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AVAILABILITY AND UTILISATION OF HEALTH CARE FACILITIES IN URBAN SLUMS OF DELHI: PART III

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Of the four slums studied, Mangolpuri and Balflmaran have all *the basic facilities, such as dispensaries, MCH and family planning and Anganwadi centres. No health or civic facilities have been extended by the Municipal Corporation or Delhi Administration to Seelampur (J J. Colony) or Construction Site Clusters (Nehru Place). Nearly two-third (62 per cent) of the households In slum areas are utilising health and family welfare services from purely private sources, about one-fourth (24 per cent) both from Government and private sources and only about one-seventh (14 per cent) from Government sources totally. Eighty-one per cent households avail services within a distance of 2 kms., 10 per cent within 2-5 kms. and remaining for over 5 kms. A bout 11 per cent households in income range of less than Rs.500 utilise services from Government sources. The utilisation increased to 18 per cent among people in income range of Rs.500 to Rs.1000 and to 23 per cent among those in income group of Rs.1000 and above. Maximum utilisation of all health facilities was for children.*

Many health problems, particularly in the urban slums areas, can be attributed to the ignorance of the people and their surroundings. Some problems can be influenced by medical or health services interventions, while others can only be solved by creating more awareness among the people for better and timely utilisation of existing health care facilities. To assess the prevailing situation, data were collected on the existence of health and manpower facilities in the slums and their utilisation by the community. Information was also collected on ongoing nutrition programme in the areas, its knowledge to the residents and the beneficiaries.

The observations made in the survey on the existence and utilisation of facilities form the focus of discussion in this section and is the third set of data in the series. The first set of data relates to correlates of morbidity and patterns of mortality in urban slums and the second set of data pertains to maternal and child health status and patterns of health care in urban slums of Delhi. The observations and inferences have been made in the same slums with the same materials and methods. Details of study population and methodology are described in the first part of the study.

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OBJECTIVES

The specific objectives of the survey on availability and utilisation of health care facilities in the study were: (i) to assess the existence of government health care facilities and urban slums of Delhi; (ii) to know the major source of treatment for the family members; and (iii) to have an idea of the operation of nutrition programme in the area, its knowledge to the residents and to the number of beneficiaries.

RESULTS AND DISCUSSION

Existence of Facilities

Data were collected on the existence of health manpower facilities in the different slums by contacting senior officials of Delhi Administration, Municipal Corporation of Delhi, medicos, local leaders (formal and informal), and other influential persons of the areas. Data is presented in Table 1 and discussed below:

TABLE 1
AVAILABILITY OF HEALTH CARE FACILITIES IN URBAN SLUMS OF DELHI

Type of Facilities	SLUMS			
	Mangolpuri	Seelampur (J.J. Colony)	Construction Site Clusters (Nehru Place)	Ballimaran
1. HEALTH MCH Centres*	1	-	-	1
Urban F.W. Centres**	1	-	•	1
Dispensary	2	-	-	1 (Ayurvedic)
Maternity Home	1	-	-	-
Private Clinics	50 Approx.	-	-	15 Approx.
Nursing Home (Private)	1	-	-	-
Charitable Dispensary	2	-		2
Mobile Hospital	1 twice a week for aged	. 1 Malaria van	-	-
2. MANPOWER				
Allopathic	30	-	1	4
Homoeopathic	20		-	1
Ayurvedic	15	-	1	1
Unani	5		-	7
LHV/PHN	10	-	-	3
Dais				
- Trained	12	-	-	A few
- Untrained-.	Many	6	-	Many
Compounders	A few	2	2	Many

*Delhi Administration
**Municipal Corporation
Note: in Mangolpuri, Government Hospital (100 beds) is under construction.

Mangolpuri Slums: It has all the basic facilities like government dispensaries and MCH and Family Planning Centres. In addition, quite a good number of private clinics, two charitable dispensaries and a nursing home cater to the needs of the people. A plethora of private practitioners, qualified and unqualified, belonging to different medical disciplines, ***i.e.,*** Allopathic, Homoeopathic, Ayurvedic and Unani are also available for health care facilities.

