable increase in age at marriage during the decade. The percentage of the married among males under 23 was only a little lower in 1961 than in 1951, but between ages 23 and 27, there was a marked decline, from 91 per cent married in 1951 to only 64 per cent married in 1961. This tremendous fall cannot be easily explained as due to fall in the age at marriage. The demographic survey in 1959 found 79 per cent of males aged between 23 and 27 married—a percentage lying between the 1951 and the 1961 census. Among females the striking feature was the 50 per cent decline in the proportion married in the age-group 13 to 17—from 62 per cent in 1951 to 31 per cent in 1961. At ages 18 to 22, however, as many girls had married by 1961 as by 1951, showing that the rising age at marriage did not mean spinsterhood.

An unexpected change was observed in the percentage of the widowed in the various age-groups during the decade. With declining mortality it was expected that the percentage of widowed would fall appreciably for males as well as females during the decade 1951-1961. However, it was found that between ages 33 and 47, the percentage of both sexes almost doubled for women aged 43 to 47. Findings in the demographic survey in 1959 were consistent with these census results. On the other hand, as expected, there was a decrease in widowhood among the oldest age-group. In view of the increase in widowhood among the earlier age-groups, was there a growing tendency not to remarry? Or, was it possible that the widowhood rate itself was higher recently? The former explanation was thought more plausible.

More details on marital status, as obtained in the demographic survey, have been presented in Table 3.4, showing the number of persons eligible for the programme in hand. The unmarried constituted 59 per cent of the males and 46 per cent of the females. About 37 per cent males were married including one per cent who had two or more living wives each, and one

TABLE 3.3 : *Marital status by age of individuals in Manchar in 1959, the year of survey, and in the 1951 and in the 1961 census*

Marital status Age- group	1951—Males					1959—Males					1961—Males				
	Unma- rried	Married	Widow- ed	Others	Total	Unma- rried	Married	Widow- ed	Others	Total	Unma- rried	Married	Widow- ed	Others	Total
Under 12	99.3	.4	.1	.2	100:1,567	100.0	—	—	—	100:1,692	98.0	1.5	.2	.3	100:1,910
13—17	92.0	5.4	—	2.6	100: 351	99.8	—	—	.2	100: 423	93.7	6.1	—	.2	100: 512
18—22	59.1	37.2	—	3.7	100: 382	67.7	30.5	.6	1.2	100: 344	63.2	35.9	.7	.2	100: 410
23—27	7.2	90.6	—	2.2	100: 235	16.4	79.4	.7	3.5	100: 281	31.7	63.8	2.8	1.7	100: 290
28—32	2.9	97.1	—	—	100: 243	2.2	95.2	1.5	1.1	100: 271	8.2	87.5	3.1	1.2	100: 319
33—37	1.4	95.9	.5	2.2	100: 223	2.5	95.5	1.5	.5	100: 201	6.8	91.6	1.6	—	100: 191
38—42	.8	95.5	2.9	.8	100: 240	1.0	90.0	6.0	3.0	100: 200	3.7	89.3	4.9	2.1	100: 244
43—47	.5	96.8	1.6	1.1	100: 184	.8	94.4	4.8	—	100: 125	.6	94.7	4.7	—	100: 170
48—52	.9	93.5	5.1	.5	100: 215	.7	89.8	9.5	—	100: 137	1.6	89.9	6.4	2.1	100: 187
53 & above	.3	74.2	24.3	1.2	100: 325	.8	77.5	18.9	2.8	100: 390	2.8	79.1	17.9	.2	100: 459

TABLE 3.3 : *Marital status by age of individuals in Manchar in 1959, the year of survey, and in the 1951 and in the 1961 census (contd.)*

Marital status Age- group	1951 — Females					1959 — Females					1961 — Females				
	Unmarri- ed	Married	Widow- ed	Others	Total	Unmarri- ed	Married	Widow- ed	Others	Total	Unmarri- ed	Married	Widow- ed	Others	Total
Under 12	98·1	1·7	·1	·1	100:1,467	99·9	·1	—	—	100:1,608	96·9	1·7	1·2	·2	100:1,771
13—17	37·9	61·8	—	·3	100: 298	67·9	31·5	·6	—	100: 318	66·7	31·2	·8	1·3	100: 390
18—22	16·2	83·2	·3	·3	100: 340	6·0	89·2	1·8	3·0	100: 399	10·0	86·4	·7	2·9	100: 418
23—27	3·9	95·7	—	·4	100: 259	1·4	92·4	3·4	2·8	100: 290	4·0	91·7	1·8	2·5	100: 327
28—32	1·5	96·6	1·9	—	100: 326	·3	91·8	6·0	1·9	100: 318	1·7	89·4	6·9	2·0	100: 347
33—37	—	94·7	4·9	·4	100: 245	—	89·6	8·2	2·2	100: 184	3·8	83·0	11·9	1·3	100: 236
38—42	·4	86·6	11·9	1·1	100: 261	—	83·7	14·4	1·9	100: 208	·4	87·1	12·5	—	100: 280
43—47	—	86·7	13·3	—	100: 157	—	76·7	21·7	1·6	100: 120	—	74·1	25·4	·5	100: 197
48—52	—	46·4	52·8	·8	100: 125	—	55·2	42·2	2·6	100: 38	—	68·5	29·9	·6	100: 171
53 & above	—	22·7	76·8	·5	100: 371	·4	37·6	61·8	·2	100: 532	·8	32·3	66·1	·8	100: 390

per cent whose families were absent from Manchar. Among females 41 per cent were married. They included about four per cent whose husbands worked away from Manchar; 2.2 per cent were two living wives of one husband.

TABLE 3.4 : *Percentage distribution of males and females in Manchar according to marital status as found in the demographic survey (more details)*

Marital status	Males		Females	
	No.	Percentage	No.	Percentage
Unmarried	2,411	59.3	1,854	46.1
Married once	1,361	33.5	1,412	35.2
Married twice or more often	58	1.4	10	0.2
Widowed	116	2.9	454	11.3
Divorced or separated	20	0.5	36	0.9
Prostitutes and their mates	1	—	2	0.1
Men with two or more wives, or women as one of two or more wives	42	1.0	87	2.2
Husband or family away	40	1.0	160	4.0
Not given	15	0.4	—	—
Total	4,064	100.0	4,015	100.0

All married women aged between 13 and 52 were asked information regarding their fertility history. The number of children born to women, and the number and sex-composition of their living children being important factors in affecting attitudes of persons towards family planning, data regarding these have been presented here. The data were of two kinds. One kind referred to total fertility-performance, and the other kind referred to the performance in one most recent year just preceding the enquiry. The second was intended to estimate the current level of fertility, and any deviations in future were to be measured from this initial level. As the interest in the present analysis of data was to assess the effect of disseminating information regarding family planning and to measure its effect on the reproductive performance, most of the data regarding this subject have been presented for age-groups excluding those above 47 years.

In Table 3.5, the number of children born to women of various ages have been set out. There were about 16 per cent women who had no children born. About 36 per cent women of ages 13-22 had no child. But, for ages above 22, about five per cent women had no child born, and the percentage of such women remained constant from one age-group to another. These women perhaps represented a group which was involuntarily sterile.

TABLE 3.5 : Number of children ever born to married women of various ages in Manchar as found in the survey

Age-group	Number of children ever born								Total
	0	1	2	3	4	5	6	7 and above	
13-17	77	21	1	1	—	—	—	—	100
18-22	97	125	81	42	10	1	—	—	356
23-27	15	33	58	74	52	23	8	5	268
28-32	15	9	18	30	91	59	38	32	292
33-37	9	1	6	9	14	25	35	66	165
38-42	11	5	8	13	7	21	21	88	174
43-47	3	3	2	3	7	10	14	50	92
Total	227	197	174	172	181	139	116	241	1447
% for all ages	15.7	13.6	12.0	11.9	12.5	9.6	8.0	16.7	100.0
Total for ages 18-42	147	173	171	168	174	129	102	191	1255
% for ages 18-42	11.7	13.7	13.6	13.4	13.9	10.3	8.2	15.2	100.0

Note :—Widows, divorced or separated women, prostitutes, etc. are excluded from this Table.

It had been observed that involuntary sterility was of the same order as five per cent in the United Kingdom.⁵

Another interesting feature of Table 3.5 is the large number of married women, namely 241, (which is 16 per cent of the total) with seven or more children. Broadly, about 25 per cent women had one or two children, another 25 per cent had three or four children, and about one third had five or more children.

In testing the completeness of the data, it was observed that the proportion of living children to mothers of various ages did not follow an expected pattern in Manchar. For instance, it did not show a decrease with advancing age of the mother and this led to a comparison of the data for Manchar with other data that showed a reasonable pattern. The fertility in Manchar could be compared with that of other areas of the State of Maharashtra. Similar data for six rural communities collected during 1953-54 in Maharashtra were available, a report on which has already been published in a publication of the Gokhale Institute⁶. It was also found that the fertility in the most recent year in Manchar compared very well with that of the six rural communities referred to above. But when the distribution of women in Manchar according to number of children ever born was compared with that of the six rural communities, women in Manchar seemed less fertile. The relevant data are shown in Table 3.6. The percentage of women with seven or more children was a little smaller for Manchar (16.7 per cent) than for the six rural communities which had 20 per cent women in this group.

There are two possible hypotheses for the above findings. One is that women in Manchar had actually borne a small number of children. The other possibility is that women in Manchar did not report all the children born. The first hypothesis can be accepted if the second is not found true. (Hence the problem was to examine the extent of under-enumeration, if any, of the children born to women in Manchar.)

TABLE 3.6: *Percentage distribution of women by the number of children ever born in (i) Manchar and in (ii) the six rural communities*

	Number of children ever born								Total and above
	0	1	2	3	4	5	6	7	
(i)	15.7	13.6	12.0	11.9	12.5	9.6	8.0	16.7	100
(ii)	17.7	13.0	11.9	10.5	9.8	8.9	7.9	20.3	100

⁵ Report of the Royal Commission on population, p. 84, Vol. 1. Also refer, Dandekar, K., *Demographic Survey of Six Rural Communities*, p. 63, Gokhale Institute Publication No. 37.

The proportion of living children among the total born was calculated for women in Manchar as well as for women in the six rural communities and the data are presented in Table 3·7. The percentage of living children seemed to have a definite trend in all the six rural communities.⁷ But no such trend was observable for Manchar. One possible explanation seemed that Manchar, being medically better equipped for the last two to three decades, had low level of mortality. There was no idea as to the probable effect of the fall in mortality, on the proportions of living children to mothers of various ages. It depended on the pattern of improvement in mortality. It was, however, observed that the percentage of living children was nearabout 80 for women of almost all ages in Manchar, a situation which falling mortality was not likely to yield.⁸

The more plausible explanation was therefore under-enumeration of dead children in Manchar. This would also explain a somewhat smaller percentage of women in Manchar with seven or more children born, compared with that of women in the six rural communities observable in Table 3·5. A correction could be applied to the data regarding ever-born children on the assumption of under-enumeration of dead children. Pattern of the proportion of living children to mothers of various ages as observed for the six rural communities was more or less uniform, though the level of mortality was very often determined by the percentage of living children to mothers of ages 18 to 22. In the present situation, the same pattern of living children to mothers of various ages was imposed on the women of Manchar, keeping the level of mortality the same as that found in Manchar among women aged 18 to 22. The proportion of living children from reports by women of this age-group was likely to be nearer the truth than by those of older ages. The estimates of the percentage of living children to mothers of various ages were obtained for Manchar. These have been shown in the last column of Table 3·7. The average number of children born, obtained after the present correction, was 3·77, while the earlier average, as shown in Table 3·5, was 3·33. This yielded an estimate of 11·7 per cent for the under-enumeration of children in Manchar. The relevant calculations are shown in Table 3·8.

Though an under-enumeration of dead children was suspected in the case of women in Manchar, no such traces were found in the data regarding women who had a child during the year of enquiry. The children born during the year were distributed according to order of birth among the children born and among the children living. These distributions were

⁷ A similar trend was observable among the children in eight other samples in the same region. Of the eight samples four were from rural areas and four from urban areas. The relevant data are presented in Appendix C₃ to this chapter.

⁸ Almost constant proportion of living children to mothers of any ages seemed probable only if there was death only under a given small age and rarely thereafter during the whole reproductive period. But we did not expect this kind of mortality pattern in Manchar.

TABLE 3.7 : Percentage of living children for different ages of mothers in Manchar and in the six rural communities

Age-group of mothers	Manchar as obtained in the survey	Six Rural Communities						Average trend values for the six rural communities	Manchar as estimated
		Bori	Dhanore	Miraj-gaon	Mithbaon	Mudalgi	Nalwar		
13—17	76.6	—	—	—	—	—	—	—	—
18—22	83.9	72.9	82.4	74.0	89.2	72.2	74.0	76.4	83.9
23—27	86.9	70.4	77.1	77.7	84.4	70.7	70.6	75.4	81.2
28—32	83.4	64.7	72.6	71.5	86.0	71.8	65.4	71.1	78.6
33—37	79.7	62.2	74.7	73.7	83.3	65.3	63.4	70.2	76.0
38—42	79.9	63.2	71.0	68.5	83.2	62.2	62.3	—	73.2
43—47	83.4	67.0	68.0	66.2	81.4	65.9	60.9	—	70.6
48—52	80.4	56.7	68.3	67.7	80.6	55.2	59.9	—	58.9
53—	82.4	56.4	69.0	57.2	71.7	56.9	53.5	—	—
Percentage of living children	82.5	63.7	72.1	70.0	81.8	66.0	65.5	—	—

TABLE 3.8 : *Estimation of the number of children born to mothers of various ages*

Age group	Percentage of living children		Corrected total for children born %	Total No. of children born (corrected No.)	Mothers	Average No. of children born per mother
	Reported	Expected				
18—22	83·9	83·9	100·0	440·0	341	1·29
23—27	86·9	81·3	100·9	760·1	259	2·93
28—32	83·4	78·6	106·1	1279·7	283	4·52
33—37	79·7	76·0	104·9	910·3	161	5·65
38—42	79·9	73·3	109·1	997·0	171	5·83
43—47	83·4	70·6	118·1	437·1	65	6·72
Total				4824·2	1280	3·77

compared with similar ones for the six rural communities. The relevant data are presented in Table 3·9 and Table 3·10. It was found that the order of birth among children born as well as living was comparatively a little higher in Manchar than in the six rural communities. This led to the conclusion that there was no under-reporting of children, at least in the case of women who reported a child in the year of enquiry. This was very encouraging as the future changes were to be measured on the basis of these data.

Granting that there was an under-enumeration of dead children by women who reportedly had no child in the year of enquiry, it seemed more apparent in the percentage of dead children by ages of the mother than by order of birth. From Table 3·11 it can be noted that for the same age-group the percentage of dead children increased with the order of birth. This was particularly so in the younger age-groups of mothers. Perhaps with a larger number of children in younger ages, the bearing and rearing of children became difficult. This aspect was observable more or less in all the rows including the last in Table 3·11. In the last row, the percentage of dead children was seen to rise from nine per cent to 33 per cent. Thus the defects of the data were not apparent in the percentage distribution of dead children by order of birth as they were by the age of the mother. With rise in the age of the mother, children were exposed to death to a larger extent, and in the last column of the table, a series of rising percentages was expected but was not found to be so. Especially the advanced age-groups seemed to under-report the dead children.

In Table 3·12 are set out the number of married women in various age-groups, the number of children born to them in the year of enquiry, and

TABLE 3.9: *Percentage distribution of births during the year of enquiry by order of birth among children ever born and the cumulated totals on more than basis, for Manchar and the six rural communities*

Order of birth among children born	Manchar		Six Rural Communities			
	Total No. of births	Percentage	Cumulative total on more than basis	Total No. of births	Percentage	Cumulative total on more than basis
1	60	19.3	100.0	291	20.3	100.0
2	47	15.1	80.7	265	18.5	79.7
3	56	18.0	65.6	208	14.5	61.2
4	44	14.2	47.6	190	13.2	46.7
5	32	10.3	33.4	156	10.8	33.5
6	18	5.8	23.1	102	7.1	22.7
7	19	6.1	17.3	88	6.1	15.6
8	19	6.1	11.2	136	9.5	9.5
9	9	2.9	5.1	—	—	—
10	5	1.6	2.2	—	—	—
11	1	0.3	0.6	—	—	—
12	1	0.3	0.3	—	—	—
Total	311	100.0		1,436	100.0	

TABLE 3.10: *Percentage distribution of births during the year of enquiry by order of birth among living children and the cumulated totals on more than basis for Manchar and the six rural communities*

Order of birth among living children	Manchar		Six Rural Communities			
	No. of births	Percentage	Cumulative total on more than basis	No. of births	Percentage	Cumulative total on more than basis
0	1	0.3	100.0	40	2.8	100.0
1	73	23.5	99.7	373	26.0	97.2
2	55	17.7	76.2	340	23.7	71.2
3	65	20.9	58.5	256	17.8	47.5
4	38	12.2	37.6	166	11.6	29.7
5	27	8.7	25.4	125	8.7	18.1
6	27	8.7	16.7	68	4.7	9.4
7	11	3.5	8.0	42	2.9	4.7
8	11	3.5	4.5	12	0.8	1.8
9	3	1.0	1.0	14	1.0	1.0
Total	311	100		1,436	100	

TABLE 3.11 : *Percentage of dead children (i) at various ages of mothers in Manchur, and (ii) at various orders of birth among total children ever born*

Age group	Number of children ever born													Percentage dead among the total ever born
	1	2	3	4	5	6	7	8	9	10	11	12 (13,17,19)		
13—17	10.0	50.0	100.0	—	—	—	—	—	—	—	—	—	—	24.0
No. of cases	20	2	1	—	—	—	—	—	—	—	—	—	—	
18—22	6.7	11.5	22.5	30.0	80.0	—	—	—	—	—	—	—	—	15.6
No. of cases	119	78	40	10	1	—	—	—	—	—	—	—	—	
23—27	9.4	13.4	8.3	12.5	21.8	22.9	14.3	—	—	—	—	—	—	13.1
No. of cases	32	56	72	50	22	8	3	—	—	—	—	—	—	
28—32	22.2	8.8	3.4	12.2	15.8	12.6	25.0	23.2	59.3	80.0	—	—	—	16.0
No. of cases	9	17	29	88	57	37	20	7	3	1	—	—	—	
33—37	—	16.7	18.5	16.1	24.2	16.7	20.6	18.2	23.6	38.0	—	29.2	77.6	23.6
No. of cases	—	6	9	14	24	34	27	22	8	5	—	2	3	
38—42	40.0	25.0	15.4	21.4	15.2	12.7	13.1	17.5	22.2	25.6	30.3	—	—	18.0
No. of cases	—	8	13	7	21	21	25	26	19	9	3	—	—	
Percentage dead among various orders of births	9.0	12.8	12.4	15.1	18.5	15.5	16.8	17.3	25.1	32.9	25.0	30.6	77.6	17.6

the age-specific fertility-rates for the year. In all, 311 live births (167 male and 144 female) were reported during the year.

