

Impact of Family Welfare Programme in the Industrial Sector : An Estimate of Returns to the Management

INDUSTRIAL undertakings in India have a large scope for introducing family welfare programmes. It has often been held that workers in the industrial sector assume special significance because of their greater capacity to adopt innovative practices in order to maintain and improve their standard of living as compared to the rest of the population. Industrial efficiency, or production, seems to depend to a great extent on how best the management has been able to tackle the familial problems of its employees—often a root cause of tension, frustration and discontent amongst them. The congenial physical environment within the industrial premises provided by the management seems to be secondary in nature. It is in this context, Godrej remarked, "For industrialists active participation in family planning is both an economic necessity and a social obligation" (Godrej : 1973).

While considerable emphasis has been placed from time to time on the importance of family welfare programme for this segment of population, not much is known about its monetary benefit to the management. The present paper attempts to focus attention on this subject in order to highlight the economics of social welfare programmes among the industrial community. It visualises the Employees State Insurance Corporation (ESIC) as backbone to promote a nation wide family planning programme as recommended by Nam-

budiri and Sharma (1977). However, it is confined to Karnataka Slate and utilises the service statistics of ESIC, Karnataka. It aims to investigate the monetary benefits the management, especially, the ESIC would have, through an effective implementation of the family welfare programme amongst the industrial community.

II. Review of Family Planning Programme in Industrial Sector

A number of studies have been conducted by individual researchers, institutions and organisations; for example Nambudiri and Sharma, Sugathan and others (1977), Council for Social Development (CSD : 1976), the Gandhigram Institute of Rural Health and Family Planning (GIRHFP : 1975), Federation of Indian Chambers of Commerce and Industry (FICCI : 1974), Family Planning Association of India (FPAI : 1970s) etc. The nature and scope of most of these studies is, by and large limited to finding out knowledge, attitudes and practice (KAP) of family planning. An overview of these studies reveals that there is a lack of uniformity in organisation, administration and professional expertise. Furthermore, there is no co-ordinated effort in so far as research and dissemination of information through publication is concerned (Pareek, U and Rao, T. V: 1974). Recently, Nambudiri and Sharma (1977) conducted several case studies to evolve a national strategy for family planning programme in the industrial sector. However, for want of efforts to gather information, to assess the fertility levels among the industrial community at the national level it was not possible to evolve a practicable national policy.

III. Current Fertility and Contraceptive Behaviour Among the Industrial Workers

A study of Madura Mills Ltd., by Kurup and others (1975) found a birth rate of 34.6 and 36.8 per 1000 population in Madura and Ambasamudram units of the Mill. Sugathan and others (1977) reported the current birth rate of 30.6 in ITI, Bangalore. Although no generalisation, can be made on this basis, it is clear that the fertility among the industrial community is higher than All India Urban fertility (28.5) and more or less close to All India Rural Fertility (36.7) (G. O. I. Family welfare Programme, 1976). Since the industrial community is stated to be socially and economically better off as compared to the rest of the population, this is rather surprising. It is notable, however, that wherever family planning programme was implemented effectively, it did drop

Considerably; for example, the birth rate in Assam Tea Plantation declined to 22.7 per 1000 population in 1968 from 38.6 in 1964 (Gilroy : 1970). Equally notable is the case of Nilgiris plantations, where it declined to 25.5 per 1000 population in 1973-74 from 40.4 in 1969-70 due mainly to effective implementation of "No-Birth Bonus Scheme" by UPASI (Ridker, Ronald G : 1971).

The current practice of the three specified contraceptive methods—sterilization, IUD and Oral Pills, among ITI employees, Bangalore, was only about one-seventh (13.8%) of the total eligible couples. This is rather low compared to the high prevalence of contraceptive practice expected among the employees in the organised sector. But a significant proportion of all workers was found to be using Nirodh (18.3%) and 'other methods' (4.4%) and so the overall current practice was enhanced to a higher level (36.5%) (Sugathan *et al.* : 1975) than the level for AH India Urban (27.0%) (ORG : 1971). Obviously, because of lower proportion of effective users, the birth rate among ITI employees remained high in spite of overall high proportion of currently using contraceptives. Similarly Kurup and others (1975) reported a lower proportion (15.7%) of current effective contraceptive users (sterilization, IUD and Oral Pills) in Madura Mills Ltd., corresponded by absence of significant impact on the birth rate (34.6).