Seelampur (J.J. Colony): A few unqualified practitioners provide medical services to the residents. There is no government dispensary in the area. Spraying by malaria van is the only oositive activity in the area. No civic facilities have been extended by the Corporation, MCH Centre and the Delhi Administration's Dispensary are situated in the adjoining colony of Seelampur from where only few residents avail the services.

Construction Site Clusters (Nehru Place); One qualified and a few unqualified medical practitioners cater to primary health care needs of the people. There-is no government dispensary serving this area. Such a population has not been allocated to any of the MCH and Family Welfare Centres of the Municipal Corporation.

Ballimaran: Medical care to the people is being provided by over 15 private practitioners, mostly from recognised allopathic discipline. Some unqualified practitioners are also providing medical care services. The population is allocated to MCH and Family Welfare Centres situated in Katra Neel, Chandni Chowk and Sarak Prem Narain.

UTILISATION OF FACILITIES

After determining the existence of facilities, all the respondents were asked to report their utilisation and the findings are presented in Table 2 and discussed as follows;

i. ***Major Source of Treatment:*** Over 60 per cent of slum dwellers avail the facility of private practitioners and private nursing homes when they fall sick, while only about 14 per cent seek the services of government doctors/dispensaries and government hospitals. Another 24 per cent avail both the facilities of government doctors and private doctors. Inter-slum analysis depicts the same trend in all the slum so far as utilisation of servicedi from purely private sources are concerned, the range being 58 to 71 per cent. Wide variations are observed in so far asutilisation of services from government sources alone or combined sources, ***i.e.***, government as well as private doctors are concerned. Utilisation from government sources alone are maximum in Ballimaran (27.4 per cent) and minimum-(1.2 per cent) in Mangolpuri and reverse is the case for combined sources, /.e.39.9 per cent in Mangolpuri and 1.4 per cent in Ballimaran.

ii.***Distance Travelled:*** Over 80 per cent of the households in the combined slums utilise medical facilities within a distance of 2 kms., may it be from private sources or government sources; another, nearly 10 per cent avail it within 2-5 kms. 7

TABLE 2
HOUSEHOLD BY MAJOR SOURCE OF TREATMENT. DISTANCE TRAVELLED AND HOUSEHOLD INCOME IN URBAN SLUMS OF DELHI

Characteristic	Major source ot treatment					
	Govt, hospital	Govt, dispensary	Private hospital	Private doctor	Govt./Pvt. doctors	Total No. of households
1. Study area/slum						
Mangolpuri	0.6	0.4	12.8	46.1	39.9	243
Seelampur (JJ. Colony)	10.4	4.1	5.8	52.0	27.7	394
Construction Site Clusters (Nehru Place)	1.5	5.7	3.6	57.7	41.4	194
Ballimaran.	16.9	10.5	3.1	68.1	1.4	295
Study area (Combined slum)	8.5	5.2	6.2	56.0	24.1	1126
2. Distance travelled (%) in ttms. (Combined slums)						
2 kms.	69.2	62.7	76.7	92.3	62.3	880 (81.0%)
2-5 kms.	19.8	16.9	9.6	5.7	17.4	113 (10.4%)
5-10 kms.	9.9	16.9	11.0	1.9	14.6	75 (6.9%)
10 kms.	1.1	3.5	2.7	-	5.7	19 (1.7%)
Average distance travelled	2.2	2.7	2.1	1.3	2.7	
3. Household income (%) in Rs. (Combined slums)						
Rs.500	7.1	4.4	5.8	54.0	28.6	789
Rs.501-1000	10.7	7.0	7.8	60.3	14.1	270
Rs.1001	13.8	9.2	4.6	63.1	9.2	65
Average household income in Rs.	448.0	439.0	406.0	424.0	373.0	

per cent within 5-10 kms and only 1.7 per cent over 10 kms. The average distance travelled for availing private facilities is slightly less, (private doctor, 1.3 kms. and private nursing home 2.1 kms.) when compared to government facilities; (government dispensary 2.7 kms., government hospital 2.2 kms.). No inter-slum variation was observed.

iii.***Source of Treatment by Household Income:*** Private doctors and private nursing homes continue to be the major source of treatment for the community irrespective of the household income. About 11 per cent households in income range of Rs.500, or less than that, utilise services from government services. The utilisation increased to 18 per cent among people in income range of Rs.501 -1000 and to 23 per cent in income group of Rs. 1001 and above in the combined slums. Inter-slum analyses did not show any variation.