TABLE 3.12 : *Age-specific fertility-rates per 1000 married women in Manchar in the year of enquiry*

<i>Age group</i>	<i>No. of live-births</i>	<i>No. of married women</i>	<i>Age-specific fertility-rates</i>
—12	—	1	—
13—17	15	100	150.0
18—22	92	356	258.4
23—27	79	268	294.8
28—32	77	292	263.7
33—37	29	165	175.8
38—42	18	174	103.4
43—47	1	92	10.9
48—52	—	21	—
Total	311	1469	211.7

With the quinquennial age-specific fertility-rates in Table 3.12, it was possible to get the fertility rates for single years of age by fitting a curve to the quinquennial rates. With a choice of a third degree polynomial⁹ for the curve, single-year age-specific fertility-rates were calculated. The results have been presented in Table 3.13. In the last column of the table are given the cumulative totals on what is called 'more than basis', which give the number of children that would be born at a given age or later, if women lived throughout the child-bearing period. It is important to note that half the contribution to fertility comes of women below age 28. Broadly, the first six to seven years of reproductive period contribute 25 per cent of the total fertility, next five to six years contribute another 25 per cent, next six years the third 25 per cent, and the last 12 or more years, the fourth 25 per cent. According to the current fertility-rates, therefore, if women did not have children after age 33, they would not be producing 25 per cent of the babies.

Table 3.14 gives the order of birth-specific fertility-rates calculated from the data for the year of enquiry. The number of women that had their *n*th child during the year of enquiry were related to women who had (*n*-1)

⁹ Various choices were available to fit a mathematical curve to the data. In the present case was fitted a polynomial of the third degree, the technique of which has been explained in an article in *Artha Vijnana*, the quarterly journal of the Gokhale Institute, Sept. 1959. The uses of this kind of procedure are given in appendix B₃ at the end of this chapter.

TABLE 3.13 : *Single-year age-specific fertility-rates per thousand married women obtained with the help of a third degree polynomial*

<i>Age</i>	<i>Age-specific fertility-rate per 1000</i>	<i>Cumulated fertility-rate on more than basis</i>
15	148.3	6172.2
16	178.5	6023.9
17	204.8	5845.4
18	227.2	5640.6
19	245.9	5413.4
20	261.2	5167.5
21	273.1	4906.3
22	281.9	4633.2
23	287.9	4351.3
24	290.8	4063.4
25	291.3	3772.6
26	289.2	3481.3
27	284.9	3192.1
28	278.5	2907.2
29	271.0	2628.7
30	259.9	2357.7
31	249.0	2097.8
32	235.0	1848.8
33	220.6	1613.8
34	205.0	1393.2
35	188.6	1188.2
36	171.4	999.6
37	153.6	828.2
38	135.4	674.6
39	117.0	539.2
40	98.5	422.2
41	80.2	225.2
42	62.1	145.0
43	44.4	82.9
44	27.4	38.5
45	11.1	11.1

children born before the year of enquiry. The figures thus obtained gave the probability that a woman could have a child in the year of enquiry when she had a given number of children born before. This sort of measurement

TABLE 3.14 : *Order of birth-specific fertility-rates per 1000 married women in Manchar and in the six rural communities*

Centre	Order of birth											Total
	1	2	3	4	5	6	7	8	9	10	11	
Manchar	203.6	228.1	250.0	225.0	150.6	170.5	153.8	195.7	113.2	135.1	71.4	211.7
<i>Six Rural Communities</i>	— 8 and over —											
Mithbaon	216.9	321.7	166.7	189.2	138.9	112.1	48.2		32.5			155.5
Bori	139.3	258.1	242.4	280.2	236.6	96.2	180.0		76.5			182.3
Dhanore	258.1	394.7	307.7	287.5	250.0	209.7	142.9		75.4			217.8
Mirajgaon	183.6	216.2	213.8	177.8	244.0	138.9	149.1		93.5			166.4
Mudalgi	150.0	201.6	287.1	323.9	188.9	338.2	327.9		163.8			215.3
Nalwar	145.7	235.7	217.2	198.9	200.0	125.0	96.8		104.5			165.7
Average of the six rural communities	173.8	266.9	238.8	237.8	213.4	159.6	146.4		90.6			183.3

is very useful especially when a woman of a given parity reacts differently towards the prospect of additional children even among a population that is not familiar with contraceptive techniques.

In Table 3·9 presented earlier, percentages of births of a given or higher order have been given in columns 4 and 7 for children born in Manchar and in the six rural communities respectively. Broadly, 33 per cent of the births were of the first and the second order; another 33 per cent were of the third and the fourth order, and the remaining 33 per cent were of the order higher than the fourth. Similar data in Table 3·10 showed the percentages of women in Manchar having a given number or a given and higher number of living children. It can be observed from the table that the third-and-higher-order living children formed 58·5 per cent of the total births, and the fourth-and-higher-order living children formed 37·6 per cent among the children born and living in the year of enquiry. It is very interesting to note the difference between the percentages of living children in Manchar and in the six rural communities. If women stopped bearing children after two living children, the fall in birth rate would be of the order of 58 per cent in Manchar, and of the order of 47 per cent in the case of the six rural communities. Thus the fall in birth rate would be higher with lower mortality, if child-bearing was stopped after a given number of living children. This was otherwise obvious because a woman has to have a larger number of children ever born to report a given number of surviving children with higher mortality than with lower.

The average ages of mothers at various orders of birth to them are shown in Table 3·15. These are mothers that had a child during the year of enquiry. The average age of the mother at the first child was 19·7 years, at the second child it was 22·2 years, and so on. At an average age of 26, women had four children.

The average intervals between births of various orders during the year of enquiry are also shown in Table 3·15. These intervals were expected to increase in length, if women with various numbers of children were to practise contraception to increase the spacing between children.

It was difficult to get accurate data on birth intervals of most women in Manchar. The exact date of birth of the last-born child was, in most cases, obtained correctly. But the date of the earlier child could not be obtained with the same precision. Only the completed year of age was available for the previous child. With the practice of family planning, precise measurement of changes in the birth intervals would be an important indicator of the extent of successful practice. In the absence of such data on birth intervals, the possibility of measuring changes in them did not exist.

Under the circumstances, women who volunteered for the practice of family planning were questioned regarding the onset of menstruation after

TABLE 3.15 : *Average age of mother and average interval* between the last two deliveries for women who had a child during year of enquiry, by order of birth*

<i>Order of last delivery</i>	<i>Average age of the mother in years</i>	<i>Average interval in months</i>
1	19·7	—
2	22·2	33·3
3	24·9	28·1
4	26·4	30·3
5	28·2	27·0
6	31·1	28·5
7	32·2	28·3
8	34·2	23·7
Total	27·8	28·9

* Data are rough as explained in the text and could not be used to measure the effect of contraceptives.

conception and the onset of menstruation, an interval that nature provides to protect women against conception. Although there exist possibilities of conception without menstruation, data on such cases could not be obtained. Out of 388 women who volunteered for contraception, 242 reported an interval between the previous delivery and the following onset of menstruation. This has been presented in Table 3.16. As will be observed from the table, the median woman had this interval as long as about a year.

TABLE 3.16 : *Percentage distribution of women in Manchar by interval between delivery and the following onset of menstruation (infecund period after the delivery).*

<i>Infecund period in months</i>	<i>Manchar</i>
— 3	9·1
— 6	12·2
—12	33·3
—18	20·7
—24	20·2
Above 24	4·5
	100=242

In a population of new users of contraceptive appliances, the knowledge regarding infecund period is useful. If the success of the practice of contraceptive appliance is to be measured, it is necessary to relate the number of conceptions to the total number of months exposed to the risk of conception. In the present case, such measures could not be attempted as the so-called users of contraceptives were not sincere in their practice.

The demographic data regarding Manchar were mostly restricted to age, marital status and fertility history of the resident women. Hypothetical

Minimum No. of living children	Total No. of women.	No. of women in col. 2 with at least	
		1 son	2 sons
2	850	763	525
3	649	609	478
4	447	423	364

There was a sufficiently large number of women who could properly come under the purview of the family-planning programme. A good response from them would have provided adequate work for the family-planning clinic of the Rural Health Institute.

Identifying more fertile communities was also important. In Table 3.18 the number of households in each community is given with the average number of members in the households. Obviously, the average size of

TABLE 3.18 : Number of households and the average size of households in various communities in Manchar

Castes	Number of households	
	Total No. of households	Average size of family
Brahmins	50	3.6
Advanced Hindus	48	5.8
Marathas	744	6.7
Intermediate Hindus (Artisans)	125	6.8
Intermediate Hindus (Others)	57	6.3
Mahar Harijan	1	3.0
Mang, etc.	36	5.9
Backward and primitives	1	4.0
Other non-Hindus (except Muslims—mainly Nava Boudhas)	53	5.6
Muslims	131	7.0
Total	1,246	

household was the smallest among Brahmins, there being only 3.6 members per household, and was the largest among the Muslims with 7 members per household on an average. In between these two extremes were the other communities; Marathas and Intermediate Hindus were closer to Muslims in family size. Compared to these groups, Mahars or Nava Boudhas, Mangs, and backward communities had a smaller number of members in their households.

APPENDIX A₉

Questionnaire for the household in the demographic enquiry

Date of enquiry	Address and name of the head Caste, occupation and income of the household
-----------------	--

For each individual in the household

Name

Sex

Relation to the head

Age

Marital status

Education

Occupation

Earning status

Number of months for which resided in Manchar during the last

Number of months away from Manchar during the last year

Place of out-migration

Reasons for out-migration

Fertility history of women aged 13 to 52 years

For each child

Order of marriage of the mother

Order of birth

Name

Sex

Marital status

Living or dead

Present age, if living

Place of residence

Age at death, if dead

Notes regarding abortions and still-births.

Fertility performance during the year previous to the enquiry

For each confinement

Name

Sex

Date of birth

Place of birth

Living or dead

Age in months, if living

Age at death, if dead

(Questionnaire continued)

Place of death
 Reason for death
 Date of death
 Any abortion or still-birth ?
 Whether pregnant at present ?
 Month of pregnancy

APPENDIX B₂

In *Artha Vijnana*, an article on graduation of fertility rates was published in its issue of September 1960. In this article, a third degree polynomial was fitted to the observed age-specific fertility rates. A similar third degree polynomial was fitted to the age-specific fertility-rates obtained in the demographic enquiry in Manchar. The procedure followed to get the fitted polynomials can be described briefly as under :

p_x is taken to be the age-specific fertility-rate at age x . If m_x out of n_x women at age x have a child during a specific year of enquiry, the probability of the observed sample is given by

$$L = \prod C_{m_x}^{n_x} p_x^{m_x} q_x^{n_x - m_x}$$

where $q_x = 1 - p_x$

p_x is then put in the form $a + b_x + c_x x^2 + d_x x^3$ and the values of the parameters a, b, c, d are obtained by the method of maximum likelihood which gives the following four equations :

$$\begin{aligned} \frac{m_x}{p_x q_x} &= \frac{n_x}{p_x q_x} + \frac{n_x}{p_x q_x} x + \frac{n_x}{p_x q_x} x^2 + \frac{n_x}{p_x q_x} x^3 \\ \frac{m_x}{p_x q_x} x &= a \frac{n_x}{p_x q_x} x + b \frac{n_x}{p_x q_x} x^2 + c \frac{n_x}{p_x q_x} x^3 + d \frac{n_x}{p_x q_x} x^4 \\ \frac{m_x}{p_x q_x} x^2 &= a \frac{n_x}{p_x q_x} x^2 + b \frac{n_x}{p_x q_x} x^3 + c \frac{n_x}{p_x q_x} x^4 + d \frac{n_x}{p_x q_x} x^5 \\ \frac{m_x}{p_x q_x} x^3 &= a \frac{n_x}{p_x q_x} x^3 + b \frac{n_x}{p_x q_x} x^4 + c \frac{n_x}{p_x q_x} x^5 + d \frac{n_x}{p_x q_x} x^6 \end{aligned}$$

The equations are solved by the method of successive approximation beginning with the observed values of p_x given by $\frac{m_x}{n_x}$

The equation obtained for Manchar is :

$$p_x = .259946 - .0549027x - .0200239x^2 + .0035603x^3$$

The standard errors¹¹ of the various age-specific fertility-rates are given in Table B₃.1. Three times the standard error is expressed as percentage of the respective fertility-rates in the last row of the table.

TABLE B₃.1 : *Age-specific fertility-rates and their standard errors*

1. Age in years	15	20	25	30	35	40	45
2. Fertility rate per 1000 women	148	261	291	260	189	99	11
3. Standard error	32.8	17.1	17.4	15.4	17.4	16.6	10.9
4. 3 (Standard error)	98.5	51.3	52.3	46.2	52.1	49.9	32.6
5. 3 (Standard error) as percentage of the fertility rate	66.4	19.7	18.0	17.8	27.6	50.6	292.4

The interest in the present project was to assess the change in the fertility performance of women in Manchar after spreading knowledge regarding family planning among them. With this object in view, a mathematical curve as above was fitted to the age-specific fertility-rates so that a significant change in them could be measured. Unfortunately, however, this technique failed to be of any use for the present purpose. It was imagined that the fall in fertility rates of the order of three times the standard error would indicate a significant change in the age-specific fertility-rates. But the standard error was so high for any age-specific fertility-rate that a fall of the order of even 15 per cent in it could not be detected. Hence other less rigorous methods had to be used as will be seen in a later chapter.

APPENDIX C₃

TABLE C_{3.1} : *Percentage of dead children of fathers of various ages in rural and urban areas during 1951 to 1955*

<i>Age of the father</i>	<i>Sample</i>	<i>Poona non-city</i>	<i>Poona City</i>	<i>Kolaba rural</i>	<i>Kolaba urban</i>	<i>Nasik rural</i>	<i>Nasik urban</i>	<i>North Satara rural</i>	<i>North Satara urban</i>
27 and below		27.86	18.87	13.3	5.9	26.3	8.9	23.0	11.0
28—32		28.25	22.87	19.6	21.7	22.5	21.6	27.0	71.0
33—37		38.12	24.63	22.4	23.4	23.4	26.1	21.0	20.0
38—42		30.96	29.15	22.3	25.2	24.3	29.6	30.0	24.0
43—47		30.66	27.99	29.8	20.1	27.6	32.3	33.0	21.0
48—52		36.78	26.56	25.9	23.3	27.0	29.5	31.0	29.0
53—57		35.43	26.69	25.4	25.2	29.4	26.9	38.0	30.0
58—62		42.37	32.48	34.4	33.7	39.0	37.9	45.0	35.0
63 and over		43.60	34.56	36.2	37.2	38.3	31.3	46.0	36.0

APPENDIX C₃TABLE C_{3.2} : Percentage of dead children of mothers of various ages in rural and urban samples of North Satara district and the six rural communities

Age of the mother	Sample	North Satara rural	North Satara urban	Bori	Dhanore	Mirajgaon	Mithbaon	Mudalgi	Nalwar
—17		3·0	9·0	—	—	—	—	—	—
18—22	}	21·0	18·0	27·1	17·6	26·0	10·8	27·8	26·0
23—27				29·6	22·9	22·3	13·6	29·3	29·4
28—32	}	30·0	21·0	35·3	27·4	28·5	14·0	28·2	34·6
33—37				37·8	25·3	26·3	16·7	34·7	36·6
38—42	}	36·0	28·0	36·8	29·0	31·5	16·8	37·8	37·7
43—47				33·0	32·0	33·8	18·6	34·1	39·1
48—52	}	47·0	40·0	43·3	31·7	32·3	19·4	44·8	40·1
Over 52				43·6	31·0	42·8	28·3	43·1	46·5

CHAPTER FOUR

Rural Health Institute

WITH THE OPENING of the Rural Health Institute, a maternity hospital was added to the neighbourhood of Manchar. In 1927 a big building with a usable area of about 8000 sq. feet was constructed for a maternity hospital, but such a hospital was never set in operation due to lack of funds. When the R.H.I. was started in 1958, this unused building, dilapidated with the passage of 30 years, was renovated, and the maternity hospital started functioning since July 1958. The hospital was equipped with 12 beds, but it could be expanded, if necessary, to a hospital with 20 or more beds.

It was feared that the residents of Manchar might not take advantage of the maternity facilities, firstly, because of cost, and secondly, because the institution of hospitalizing confinements was new to them. The charges at the hospital were Rs. 15 per confinement. At the beginning, the residents suggested that the confinements should be conducted free of charge. The local leaders tried to bring pressure on the authorities concerned, and it was decided that a concession should be given to the poor. The poverty line was fixed at a *per capita* income of Rs. 100 per year. In cases where the income could not be stated in specific terms (there were many such cases) it was difficult to judge whether a person was qualified for the concession or not. Because of this difficulty the concession facility was withdrawn after the first three or four months; only one case was treated free of charge during the three years of survey.

The staff of the hospital was as follows : One lady doctor at a salary of Rs. 200 p.m.; one midwife (matron) for 20 months to begin with at a salary of Rs. 200 per month; three trained *dais* at Rs. 60 each per month; three ayahs at Rs. 35 each per month; one sweeper at Rs. 50 per month; a compounder at Rs. 75 per month; three ward boys at Rs. 35 each per month; and a night watchman at Rs. 30 per month. The last four were also required to work for the dispensary of the R.H.I. Besides, the doctor from the dispensary of the R.H.I. was to help the lady doctor in the maternity hospital if necessary, and every Sunday a surgeon from Poona visited the hospital for surgical help. A midwife did the work of collection of data relevant to the present project.

To ascertain the optimum number of cases this staff could handle, is beyond the scope of the present report. In practice, this staff conducted about 24 confinement cases during a month on an average, and the hospital staff

did not seem occupied to its capacity. However, compared to the working of the dispensary, this part of the R.H.I. was successful in its smooth continuity as regards the medical personnel available and the number of cases coming to the hospital for confinement. From Table 4.1, it can be seen that till the close of the year 1961, 902 confinements were conducted in the hospital.

TABLE 4.1: *Number of confinements in the hospital (1) from Manchar (2) outsiders*

	1958		1959		1960		1961		Total	
	1	2	1	2	1	2	1	2	1	2
January	—	—	13	5	11	3	8	7	32	15
February	—	—	9	7	7	6	10	13	26	26
March	—	—	15	7	11	11	8	14	34	32
April	—	—	15	14	6	14	21	14	42	42
May	—	—	14	9	10	15	9	14	33	38
June	—	—	19	13	7	9	17	14	43	36
July	3	—	13	6	13	21	15	15	44	42
August	12	8	15	14	7	11	6	11	40	44
September	8	8	10	10	9	13	11	14	38	45
October	5	8	14	13	13	10	20	13	52	44
November	8	6	15	11	11	6	7	11	41	34
December	12	10	8	12	9	7	10	11	39	40
Total	48	40	160	121	114	126	142	151	464	438
Yearly total	88		281		240		293		902	

Starting in July 1958, 88 confinements were conducted in the hospital up to December 1958. This number rose to 281 next year and remained at about the same level till 1961. On an average, there were about 24 confinements conducted during a month. This meant that there were, on any day, about eight or a smaller number of women on an average to attend to in the hospital, as each lived in the hospital for 10 or less number of days. On an average there was only one woman a day undergoing actual labour.

Manchar with its population of about 9,000 could have about 350 births¹³ or confinements during a year. If all the women of Manchar preferred to deliver in the hospital, it had, according to experts in the field, necessary facilities. However, the prevailing view was that normal confinements should be conducted at home, and only difficult ones in the hospital when there was a shortage of medical personnel. This has been discussed in a later section. It is enough to note here the capacity of the hospital, and also the fact that some proportion of women from any place go out for confinement and some outsiders come in for the same. At the beginning of the present project, one-fifth of the registered births in Manchar were to out-

¹³ Except for the hospital record, there was no reference to abortions. Hence, unless referred to otherwise, terms births and confinements are used in the same sense, births of course including still-births unless stated otherwise.

siders. This proportion, however, changed with the popularity of the hospital.