Although no effort has so far been made at the national level to assess the fertility level of industrial workers, it appears that, contrary to general expectation, the fertility level of this community seems to be in no way different from the rest of the population. Hence, an urgent need to evolve a national strategy for effective family welfare planning programme in this easily accessible section of the labour force.

IV. The Employees State Insurance Corporation (ESIC)

Under the ESIC Act, the corporation provides a compulsory integrated system of social insurance and other benefits such as health, maternity and accident benefits etc., to industrial workers, their wives and dependent children[†] for those who are earning Rs. 1000 or less per month in perennial factories using power and employing 20 workers or more. Since such employees and their dependents are entitled to receive all necessary medical care free of cost, all the expectant mothers and their children are also to be provided with adequate care, both preventive and curative, by the Corporation.

V. Findings

A. Estimated Expenditure of Medical Care to the Expectant Mothers and their Children. The details of average actual expenditure for the provision of medical care per pregnant woman during ante-natal, natal and post-natal stages in terms of number of medical attendance, costs of drugs, doctor's time and lab investigation etc., was worked out on the basis of actual data collected from ESIC sources. The costs of drugs were estimated on the basis of the wholesale purchase rate of the ESIC. The doctor's time was estimated by considering the actual time taken by them, their total emoluments and the effective working hours in a day. The details of such estimates are given below :

TABLE 1—EXPENDITURE ON MEDICAL CARE PER EXPECTANT MOTHER

Stage of care	No. of Medical attendance	Cost of Medical Care (in Rs.)		Total
		Drugs	Medical attendance + Lab. Investigation	
Ante-natal	10*	11.05	29.40	40.45
Natal	20% Hospital** delivery		40.16	40.16
Post-Natal	3***	0.83	6.00	6.83
Total		11.88	40.16	35.40

SOURCE : The figures were estimated after discussion with the E.S.I.C. officials of Karnataka State, Bangalore.

*Once a month upto 7th month of pregnancy, fortnightly during 8th month and weekly afterwards; totalling an observed average number of 10 visits per case.

**Assumed on the basis of E.S.I.C. Annual Report.

***Minimum 3 visits within 1st month after delivery.

On an average, the expenditures incurred by the Corporation are Rs. 40.5, Rs. 40.2 and Rs. 6.8 during ante-natal, natal and post-natal stages respectively. Thus, the total expenditure for these 3 stages the Corporation incurs is a minimum of Rs. 87.4 per pregnant woman.

B. Estimated Expenditure for Preventive and Curative Care Per Child upto 5 Years of Age. The average actual expenditure on preventive and curative care

per child was estimated from infancy to pre-school stage by considering the existing incidence of illness, type of illness and the requisite medical attendance by a doctor; the latter was worked out to be Rs. 2/- per patient per visit by considering his time, total emoluments and the effective working hours. Besides treatment for illness, infants and pre-school children require preventive care, including immunization, such as prevaccination, DPT, prophylaxis against nutritional anemia etc. These were quantified in terms of equivalent amounts in rupees. The details are given below :

TABLE 2—ESTIMATED EXPENDITURE ON PREVENTIVE AND CURATIVE CARE PER CHILD UPTO PRE-SCHOOL STAGE

Age (in years)	Average No. of illness per child	Preven- tive care	Estimated Cost of Medical Care per year (in Rs.)			Equivalent total value in the ini- tial year*	
			Medical atten- dence	Drugs	Total Expenditure†		
0-1	4	4.40	8.00	8.71	21.11	19.78	15.90
1-2					28.93	25.84	21.35
2-3			6.00	15.91**	24.11	21.19	15.93
3-4	3	2.20			24.11	20.99	14.34
4-5					19.29	11.63	10.36
All		6.60			117.55	104.43	77.88

*During the year of pregnancy, ten per cent discount factor is taken into account for calculation. An expenditure of Rs. 19.29 during the 4th year is equivalent to an expenditure of Rs. 10.36 during the 0th year and so on.

**The total expenditure is assumed to be in the ratios of 30 : 25 : 25 : 20 during 1st through 4th year of age.

†Taking mortality into consideration.