iv.***Health Facilities Utilised During Last Month/Month Previous to Last One:*** Data were collected tor utilisation of health facilities during the last month. Those who did not utilise facilities during the last month, were asked to report if they had availed facilities during the month previous to the last one. Data were analysed by classifying household members into four categories, ***i.e.,*** children (0-6 years), male, female and aged (50 + yrs.). Analysis focussed on number of visits to health facilities and consequent satisfaction derived by availability of doctor, medicine and good care. The results have been discussed in the following sub-sections,

(iva) ***Type of Health Facilities Utilised:*** Of the 871 persons who availed health facilities, 80 per''cent were through private sources (private doctors+private nursing homes) and only 20 per cent through government sources (government doctor/dispensary/hospital) by all categories of people in the combined slums. Same picture was evinced in all the slums and by all categories of population, but with varying degrees of magnitudes depending on the composition of population by age and sex and frequency of sickness, indepth analysis of data on sickness and source of treatment (private and government) for two points of time, ***viz.***, sickness during last one month including the day of survey and chronic sickness (3 months), revealed that private practitioners continue to be the dominant source of treatment for all the reference periods and in all selected slums,

(ivb) ***Number of Visits to Health Facilities:*** On an average 2 to 3 visits were made to health facilities in a month by different groups of people in all the slums.

(ivc) ***Satisfaction Derived.*** Of the 871 persons utilising health facilities, only 23 (2.6 per cent) reported to have some complaints, problems while rest were satisfied in every respect The main problems reported were 'charges more money' (56.5 per cent), 'does not pay attention', (26.1 per cent) and 'prolongs the treatment' (17.4 per cent).

NUTRITION PROGRAMMES

ICDS covers the total population of Mangolpuri with over 100 centres located in different blocks of the colony and the number of beneficiaries in each target group

range from 60 to 70 per cent; In addition, there are about 25 centres of special nutrition programme which provide nutrition to the target population group. In Seelampur (J.J. Colony) and Construction Site Clusters (Nehru Place), some special nutrition programmes are operating, but as per the official records no beneficiary has been listed. In Ballimaran slum, four anganwadi centres are operating and are catering to the needs of the designated population. Table 3 sets forth the data that are discussed in the following sub-sections.

TABLE 3
NUTRITION PROGRAMME IN THE URBAN SLUMS OF DELHI

	Characteristic	SLUMS			
		Mangolpuri	**Seelampur Slum (JJ Colony)**	**Construction Site Clusters (Nehru Place)**	**Ballimaran**
1.	ICDS Centres	Over 100 centre (1 Anganwadi for 1000 population)			4 Anganwadi centres)
2.	Special nutrition centres	25	13	A few centres	25
3.	Total children 6 years	345	556	367	1451
4.	% receiving supplementary nutrition	31.6	11.9	12.5	15.2
5.	Duration from which receiving:				
	<1 year	12.6	2.0	4.3	4.9
	1 -2 years	8.1	3.4	4.3	4.1
	2+years	10.7	6.5	4.9	6£
	Average duration in yrs	1.4	1.9	1.5	1.6
6.	% respondents having difficulties in receiving	7.3	15.1	-	8.1
7.	% children who improved health after supplementary nutritior	35.8		17.4	21.3
8.	% mothers who help in the implementation of the programme:				
	- supply fuel	34.9	6.1	22	19.0
	- help in cooking/ feeding	5.5		2.2	3.2
	- contribute vegetables	6.4	-	2.2	3.6

i) ***Knowledge About the Existence of Programme:*** Of the total of 945 households in three slums, leaving aside Nehru Place squatters where no nutrition programme exists, 37.8 per cent are reported to have knowledge about the existence of nutrition programme in their areas. The knowledge was present in nearly 68 per cent households in Mangolpuri, 30 per cent in Seelampur (J.J. Colony) and 22 per cent in Ballimaran Slums.