The purpose in opening the maternity hospital was to contact women of reproductive ages and to impart to them information regarding family planning while attending the confinement. With this in view a family-planning clinic was attached to the hospital. In the present chapter the main objective is to describe the socio-economic status of women that visited the hospital, and to ascertain the class of women that could be contacted through the hospital. Besides the functioning of the hospital as an institution conducting confinements, improvement in the registration of vital events due to hospitalization of confinements, contact of the medical personnel with the residents or outsiders, and the popularity and capacity of the staff to impress the need for contraception, have been discussed in subsequent paragraphs.

There were 902 confinements conducted in the hospital till the close of the year 1961. Out of these, about a half, i.e. 48 per cent, were of outsiders coming to the hospital in Manchar. It is not known why they came to the hospital. It could be that the confinement was expected to be difficult in their case and hence they were required to make use of the hospital facilities; or the use of hospital was just popular, or these were the outsiders that would have come to Manchar for confinement in any case, and because the hospital was there, they came to the hospital. The following exposition may throw light on some of the possibilities.

A guess that women came to the hospital only when they had some trouble would be unwarranted, as will be observed from the data in Table 4.2.

TABLE 4.2 : *Percentage of abnormal cases in the hospital*

	<i>Cases from Manchar</i>	<i>Cases from outside</i>
Abnormal cases	82	104
Total number of cases	464	438
Percentage of abnormal cases	17.4	23.7

The percentage of abnormal cases among the outsiders is larger than that among the local residents. This was to be expected because people from the neighbouring areas probably came to the hospital when medical help was necessary but was not available in the vicinity. Granting this, however, the number of abnormal cases did not seem to be especially high among outsiders.

It is not known whether the proportion of abnormal cases in the hospital was representative of those in the general population of confinements. This is to be judged by the experts in the field. The conjecture is that at least in the initial stages, the proportion of abnormal confinements should be larger

in a hospital, till hospitalization of confinements becomes universal. It is worthwhile noting, however, that women came to the hospital from appreciable distances even when there was no trouble or abnormality. Abnormality of a case was determined by the actual conduct of the labour and delivery of the child in the hospital. It was possible that women anticipated a difficult delivery in their case and hence came to the hospital. The proportion of cases, imagined to be difficult or abnormal, was likely to be larger than that of the abnormal cases recorded in the hospital. This will be clear from the following data.

A small questionnaire was addressed to women in the hospital. This has been given in Appendix A₄ at the end of this chapter. The questionnaire was filled in for 343 women, 157 from Manchar and 186 from outside. It was found that nearly three fourths of the total women from Manchar and two thirds from outside came to the hospital because either there was no help at home, or it was the first confinement, and so on. The remaining reported that they came to the hospital because they expected a difficult delivery. The relevant data are presented in Table 4.3.

TABLE 4.3 : *Percentage of suspected abnormal confinements*

	<i>From Manchar</i>	<i>From outside</i>
Percentage of abnormal cases on record	17.4	23.7
Percentage of women who suspected abnormality before coming to the hospital	25.2	33.8

It was interesting to enquire into the popularity of the hospital in Manchar as well as outside. Out of 902 confinements conducted in the hospital, 438 came from outside Manchar. They came from various distances. Normally one would expect that larger the distance from the hospital, the smaller its use, particularly if similar facilities were available in the neighbouring areas. But communication with Manchar by bus also seemed an equally important factor affecting the serviceability of the hospital. As can be seen from Table 4.4, 559 cases out of 902, were from distances less than three miles from Manchar, 86 were from a distance of four to five miles, and 152 from six to seven miles from Manchar. One hundred and six cases out of 152 coming in spite of a long distance of six to seven miles, were from the village Avasari Khurd which was on the bus-route to Manchar. Buses between Manchar and this village were quite frequent, and once a direct bus was available, efficiency of the hospital was perhaps more important than the distance.

Besides communication and distance, availability of medical help from other sources could affect the number of cases from an area using hospital facilities. In appendix B₄ at the end of this chapter, is given the list of places (small towns and villages) near Manchar, which had medical units consisting of a dispensary and a maternity ward. Each such unit covered a population

TABLE 4.4 : *Number of cases coming to the hospital from various distances in the four calendar years (1958-61)*

Distance from Manchar (miles)	0 (Manchar itself)	—3	4—5	6—7	8—10	10—	Place cannot be identified and not given	Total
Year								
1958	48	9	8	20	1	2	—	88
1959	160	30	24	37	10	18	2	281
1960	114	31	25	42	7	19	2	240
1961	141	26	29	53	12	20	12	293
Total	463	96	86	152	30	59	16	902

of about 20,000. Within the radius of 15 miles from Manchar, there were 13 such units. They were run by the department of public health of the State of Maharashtra, and were called Primary Health Units. All these units were working for more than three years. Within the radius of 10 miles from Manchar, there were eight such Primary Health Units, and within the radius of five miles, there were two. Manchar itself was included in the area under the Primary Health Unit at Mahalunga Padwal at a distance of four miles and a half from Manchar.

A primary health unit normally covered a population of about 20,000 lying within a radius of four to five miles from the headquarters. It is important to note that Manchar also had a population of about 19,000, within a radius of three miles from Manchar, and so a broad comparison could be made between the performance of the Rural Health Institute and that of the primary health units. However, Manchar was not a village but a town, and hence the population round about Manchar was more concentrated than that nearabout the villages in which the primary health units were located. This, no doubt, had its consequence on the number of confinements conducted at the hospital. The number of confinements conducted in the maternity hospital of the Rural Health Institute was 902 during the three years (1959-61) in a population of about 19,000. This performance may be compared with that of the four best-run primary health units in the neighbouring areas that conducted 53 to 214 cases per year.

In Table 4.5 are set out the data for the four best-run primary health units and for Manchar, such as the number of confinements conducted by the staff of the primary health units, confinements conducted in the maternity wards of the units, and those conducted in the homes of people by the staff of the units.

In spite of the higher charges of the R.H.I., it conducted a greater number of confinements than the wards of the four best-run centres. Of course the centres might have lost some potential ward-cases because they

TABLE 4.5: *Data showing the relative performance of the four best-run primary health units and of Manchar, in respect of confinements conducted*

Name of the Primary Health Unit	Year of opening	Distance from Manchar (miles)	Average No. of confinements conducted per year from 1959—61 in		
			Maternity wards	Village homes	Total
Ghoda	1955	7.4	81	133	214
Narayangaon	1955	8.6	160	22	182
Dhamni	1956	10.2	24	29	53
Belha	1955	17.3	69	6	75
Manchar	1958	—	167	—	167

offered services also at home, which the R.H.I. did not. However, the figures suggest greater popularity of the Manchar centre compared to the government centres.

These two types of institutions largely differed in their working. The government hospitals were a part of the public health department, and, as a part of routine work, they could provide both kinds of services, namely, the institutional services as well as the domiciliary ones. The hospital at Manchar was a private hospital not used to offering domiciliary services. On the other hand, it was possible that the government staff preferred to conduct confinements in the homes of people rather than in the maternity ward, when they were normal.

There were three sources of data to examine the situation, but each source referred to a different set of data. One source consisted of the data from the register of vital statistics; the second was the data from the demographic enquiry conducted at the beginning of the present project; and the third source was the record of confinements conducted in the hospital. These three sources are described briefly in the subsequent paragraphs.

In the register for births, information was available regarding births occurring to usual residents and to outsiders in Manchar, and the date of birth besides the name and address of the father. From the demographic enquiry, information regarding the births that occurred to women in Manchar during one year previous to the date of enquiry, was available.

Whether the birth occurred in Manchar or not was reported in this enquiry. The year of enquiry was a moving year, as the enquiry was conducted on different dates in different households. The enquiry was spread over a period of seven months beginning from the end of December 1958 to July 1959. Naturally, the information regarding births in this enquiry referred to a continuous period of 12 months, anywhere between December 1957 and July 1959, a period of 19 months.

From the record of the hospital, information could be had regarding the confinements that occurred in the hospital by date, the place of usual residence of women, their religion, order of birth, and the normality or otherwise of the confinement.

From Table 4.6, it can be seen that the percentage of births to outsiders increased steadily from 1957 to 1961, from 22 to 45 per cent of the total registered. It is interesting, too, that registered births increased from 195 to 385, a gain of 97 per cent. This increase can be attributed partially to the rise in population and partially to an increase in the number of outsiders coming to Manchar for confinement. A third factor is the improvement made in the registration of births; all the hospitalized births were recorded in the register. Another possible reason for the increase was the popularity of the hospital in Manchar itself. Women who would otherwise have gone out for maternity did not do so because of the hospital.

TABLE 4.6 : Registered births in Manchar, percentage of births to outsiders, percentage of the hospitalized to registered births

Calendar year	Registered births*			Percentage of births to outsiders	**Percentage of hospitalized to registered births	
	Mancharites	Outsiders	Total		Manchar	Outsiders
1957	152	43	195	22.1	—	—
1958	187	76	263	29.2	24.1	52.6
1959	253	131	384	34.1	59.3	88.6
1960	209	116	325	35.7	53.1	100.0
1961	213	172	385	44.7	64.8	83.7

* Source:—Official Register.

** Hospital record.

As seen from the Table 4.6, there was a rise of 41 per cent in the registered number of births to the residents of Manchar during 1957-61. The maternity hospital was started during the latter half of the year 1958, and probably due to that, there was a rise in the number of registered births in 1958. The very large number of registered births in 1959, however, seemed accidental, though the number of births in 1960 and 1961 also registered a marked increase.¹³

The rise in the registered births to the residents of Manchar, over and above the expected two per cent per annum due to increased population, included births that occurred in 1957 but were registered subsequently, and also births to those who would have gone out for maternity but remained in Manchar due to the hospital.

¹³ It is well known that hospitalization improves the registration as all births in the hospital get registered. Larger the number of women using hospital facilities better the registration.

Some idea regarding the above can be had from the demographic enquiry conducted during the first half of the year 1959. In this enquiry, 311 births were reported to have occurred in the year preceding the date of interview. They included 51 births that did not occur in Manchar, and hence were not expected to be in the register at Manchar. The remaining 260 births from the demographic enquiry were roughly comparable to the birth register of Manchar in 1958, in which 187 births were recorded. If the difference in time periods is neglected (a factor that should not affect numbers significantly inasmuch as the enquiry and the register covered one year each with considerable overlapping) a large part of the discrepancy of 73 births can probably be attributed to under-registration of births. Thus the increase in the number of registered births after 1958 to a figure of about 260 can be attributed to improvement in registration, and not to a decline in the number of women leaving Manchar for their deliveries. As the number of registered births was smaller than 260, no estimates of rise in the births due to attraction of the hospital, could be made. It could be concluded that in 1958 the under-registration of births to women from Manchar was of the order of 32 per cent, and it came down to about 22 per cent by 1961. It was 40 per cent before opening the hospital.

As for the outsiders that had their confinement in Manchar, data were available from the vital registers for Manchar, at least for some of them; but no corresponding data were available from the demographic enquiry. According to the register, 22 per cent of the births that occurred in Manchar in 1957 were to outsiders, and this percentage went on increasing steadily to about 45 in 1961. In absolute numbers there were only 43 births in Manchar to the outsiders in 1957 compared to 172 in 1961. This rise is probably a composite effect of the improvement in birth registration and an upsurge in the number of outsiders coming to the hospital for confinement. The effect of the two factors could have been obtained separately, if the number of women in the hospital who would have come to Manchar for confinement even without the hospital, was known. It is possible that a greater proportion of births to the outsiders than of births to the residents of Manchar was unregistered. If it is assumed, however, that both the groups were under-registered to the same extent, then the additional increase in outside births can be attributed to the attraction of the hospital to outsiders.

A direct estimate of the popularity of the hospital among the residents of Manchar could be obtained from the records of the hospital. Excluding abortions the hospitalized confinements could be related to registered births to get the percentage of hospitalized births. In Table 4.7, registered births are compared with the expected births which were calculated on the assumption of complete enumeration in the demographic enquiry in 1958¹⁴,

¹⁴ This assumption is not too unreasonable, as in Chapter III it was observed that the births in the year of enquiry were not under-enumerated.

TABLE 4.7 : *Proportion of hospitalized births to the expected number of births before and after the opening of the maternity hospital*

Year of registration	Births registered as of usual residents of Manchar	Expected* number of births to Mancharies in Manchar	Hospitalized confinements of Mancharies (abortions excluded)	Percentage of hospitalized births	Per cent under-registration
1957	152	254.9	No hospital	No hospital	40.4
1958	187	260.0	45	17.3	28.1
			(Hospital in existence for 6 months)		
1959	253	265.2	150	56.6	4.6**
1960	209	270.5	111	41.0	22.7
1961	213	275.9	138	50.0	22.8
Total	1,014	1,326.5	444	41.4	23.6

* The expected number of births was calculated on the hypothesis that the enumeration of births was complete in the demographic enquiry, and the number increased by two per cent annually.

** It is difficult to explain this figure except by abnormal increase in the number of confinement cases due to great popularity of the resident surgeon who was very highly qualified and who worked as doctor No. 3 for the dispensary as can be seen from Table 4-15.

and of annual increase of two per cent in births with a two per cent annual increase in population. This gave a rough estimate of the extent of under-registration in various calendar years. As is clear from the table, almost half of the births to the residents of Manchar, which occurred between 1958 and 1961 in Manchar, were hospitalized.

The number of women attending the hospital was examined to assess the effect of season on attendance. It was conceivable that heavy rains, for example, would influence the decision whether to have the delivery at home or in the hospital. Nevertheless, such effect was not observed in the present case.

The analysis presented above suggests that the performance of the hospital was encouraging. Yet about half of the confinements were still conducted at home without any assistance from the hospital staff. Many residents of Manchar either could not afford the hospital facilities or they did not approve of the hospital. Inasmuch as an important part of the programme was to impart knowledge of family planning to women using hospital facilities, the socio-economic-demographic composition of the hospitalized women from Manchar was compared with that of the general female population of Manchar, who had borne a child in the year of enquiry. Comparisons with outsiders were not possible due to lack relevant data.

As can be seen in Table 4.8, women using the hospital facilities for their confinements, were slightly older than those delivering at home, although the difference was not large. It will be seen later that women with higher

TABLE 4.8 : *Percentage distribution by age-groups of women in Manchar: (a) who had their confinement in the hospital; (b) who had a child during the year of enquiry; and (c) who were below 52 years of age with one or more children ever born*

Age group	a	b	c
13—22	32.6	34.3	20.0
23—27	23.0	25.4	17.5
28—32	27.0	24.8	19.1
33—37	13.3	9.5	10.8
38—42	3.5	5.7	11.2
43—52	0.6	0.3	21.4
Total	100 : 464	100 : 311	100 : 1,452

order of births predominated in the hospital and it seemed convenient for the middle-aged women in the age-group 28 to 37 to take advantage of the facilities available at the hospital. This group was well suited to receive advice on family-planning methods including sterilization. In column 4 of Table 4.8 is given the age distribution of all married women in Manchar aged below 52, who had at least one child. The current contributors to births were obviously much younger compared to married women of child-bearing age with one or more children born.

The caste composition of women who came to the hospital is presented in Table 4.9. In the hospital record, only religion of women was noted. From the more detailed enquiry through the questionnaire in Appendix A₄

TABLE 4.9 : *Caste composition of the hospitalized confinements according to (a) the register in the hospital and (b) the 157 questionnaires canvassed among women with hospitalized confinements from Manchar compared with (c) that of women who had a confinement in the year of enquiry*

Caste	a	b	c
Brahmin	74.5	2.8	1.9
Advanced Hindu		1.9	3.2
Maratha		43.0	65.6
Intermediate Hindu (Artisans)		20.6	12.9
Intermediate Hindu (Others)		3.8	3.2
Other Hindu (Scheduled Castes and others)		2.5	3.9
Nava Boudha	1.9	4.7	4.2
Muslim	23.6	20.7	5.1
Total	464	157	311

regarding 343 hospitalized women—157 from Manchar and 186 from outside—the caste was noted and is presented in Table 4·9. Among the Hindus the advanced castes and the artisans were represented more than proportionately among the hospitalized. Marathas were in smaller numbers, many of them perhaps following agriculture. The Hindus from the Scheduled Castes and other backward classes were proportionately smaller in number. The Muslims were markedly predominant among the hospital-goers.

As many women coming to the hospital could not report their family income, it was not possible to ascertain the income-groups represented by women who had their confinements in the hospital. However, some idea of the social status of these women was available from the occupations of their households. The women coming to the hospital belonged to households that earned their living either by salaried services, or by trade and transport, or by artisan services. The agricultural classes were represented in very small proportions in the hospital population. The relevant data are presented in Table 4·10.

TABLE 4.10 : *Distribution of women who had (a) their confinement in the hospital and those who had (b) a confinement in the year of enquiry according to occupation of their households*

<i>Occupation of the household</i>	<i>a</i>	<i>b</i>
Agriculture	55·0	22·6
Agricultural and other labour	8·0	2·8
Other production	8·0	5·8
Artisan services	10·0	11·2
Trade and transport	7·4	29·2
Salaried services	9·3	22·5
Others	2·3	5·9
Total	464 = 100	311 = 100

It was believed that women with larger number of children would find it difficult to leave their children to come to the hospital, but the data regarding the confinements in the hospital did not suggest this hypothesis. Table 4·11 gives the distribution of women in the hospital by birth order compared with that of women who had a confinement during the year of enquiry. The data show obvious predominance of women with first-order and sixth-and-higher-order births in the hospital. A probable explanation is that these birth orders constitute more difficult confinements for which the hospital facilities are more likely to be sought. To test this hypothesis the normal cases from the hospital record have been analysed by order of birth. Table 4·12 gives the distribution of normal and abnormal cases by order of birth. From Table 4·11 and Table 4·12, it can be seen that the number of abnormal hospital-cases among the first-order and the sixth-and-higher-order confinements was not disproportionately large, at least among women from Manchar. The women were often normal. Thus women con-
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TABLE 4.11 : *Distribution of women who had (a) a confinement in the hospital and of those who had (b) a confinement in the year of enquiry, according to the order of confinement*

Order of birth	a	b
1	26.2	19.1
2	12.8	15.1
3	13.9	18.0
4	9.8	14.0
5	10.0	10.3
6 and over	27.3	23.5
Total	100.0 = 464	100 = 311

tacted for family-planning education through the maternity hospital were suitable for discussion even on sterilization, due to the predominance of women of higher-order confinement.

TABLE 4.12 : *Percentage distributions of abnormal cases from Manchar and outside, according to order of confinement*

Order of maternity	Residence			Abnormal cases from Manchar	Abnormal cases from outside	Total hospitalized confinements
	Manchar	Outsiders	Total			
1	21	23	44	25.3	22.4	26.2
2	10	15	25	12.1	13.5	12.8
3	15	12	27	18.1	11.7	13.9
4	9	10	19	10.8	9.7	9.8
5	6	8	14	7.2	7.7	10.0
6 and over	22	36	58	26.5	35.0	27.3
Total	83	104	187	100.0	100.0	100.0

From the foregoing discussion, it is clear that, generally, women who took advantage of the hospital facilities did not represent the general population. About half of the women who were current contributors to fertility did not come to the hospital. Agricultural classes and certain low-income groups were under-represented. This suggests that if a family-planning clinic is attached to a hospital, some arrangements have to be made to contact these groups.

It has been a general practice to attach a family-planning clinic to maternity hospitals. In the hospital, it is possible to have closer contact with women to discuss such personal matters as sex, family size and family planning. The point is, if family-planning knowledge is imparted to women

coming to the hospital, how far is it likely to be effective. The following paragraphs narrate some of the experiences in the matter.