The total expenditure incurred by the Corporation for preventive and curative care during the given five years period comes to Rs. 117.6 per child without considering the mortality effect. When the actual proportion of surviving children from year to year was taken into account, the cost decreased to 104.4 per child. By taking the discount factor into consideration, the expenditure,

of Rs. 104.4 during the five year-period is equivalent to an expenditure of Rs. 77.9 at the initial stage itself. This means that the net economic benefit to the Corporation by way of less expenditure on medical care would be Rs. 165/- per pregnant woman for prevention of each pregnancy ending in live birth. This excludes other benefits the nation would realise by way of reduced expenditure on various welfare programmes amounting to several thousands of rupees.

C. Economics of Estimated Savings—An Illustration. As mentioned earlier, the ESIC will have a saving of around Rs. 165/- from preventing a pregnancy ending in live birth. In Table-3, the levels of current General Marital Fertility

TABLE 3—AMOUNT OF EXPECTED SAVING PER 1000 CURRENTLY MARRIED COUPLES AT VARIED LEVELS OF GENERAL MARITAL FERTILITY RATES

Level of Current General Marital Fertility Rate per 1000 women	Expected percent reduction in Fertility assumed				
	10	20	30	40	50
	Rs.	Rs.	Rs.	Rs.	Rs.
300	4950 (30)	9900 (60)	14850 (90)	19800 (120)	24750 (150)
280	4620 (28)	9240 (56)	13860 (84)	18480 (112)	23100 (140)
260	4290 (26)	8580 (52)	12870 (78)	17160 (104)	21450 (130)
240	3960 (24)	7920 (48)	11880 (72)	15840 (96)	19800 (120)
220	3630 (22)	7260 (44)	10890 (66)	14520 (88)	18150 (110)
200	3300 (20)	6600 (40)	9900 (60)	13200 (80)	16500 (100)
180	2970 (18)	5940 (36)	8910 (54)	11880 (72)	14850 (90)
160	2640 (16)	5280 (32)	7920 (48)	10560 (64)	13200 (80)
140	2310 (14)	4620 (28)	6930 (42)	9240 (56)	11550 (70)

Figures in brackets indicate the estimated no. of births likely to be saved.

Rates (GMFRs) were assumed at various levels. Accordingly, the expected reduction in fertility at 10%, 20% and 30% etc., were also assumed. Likewise, at different levels of GMFR, the equivalent savings were also worked out at various levels of fertility reduction by multiplying the expected number of births prevented to that of the total savings per birth i.e., expenditure of medical care per expectant mother during ante-natal, natal and post-natal stages (Rs. 87.4) plus curative and preventive care from infancy to pre-school stages (Rs. 77.9).

Table-3 provides data on expected benefits the management would have through various levels of contraceptive impact on fertility reduction at various levels of current fertility. For example, a study conducted in Indian Telephone Industries, Bangalore, by the Population Centre revealed a GMFR of 200 per thousand currently married women (Sugathan *et al.* : 1975). Assuming that the number of births prevented per year among them would be 20, 40, 60 and so on for the expected reduction in fertility at 10%, 20% and 30% levels etc., respectively, the benefit in terms of equivalent amount for the corresponding reduction in fertility would be Rs. 3300/-, 6600/- and 9900/-etc., respectively.

On the whole, experiences in selected industrial units in India showed evidence of potential reduction in fertility varying from 10 to 30 per cent with a moderate family planning programme. Therefore, there seems to be a need to intensify efforts in order to keep a sustained fertility reduction beyond 30 per cent. Assuming a resultant impact on fertility of 20% reduction from its original level (about 200 live births per 1000 currently married women), the monetary benefit to be derived by the management, say for a block of 50 thousand industrial workers, would be of the order of Rs. 2.5 lakhs per year. Since the ESIC covers around 5 million industrial workers throughout the country, the likely benefit to the Corporation per year would be of the order of Rs. 25 million provided the level of fertility reduction of 20% is achieved. This clearly justifies the necessity of creating family planning cells in various regions of the country through ESIC to intensify the contraceptive programme among industrial workers along with the existing medical and other welfare programmes. Such an effort would be beneficial not only to the Corporation by way of reducing the expenditure on medical care but would also contribute to the success of the country's population programme.

Concluding Remarks

We estimate that, on an average, the Corporation spends Rs. 87.4 per preg-

nant woman on ANC, Natal and Post-natal services. The Corporation's expenditure, for preventive and curative care from infancy to pre-school stage is estimated to be Rs. 104.4 per child, which is equivalent to an expenditure of **Rs. 77.9** at the initial stage itself when the discount mortality factor is taken into account. Therefore, the net monetary gain to the Corporation by way of less expenditure on medical care would be about Rs. 165/- per woman for prevention of a pregnancy. It is further estimated that a programme's impact of 20 per cent reduction in fertility would result in avoiding the cost of nearly Rs. 7000/- per 1000 currently married couples.