(ii)*Knowledge About the Benefits of the Programme:* Anganwadi and Special Nutrition Programme were the two programmes named by those respondents who had complete knowledge about the existence of the programme. In Mangolpuri and Ballimaran, vast majorities of 86.1 per cent and 100 per cent respondents, respectively, had the correct knowledge about the name of the programmes operating in their areas, while in Seelampur nearly 67 per cent had it.

(iii)***Knowledge About the Organisation of the Programme:*** Over one-third (36.6 per cent) of the respondents in the combined slums had the knowledge about the organisation of programme with maximum knowledge in Ballimaran(51.5 per cent) and minimum in Mangolpuri (27.3 per cent).

(iv)***Knowledge About Food Items Distributed:*** Again, nearly 67 per cent of the respondents from the combined slums reported to have known the items distributed with a maximum of 89.4 per cent in Ballimaran. followed by 85.8 percent in Seelampur and 47.3 per cent in Mangolpuri.

(v)***Enrolment Under.Supplementary Nutrition Programme:*** Of the 1451 children in combined slums, 15.2 per cent (221) were reported to be receiving supplementary nutrition with 31.6 per cent in M angolpuri and about 12 per cent each in Ballimaran and Seelampur and while none in Construction Site Squatters where no supplementary nutrition programme existed).

Those who were receiving supplementary nutrition in the combined slums, nearly 5 per cent were receiving for less than one year. 4 per cent for 1 -2 year and 6 per cent for two or more years. Almost sametrend was evincible in all the slums. The average duration worked out to 1.6 years in the combined slums with a narrow range of 1.4 to 1.9 years.

About 8 per cent of the total respondents expressed difficulties In receiving the nutrition (being 15 per cent in Seelampur and 7 per cent in Mangolpuri).

A total of 21.3 per cent respondents reported that their children had improved in health after receiving supplementary nutrition (being 35.8 per cent in Mangolpuri and 17.4 per cent in Ballimaran slums).

Fifty seven (25.8 per cent) women from the combined slums reported that they had been helping in the implementation of the programme, out of which 19.0 percent reported to be supplying fuel. 3.2 per cent helping in cooking/feeding and 3.6 per cent contributing vegetables. Maximum help of all types was in Mangolpuri. Supply of fuel was the leading type of help in all the slums.

PERCEIVED NEEDS FOR HEALTH AND SOCIAL SERVICES

As regard the types ot needs for health and social services, about 74 per cent respondents expressed the need for a hospital/dispensary, 63 per cent for improving environmental sanitation, 10 per cent for potable drinking water supply, 49 per cent for employment and 33 per cent for better housing. Inter-slums analysis revealed that hospital/dispensary ranked as number I need in all the slums excepting Ballimaran, where environmental sanitation was reported to be the most sought for need. The rank II need was environmental sanitation reported by the residents of Mangolpuri, and Construction Site Dwellers. Employment was ranked as the 111 felt need while the housing occupied the IV in rank as given in Table 4.

TABLE 4

PERCEIVED FELT NEEDS FOR HEALTH AND SOCIAL SERVICES IN URBAN SLUMS OF DELHI

Important Needs of the slums	Slums				
	Mangolpuri	Seelampur (J J. Colony)	Construction Site Clusters (Nehru Place)	Ballimaran	Study area (combined slums)
Hospital/ Dispensary	82.0	74.5	91.0	55.0	74.2
Environmental/ sanitation	80.0	392	67.0	73.0	62.7
Water Supply	1.3	21.5	6.0	77	10.4
Employment	61.9	42.1	63.5	34.7	48.6
Housing	7.8	52.1	35.0	290	32 8

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दिल्ली महानगर की जिन चार गन्दी बस्तियों के बारे में अध्ययन किया गया था उनमें से केवल मंगोलपुरी तथा बल्लीमारान क्षेत्रों में ही डिस्पेंसरियों, मातृ–शिशु स्वास्थ्य एवं परिवार नियोजन केन्द्रों और आंगनबाड़ी केन्द्रों जैसी आधारभूत सभी सुविधाएं सुलभ थीं। किन्तु दिल्ली नगर निगम अथवा दिल्ली प्रशासन द्वारा सीलमपुर (जे0जे0 कालोनी) तथा नेहरू प्लेस निर्माणाधीन स्थल की झोपड़–पट्टियों में न तो कोई स्वास्थ्य सुविधा ही उपलब्ध कराई गई थी और न ही कोई अन्य जन–सुविधा ही प्रदान कराई गई थी। इन शहरी गन्दी बस्तियों के लगभग दो तिहाई परिवार (62:)स्वास्थ्य और परिवार कल्याण सुविधाओं के लिए प्राइवेट स्रोतों की सेवाओं का उपयोग करते थे, 25 प्रतिशत परिवार सरकारी तथा प्राइवेट, दोनों स्रोतों की सेवाओं