Contact through the maternity hospital alone was not enough to impart knowledge regarding family-planning to the general population as some important categories were excluded. Further, even those who came to the hospital for confinement were not acquainted with the workers of the maternity hospital or of the family-planning clinic. Rarely did women take advantage of the hospital facilities early in pregnancy. From the questionnaires filled-in for hospitalized maternity-cases it was found that of the 158 cases from Manchar, 111 never registered during pregnancy but came straight to the hospital for maternity; 26 got registered in the ninth month, and only three during the first four months of pregnancy. The remaining 18 registered during the fifth and the eighth month of pregnancy. The relevant data are presented in Table 4.13. Of the 185 outsiders, 133 came straight

TABLE 4.13 : *Month of pregnancy when women got registered in the hospital*

<i>Month of pregnancy when registered</i>	<i>No. of women from Manchar</i>	<i>No. of women from outside</i>
—4	3	1
—8	18	13
—9	26	38
No registration	111	133
Total	158	185

for confinement without registration, 38 registered in the ninth month, and only one registered during the first four months of pregnancy.

Registration quite early in pregnancy is essential from the point of view of pre-natal care. This is the period that can be used to prepare a woman to take steps towards family-planning or -limitation. To effect this, the provision of domiciliary services is requisite; it can establish better rapport with the residents by promoting health care. In the absence of such a requisite, it was difficult to discuss family planning even with those that came to the hospital, because they entered and left the hospital unacquainted with the medical personnel. The period of confinement was too short and rather unsuited for opening fresh discussions on family planning.

It was thought that if maximum results were to be realized, emphasis had to be laid on the unity of institutional and domiciliary health-services. Otherwise, the goodwill of the community could not be mobilized to assist in the work-programme of disseminating information regarding family planning. The earlier experience of the Gokhale Institute had proved that midwives and health-visitors could, through the vehicle of medical help, impart family-planning knowledge, with encouraging results. But what they administered was not mere curative medicine, but 'social medicine' which included many-sided health-service. This, however, could not be

adapted to the set-up of the Manchar medical centre for various reasons, the chief of which was that it was a private medical body and not a public health centre. Moreover, no specific arrangement had been made with the Rural Health Institute at the start of the project to ensure flexibility in the set-up of the centre.

The public-health-care programme of the government combines the preventive and curative aspects of health care, particularly after the Bhole Committee Report which emphasized the need for the unity of these two types of services. In our project, the midwife-investigator of the Gokhale Institute collected information for the demographic enquiry. After finding that the people were not coming to the hospital for family-planning advice, she went round to assess the attitudes of people regarding family planning. Our idea of keeping research and action separated therefore failed, as the investigator who was only to collect data, was also assigned the work of motivating the people towards the use of contraception.

There were several administrative problems in running a maternity hospital which had in its work-programme an important place for popularizing family-planning. The provision of domiciliary services raised a number of difficulties which were of great consequence to those who ran the maternity hospital. Only in the public-health-programme of the government, a programme like the present one could perhaps be fitted without much difficulty.

There were difficulties in getting a qualified, efficient doctor, a qualified nurse, and even the scavengers. It was found difficult to get in one person of the doctor, the professional skill as well as the capacity to impress an idea upon the people. It seemed necessary, therefore, to bifurcate the two kinds of responsibilities, and it was decided that the midwife-investigator should educate the people regarding family planning.

In Manchar, with a surveyed population of about 8,000, and with 447 couples with four or more living children, we got only about 18 couples to practise family-planning appliances, and about 54 couples who took to male or female sterilization. At the end of the year 1960, the present project lost its significance due to change in the policy of the Government of the State of Maharashtra, which started family-planning campaign including the facilities for sterilization. This has been discussed in a later chapter.

Besides the maternity hospital, the R.H.I. had a dispensary. The male doctor from the dispensary was also expected to impress the need of family planning upon the residents of Manchar. Much depended, however, on the personality of the doctor. He could be popular either as a medical expert, a public health worker, or as a social worker. Without special efficiency, he could not impress the residents, particularly in the presence of two private practitioners in Manchar who had the urge to establish good medical practice in order to make a living. In the course of the three years of the project, there came seven medical experts in the dispensary. The

dates of their joining and leaving the duties are set out in Table 4.14. It

TABLE 4.14 : *Dates of joining and leaving the dispensary in the case of male doctors of the R.H.I.*

Doctor No.	From	To
1	September 1, 1958	October 20, 1958
2	November 1, 1958	April 18, 1959
3	April 23, 1959	April 29, 1959
4	May 4, 1959	August 30, 1959
5	September 2, 1959	October 18, 1959
6	November 21, 1959	December 6, 1959
7	January 3, 1960	End of 1961 (with a few breaks)

is obvious from the table that there was no stability in the stay of the doctors. The time gap in between two doctors, though occasionally filled by the lady doctor of the maternity hospital, caused discontinuity in the working of the dispensary.

TABLE 4.15 : *Average number of patients in the dispensary each month under various doctors*

Month and year	Patients per day	Month and year	Patients per day
<i>Doctor No. 1</i>		<i>Doctor No. 5</i>	
August 1958	48.2	September 59	12.8
1-9-58 (only one day)	112.0	October 59	9.9
<i>Doctor No. 2</i>		<i>Doctor No. 6</i>	
September & October 1958	0.0	November 59	9.3
		December 59	6.5
<i>Doctor No. 3</i>		<i>Doctor No. 7</i>	
November 58	15.8	January 60	7.3
December 58	31.9	February 60	7.6
January 59	25.7	March 60	5.4
February 59	31.5	April 60	5.0
March 59	32.7	May 60	7.5
<i>Doctor No. 2 and 3</i>		June 60	
April 59	25.9	July 60	8.4
<i>Doctor No. 4</i>		August 60	
May 59	11.2	September 60	10.1
June 59	11.7	October 60	7.7
July 59	10.0	November 60	8.2
August 59	10.7	December 60 to } December 61 }	7.0

In Table 4-15, the average attendance in the dispensary each month, shows regular decline in the popularity of the hospital. The highest average number of patients for a month had been 48 a day, during the term of the earliest doctor who left the dispensary after a month to start private practice. He had been practising in Manchar for the previous 30 years. At the end of the project, the dispensary ended up with a daily attendance of seven to eight patients due to the popularity of the private practitioners.

It is worthwhile noting here the experience of the medical centres run by the Public Health Department of the State, in the nearby areas. Reportedly the difficulties of getting the right kind of medical personnel were present even with the government. But the continuity of the doctors seemed much better in the government centres nearby Manchar, firstly because they were established earlier, and secondly because the government could transfer doctors from one place to another and achieve continuity of work at least in the established centres. The difference between the expectations of work from the male doctor at the dispensary of the R.H.I. and that at the government medical units with their public-health personnel, was large. Apparently, public-health work and the popularizing of family-planning practice could not be arranged through the R.H.I.

Besides the lady doctor of the maternity hospital and the male doctor of the dispensary, a highly qualified surgeon from Poona visited Manchar twice a week very regularly on Sundays and Wednesdays. His only responsibility was to conduct the surgical work scheduled beforehand. The surgical help was meant to attract the people to the hospital. The surgical operations conducted during the course of three years, covered a wide range of complications needing surgical skill. Thus, so far as the medical treatment was concerned, the R.H.I. was well-equipped.

APPENDIX A₄

Questionnaire for women with confinement in the hospital

1. Name
2. Age
3. Occupation
4. Yearly income
5. Caste
6. Place of residence
7. Husband's name
8. His age.
9. His occupation
10. His yearly income
11. Date of confinement
12. Sex of the child born
13. Date of registration in the hospital

Including the present child born (excluding still-births)

Questionnaire continued

14. Sons living/dead
15. Daughters living/dead
16. Details regarding (i) still-births (ii) abortions
17. Was the pregnancy troublesome ?
18. Was the delivery difficult ?
19. How many earlier confinements were conducted in hospitals ?
20. Reasons for conducting them in the hospital.
 - (i) No help at home
 - (ii) Difficult confinement
 - (iii) Others (state)
21. How many confinements were conducted at home ?
22. Reasons for conducting the confinements at home
 - (i) Easy delivery (ii) Help available at home (iii) Has to look after the children and household work (iv) No hospital (v) High cost in the hospital (vi) Hospital delivery not comfortable (vii) Others (state)
23. Why was the delivery conducted in the hospital ?
24. Was the delivery difficult ?
25. Description of the difficulty.
26. Total days of stay in the hospital.
27. Total cost for the confinement in the hospital.
28. Is this birth recorded in the birth register for Manchiar* ? (This question was addressed to the investigator)
29. Notes :

APPENDIX B₄TABLE B_{4.1} : *The distance (in miles) of the various primary health units of the department of public health from Manchiar*

<i>Serial number</i>	<i>Name of the village</i>	<i>Distance (miles)</i>
1	Ambeagaon	15.00
2	Dhamani	10.20
3	Ghoda	7.40
4	Khed	11.40
5	Mhalung-Padwal	4.50
6	Narayangaon	8.58
7	Nirgudsar	6.84
8	Pait	5.40
9	Pimpalvandi	12.60
10	Shel Pimpalgaon	3.00
11	Vaphgaon	9.16
12	Vada	13.20
13	Yenere	13.18

* Need not get it registered.

CHAPTER FIVE

Family-Planning Programme

AS STATED EARLIER, the surveys conducted by the Gokhale Institute as well as such other institutions in this country, showed that there was no strong opposition to the practice of contraceptives.¹⁵ The people, however, lacked knowledge regarding contraceptives and their effective practice. In the present experiment by attaching a family-planning clinic to the maternity hospital, arrangements were made to impart knowledge regarding family planning to those who delivered in the hospital and also to those who visited the clinic for family-planning advice. The lady doctor in the hospital was supposed to give family-planning advice. As the load of work of the maternity hospital was not heavy, she could afford to do this work. Thus the lady doctor in the maternity hospital, male doctor in the dispensary, and the surgeon visiting Manchar regularly, formed a useful group of medical experts, and residents of Manchar could easily approach them for family-planning knowledge and practice. This fact was made clear to the residents of Manchar at the very opening of the centre.

The work began with an initial demographic enquiry which took about six months. The object of this enquiry was to divide the population into various segments so that methods suitable for promoting the practice of family planning in each of the segments could be devised. The enquiry also helped to know the initial demographic situation so that the future change in it could be ascertained. In the following paragraphs is described the programme of work of popularizing family planning.

The work programme in Manchar consisted of four stages. The first stage consisted of the initial demographic enquiry—a stage comparatively simple to handle from the point of view of administration. This lasted from January 1959 to the end of June 1959. The second stage began in the month of March 1959 and ended in May 1960. During this stage, the investigator, who was a midwife, went round each and every household and filled in the questionnaire No. 2 which is presented in Appendix A₅ at the end of this chapter. Through this questionnaire, the prevalence of knowledge regarding family planning, residents' reactions to the dissemination of contraceptive information, choice of contraceptive, reactions to pessary diaphragms, foam tablets, contraceptive jellies, and to male and female

¹⁵ A brief summary of the findings in the various surveys is found in a paper by Dr. Bogue for the Family Planning Conference in New York in 1960.

sterilization, were noted. Information regarding family planning was imparted to people if they had no information before. Out of a total of 1,255 women in Manchar, aged 18 to 42, only six were using contraceptives, and 31 women admitted the knowledge of one or other of the contraceptives. Though generally women were approached for discussion on family planning, males were not barred from discussion, and male contraceptives like the condoms were also discussed. Thus the working of all the contraceptives was explained to the people. If people preferred so, they were asked to make their choice of contraceptives, and they were supplied to them. They were also requested to come to the clinic, as free and frank discussions regarding contraception were possible at the clinic. The use of certain contraceptive measures like the diaphragm could be conveniently demonstrated in the clinic and not in the house-to-house visits.

The second-stage enquiry ascertaining the attitudes of people after imparting them the necessary knowledge regarding family planning, continued for 14 months. The third stage consisted of revisits to the same households, and it started immediately after the second stage was begun. The second and the third stage were the most difficult stages to conduct. As will be seen from the questionnaire at the end of this chapter, in each repeated visit to women, their success or otherwise with the practice of contraceptives was to be noted. They were also asked whether they felt like changing the contraceptive.

The fourth stage consisted of winding up the enquiry at the end of three years. During this stage, the investigator went round each household in which a child aged three years or below was reported in the initial demographic enquiry. There were 833 such households. The fertility performance of those households during the three years of the enquiry was noted. Besides, another enquiry was introduced during this stage, which concerned the latest development in the government policy and undertakings. By the end of year 1960, the Government of Maharashtra State started a family-planning campaign and conducted vasectomy camps in the state. November 1960 was declared a vasectomy month all over the state. Each district of the state was given a quota of 600 vasectomies which the district health officer was to conduct in his district. Exact specifications as to the eligibility for vasectomy were prescribed.¹⁶ Men that had a monthly income of less than Rs. 150 were given Rs. 20 as a compensation for the work-days lost for taking rest after the vasectomy. During the fourth stage, an attempt was made to assess how far the residents of Manchar had heard about the new activity of the government, and their attitude towards that activity.

An important part of the work in the fourth stage was to examine the sterilized persons for the after-effects of sterilization. The questionnaires addressed to males and females for this purpose are presented at the end of this chapter in Appendix A₆. An analysis of each stage of enquiry is presented in the subsequent sections.

¹⁶ More details are presented in Appendix B₆ to this chapter.

First-stage enquiry

The detailed results of the first stage of enquiry have been set out in an earlier chapter. They helped in planning an approach to each family, in the second stage. During the first stage, talk or discussions on family-planning methods were not a routine practice in the house-to-house enquiry. If individuals approached for consultation, they were given information regarding family-planning techniques. In fact, during the first stage, we waited for the highly motivated to come to the clinic on their own. Had the people come to the clinic for consultation, there was no need for individual approach. As is clear from the data presented in Table 3-17, even with moderate motivation among the residents, a sizable number was expected to come to the clinic. Hence, instead of individual approach, during this stage, three group-meetings were arranged; one on the main village-site and two others in two hamlets of the town, where talks on family planning were given to groups of people. Of these meetings, the one on the main village-site seemed comparatively better attended: it had an audience of about 30 to 35 leading people of Manchar. That was the first meeting of its kind in Manchar. Moreover, the speaker was a woman, which fact perhaps aroused greater curiosity. She had brought with her a young man and a young woman to narrate to the audience their experiences in the practice of family planning. It was a novel idea to have those two speakers who were both illiterate and who belonged to low-income groups.

The other two meetings were held in two hamlets of Manchar. They were intended to create a family-planning climate in the hamlets that were a little removed from the main town of Manchar. Only about 15 persons could be collected with difficulty at the meeting. This technique of calling group-meetings was tried again in 1961, when efforts were made to organize two more meetings. One was of Nava Boudha women (mostly Mahars converted to Buddhism in 1956) and the other was of Muslim men. The Muslim and Nava Boudha communities were well-organized, and it was thought that the idea of family planning could be perhaps popularized among them through their own organization. In the case of Nava Boudha women, about 25 of them attended the meeting. Half of them were old women mostly widows. Most of the others were very young women who had either one or no child. This kind of response had ceased to discourage us by the year 1961. The author herself had a discussion with the women regarding the medical and maternity facilities made available through the R.H.I., and regarding the family-planning campaign in the town. The response was good as compared to the kind of audience. Discussion had to be carried with old women who had crossed child-bearing age. The women thought that a normal confinement at home did not cost more than five rupees. With regard to family planning, many of them verbally agreed that it was a good move. Some of them complained that the hospital was not conducting salpingectomy free of charge because of which three women from their community were going to get it done in Bombay,

where their husbands worked and where they could get it free of charge.

As for the Muslims, all attempts at organizing a meeting of the menfolk failed. No response was given on the ground that their religion did not allow family planning. If instances of individuals from their own community were cited, they were dismissed as private affairs of those people. A printed circular from a religious leader of the community was translated and sent round. But it had no effect. Some of the men from the community argued that they wanted to increase in numbers. It was worth while remembering that this community formed 10 per cent of the total households surveyed in Manchar, and they had the largest size of family on an average.

With all the effort in the first stage of our work-programme, only three women from Manchar came to the clinic on their own, and eight consulted the midwife about family planning, while she was doing the work of collection of data for the first-stage enquiry.

Second-stage enquiry

From the demographic enquiry conducted during the first stage, it was found that there were 4,016 females during the first half of the year 1959. Of these, 1,669 that formed about 42 per cent of the total were married women with a living partner not divorced or separated. It was decided that women below 18 and above 42 years of age need not be approached for family-planning advice at least at the beginning, though family-planning advice was to be given to anybody who approached for it on reasonable grounds. Among the 1,669 married women, there were 101 below 18 years of age and 313 above 42 years of age, forming respectively about six and 19 per cent of the total. Consequently, there were left 1,255 women to be approached in the second stage of enquiry.

Among the 1,255 women, there were 133, i.e. a little more than 10 per cent, who had their husbands away from Manchar, most of the time. Of the remaining, 67 women were one of two wives. Nineteen of these had no living child, 28 reported no living son, and 18 reported only one living son. But childless couples consisting of one husband and two wives together were few, there being only one such man reporting no child. Thus we had 200 (133+67) women who could be regarded as difficult to deal with in the matter of family planning. Still all these were considered on par with other married women.

Here we should like to divert a little as we find it essential. In disseminating information regarding family planning, it was the explicit policy not to lay special emphasis on any specific family-planning device, though the earlier experience had shown the popularity of sterilization among the interviewed. After a proper medical examination, contraceptives were suggested and the final choice was left to the women interviewed. The utility of sterilization, however, could be stressed as much as that of other devices or even more in the case of women who had three or more children. Women with a child or two were expected to rely on contraceptive methods, and not

on sterilization, as very often it came too late in the day, and people tried to have a larger number than desired, if they wanted to get sterilized. Calculations regarding the fall in birth-rate following family limitation, showed that limiting the family at three or four living children did not bring down the birth rate to a considerable extent.¹⁷ On the other hand, one could not take the responsibility of recommending a drastic method like that of sterilization to persons with fewer children. Hence emphasis was not to be laid on any specific contraceptive device. This policy, of course, was based on the hypothesis that all accepted effective methods could be used equally well by those motivated towards limiting the size of family. The interests of individuals and the interests of the educators of family-planning methods were likely to clash in choosing contraceptives because of the peculiar merits or demerits of the various kinds of devices. Educators wanted to reduce the birth rate as much as possible by limiting the number of children just to the desired number. Individuals on the other hand did not use contraceptives, nor could they take the risk of getting sterilized with just the desired number of children, without some provision for casualties. Hence the choice of sterilization rather than any other device, kept the level of fertility higher than desired. This was of course on the assumption that people chose one method and not a combination of methods. A sizable proportion of the motivated had already reached a stage when it was no use taking risks with other contraceptives that could prove fallible with new users. For such persons, sterilization could be recommended on sound ground, while for others effective use of contraceptives could be taught.