The ESIC covers over 5 million industrial workers in the country as a whole. This means that there would be nearly 4 million eligible couples. It is estimated that the total benefit expected by the Corporation for the country as a whole will be of the order of about Rs. 25 million per year if the fertility reduction is of the order of 20%. Such gain would accelerate if the fertility is further reduced.

Considering these facts, the effective implementation of family planning programme among the industrial workers at national and regional levels through ESIC would not cost much as compared to the ultimate multidimensional benefits the Corporation, the management, the industrial community and, above all, the nation would have. Therefore, the authors visualise the ESIC as a backbone for strengthening the nation wide family planning programme and suggest creation of separate family welfare planning cells through it to intensify the contraceptive programme among industrial workers.

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APPENDIX-1

Worked out cost per ANC check-up

<i>Sl. No.</i>	<i>Particular</i>	<i>Doctor</i>	<i>Para-Medical</i>
1.	Total approximate monthly salary (in Rs.)	1,626.00	520.00
2.	Effective time spent per day (in Hours)	4	4
3.	Total time available per month (in Hours)	26×4	26×4
4.	Cost per hour (in Rs.)	16.53	5.00
5.	Time required per ANC check-up (in Minutes)	6	15
6.	Cost per ANC check-up (in Rs.)	1.56	1.25
7.	Cost of Chemicals for investigation		0.13
	Total cost per ANC Check-up (in Rs.)		2.94

APPENDIX-2

Worked out cost for drugs for ANC and PNC care per case

Sl. No.	Name of the drugs	Quantity required	Unit cost (in Rs.)	Percent of cases required	Cost per ANC (in Rs.)
I. ANC					
1.	Folic Acid and Ferrous Sulphate Tablets	100	28.0/100	100	2.80
2.	Injections (Inferron)	10	7.47/10	20	1.50
3.	TT Injection	2	0.68/2	100	0.68
4.	Calcium preparation for 5 months	100	0.64/100	25	0.16
5.	Antibiotics Capsules (Tetracycline) 250 mg.	20	6.70/20	5	0.34
6.	Vit. B Complex and Multivite	100	3.70/100	100	3.70
7.	Analgesics (Tablets)	10	0.90/10	25	0.22
8.	Antiemetics (Tablets)	30	5.55/30	25	1.39
9.	Antacids (Tablets)	30	0.75/30	10	0.08
10.	Diuritics (Tablets)	5	1.75/5	10	0.18
TOTAL					11.05
II. PNC					
1.	Inferron injections	10	7.47/10	10	0.75
2.	Iron and Folic Acid Tablets	30	28.0/1000	10	0.08
TOTAL					0.83
GRAND TOTAL					11.88

APPENDIX-3

Worked out Cost of Medicine for Preventive and Curative Care During Infant and Pre-school Stage

<i>Sl. No.</i>	<i>Type of illness</i>	<i>Rate of illness per 1000 per year</i>	<i>Cost of Medi- cine per case (in Rs.)</i>	<i>Cost per child (including all) (in Rs.)</i>
I. Infant				
1.	Icterus (Jaundice)	75	29.85	0.22
2.	Umbilical sepsis	250	3.66	0.92
3.	Diarrhoea and Gastroenterities	500	15.14	7.57
				Total
				8.71
II. Pre-School				
1.	Measles	250	6.23	1.56
2.	URI	500	1.92	0.96
3.	UTI (Urinary Tract Infection)	25	12.44	0.31
4.	Malnutrition	100	37.43	3.74
5.	Gastroenterities	200	15.14	3.03
6.	Pertussis	200	13.90	2.78
7.	Discharge from ear	50	21.16	1.06
8.	Cold and URI	200	9.52	1.90
9.	Mumps	20	11.75	0.24
10.	Conjunctivities	100	2.26	0.23
11.	Abscess	15	6.50	0.10
12.	Scabies	130	11.32	1.13
				Total
				15.91
PREVENTIVE CARE				
I. Infant				
1.	BCG and Small Pox			0.40
2.	DPT and Polio (3 doses)			4.00
II. Pre-School				
1.	Booster dose (DPT and Polio)			2.00
2.	Revaccination			0.20
				Total
				6.60
				Grand Total
				31.22