का उपयोग करते थे, तथा केवल चौदह प्रतिशत परिवार ही ऐसे थे जो पूरी तरह से सरकारी सेवाओं पर निर्भर थे। 81 प्रतिशत परिवारों को दो किलोमीटर की परिधि में, 10 प्रतिशत परिवारों को दो से पांच किलोमीटर की परिधि में, तथाशेश परिवारों को 5 किलोमीटर से अधिक दूरी तय करके यह सुविधाएं प्राप्त होती है। 500 रू0 से कम आय वर्ग के लगभग 11 प्रतिशत परिवार सरकारी स्रोतों की सेवाओं का उपयोग करते हैं, जबकि 500 से 1000 रू0 के आय वर्ग में यह दर बढ़कर 18 प्रतिशत थी तथा जो लोग 1000 रू0 तथा इससे ऊपर के आय वर्ग में थे, उनमें यह दर बढ़कर 23 प्रतिशत पाई गई थीं। सभी प्रकार की स्वास्थ्य सुविधाओं का सबसे अधिक उपयोजन बच्चों के लिए किया जा रहा था।

REFERENCES

1. BHATNAGAR. S., DOSAJH, U. & KAPOOR, S.D. (1988) Correlates of Morbidity and Patterns of Mortality in Urban Slums of Delhi: Part I. Health and Population: *Perspectives and Issues.* 11(2). p. 83-95.
2. BHATNAGAR. S., DOSAJH, U. & KAPOOR. S.D. (1988) Maternal and Child Health Status and"Patterns of Health Care in Urban Slums of Delhi: Part II. *Health and Population: Perspectives and Issues,* 11(3), p. 105-114.
3. DELHI DEVELOPMENT AUTHORITY, PERSPECTIVE PLANNING WING: NEW DELHI (1981) Project Report ot Resettlement Scheme.
4. MINISTRY QF SOCIAL WELFARE, GOVERNMENT OF INDIA. NEW DELHI (1982) Integrated Child Development Services Scheme (Revised).
5. MUNICIPAL CORPORATION OF DELHI (SLUMS) (1977) Details of New Resettlement Scheme as on 31.7.1977.

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FERTILITY AND CONTRACEPTION PATTERNS IN A TRIBAL AREA OF MADHYA PRADESH

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ABSTRACT

A study was carried out for the purpose of studying the demographic profile and fertility patterns of acceptors of contraception amongst Eligible Couples in a tribal area of Madhya Pradesh, with a view to assess the family planning performance in the area. The study showed a low Effective Couple Protection Rate of 18.3 per cent only, which was made up only of acceptors of sterilization, mostly vasectomy, with no spacing methods evidently in use. Sterilization coverage was observed to be mostly amongst the older women aged 30 years or more, who already had three or more living children of which two at least were male. Preference for the male child was seen throughout, and motivation for sterilization was maximum while the youngest child was under one year old and that too a male. The financial incentives to both the motivator and the acceptor of sterilization appeared to influence the choice of method of contraception adopted. It is stressed, that a strategy based on excessive emphasis on sterilization can have only a very limited impact on the birth rate, and efforts should be increased to popularize spacing methods, especially in the highly fertile younger age-groups. 'Fruitless' sterilizations should be avoided. At the same time, a need was felt for more evaluations like the present study in the hilly and tribal areas of the country, in respect of which there is great paucity of data at present.

India's uncontrolled population growth is recognized as the single most important threat to the national development. So much so. that in 1952 India became the first Government in the world to launch an official Family Planning Programme, but the demographic situation of the country continues to be a matter of grave concern, Political commitment to the National Family Welfare Programme is reflected in the steadily increasing allocation of funds to it in the successive Five Year Plans as given in Table 1. The Programme is the only national health programme featuring financial and other incentives to both acceptors and motivators of contraception, which are extremely biased in favour of sterilization as shown in Table 2.