The problem for the academician, however, was to calculate the risk of anyone dying childless, or without a son, at a specific age of the mother, say 65, who got sterilized after a given number of children, say two, three, or four. This was particularly important when there was a likelihood of sterilization being undergone on a large scale. It was possible to arrive at a standard of eligibility for either vasectomy or salpingectomy, so that the mother had at least one child or one son at the age of 65. In fact we calculated the probabilities that a mother should have at least one child at the age 65, if she got sterilized (or stopped child-bearing) after one, two, or three children. The mortality pattern assumed was such that the expectation of life at birth was 40 years. Another assumption was that every five years the addition to expectation of life would be 2.5 years. It was found that sterilization after one child held the probability of having a child at age 65 appreciably lower than 0.9. This probability, however, increased with the age of the mother at sterilization (or at stopping the child-bearing) or with the ages of the children. With two living children it was found that the probability of having at least one child at age 65 of the mother was

¹⁷ It was observed that a stop to child-bearing after two living children could bring down the present birth-rate by a little less than a half. A stop after three living children could bring it down by 30 per cent, and after four living children it could be brought down by 18 per cent.

greater than 0.9, and with three living children the probability was at least 0.96, whatever the age at sterilization.

The conclusion therefore was that even with two living children as the standard of eligibility for sterilization, the probability of having at least one living child at age 65 of the mother was fairly high, and it was much more so with three living children. It was observed in an article in *Artha Vijnana* (1959 September) by the present author that sterilization after two or three living children reduced the birth rate by about 47 per cent or 30 per cent respectively. So sterilization even after three living children did not reduce the birth rate to a considerable extent. In the light of such findings, it was worthwhile considering the standard of eligibility for sterilization which has been suggested by various experts in the country. For the purpose of this project, all methods of contraceptives were suggested. Sterilization was the choice of many. Surgeons in the hospital were prepared to follow the accepted government rules for eligibility and conduct surgical operations on those that had three living children. None, however, who did not satisfy the requisite conditions, volunteered for sterilization.

Thus the above calculations show that there was normally no fear of the mother dying childless at the age of 65, if she stopped child-bearing after two children. After this digression we revert to the findings of the second-stage enquiry.

Among the 1,255 women of ages 18 to 42, there were 142 who had no child ever born to them. Such women were advised to come to the clinic and get examined for sterility if they so wished. Twenty-two of them visited the clinic, seven of whom were aged between 18 and 22. Leaving aside the 142 childless women from the total of 1,255, there were 21 who had born children but none was living. So finally, 1,092 women were approached for interviews regarding family planning.¹⁸ This was done during the second stage of enquiry. Interviewers in this case faced an immense resistance from people in answering the questionnaire. According to the midwife-investigator, who was a seasoned health-visitor, only five per cent households received her with courtesy. Of the 1,092 that could profitably learn about contraception, 388 (35 per cent) showed a favourable response at the first broaching of the subject. The remaining 704 who were unfavourable to contraception gave the following reasons for their indifference or opposition.

205 women had only one living child.

169 women had no living son.

73 women had a child only during the current year and they did not think that there was any possibility of pregnancy immediately.

46 women were pregnant.

41 women had no pregnancy during the preceding five years.

¹⁸ According to us even those that had no children, could learn about family planning. But such a group of persons, particularly the women, wavered between two conditions. They were either too young to feel free to learn about contraception, or they suspected sterility in their own case.

- 29 women had long spacings between children.
 118 women had their husbands away for a major part of the year.
 9 women had menopause.
 15 women had religious objections. They were all Muslims.
-
- 706 Total

Among the 388 women that generally approved of the idea, only 17 (16 per cent of the total of 1,092) agreed to pursue the subject. The midwife-investigator canvassing the questionnaire regarding attitudes toward family planning broadly explained the use of contraceptives and advised the women to come to the family-planning clinic attached to the maternity hospital. The lady doctor in the hospital was to explain to them the various contraceptives, fitting of the diaphragm, use of condom, jelly, and the foam tablets. As only five of them came to the clinic, the investigator had to visit the homes of the women to provide them with contraceptives if they had shown any interest in their practice. The preferences for contraceptives as obtained during the second stage of enquiry were as follows :

- 92 chose surgical method.
 63 chose foam tablets.
 15 chose diaphragm and jelly.
 5 chose rhythm.
-
- 175 Total

From this performance of women in Manchar during the second stage of enquiry which lasted for 14 months, till May 1960, a marked preference for surgical method is quite clear. Probably it was the peculiar composition of motivated women, which made them opt for sterilization. Only those with a large number of children got motivated to family planning and for them sterilization seemed a convenient method of family planning. Persons without a child, or with one or two children could afford the practice of other contraceptives, but they were modestly motivated towards family planning. Thus, the preference for sterilization in the present circumstances revealed poor motivation.

Third-stage enquiry

The third stage of enquiry consisted of follow-up visits to those who had accepted contraceptives for actual use. In this stage an attempt was also made to convert those who had not favoured contraception during the first stage. Actually this meant propaganda work which was expected to be a part of the duties of the R.H.I. But in the circumstance of poor or no response from the people to the family-planning clinic, the midwife-investigator who was supposed only to keep records, or collect information, had perforce to try various approaches to motivate the people to come to the clinic. Those who preferred foam tablets, diaphragm, condoms, and jelly, had to be visited once a month. Foam tablets were supplied in phials of 12, giving one phial every month. Any one who ran short of the supplies

in between monthly visits, was advised to come to the clinic and get additional supplies. But none ever turned up in the clinic. The same was true of the 15 women who preferred to use diaphragm and jelly. Each was given a diaphragm to be used for a year, though in the case of spoilage, it could be replaced. To the users of diaphragm, a jelly tube was supplied every month, if necessary. The midwife-investigator could check whether the interviewed women continued to use the diaphragm. Those who preferred the rhythm method had also to be visited every month to know whether they practised the method. In the periodical revisits, it was enquired whether the methods preferred were agreeable, or the women wanted to change the method.

Those who preferred sterilization had only to decide a day for the operation. Among the 92 who preferred sterilization, only 46 got sterilized, 8 additional ones took to sterilization after having tried other methods.

The data regarding couples that took to contraception are presented in the following. Their age composition, the number of children they had, and the duration of their practice of contraception are set out in relevant tables. An attempt was made to measure the effect of this practice on the fertility rates at various ages. The number of users of contraceptives or the number of sterilized men and women was very small. Still the effect of their practice was calculated simply to describe the possible approaches that could be thought of. The performance in Manchar as measured by the number of sterilizations was superior to that in the district which had the largest number of male sterilizations in 1960, during the campaign of the department of public health in the State of Maharashtra. In Manchar 1.8 sterilizations were conducted per thousand of population per year. The corresponding numbers for a district in Maharashtra and the towns of population from 5,000-10,000 in the district were, respectively, 1.2 and 1.0¹⁹

In Table 5.1, the age composition of the wives from the couples that preferred sterilization, and from those that preferred contraceptive appliances, is set out separately, along with the age composition of those who gave a favourable response to family planning without taking any action in the matter. It was presumed that those who preferred contraceptive appliances or the rhythm method would be relatively younger than those who preferred sterilization. As will be seen from Table 5.1, among those choosing contraceptive appliances, about half belonged to the age-group below 27 years, while among those preferring sterilization, one third were in this age-group. The difference in the average ages of the two groups was 2.2 years, those preferring contraceptive appliances being 27.6 years of age on an average. Those who merely gave a favourable response but did not take to a method were a little older on an average compared to those who took to a contraceptive method.

¹⁹ For further details, please refer to Appendix B.

TABLE 5.1: *Age composition of women from couples that preferred sterilization and other contraceptive appliances separately and of those that merely showed favourable response*

Age group	Women preferring sterilization	Women taking to contraceptive appliances	Women showing mere favourable response
18—22	6	20	15
23—27	25	21	48
28—32	30	26	46
33—37	26	11	52
38—42	5	5	52
Total	92	83	213
Average age	29.8	27.6	31.1

(Total number showing favourable response to contraception was 388 = 92 + 83 + 213.)

The number of living children to the above three groups has been presented in Table 5.2. Those choosing contraceptive appliances had 3.6 children

TABLE 5.2: *Number of living children and number of sons to those (a) who took to contraceptive appliances, (b) who preferred sterilization, and (c) who merely showed favourable response*

No. of children	Number living			Number of sons living		
	a	b	c	a	b	c
0	—	—	4	5	3	5
1	12	1	15	24	11	21
2	21	4	19	25	23	19
3	16	11	26	12	21	25
4	8	26	34	13	24	34
5	12	24	38	4	8	41
6	7	20	36	—	2	34
7	3	5	16	—	—	24
8 and over	4	1	25	—	—	10
Total	83	92	213	83	92	213
	Total = 388 cases			Total = 388 cases		

on an average, and the corresponding group preferring sterilization had 4.7 children. Fourteen per cent of the users of contraceptive appliances had only one child, and 40 per cent had two or less number of living children. Among those who preferred sterilization only five per cent had two or less number of children.

Among the 54 sterilized, 44 men had undergone vasectomy, and 10 women salpingectomy. The ages of the sterilized males and females were as given

in Table 5.3. In the same table, in the last column, are given the ages of the wives of the sterilized men; it was their capacity for reproduction that was to stop in future. The average age of the sterilized males was 39.3 years and of the sterilized females it was 34.5 years. The average age of the wives of the sterilized men was 33.3 years. The difference though small can be significant as regards the measurement of its effect on birth rate.

TABLE 5.3 : *Age composition of the sterilized men and women and of wives of the men*

<i>Age group (in years)</i>	<i>Males in Manchar</i>	<i>Males from outside Manchar</i>	<i>Females in Manchar</i>	<i>Wives of the sterilized males in Manchar</i>
23—27	1	—	—	4
28—32	4	21	4	15
33—37	12	53	3	16
38—42	15	48	3	7
43—47	8	42	—	2
48—52	3	15	—	—
53 and over	1	11	—	—
Total	44	190	10	44

After hearing about the facilities available at the R.H.I., a number of men from the areas in the vicinity of Manchar came to the R.H.I. for sterilization. Up to the end of 1961, there were 190 such men.²⁰ Their distribution by age at sterilization is presented in Table 5.3. Majority of the men got sterilized in the age-period 33 to 47, and their average age was 40.2 years.

The number of children born, the number of children living, and the number of sons to men and women in Manchar who got sterilized in the R.H.I. are presented in Table 5.4. The average number of living children to those who got sterilized was 4.9. The average number of children to outsiders who came to the R.H.I. for sterilization was 5.2. As can be easily seen, these sterilizations were not likely to affect the birth rate appreciably. (See footnote 17.)

Besides the 54 persons from Manchar that got sterilized, there were 46 couples who preferred sterilization but did not get it done. Under various pretexts they postponed the operation. They seemed susceptible to sterilization at the beginning but cooled off by the end of the project; they even

²⁰ The 190 cases of vasectomy from outside Manchar were important for the study of motivation towards sterilization spread in the nearby areas due to establishment of the R.H.I. This would have found a place in this report if there was no other agency besides the R.H.I. that spread the knowledge regarding contraceptives and provided the facilities for sterilization. From 1960, however, the government was also attempting to spread the knowledge regarding family planning and hence it became difficult to calculate the effect of the facilities offered by the R.H.I.

avoided enquiries regarding the matter. Here it is worth noting one incident that gave a set-back to the work of popularizing sterilization.

TABLE 5.4 : *Distribution of the 54 sterilized persons in Manchar and of 190 men from outside Manchar, according to number of ever born and living children and number of sons*

No. of children	Distribution according to			
	Children born to males from Manchar	Living children to males from Manchar	Living children to males from outside Manchar	Sons to males from Manchar
0	—	—	—	1
1	—	—	—	4
2	1	1	3	16
3	4	6	10	14
4	9	15	39	12
5	12	15	52	5
6	12	11	40	1
7	11	5	15	1
8	3	—	31	—
9	1	1	—	—
10 and over	1	—	—	—
Total	54	54	190	54

In August 1959, among the vasectomies that were conducted, there were three septic cases. They needed a special treatment. They were not cured completely for about two to three months after the vasectomy. The persons were much perturbed by this incident, and though such complication never arose in any other case, this had its effect on the number volunteering for operation, for some time. During the following eight months, there came to the R.H.I. only two cases from Manchar for vasectomy. During this period, however, nine men from Manchar got vasectomized from a local private practitioner who obtained training in the surgical operation under one resident surgeon of the R.H.I. This practitioner used to charge fees for the operation. The men undergoing surgical operation from the practitioner are included in the 54 cases described above. They are also included in the 20 cases shown against the year 1959 in Table 5.5.

Such was the performance of stage two of the experiment.

The third stage of the project consisting of revisits, began in March 1959. By August of the same year, there seemed hopes of getting more people for the practice of family planning. The above-mentioned set-back proved temporary. Many outsiders came to the hospital for vasectomy even after the incident; it helped to keep the project going. The number of vasectomies undergone in various calendar years by the residents of Manchar as well as outsiders are set out in Table 5.5.

TABLE 5.5 : *Vasectomies undergone by residents and outsiders in Manchar during 1959, 1960, 1961*

<i>Year of vasectomy</i>	<i>Manchar</i>	<i>Outside</i>
Before 1959	8	—
1959	20	25
1960	13	118
1961	3	47
Total	44	190

As for the revisits with regard to contraceptive appliances, it was worthwhile noting the total number of women practising various contraceptives and the duration of their practice. During the second stage, there were 78 couples who had chosen contraceptive appliances for limiting the size of their families. During the third stage, this number increased to 110. But at no time did the number of actual users exceed 34. There were continuous drop-outs and new acceptors. On the whole the number of hopeful cases was less than 20, and the others did not seem to take the subject seriously.

In Table 5.6 is given the distribution of 110 users of contraceptive appliances, according to duration in months for which they used the appliances. Fifty per cent of the users dropped the practice within three months, as will be seen from this table.

TABLE 5.6 : *Distribution of users of contraceptive appliances according to duration of use*

<i>Duration of use (in months)</i>	<i>No. of users</i>
1	13
2	31
3	10
4	13
5	7
6	8
7	5
8	1
9	2
10	1
11	3
12 and over	16
Total	110

At the end of 1961 when the project was closed, there were only 18 users of the appliances, most of whom had used them for more than 10 months. The average duration of use was 16 months. The performance with regard to practice of appliances thus proved disappointing. The repeated visits

of midwife-investigator were not welcome, and the experience suggested that a very patient plodding was necessary to popularize appliance methods. Moreover, even this plodding became well-nigh impossible during the last few months, and it seemed that the spread of other contraceptives might have to await more education, if not sophistication, among the small-town population. The results of the experiment in Manchar had to be judged by the few sterilizations conducted among the residents. However, at the present levels of motivation and conditions of living, people seemed to choose surgical means a little too late to affect the birth rate appreciably.

The effective use of appliance method was bound to affect the fertility performance of women. But in the absence of any serious practice, there was no point in trying to measure the effect. Further, the available measures could not indicate small declines in fertility. The number of users that we had was very small, and when distributed over various age-groups, it was reduced to a still smaller number. Moreover, the period under study was small, and hence the likely effect could not be appreciable. Still, purely for theoretical interest, two ways of measuring the effect are mentioned here. One approach was to get the proportion of women in different age-groups that had a child during the year 1961, and compare it with the proportion expected to have a child had they not practised contraception. The difficulty, however, was in getting the expected proportion of women that could have a child during the year 1961, because of the large standard errors of the estimated age-specific fertility-rates. It is quite clear from Appendix B₃ of Chapter Three, that with a sample of 1,000 women, it was not possible to detect with this method a fall in birth rate of the order of even 20 per cent. A rough measure on the same lines was, however, calculated for the women from couples who used contraceptive appliances or got sterilized. Column 2 of Table 5.7 gives the age-specific fertility rates for women during the year of initial enquiry, i.e. 1958-59. In column 3 are the fertility rates for women in the year 1961, after making allowance for the new entrants into reproductive period. The difference between the rates, has been statistically tested and found to be non-significant.²¹ In column 4 of the table are given the fertility rates for women who admitted the practice of contraceptive appliances, or who stopped child bearing due to sterilization sometime during the three years of our project. The performance of such women during the three years of experiment (namely 1959, 1960, 1961) was averaged and attributed to the age-year as in 1960. The fertility rates are low for the first four age-groups, but for the last age-group the rates are much higher for users and the sterilized together. The latter seemed to be due to the select few who

²¹ It was very difficult to get a decline in fertility with the effort of about two years and that too mostly through sterilization. Those who got sterilized had very often a child during the three years of the experiment and the effect of their action could be seen only at the time when the expected children in future would not be born.

intended to use family-planning appliances or who got sterilized at advanced age. They were likely to be very fertile and they either failed to apply the methods successfully, or got sterilized after a delivery, or their husbands got sterilized as they were having babies. Their number also was small as will be seen from the figures given in column 5 of Table 5-7.

TABLE 5.7 : *Age-specific fertility rates for married women in Manchar in (i) the year of enquiry (1958-59), (ii) in 1961, and (iii) average rates during 1959 to 1961 of those practising family-planning or -limitation*

Age group	Fertility rates per 1,000 married women in the year of enquiry 1958-59	Fertility rates in 1961 per 1,000 married women	Fertility rates for users only (including sterilized)	No. of users (including sterilized)
Below 18	150	163	No users	—
18—22	258	241	229	26
23—27	295	289	246	32
28—32	264	278	208	53
33—37	176	162	167	33
38—42	103	94	167	18
Total				162

A point is to be noted about the rates in column 4 of Table 5-7. These rates refer to women who reportedly tried to practise contraception, or who stopped child-bearing through sterilization. Such women were therefore different from the general group of women in the sense that they were motivated towards the practice of family planning. Moreover, they were very often those who were in the fecund period of the reproductive life. The fertility rates in columns 2 and 3 refer to women in fecund as well as infecund period of their reproductive life.²² Users were often those who were in the fecund period, and hence they did not represent the general group of women. However, the period of reference for the fertility rates of women in column 4 is three years. Had it been smaller, say, a year, the comparison of the fertility of women from this group with that of the general group, could not have been valid. But by considering three years' average fertility, fecund and infecund periods of the users are considered, and hence the comparison becomes valid.

²² Here the reference is to the period of amenorrhoea which follows conception. During nine months of pregnancy, a woman need not conceive again. Even after delivery, there is an infecund period and a woman is immune from another conception. This period though varies from individual to individual, is roughly about a year on an average for women in these parts of the country. This period along with that of pregnancy gives the infecund period to be about 20 months on an average. This length of the infecund period should be kept in mind while calculating the effectiveness of contraceptives. The exposure to the risk of pregnancy begins after the infecund period is over.

This analysis brings out the effect of practice of contraception. From the comparison of columns 2 and 3 of Table 5·7, it is possible to have some idea of the change that occurred with the spread of family-planning knowledge. Obviously, there was no appreciable effect on the fertility of women. Comparing columns 2 and 4 of the table one could get some idea of the effectiveness with which the 'users' practised contraception. The ratios of figures in column 4 to those in column 2 of the table, after subtracting from unity, give the proportion of decline in fertility. This multiplied by the proportion of women in each age-group, who could be motivated to use contraceptive appliances, may yield a measure of the decline in fertility as a result of spread of family-planning knowledge. The values so calculated are shown in column 6 of Table 5·8. Thus there are two indicators of the result of the spread of knowledge. The first indicator is the set of figures in column 3 of Table 5·7 compared with those in column 2 of the table. The figures in column 6 of Table 5·8 form the other indicator. If the proportion of women admitting the practice is different from the proportion of actual users, or, in other words, if a proportion of women hides the practice of contraception, the second indicator will fail to take account of their practice.

TABLE 5.8 : *Calculations to show the decline in fertility due to users of contraceptive appliances and the sterilized*

<i>Age group</i>	<i>No. of users of contraceptive appliances and of the sterilized</i>	<i>No. of women</i>	<i>Proportion of the users to total women</i>	<i>Percentage decline in fertility among those taking some action</i>	<i>Col. 4 × Col. 5</i>
18—22	26	356	0·07	11·24	0·79
23—27	32	268	0·12	16·61	1·99
28—32	53	292	0·18	21·21	3·82
33—37	33	165	0·20	5·1	1·02
38—42	18	174	0·10	0·00	0·00
Total	162	1255	0·13		

Fourth-stage enquiry

Results of the fourth stage of enquiry were partly presented above while measuring the effect of the spread of knowledge regarding family planning on the fertility rates. A very important part of the work of the fourth stage consisted of the enquiry into the after-effects of sterilization, results of which have been presented in the next chapter.

Besides the above-mentioned enquiries, in the fourth stage an attempt was made to know how far the people in Manchar knew about the government policy regarding payment to those who got sterilized. From November

1960, the payment of Rs. 20 was announced by the Government of Maharashtra State, in compensation for the work-days lost in taking rest after sterilization. It was known to everybody in the town, but nobody was poor enough to be induced to sterilization just for the money offered.

Thus the important aspects of the work-programme can be summarized briefly as follows :

(i) People rarely took advantage of the free facilities for family planning, offered at the clinic of the medical centre.

(ii) Individual approach had to be used to popularize family planning or family limitation. This resembled the situation at the department of public health that tried to popularize family planning through individual approach. It facilitated comparison between the performance in Manchar and that of the department of public health.

(iii) In a town with about 8,000 population, 18 couples who were genuinely interested in the practice of contraception, could be found during three years. Besides these, there were 54 persons that got sterilized. This amounted to a little more than two sterilizations per thousand of population per annum. In 1960, in the State of Maharashtra, the district of Ahmednagar was supposed to have the best performance as measured by the number of sterilizations conducted in the camps held in the district. For the district as a whole, about 1.2 sterilizations were performed per thousand of population in 1960. Set against this, the performance in Manchar did not seem discouraging. It meant that a hopeful beginning was made. The near future might reveal how far the family-planning movement has taken root in Manchar.

APPENDIX A₅

Questionnaire No. 2 for the Second-Stage and the Third-Stage Enquiry

First visit

- Date of interview
- Address of the interviewed
- Head of the family
- Caste
- Occupation of the head
- Annual income of the head
- Name of the interviewed
- Age of the interviewed
- No. of sons living/dead
- No. of daughters living/dead
- No of years since married
- Whether informed about contraceptives

Ages of the living
Ages of the living

Questionnaire continued

- If yes, which contraceptives
 Whether the interviewed had practised any method
 If yes, details regarding the practice
 If not informed, information to be given and reactions to be noted.
 While informing, did the interviewed show any interest in the methods ?
 Which methods ?
 Did she take any action ?
 Did she take a pessary ?
 Did she learn how to fit it ?
 Was she successful ?
 Was she given foam tablets ? How many ?
 Was she given the jelly ?
 When was she requested to come to the hospital ?
 When did she have her last menses ? (Date)
 Had she ever discussed family planning with her husband ?
 Did he agree to the practice ?
 Did the couple know about sterilization ? How long ?
 What were their reactions to vasectomy ?
 What were their reactions to salpingectomy ?
 Had they any fears about sterilization ?
 What kind ?

Second visit

- Date
 Did the interviewed practise the method preferred last time ?
 How often was the appliance used during last week ?
 If not used any time, why so ?
 Did the interviewed think that it was inconvenient to use it everytime ?
 What were the inconveniences ?
 Did the interviewed think of changing the method ?
 All the questions of the Second Visit were to be repeated for all the subsequent visits.

*Questionnaire used for the enquiry into**After-effects of vasectomy*

(For those who had undergone vasectomy)

- Date of interview
 Name
 Place of residence
 Address
 Age at present
 Educational level

Questionnaire continued

Date of vasectomy

Occupation and yearly income

Village or town where vasectomy was conducted

Troubles or complications immediately after the vasectomy within the first two weeks. The kind of troubles and complications. Troubles later or at present.

If any trouble :

- (a) Is it after certain movements ?
- (b) Is it after or during sexual intercourse ?
- (c) Is it after physical exertion ?
- (d) Is it in any other situations ? Describe.

If he had no trouble currently, did he have it any time after the vasectomy ?

Has there been any change in the sexual desire after the vasectomy ?

Describe the change. (Mention intensity and also duration)

If there is any change, is the desire strengthened or weakened ?

What is the coital frequency now per week ?

How much was it per week before vasectomy ?

If the desire is strengthened :

What are the likely reasons for this ?

- (a) Is it because the fear of having children has gone ?
- (b) Is it because there is no worry on any account ?
- (c) Is it because his health has improved ?
- (d) Or has there been more enthusiasm ?
- (e) Or is it due to any other reasons ? Describe.

If the sexual desire is weakened :

- (a) Is it due to bad health ?
- (b) Is it due to mental weakness or nervousness that is acquired after the surgical operation ?
- (c) Is it due to advancing age ?
- (d) Is it due to any other reasons ? Describe.

Any repentance for having undergone vasectomy ?

If repenting :

What are the likely reasons ?

Is it because :

- (a) His health deteriorated
- (b) His wife is not satisfied
- (c) His children are not having good health
- (d) His wife is not keeping good health
- (e) Others (Describe)

At the time of vasectomy :

How many (living) sons did he have ?

How many (living) daughters did he have ?

Questionnaire continued

How many living sons does he have now ?

How many living daughters does he have now ?

The following question was introduced by the surgeons a little later in Sangli enquiry referred to in the next chapter.

Was there any change in the sexual organs after the vasectomy (i) in its size, or (ii) in its shape ?

After-effects of Salpingectomy

(For women who had undergone salpingectomy)

Date of interview

Date of salpingectomy.

Name of the interviewed

Name of the husband

Her address

Her age and education

Husband's age and education

His occupation and yearly income

Occupation of the interviewed if earning

Her annual income if earning

Place of surgical operation

Any physical trouble

after the operation (not existing before). Describe.

If physical trouble when did she get it ?

- (a) After some particular gestures or actions
- (b) After household work
- (c) After work either on the farm or outside home
- (d) After sexual relations
- (a) Other occasions (Describe).

If no physical trouble now, had she any trouble any time before? When ?
How long ? What kind ?

Is there any change in the sexual desire after the operation ?

Before sterilization :

- (a) Had she any financial strain ?
- (b) Was she in trouble due to poverty ?
- (c) Was she tired of child-bearing ?
- (d) Did she feel like avoiding sexual relations ?
- (e) Did she avoid sexual relations because they caused pregnancy ?
- (f) Did she have any physical or mental trouble due to sexual relations ?

Questionnaire continued

If mental trouble what kind ?

- (a) No zeal for doing anything
- (b) Irritability
- (c) Nervousness
- (d) Others (Describe)

Did she have any physical trouble like

- (a) Pain in the waist
- (b) Physical pain elsewhere
- (c) Feeling of tiredness
- (d) Others (Describe)

After sterilization :

- (a) Has she a feeling of improved financial circumstances ?
- (b) Does she avoid sexual relations ?
- (c) Does she have some physical or mental trouble after sexual relations ?

Describe the kind of mental trouble

Describe the kind of physical trouble

Number of sons and daughters at the time of sterilization

Number of sons and daughters after the sterilization.

Note the change if any in regularity and the extent of bleeding in menstruation.

APPENDIX B₅*Vasectomy Camps*

In the month of November 1960, the Government of Maharashtra State celebrated, for the first time, a vasectomy month, when from each district in the state 600 vasectomies were to be conducted. Though the state government recognized sterilization as the accepted method since 1957, a state-wide vigorous programme of limiting the size of family through vasectomy was launched only in 1960. A number of vasectomy camps were held in the state; some attempts were also made to popularize methods of contraception. Information regarding vasectomy cases conducted in the camps, provided enough material for scrutiny from the research point of view. There were two sides of the technique of vasectomy camps that needed careful examination. One was the administrative side and the other included analysis of the data regarding men that had undergone vasectomy. It is not proposed to discuss here the administrative side of the camps. As for the data regarding the cases of vasectomy, a register was maintained with each district health officer in the state in which the names and addresses of all men volunteering for vasectomy were noted. The ages of these men, sexwise living issues to them, their occupation and annual income, and name of the surgeon conducting surgical operation were also noted in the registers. From these data it was possible to know the categories of men who were

motivated towards vasectomy. For this purpose, only one district from Maharashtra State, namely Ahmednagar, which had the largest number of vasectomies during 1960, was selected. Data available for this district till January 1962 were analysed and are presented here.

There were 3,465 vasectomies conducted in 41 camps held in the district of Ahmednagar during the period July 1959 to 30th January 1962.²³ The number of camps held in each calendar year and the number of vasectomies in the year are set out in Table B₅.1. It is obvious from the table that the largest number of vasectomies was conducted during the year 1960. At this time the administrative staff of the district included men who were specially interested in the family-planning programme. Besides the department of public health, some members of the staff from the other departments of the government like the revenue department including block development officers and others, helped to make the programme a success.

TABLE B₅.1 : *Number of vasectomy camps and the number of vasectomy cases conducted in various calendar years*

<i>Year</i>	<i>No. of camps</i>	<i>No. of vasectomy cases</i>
1959 (July to December)	2	117
1960	18	2,104
1961	11	882
1962 (Only January)	10	362
Total	41	3,465

Table B₅.2 shows the number of vasectomies in each of the 41 camps, the duration of the camp, the number of surgeons who actually participated in the surgical work, and the maximum number of vasectomies performed by any one surgeon in a camp. From the figures in the table, one can obtain some idea of the enthusiasm with which the surgeons worked. In some of the camps a single surgeon performed as many as 76 vasectomies in a day. This, of course, was not usual.²⁴

In these camps men were considered to be eligible for vasectomy if they satisfied the following criteria :

a) Willingness for the operation shown by the consent-forms meant for the purpose. The consent-forms were signed by both the husband and wife concerned.

²³ The length of this period was about the same as that of the scheme in Manchar after collection of the basic demographic data.

²⁴ It is relevant to note that undertaking such a large number of vasectomies during a day was mainly because of the special circumstances at the camp. Sometimes it was due to an unexpected number of men attending the camp. On such occasions, it was not convenient to extend the duration of camp. It was also not possible to disappoint the volunteers by sending them back.

TABLE B_{3.2} : Number of vasectomies performed in the camp, by duration of the camp and number of surgeons available

Serial No. of the camp	Name of the village or town of camp	Camp No.	Total No. of vasectomies	No. of participant surgeons	Average No. of vasectomies performed by a surgeon	Maximum No. of operations performed by a surgeon during the camp	Duration of camp in days
1	Ahmednagar	1	208	N.A.	—	—	2
2	"	2	541	23	23.5	89	3
3	Chonchondi Patil	1	18	N.A.	—	—	1
4	"	2	6	N.A.	—	—	1
5	Walki	1	11	1	11.0	11	1
6	Jamkhed	1	125	8	15.6	39	2
7	Kharda	1	85	4	36.0	76	1
8	"	2	59				
9	"	3	13				
10	Karjat	1	101	N.A.	—	—	1
11	Mirajgaon	1	90	—	—	—	—
12	"	2	8	2	4.0	4	1
13	Kolpewadi	1	34	4	8.5	15	1
14	Kopargaon	1	72	N.A.	—	—	2
15	"	2	132	N.A.	—	—	1
16	"	3	47	6	7.8	21	1
17	Newase	1	161	N.A.	—	—	1
18	"	2	43	8	5.4	17	1
19	Parner	1	106	7	15.1	37	1
20	"	2	47	3	15.7	30	1
21	Takli	1	28	3	9.3	18	1
22	Miri	1	36	9	4.0	11	1
23	Pathardi	1	216	9	24.0	64	1
24	Raburi	1	86	11	7.8	25	1
25	"	2	37	7	5.3	13	1
26	Walan	1	11	1	11	11	1
27	Wambori	1	19	2	9.5	13	1
28	Sangamner	1	280	15	18.7	109	2
29	"	2	26	4	6.5	8	1
30	Balam Takli	1	50	5	10.0	16	1
31	Shevgaon	1	280	10	28.0	65	2
32	Pimpalgaon Pisa	1	10	1	10.0	10	1
33	"	1	8	N.A.	—	—	—
34	Shrigonda	1	46	5	9.2	16	1
35	Kolgaon	1	76	N.A.	—	—	1
36	Pravaranaagar	1	45	N.A.	—	—	2
37	Shrirampur	1	64	5	12.8	25	1
38	Tilaknagar	1	114	N.A.	—	—	—
39	Akola	1	73	N.A.	—	—	—
40	"	2	29	N.A.	—	—	—
41	"	3	24	N.A.	—	—	—
Total			3,465				

- (b) Husband's age 35 years.
 (c) Wife's age 30 years.
 (d) They were to have at least three children of whom at least one was to be a boy and the youngest child aged five and above.
 (e) If the above-mentioned qualifications were not satisfied, the relevant couple had to bring a certificate from a doctor to the effect that the man could undergo vasectomy.

The following data could give an idea as to how far the men undergoing vasectomy satisfied the criteria cited above.

The age composition of the 3,465 men who got sterilized in the vasectomy camps, is presented in Table B₅.3. As will be seen from the table, the

TABLE B₅.3 : *Age distribution of the sterilized men*

<i>Age group</i>	<i>No. of sterilized men</i>
23—27	10
28—32	360
33—37	955
38—42	1,100
43—47	610
48—52	284
53—57	76
58—62	22
63—67	2
68+	2
Not reporting	44
Total	3,465

largest number of vasectomy cases came from the age-group 38 to 42, and the next biggest number was from the age-group 33-37. The average age of the sterilized was 39.7 years. Four men got sterilized even when they were above 62 years of age, and more than 200 men out of 3,465, were above 50 at the time of sterilization. It was observed that from 1959, the average age was gradually coming down, though very slowly, as shown in Table B₅.4. There was a decrease of one year and a quarter in the age of the

TABLE B₅.4 : *Average age and the number of living children to those sterilized in various calendar years*

<i>Calendar year</i>	<i>Average age of the sterilized</i>	<i>Average No. of living children</i>
1959	40.1	5.7
1960	40.0	5.4
1961	39.4	5.1
1962	38.9	5.1

sterilized during about two years and a half. The average number of living children to the sterilized also declined during this period as will be seen from Table B₅-4. The reason for this decline could be explained partly by a decision of the government in December 1961²⁵ to pay men aged up to 45 only, Rs. 10 as a compensation for the loss of wages while taking rest after the vasectomy. Still, there being no such rule till the end of the year 1961, few cases in the sample were affected by this decision. The possible reason for the decline in the ages was therefore the obvious popularity of vasectomy which was spreading to younger ages. The average number of male and female living children to the sterilized men in various age-groups, are presented in Table B₅-5. The minimum number of living children was

TABLE B₅-5 : Average number of living children to sterilized men in different age groups

Age group	Average number of living children			No. of men
	Male	Female	Total No. of living children	
23-27	2.1	0.5	2.6	10
28-32	2.6	1.5	4.2	360
33-37	2.9	1.9	4.8	955
38-42	3.2	2.2	5.4	1,100
43-47	3.4	2.6	6.0	610
48-52	3.5	3.0	6.4	284
53-57	3.7	3.0	6.7	76
58-62	3.9	3.0	7.0	22
63-67	2.0	3.5	5.5	2
68 and above	4.0	5.5	9.5	2
Not reporting	3.3	2.8	6.0	44
Total	3.1	2.2	5.3	3,465

2.6 for the youngest age-group among the sterilized, namely 23-27. The number of living children increased with the age of the sterilized. One interesting point to be noted about the children to the sterilized was the predominance of sons among the children. The average number of sons was 2.10 even for the youngest age-group 23 to 27, and it increased to a little less than four for older ages, while the number of daughters was uniformly smaller than the number of sons for any age-group of the father.²⁶

²⁵ It was observed by the author in some of the very recent camps held in the district of Poona that there was hardly a case of a man above 45 years of age undergoing vasectomy. It probably meant that men misreported their ages and a possibility of getting the so-called correct age-reporting was probably lost after December 1961.

²⁶ Here an interesting point may be noted. Whatever the preference for male and female children, the sex-ratio of the future will not be affected by any family-planning programme, as birth-order and sex of the birth are not correlated. It could be statistically shown, for instance, that if people stopped child bearing soon after getting one, two, or a specific number of sons, the sex-ratio of the total population remained unaffected.

The preference for sons among fathers of any age-group was very marked. The number of male and female children to fathers of various ages were analysed to get an idea about the extent of preference. All these data are not presented here. Only a part of the data regarding the number of fathers in various age-groups, which got sterilized even when they had no son or no daughter, or when they had one son or one daughter, is presented in Table B₅.6. There were only four fathers who had no son when they

TABLE B₅.6 : Number of sterilized fathers with no child or one son or daughter

Age group of the fathers	Number of children			
	0		1	
	Son	Daughter	Son	Daughter
23—27	0	5	0	5
28—32	0	52	22	132
33—37	3	97	35	282
38—42	0	90	40	260
43—47	1	29	23	109
48—52	0	10	12	52
53 and over	0	4	1	12
Total	4	287	133	852

got sterilized, while there were 287 fathers who got sterilized when they had no daughter. Similarly, there were only 133 fathers with one son when they got sterilized, while 852 fathers got sterilized when they had one daughter. These data clearly bring out the fact that 'male issue was the real issue', for most fathers. It was quite possible that a large proportion of people were not motivated towards sterilization because they had not the number of sons desired by them. Thus the sex-preference for the children hindered the promotion of family-planning programme to a large extent.

Socio-economic status of the men that got sterilized in vasectomy camps could be known from the data presented in Table B₅.7. and Table B₅.8. The distribution of sterilized men according to their occupation in Table B₅.7 shows that about 59 per cent of the men followed agriculture. This was the largest single occupational group getting sterilized. The next largest group consisted of those who lived on salaried services. They included about 16 per cent of the sterilized men. About three per cent of the sterilized men lived by artisan services and two per cent and a half depended for living on trade and transport.

Distribution of the sterilized men according to their reported income is presented in Table B₅.8. For a major part of the period during which

TABLE B₇: *Percentage distribution of sterilized men according to their occupation*

<i>Occupation</i>	<i>Percentage distribution</i>
Agriculture	59·0
Primary production other than agriculture	0·0
Other production	1·8
Artisan services	3·3
Trade and Transport	2·5
Salaried services	16·2
Others	5·7
Not reporting	11·5
Total	100·0 = 3,465

TABLE B₈: *Percentage distribution of sterilized men according to their annual income*

<i>Income in Rs.</i>	<i>Percentage distribution</i>
Up to 500	47·0
501—1000	40·5
1001—1500	9·8
1501—2000	1·8
2001—2500	0·4
Above 2500	0·5
Total	100·0 = 3,465

the vasectomies were conducted, men were paid money²⁷ in view of the wages the men lost while taking rest after undergoing sterilization. This payment was made only to those whose monthly income was less than Rs. 150. Only about two per cent men undergoing sterilization had reported an income above this level.

The effect of sterilization on population growth would be brought out by relating the number of vasectomies to the total population. Similarly, the effect on any community-group could be obtained by relating the number of vasectomy cases from that community to the total size of the community. It is to be remembered that the number of registered vasectomies in a camp included cases from the place of camp as well as from outsiders coming to the place of camp. There were 27 villages or towns where the camps were held in 1960. The number of vasectomy cases from these 27 villages or towns only were related to the total population²⁸ of the respective villages

²⁷ Rs. 20 from 1st November 1960 to 17th December 1961, and Rs. 10⁴ from 18th December 1961 for those who were 45 and below.