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TABLE 1

PATTERN OF NATIONAL INVESTMENT ON HEALTH AND FAMILY WELFARE

Plan Period	Total Plan Investment/ Outlay (crore Rs.)	Allocation for health (crore Rs)	Allocation for family welfare (crore Rs.)	Sub-total (crore Rs.)	Proportion ol Total Outlay on Health and Family Welfare Allocated to FW (%)
1. First 5-yr. Plan (1951-56)	1960.0	652	0.1	65.3	0.1%
		(3.3%)	(-)	(3.3%)	
2. Second 5-yr. Plan (1956-61)	4672.0	140.8	2.2	143.0	1.5%
		(3.0%)	(0.1%)	(3.1%)	
3. Third 5-yr Plan (1961-66)	8576.0	225.9	24 9	250.8	9.9%
		(2.6%)	(0.3%)	(2.9%)	
4. Fourth 5-yr. Plan (1969-74)	15778.8	335.5	278.0	613.5	45.3%
		(2.1%)	(1.8%)	(3.9%)	
5. Fifth 5-yr. Plan (1974-79)	39426.2	7608	491.8	1252.6	39.3%
		(1.9%)	(1.3%)	(3.2%)	
6. Sixth 5-yr. Plan (1980-85)	97500.0	1821.1	10100	2831.1	35.7%
		(1.9%)	(1.0%)	(2.9%)	
7. Seventh 5-yr. Plan (1985-90)	180000.0	3392.9	3256.3	6649.2	49.0%
		(1.9%)	(1.8%)	(3.7%)	

Source: Health Expenditure Patterns in India IN: Health Status ot the Indian People - A supplement to the ICSSR /ICMR report Health for All: An Alternative Strategy'. Publ. Foundation for Research in Community Health/ICMR, 1st reprint, May 1969. Table IV, pp. 44a.

TABLE 2
FINANCIAL INCENTIVES TO MOTIVATORS AND ACCEPTORS OF CONTRACEPTION IN MADHYA PRADESH 1986, UNDER THE NATIONAL FAMILY WELFARE PROGRAMME

Method of Contraception	CENTRAL GOVT. INCENTIVE (Rs.)					M.P. STATE GOVT. INCENTIVE (Rs.)					TOTAL (Rs.)	
		Acceptor				Motivator	Acceptor				Motivator	Acceptor
	Motivator	C	T	D	Total		C	T	D	Total		
Vasectomy	11.00	100.00	15.00	10.00	125.00	29.00	100.00	-	-	100.00	40.00	225.00
Tubal ligation	4.00	100.00	15.00	30.00	145.00	6.00	2500	-	-	25.00	10.00	170.00
IUCD	0.50	9.00	-	-	9.00	-	-	-	-		0.50	900
Oral Pills	Nil		-	-	Nil	Nil	-	-	-	Nil	Nil	Nil
Condoms	Nil	-	-		Nil	Ni'	*			Nil	Nil	Nil

(C: Compensation; D: Diet; T: Transport)

Remarkable progress in numbers has been made in family planning coverage as revealed in Table 3, However, the reduction in the national birth rate from 36.9/1000 in 1971 to 32.7/1000 in 1986 seems to be a poor reward for so much of effort. The birth rate in Madhya Pradesh shows a paradoxical increase of 1.8 in the period 1981 -86 with a recorded increase of 10.6 per cent in the Effective Couple Protection Rate.

Failure to achieve a corresponding proportionate reduction in birth rate despite good family planning coverage has caused grave concern at all levels regarding the effectiveness of the National Family Welfare Programme. The Programme has come under critical scrutiny, with a view to enable identification of bottlenecks so that remedial action could be initiated.