²⁸ Population figures of 1951 were used as those of 1961 were not yet available.
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and towns. The number of vasectomies per thousand of population are shown in Table B₅.9. This number varied from 0.5 to 15.9. It was observed

TABLE B₅.9 : Total population in 1951 and the number of vasectomy cases per 1000 population in various villages or towns where vasectomy camps were held

Serial No.	Name of the village or town	Total population in 1951	Total No. of vasectomy cases	Vasectomy cases per 1000 of population
1	Ahmednagar	105275	175	1.6
2	Akola	5008	12	2.4
3	Balam Takli	2417	23	9.5
4	Chinchondi (Patil)	2974	26	8.7
5	Jamkhed	7025	34	8.6
6	Kharda	6894	27	3.9
7	Kolgaon	4391	27	6.1
8	Karjat		12	
9	Kalpewadi	Not available	16	Not available
10	Kopargaon	11616	42	3.6
11	Mirajgaon	4346	26	6.0
12	Miri	3343	5	1.5
13	Newasa	5175	7	1.4
14	Pravara Nagar	Not available	22	Not available
15	Parner	7501	13	1.7
16	Pathardi	9952	29	2.9
17	Pimpalgaon	3016	28	9.6
18	Rahuri	9833	35	3.6
19	Sangamner	16756	53	3.2
20	Shevgaon	7269	28	3.9
21	Shrigonda	8909	8	0.9
22	Shrirampur	16311	8	0.5
23	Takli Dhokeshwar	1765	3	1.7
24	Valki	3368	43	12.8
25	Vambori	7341	16	2.2
26	Valan	805	12	15.9
27	Tilaknagar	Not available	18	Not available

that the work of the department of public health with regard to vasectomy had more effect on small places than on bigger towns. The villages or towns were grouped according to size of population, and the number of

vasectomy cases was related to the total population of the group as in 1951 census. The relevant figures are shown in Table B₅.10. For villages with population below 1,000, the number of vasectomy cases per 1,000 of

TABLE B₅.10 : *Number of vasectomy cases per 1000 population in villages and towns of various sizes*

<i>Population of the village or town</i>	<i>No of vasectomy cases</i>	<i>Vasectomy cases per 1000 of population during 1951-61</i>
— 1,000	12	15.9
— 3,000	52	6.6
— 5,000	124	5.2
—10,000	209	3.1
		Manchar 5.6
Towns with 10,000 and over	103	2.4
City with 100,000 and over	172	1.6

population was 15.9. This number gradually decreased to 1.6 for the city of Ahmednagar with a population of over 1,00,000. This was due probably to the effect of propaganda getting diffused in bigger towns. When the number of vasectomy cases conducted in Manchar, presently under report, was related to the total population of Manchar in 1951, the figure of the vasectomy cases²⁰ obtained was 5.6 per thousand of population. This figure could be compared with the figure of 3.1 vasectomies per 1,000 population in Table B₅.10 for the towns with population between 5,000 and 10,000.

Generally it could be remarked that the number of 5.6 vasectomies per thousand of population conducted in Manchar was not disappointing when compared with the performance of the department of public health in towns of population 5,000 to 10,000. In fact the number of vasectomies in Manchar was excelled only by that in smaller places and rural areas.

The distribution of vasectomy cases in various sub-divisions (talukas) of the district of Ahmednagar is presented in Table B₅.11. The highest number of vasectomies in one sub-division is more than three-and-a-half times the lowest number found in other sub-divisions. It is very interesting to calculate the possible number of vasectomies in the district if its popularity, evenly spread over the sub-divisions, had been as high as 4.7 vasectomies (the highest attained in the present case) per thousand of population during two years and a half. It meant conducting over 2,652 vasectomies in the district annually at the prevailing level of highest motivation. Of course this cannot describe a long-term programme year after

²⁰ It is worth noting that here only the vasectomies were taken into consideration and not the female sterilizations.

year. There will be new entrants among the eligible for vasectomy, and outgoers from reproduction who have to be taken into account in such calculations.

TABLE B₅.11 : *Number of vasectomies in various talukas related to the population of the talukas*

<i>Name of the taluka</i>	<i>Total No. of vasectomies in the taluka</i>	<i>Total population of the taluka in 1951 (From District Census Handbook)</i>	<i>Total number of vasectomies during 1959-61 per 1000 of population in 1951</i>
Ahmednagar	784	2,06,153	3.8
Akola	126	96,074	1.3
Jamkhed	282	59,397	4.7
Karjat	199	74,653	2.7
Kopergaon	285	1,42,858	2.0
Newasa	204	92,037	2.2
Parner	181	1,06,078	1.7
Pathardi	252	97,575	2.6
Rahuri	153	88,360	1.7
Sangamner	306	1,29,331	2.4
Shevgaon	330	88,096	3.7
Shrigonda	140	95,007	1.5
Shrirampur	223	1,35,254	1.6

CHAPTER SIX

After - effects of Sterilization

A PART OF THE FOURTH-STAGE enquiry in Manchar was devoted to the study of the after-effects of sterilization. This study gained in importance especially after the Government of India, in their national programme, recognized sterilization as one of the acceptable methods for limiting the size of family. In the present chapter, it is proposed to present the results of the enquiry into the after-effects of sterilization, after describing briefly the conditions under which the sterilizations were being conducted on a large scale by the government. Probably these conditions paved the way for this enquiry.

For conducting sterilizations on a large scale in the rural areas of the State of Maharashtra, vasectomy camps were held as described earlier. Men who volunteered for vasectomy from a number of nearby villages, were collected in one convenient place, and vasectomies were conducted by qualified surgeons. The queries from the people regarding the after-effects of vasectomy were, invariably, of a set pattern, and they seemed to represent the fears of most of those that volunteered for sterilization all over the state. The queries were: Is it possible to have normal sexual relations after sterilization? Does sterilization affect the sexual desire? Does it harm the normal behaviour of a male as a male or of a female as a female? It therefore seemed of utmost importance to get answers to these questions on a scientific basis.

Studies leading to answers to such questions as above regarding the after-effects of vasectomy are few. The enquiries made in the field related to sterilization of persons who were either mentally deficient or were physically handicapped. Sterilization as a contraceptive measure not being common among a general population, the effects of sterilization on such people had not been examined. It was therefore planned to conduct enquiries in Manchar with regard to these matters. A questionnaire was devised for this purpose which is presented in Appendix A₅ at the end of the previous chapter. The idea was to collect men who had undergone vasectomy in the Rural Health Institute to have their clinical examination by the surgeon who conducted the sterilizations. With this in view, the midwife-investigator went round the town of Manchar as well as the small towns and villages nearby and requested the sterilized men to come to the hospital for examination of the after-effects of sterilization. She explained to them the purpose of the examination.

A proper enquiry in the field could consist of (i) psycho-analytical studies, (ii) studies regarding physical changes after vasectomy, (iii) studies of the reactions of the people towards their own sterilization, and (iv) the way the society looked at those who got sterilized.³⁰ Out of these the first two needed a careful examination of the sterilized men by the experts in the field, before and after the sterilization. For instance, sterilization could produce nervousness, irritability, or physical and mental weakness. It could also produce changes in the size and shape of the organs concerned. All such possible changes needed careful observation of the conditions before and after the sterilization. Because there were no observations made regarding these matters before sterilization, such medical check-ups as above, after the sterilization, were not likely to be useful. The clinical methods thus being out of question, the only method left was the questionnaire method for conducting studies of the kind (iii) and (iv) mentioned above. The present enquiry tried to assess the reactions of the sterilized men towards sterilization. This could be easily done by a surgeon who could ask questions to the sterilized on very private matters like the sexual relations, etc. In Manchar, men did not bother to come to the Rural Health Institute for this purpose. In spite of repeated requests from the midwife-investigator, there was no response. Ninety-six men were, however, prepared to give information willingly to the midwife-investigator, on the subjects referred to in the questionnaire.

In view of the importance of the problem, it was keenly felt that the investigation of sterilized men be conducted through surgeons themselves for a bigger sample, if surgeons were available anywhere to do the field-work. Such an investigation, therefore, was arranged in the district of Sangli of the State of Maharashtra. In this district, a team of three doctors from the town of Sangli had formed a mobile unit on week-ends only, when they conducted vasectomy camps in a number of places in the district. The Gokhale Institute had a contract with them earlier to collect socio-economic information regarding the men that got sterilized. The current interest was to conduct examination of the men sterilized by these surgeons. The surgeons sent out a circular to the village officers, teachers, leaders and doctors in the places of camp whom they knew due to their earlier contacts, and they arranged to inform the men that had undergone vasectomy about their intentions to interview them. Most of the men had their operation performed by this team of doctors. The doctors then visited the villages and towns where men who had undergone vasectomy agreed to gather. The surgeons interviewed 1,191 men. In all 1,287 questionnaires were obtained; 1,191 from Sangli filled in by the surgeons, and 96 from Manchar filled in by the midwife-investigator. The questionnaires filled in by the surgeons were the same as those filled in by the midwife-investigator.

³⁰ As will be seen later, the questionnaire method needed the support of clinical findings to some extent in order to examine the effect of vasectomy on individuals. But to study the reactions of the society towards the sterilized, the questionnaire method was enough.

The two samples from Sangli and Manchar had to be treated separately. The surgeons from Sangli had no special observations to make except on the changes in the size and shape of the organs operated upon. Still the two samples were kept separate because of the differences in the two kinds of agencies conducting the investigation. It is obvious that the sample from Manchar was too small compared to the Sangli sample, and one could have better confidence while discussing the Sangli sample.

As observed from the questionnaire presented earlier, the questions pertained to :

(A) Change in the sexual desire after sterilization as felt by the interviewed men.

(B) Frequency of coitus before and after the sterilization.

(C) Change in the size and shape and strength of the sexual organ after sterilization.³¹

(D) Physical and mental troubles experienced after sterilization.

(E) Repentance or the general reactions towards the operation.

Before presenting the results regarding the above, it is proper to examine how far the interviewed men represented the general population of the sterilized. In the present conditions of the conduct of the enquiry, it was quite possible that only men with some complaint to be reported, gathered round surgeons or the midwife-investigator for interview. It was necessary to know the proportion of those with complaints among the general population of the sterilized, so that it could be checked whether the sample of men that gathered round the surgeons was really representative of the general population of the sterilized. That was not possible unless a frame for sampling was available from which a representative sample of the sterilized men could be contacted for knowing about the proportion of men with complaints. Had there been access to all the people undergoing sterilization in the district of Sangli, then the present sample could have been compared with those people. In the existing circumstances, the interviewed men from Sangli were compared with a sample of sterilized men in the district, for whom the surgeons had collected information regarding their socio-economic status at the time of the surgical operation in the vasectomy camps conducted by them. This did not seem unreasonable, as most of the vasectomies conducted on a large scale in the camps in Sangli were reportedly the work of the team of those surgeons. The distributions of the sterilized men according to age, education, occupation, income, and the number of their living children and sons, were compared with those of the sample. As for the Manchar sample, similar comparison could not be tried, as many of the interviewed men were from areas nearby Manchar, data for which were not available.

³¹ This was not included in the original questionnaire canvassed in Manchar but was added by the surgeons at Sangli later on.

The comparison of the Sangli sample as above and of a few men from Manchar proper with men sterilized in Manchar showed that the interviewed men in the present project represented fairly well the general population of the sterilized so far as the above-named socio-economic-demographic characteristics were concerned. The 1,287 interviewed men had undergone vasectomy at different points of time. The calendar years of their vasectomy are shown in Table 6.1. About 96 per cent had undergone vasectomy during 1958-61. All the vasectomy cases from Manchar belonged to the period 1958-61.

TABLE 6.1 : *Calendar years of vasectomy of the interviewed men*

<i>Calendar year</i>	<i>Sangli sample</i>	<i>Manchar sample</i>	<i>Total</i>
1950 and before	5	—	5
1951—1957	46	—	46
1958	111	3	114
1959	130	29	159
1960	700	45	745
1961	169	19	188
Not reporting	30	—	30
Total	1,191	96	1,287

The interviews were conducted during the years 1959-61. The time interval between the date of vasectomy and the date of interview, was between 7 and 24 months in the case of 84 per cent cases. The distribution of the interviewed men according to this interval is presented in Table 6.2. Less than two per cent men from Sangli, and 10 per cent from Manchar, had undergone the operation just three months before. About eight per cent of the total, and 25 per cent from Manchar sample, had completed four to six months after the operation. On the whole, this meant that the sample of men

TABLE 6.2 : *Time interval in months between the date of vasectomy and the date of interview*

<i>Interval (in months)</i>	<i>Sangli sample</i>	<i>Manchar sample</i>	<i>Total</i>
3	15	9	24
4—6	80	24	104
7—12	87	25	112
13—18	618	22	640
19—24	321	13	334
25 and above	70	3	73
Total	1,191	96	1,287

from Manchar was comparatively recently sterilized. This interval could give an idea as to how long the sterilized men had experienced the changes caused by sterilization. Four to 24 months' period was imagined to be appropriate for noting the changes due to sterilization, as the changes, if any, were fresh enough in the minds of the respondents to need a mention. Men were advised to avoid sexual relations for three months after the operation. If this was not possible, they were advised to use condoms which were supplied to them for use during this period.

In the following paragraphs it is proposed to group the interviewed men into three categories, according to the reported change in the sexual desire after the vasectomy, and to examine whether the extent of change in the desire varied according to age, education, number of living sons of the interviewed, and the time interval between vasectomy and the interview. The change in the sexual desire was also examined against the physical complaints the men had (i) immediately during the first two weeks of the operation, and (ii) the complaints that were comparatively of a permanent nature.

The interviewed men were divided into three categories according to reported change in their sexual desire. Out of 1,287 men, 654 men (51 per cent) reported a weakened sexual desire³² after the sterilization. Four hundred-and-eighty-two men (38 per cent) reported 'no change' in the sexual desire, and 143 (11 per cent) reported a 'strengthened' sexual desire. The change in the sexual desire was noted in terms of the change in the coital frequency. The enquiry regarding change in the sexual desire was not conducted on an objective basis as for instance by a psychiatrist. The answers were subjective,—just feelings of the interviewed men regarding the subject.³³ Further, it was very difficult to attribute the change in the sexual desire to a factor like vasectomy, because, even without vasectomy, age could affect the sexual desire. An enquiry on a scientific basis therefore needed a 'control group' so that the results of the present enquiry could be set against the results of the control group, which was not done in the present enquiry. On the other hand, it was not unreasonable to present the results in the present form, as it was the same set of persons reporting about the

³² It is important to state here that the weakening or the strengthening of the sexual desire was not looked upon as something desirable or undesirable. Weakening or strengthening, by itself, may not be harmful to the individual. The extent of harm or otherwise depends on the effect on the compatibility of the married partners. It only means that to conduct a proper enquiry, reactions of the males, as well as of their wives, need be examined. In the present case, wives of the sterilized men could not be interviewed for their reactions towards vasectomy.

³³ The reactions of the sterilized men could not be objective. Set against clinical findings, they could only have different implications. The discrepancy, if any, between clinical findings and the reactions of the men, could be used, if at all, to do away the ignorance of the people, so that people may get rid of wrong notions regarding sterilization. As it is at present, whatever the reactions of the people towards sterilization, they might affect the attitudes of the general population towards sterilization.

TABLE 6.3 : Change in sexual desire in various age-groups

Age group in years	No. of cases with strengthened desire			No. of cases with unchanged desire			No. of cases with weakened desire			Total		
	S	M	T	S	M	T	S	M	T	S	M	T
—37	44	1	45	153	33	186	192	11	203	389	45	434
Percentage	32.4	14.3	31.5	37.0	48.5	38.6	30.3	52.4	31.0	32.9	46.9	33.9
38—47	75	6	81	212	23	235	314	8	322	601	37	638
Percentage	55.1	85.7	56.6	51.2	33.8	48.7	49.6	38.1	49.3	50.8	38.5	49.9
48 and above	17	—	17	49	12	61	127	2	129	193	14	207
Percentage	12.5	—	11.9	11.8	17.7	12.7	20.1	9.5	19.7	16.3	14.6	16.2
Total	136	7	143	414	68	482	633	21	654	1183	96	1279
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

In addition to 1279 cases above there were 8 cases from Sangli that could not be put in the three categories according to change in the desire, S for Sangli; M for Manchar; T for total.

changes in the sexual desire during a period of about two years of the surgical operation.

In Table 6·3, the reported change in the sexual desire is shown for men in the various age-groups. The age-groups are broad, and the ages are the current ages of the men when they were interviewed. From the proportion of men reporting change in the sexual desire, it was evident that the difference in the ages of those with weakened desire and the others, if any, was negligible (see columns 9 and 12 of Table 6·3). Comparatively larger proportion of men reporting weakened desire in the age-group 48-and-above meant that the weakening of the desire could be explained, at least partly, as due to advancing age. Here the findings of a controlled group would

TABLE 6.4 : *Coital frequency before and after the vasectomy in the three categories, according to change in the sexual desire*

Frequency per fortnight before vasectomy-	Frequency per fortnight after vasectomy							Total	
	Less than						Above		Unspe- cified
		1	2	3	4	4			
<i>I. Those with weakened desire</i>									
Less than 1	14	—	—	—	—	1	—	15	
1	19	3	—	—	—	—	2	24	
2	43	60	6	—	—	—	3	112	
3	2	9	2	—	—	—	—	13	
4	25	57	91	—	2	—	2	177	
Above 4	20	32	123	16	53	33	8	285	
Unspecified	4	—	—	1	—	—	23	28	
Total	127	161	222	17	55	34	38	654	
<i>II. Those with unchanged desire</i>									
Less than 1	5	—	—	—	—	—	—	5	
1	1	8	—	—	—	—	—	9	
2	2	—	31	—	—	—	—	33	
3	—	—	—	6	—	—	—	6	
4	—	—	1	—	54	—	—	55	
Above 4	3	2	—	—	2	61	—	68	
Unspecified	—	—	—	—	—	—	306	306	
Total	11	10	32	6	56	61	306	482	
<i>III. Those with strengthened desire</i>									
Less than 1	—	—	3	—	—	—	—	3	
1	—	—	3	1	—	—	—	4	
2	—	—	1	2	10	6	—	19	
3	—	—	2	3	—	11	—	16	
4	—	—	2	—	4	38	—	44	
Above 4	—	—	1	—	—	42	—	43	
Unspecified	—	—	—	—	—	—	14	14	
Total	—	—	12	6	14	97	14	143	

have been very useful to find out whether vasectomy could weaken the desire earlier than would have been the case without vasectomy. As denoted by Table 6.3, the percentage of men with reported weakened desire is 50 in the age-group 47-and-below, and 60 in the age-group 48-and-above.

The change in the sexual desire was given a quantitative expression in terms of change in the coital frequency. In Table 6.4³⁴ the coital frequency before and after the vasectomy is given for the three groups according to change in the desire. The coital frequency was sometimes stated as two to three per week. In such cases, the frequency was taken to be 2.5 per week and was presented as the coital frequency per fortnight in the table, for convenience of the presentation of data.

It was obvious from Table 6.4 that those who reported a weakening of the desire, also reported a smaller coital frequency after the vasectomy. For this group the average frequency of coitus before the operation was 3.9 per fortnight. After the operation the average came down to 1.8 per fort-

TABLE 6.5 : Coital frequency before and after vasectomy in various age-groups

Frequency per fortnight	Age group							
	Less than 37		38-47		48 and above		Total	
	Before	After	Before	After	Before	After	Before	After
I. Number of those with weakened desire								
Less than 1	2	30	7	56	6	41	15	127
1	6	40	9	85	9	38	24	163
2	30	79	46	110	36	33	112	222
3	2	7	6	7	5	3	13	17
4	55	27	93	25	29	3	177	55
Above 4	103	13	149	20	33	2	285	35
Irregular	6	8	11	18	11	9	28	35
Total	204	204	321	321	129	129	654	654
II. Number of those with strengthened desire								
Less than 1	—	1	—	—	—	2	—	3
1	—	—	—	2	—	2	—	4
2	2	7	5	10	5	2	12	19
3	2	3	4	11	—	2	6	16
4	6	17	6	24	2	3	14	44
Above 4	32	14	57	25	8	4	97	43
Unspecified	3	3	9	9	2	2	14	14
Total	45	45	81	81	17	17	143	143

³⁴ In this table and the table following, the two samples from Sangli and Manchar are not shown separately for convenience of the presentation of data.

night. Those reporting 'no change' in the desire, very often did not state the frequency of coitus. They simply reported that there was no change. In the case of other groups, the proportion of those not stating the frequency of coitus was small.

The change in the coital frequency for the three groups with respect to change in the desire could be summarily put as in Table 6.5, which very clearly brings out the change in the coital frequency. For instance, the modal frequency group before vasectomy was at more than four copulations a fortnight. After vasectomy it came down to two copulations a fortnight for those with weakened desire. In the same table are also given the coital frequencies before and after the operation in the three broad age-groups. For the youngest age-group 37-and-below, the modal group changed from more than four copulations to two copulations; in the middle age-group also the same change was observed, while for the oldest age-group the fall was comparatively smaller in magnitude, i.e. From three to two copulations for those with weakened desire. From the foregoing discussion, it was clear that those who reported a weakened or strengthened desire, also reported, respectively, a smaller or larger coital frequency after the vasectomy.

The reported reasons for the change in sexual desire are set out in Table 6.6. Out of the 654 men with weakened desire, 284 (43 per cent) attributed

TABLE 6.6 : *Reasons reported for the weakening of the desire*

<i>Reason for weakening</i>	<i>No. of men reporting the reason</i>		
	<i>Sangli</i>	<i>Manchar</i>	<i>Total</i>
1 Bad physique	172	6	178
2 Mental weakness	40	1	41
3 Advancing age	30	3	33
4 Combinations of 1, 2, 3 above	71	—	71
5 Vasectomy alone	124	6	130
6 Vasectomy as well as others	153	1	154
7 Others	7	2	9
8 Not reporting	36	2	38
Total	633	21	654

TABLE 6.7 : *Reasons stated for the strengthened sexual desire*

<i>Reason for strengthened desire</i>	<i>No. of men reporting the reason</i>		
	<i>Sangli</i>	<i>Manchar</i>	<i>Total</i>
1 No worries of new children coming in	13	1	14
2 Better health	8	2	10
3 Both 1 and 2 above	85	4	89
4 Vasectomy	17	—	17
5 Others	13	—	13
Total	136	7	143

TABLE 6.8 : Change in the sexual desire of men with various levels of education

Level of Education	Change in desire														
	Weakened desire			Unchanged desire			Strengthened desire			Others			Total		
	S	M	T	S	M	T	S	M	T	S	M	T	S	M	T
Illiterate	254	1	255	127	8	135	28	2	30	5	—	5	414	11	425
Just literate	54	—	54	10	—	10	12	—	12	1	—	1	77	—	77
1 to 4 std.	145	—	145	96	24	120	39	1	40	1	—	1	281	25	306
5 to 7 std.	154	18	172	148	30	178	37	2	39	1	—	1	340	50	390
8 to 11 std.	8	1	9	6	3	9	5	1	6	—	—	—	19	5	24
S.S.C. and above	18	1	19	27	3	30	15	1	16	—	—	—	60	5	65
Total	633	21	654	414	68	482	136	7	143	8	—	8	1,191	96	1,287

S for Sangli; M for Manchar; T for Total,

it specifically to vasectomy. In Manchar, 33 per cent attributed the weakening of the desire to vasectomy.

Those that reported a strengthened desire were very much satisfied with vasectomy; their reasons for the strengthened desire have been presented in Table 6.7

The reported change in the sexual desire was examined for the various levels of education. The relevant data are presented in Table 6.8. As observed from the table, the level of education and the weakening of the sexual desire were related to a marked degree for the sample from Sangli, but the sample from Manchar did not show such relation. The largest percentage reporting weakening of the sexual desire was amongst the illiterate, and the percentage of those with weakened desire fell gradually with rising level of education for Sangli sample. It seemed therefore probable that despite the convincing regarding the harmlessness of the operation, psychological factors did work and people reported a weakened desire after sterilization. Otherwise there was no reason to find the kind of correlation between education and the weakening. This kind of finding was very useful and could be used to eradicate the fears regarding the operation of sterilization, in the future propaganda work.

It was suspected that a small number of living children, particularly of sons, made the people skeptical about the correctness of their action, and they reported a weakened sexual desire after the operation. But this was not supported by the data from Table 6.9 in which three categories of men according to change in the sexual desire are presented by the number of sons they had. Those with weakened desire had a slightly larger number of sons on an average, which could perhaps be explained by the slightly larger average age of those with weakened desire mentioned earlier.

TABLE 6.9 : *Percentage of men with various numbers of sons in the three categories, according to change in the sexual desire*

No. of sons	Those with weakened desire			Those with un- changed desire			Those with stren- ghened desire		
	S	M	T	S	M	T	S	M	T
0	0.7	—	0.6	0.7	—	0.6	0.7	—	0.7
1	6.5	4.8	6.4	7.3	4.4	6.9	6.6	—	6.3
2	27.3	33.3	27.6	31.9	30.9	31.8	36.0	14.3	35.0
3	33.3	33.3	33.3	29.7	25.0	29.1	32.4	28.6	32.2
4	19.4	23.8	19.6	20.0	27.9	21.2	14.0	42.8	15.4
5 and above	12.8	4.8	12.5	10.4	11.8	10.4	10.3	14.3	10.4
Total									
100.0 =	633	21	654	414	68	482	136	7	143

(S for Sangli; M for Manchar; T for Total)

There was a possibility that men suffering from some physical or mental trouble, temporarily or permanently, after the vasectomy, felt that the vasectomy affected their sexual desire. In Table 6.10 are set out the troubles the interviewed men had immediately after the vasectomy. These troubles indicate the kinds of complaints the men temporarily had.

The three groups of men reporting different kind of change in the sexual desire were divided according to whether they had any complaint about

TABLE 6.10 : *Troubles immediately after the vasectomy (During two weeks after the operation)*

Kind of trouble	No. of men with the trouble			Percentage for the total
	S	M	T	
Sepsis	45	4	49	3.8
Unhealed wound	16	—	16	1.2
Swelling	54	6	60	4.7
Pain in the waist and other parts	32	—	32	2.5
Fever	69	—	69	5.3
Others	53	10	63	4.9
No trouble	922	76	998	77.6
Total	1191	96	1287	100.0

S for Sangli; M for Manchar; T for total.

TABLE 6.11 : *The three categories according to change in the sexual desire classified according to whether they had any complaint regarding the vasectomy or not during the two weeks of the surgical operation*

Change in sexual desire	Temporary trouble during two weeks			No trouble during two weeks			Total		
	S	M	T	S	M	T	S	M	T
Weakened desire	172	8	180 (27.5)	461	13	474 (72.5)	633	21	654 (100.0)
Unchanged desire	63	10	73 (15.1)	351	58	409 (84.9)	414	68	482 (100.0)
Strengthened desire	33	2	35 (24.5)	103	5	108 (75.5)	136	7	143 (100.0)
Others	3	—	3	5	—	5	8	—	8
Total	271	20	291	920	76	996	1,191	96	1,287

(Figures in brackets are percentages. S for Sangli; M for Manchar; T for Total.)

TABLE 6.12 : *Troubles of a permanent nature after the vasectomy in three broad age-groups*

Complaints of a permanent nature	Age-groups									Total
	37 and below			38-47			48 and above			
	S	M	T	S	M	T	S	M	T	
1 Swelling	—	—	—	1	—	1	—	—	—	1
2 Pain in the waist, back and loins	18	1	19	28	1	29	11	—	11	59
3 Physical weakness	9	2	11	12	1	13	6	2	8	32
4 Loss of memory	9	—	9	2	1	3	2	—	2	14
5 Combinations of 1, 2, 3, 4, above	—	—	—	1	—	1	2	—	2	3
6 Others	10	—	10	9	3	12	2	1	3	25
7 No complaint	343	42	385	546	31	577	180	11	191	1,153
Total	389	45	434	599	37	636	203	14	217	1,287

S for Sangli; M for Manchar; T for Total.

the surgical operation or not during the first two weeks of the operation. It was observed that 27 per cent of those with weakened desire had some complaint during the first two weeks of the operation. The corresponding percentage for those with strengthened desire was about 24. Among those reporting an unchanged desire, only about 15 per cent had some complaint during the first two weeks of the operation. The relevant data are presented in Table 6-11.

In Table 6-12, the long-term complaints of the interviewed are given for three broad age-groups. The troubles of a permanent nature after the vasectomy were not so frequent, there being about 89 per cent men who had no complaint at all. Though the number of complaints from the age-group 48-and-above was slightly higher than that from the younger age-groups, the difference seemed negligible.

The men reporting changes in the sexual desire were divided into two groups according to whether or not they had any oft-occurring trouble due to sterilization. This kind of trouble could be called a trouble of a permanent nature. The relevant data from Table 6-13 show that about 12 per cent

TABLE 6-13 : *The three categories according to change in the sexual desire classified according to whether they had an oft-occurring trouble or not, after the surgical operation*

<i>Change in the sexual desire</i>	<i>Trouble of a permanent nature</i>	<i>No trouble</i>	<i>Total</i>
Weakened desire	81 (12.4)	573 (87.6)	654 (100.0)
Unchanged desire	45 (9.3)	437 (90.7)	482 (100.0)
Strengthened desire	7 (4.9)	136 (95.1)	143 (100.0)
Others	1	7	8
Total	134	1,153	1,287

(Bracketed figures give percentages)

men reporting weakened desire had a trouble of a permanent nature. The corresponding percentages for those with unchanged and strengthened desire were nine and five respectively. So partly, the reported weakening of the sexual desire could be attributed to the complaints following the vasectomy.³⁵

³⁵ It is also not impossible that those reporting weakening of the sexual desire belonged to a mentally weak category of people. Nothing, however, is known about this, as no psychological tests were ever conducted.

It was also noted whether the people repented their action after the experience of vasectomy; 92 per cent reported no repentance at all for what they had experienced. The reasons reported for repentance in the case of the remaining eight per cent in various age-groups, are set out in Table 6-14.

TABLE 6.14 : *Reasons for repentance after vasectomy in three broad age-groups**

Reasons for repentance	Age-groups in years			Total
	37 and below	38-47	48 and above	
1 Health of the man gone down	17	29	12	58
2 Dissatisfaction on the part of the wife	4	2	1	7
3 Health of the wife gone down	2	1	2	5
4 Combinations of 1 to 3 above	10	7	6	23
5 Loss of sexual desire (no reaction of the sex-organ)	1	1	1	3
6 Combinations of 1 to 3 above, though not repenting for there would not be additional children coming in	6	1	—	7
7 No repentance: More than satisfied	63	63	23	149
8 No repentance	389	424	206	1019
9 Not reporting	6	7	—	13
Total	498+2*	535+1*	251	1284+3*

* Vasectomized for reasons of health. (Age-groups here are from the ages at vasectomy and not the ages at interview.)

In the sample from Manchar, 87 men had no repentance, six did not report and three complained that their health had gone down after the operation.

Major reason for repentance seemed to be the worsening health. It was difficult to say how much worsening of health was real and how much psychological.

Notes were made on the strength of the sexual organ and on its size and shape if it had changed after the operation. The notes were, however, not based on scientific observation but on subjective judgements. The scientific basis would be to have measurements and photographs before and after the vasectomy, making allowance for the possible changes, if any, with age, etc. The observations are presented in Table 6-15.

Generally it may be remarked from the data in Table 6-15 that about 10 per cent men reported a change in the size of the organ, and about 52 per cent reported a change in the strength of the organ. The latter were probably those who reported a weakened sexual desire³⁶ after vasectomy.

³⁶ It was difficult to know how much of this was real and how much psychological, as we had no clinical observations on the matter.

TABLE 6.15 : *Change in the strength and the size of the sexual organ after the vasectomy as felt by the interviewed*

Age groups	Change in the sexual organ									Constant pain and swelling, etc.	Total
	Smaller			Larger			Unchanged				
	S.S.	I.S.	U.S.	S.S.	I.S.	U.S.	S.S.	I.S.	U.S.		
—37	16	—	—	1	1	—	103	7	289	17	434
38—47	42	—	4	—	—	1	170	7	397	15	636
48 and above	14	—	—	2	—	—	72	1	126	2	217
Total	72	—	4	3	1	1	345	15	812	34	1,287

S. S. = Smaller strength. I. S. = Increased strength. U. S. = Unchanged strength.

In Table 6-16 the relevant data are set out. A little less than half of the interviewed men did not report on the change of strength in the sex-organ after the operation, as probably they had not marked any change. Thirty-four out of 1,287 had a constant complaint regarding the operation, and they did not bother to report on the change in the strength of the sex-organ. Thus the percentage reporting on this item was small, and hence the findings were not reliable. Still, from Table 6-16, one thing was obvious that people

TABLE 6.16 : *The reported change in the strength of the sexual organ in the three categories, according to change in the sexual desire*

Change in desire	Smaller strength in the organ after the operation	Others	Those with constant complaints	Not given	Total
Weakened desire	400	33	9	212	654
Unchanged desire	10	154	22	296	482
Strengthened desire	9	43	3	88	143
Others	1	—	—	7	8
Total	420	230	34	603	1,287

reporting weakened sexual desire reported weakened strength of the sexual organ to the extent of 60 per cent, while other groups reported this only in three per cent cases.

The relation between the reported changes in the sexual desire and the time interval after the vasectomy can be assessed from the data presented

in Table 6-17. People reporting weakening of the sexual desire among groups with various intervals after vasectomy, did not show any specific trend.

TABLE 6.17 : *The relation between the time interval after the vasectomy and the weakening of the sexual desire*

Change in desire	Interval in months					Blank	Total
	0-3	4-6	7-12	13-18	19+		
Weakened desire	6	64	19	415	126	24	654
Unchanged desire	13	39	67	185	132	46	482
Strengthened desire	4	10	16	40	70	3	143
Others	1	—	—	5	2	—	8
Total	24	113	102	645	330	73	1,287

Interviewed men were asked about their wives' fertility performance after the surgical operation. Of the 1,287 interviewed men, 53, i.e. about four per cent, had an additional child after vasectomy. Out of these, 47 had it within one to nine months of the operation, and hence could be considered as in the normal course. The remaining six, however, had the child after nine months since the operation. Two had it after 10 to 12³⁷ months two after 13 to 15 months, and the remaining two after more than 16 months. The first two could be explained. As regards the remaining four, it was found that the vasectomy was done effectively in the case of two, and in the case of the other two, no medical examination was done to test the effectiveness of the operation, nor did the men concerned ask for such an examination.

So much for the data available regarding men that had undergone vasectomy. An interview with the wives of men, regarding sexual satisfaction, etc., would have been very useful, but there were difficulties in conducting the enquiries in the existing social circumstances.

To put the results of the present enquiry briefly, about half of the men undergoing vasectomy had a feeling that their sexual desire had weakened after the operation; but 284 men (i.e. about 22 per cent) out of a total of 1,287 interviewed, attributed the weakening specifically to the operation of vasectomy. With rising level of education, the number reporting weakening diminished, indicating that the fear of surgical operation in the case of the ignorant probably made them report as they did. The percentage of sterilized men that repented for having undergone vasectomy was only eight.

Before closing the chapter the author would like to emphasize that she was fully conscious that the questionnaire method did not give solutions to all scientific problems. In the present case, for instance, a scientific enquiry on a firm footing would need a number of other observations before

³⁷ After an effective vasectomy, sperms may cause pregnancy for three months. Hence these two cases of males having children after the operation are understandable.

and after the sterilization, where questionnaire method could not be of help. If anything, such results as observed in the present enquiry might suggest problems for research on a scientific basis. Further, even in adopting the questionnaire method, some scientific procedures could not be resorted to as mentioned in the relevant places in the chapter.

The useful part the enquiry could serve was the extent to which the vasectomy was acceptable to people from our areas in the conditions they were conducted. If the vasectomy was to be the chief weapon in fighting the problem of immense growth of population, it was to be acceptable firstly to the individuals; 92 per cent men were satisfied with what they had undergone. The other problem connected with this was: How did the society look at the man who was sterilized? To answer this question a separate enquiry should be conducted in the villages from which such men came. This can be tackled with comparative ease, using a questionnaire method, and it is proposed to do it sometime in future.

Data on salpingectomies

Data for 103 females that got sterilized were available. The data had exactly the same limitations as the data on vasectomies, namely (i) the absence of control group, (ii) absence of information on the attitudes towards sterilization of the married partner, and (iii) absence of clinical observations before and after sterilization regarding psychological and physiological changes. A questionnaire presented at the end of Chapter V was canvassed among 103 women that were sterilized by the same surgeons conducting the vasectomies mentioned earlier, in the district of Sangli. Interviews with those women were conducted by a nurse who also happened to be the wife of one of the surgeons.

Information regarding the socio-economic status of the sterilized women and physical and mental troubles arising after sterilization, was collected through the questionnaire referred to above. It is worthwhile noting the difference in the socio-economic groups wherefrom the samples of sterilized males and females came. The peculiar circumstances in which the male and female sterilizations were conducted caused difference in the sex and kind of persons that got sterilized. A comparison of the socio-economic status of the sterilized females and their husbands with that of the sterilized males showed that sterilized females and their husbands came from families that were better educated and better off financially.³⁸

³⁸The ages, number of living children, occupation, level of literacy, and income, of the sterilized males and females (and their married partners when necessary) cannot be compared in the present situation to assess their differential effect on birth rate. Our samples of male and female sterilizations do not necessarily represent all the rural and urban sterilizations in a given region. Especially we lack data on sterilizations of males in urban centres. Had our samples been representative, difference in the average number of children and the differential socio-economic status of the two kinds of sterilizations would have different implications for the decline in birth rate in rural and urban areas.

Information was collected on the regularity or otherwise in menstruation of women after the sterilization. Out of 103 women, 24 had either not started the menses or had them only once, and five did not report. Of the remaining 74 women, 65 had them regularly with no trouble of any kind; nine had them very irregular with one reporting very scanty and one very profuse.

Among the 103 women, 15 reported some frequent physical trouble after sterilization. Thirteen often had pain in the waist and two had general weakness. Eighty-eight had no trouble. Two reported pain in the sex-act, seven reported exhaustion after house-work, and four had trouble after heavy work.

Women were asked whether there was any change in the marital relations after sterilization. Seventy-eight reported a definite change for the better, 23 no change, and two reported worsened relations. Forty-eight of the total of 103 women reported that they abhorred sex-act before sterilization because of poverty and the fear of getting children; they had no anxiety after the sterilization. Thirty-five admitted a desire for the sex act; they had anxiety about getting additional children before sterilization.

Generally speaking there was no repentance on the part of the sterilized women for having undergone the operation.

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