TABLE 3

FAMILY PLANNING PERFORMANCE AND BIRTH RATE TRENDS IN INDIA AND MADHYA PRADESH

	FAMILY PLANNING PERFORMANCE				**Birth Rate**
	Percentage of Eligible Couples Effectively Protected by:				
	Sterilisation	**IUCD**	**Other methods**	**All methods**	
All India					
1971	8.0	1.4	1.0	10.4	36.9
1976	14.2	1.0	1.7	17.0	34.4
1981	20.1	1.0	1.7	22.8	33.9
1986	26.5	3.7	4.7	34.9	32.7 (1985)
Madhya Pradesh					
1976	11.9	1.5	1.4	14.7	39.8
1981	20.3	0.5	0.5	21.3	37.6
1986	25.6	2.7	3.6	31.9	39.4 (1985)

Source:
1. All-India family planning performance figures obtained from Government of India. MOHFW, Department of Family Welfare; Family Welfare Programme in India. Year Book 1985-86 Table E-1, p. 203-204.
2. All-India Birth Rates obtained from *ibid..* Year Book 1985-86. Table B-3. p. 76.
3. Family planning performance figures for Madhya Pradesh compiled from Table E-2 of *ibid..* Year Books 1975-76, 1980-81. and 1985-86.
4. Birth Rates for Madhya Pradesh compiled from Table B-4 of *ibid..* Year Books 1977-78.1985-86 and 1986-87.

REVIEW OF LITERATURE

The demographic profile and fertility pattern of acceptors of contraception has been mentioned in studies carried out in parts of the country as well as in reports of the Government of India. Raghav ef a/. (1981) reported acceptance of contraception, particularly sterilization, to be significantly higher in those aged 30 years or more and having three or more children. Similar findings were also reported by other authors and also in the report of the Government of India 1986-87[5]. The acceptance of sterilization has also been reported to be more in those having at least two living male children. Similar findings were reported by other scholars. However, there is paucity of data in respect of remote, tribal areas of the country, hence this study was undertaken.

THE COMMUNITY UNDER STUDY

Shahdol district of Madhya Pradesh is a backward, tribal area inhabited by aboriginal tribes of Gonds and Baigas. They are poor and primitive people, living in scattered, isolated, small villages in hilly, forest areas. They earn their livelihood primarily by agriculture, growing seasonal crops on small land-holdings, depending solely on the rains since there are no irrigation facilities. They supplement their income by casual labour, when both men and women work on building roads and bridges which is part of the 'Food for Work' programme in the drought relief work of the Government, since this area is prone to famine. The tribals are animists, worshiping spirits in trees, rocks, water etc. Sickness is treated by village elders using herbs and roots in the traditional way. or else by witch-doctors. Exposure to modern civilization has been reluctant and slow with gradual acceptance, and literacy rate is only about 7 per cent in the area under study. Access to modern health services is limited, and their utilization by the tribal is low.

OBJECTIVES

To study the demographic profile and fertility pattern of acceptors of contraception amongst the Eligible Couples in this tribal area, with a view to assess the impact of family planning programme in the area.

MATERIALS AND METHOD

Fourteen villages in Sohagpur Block of Shahdol district were taken up by Christian Hospital. Shahdol, for provision of community health services on a project basis for three years. This study has been carried out in these villages which were already selected by the hospital for provision of outreach services.The reasons for choosing these villages for this study were that here an infrastructure was available to conduct the study, and also that initial contact with the tribal people, which is difficult to establish, had already been gained through the Project staff of the hospital in the preparatory phase of the Project, making such a study possible. The census method involving house-to-house survey was used in this study, covering all the Eligible Couples in the 14 villages.

The proforma or information system is the family folder methodology developed by the Department of Social and Preventive Medicine and Community Health of the Christian Medical College, Ludhiana (Punjab), which is detailed elsewhere. Each family in each village served has a family folder, wherein complete health profile of the family members is available, which in the first place obtained through an initial house-to-house survey and subsequently kept updated through regular periodic home visits by the health team.

Profile of the wife has been taken into consideration for the purpose of this study. An 'Eligible Woman' means a woman who is eligible for family planning, ***i.e.*** a married woman aged 15-45 years living in union with her husband. An 'Eligible Couple' is a couple containing an Eligible Woman. Tubectomy and vasectomy have been considered together as 'sterilization', being terminal methods of contraception
for the couple considered as an unit, The eTfect of both the procedures being the same for the purpose of this study. The age-group of the wife has been considered to maintain uniformity, since she is the reproductive unit.

Information was obtained from the respondents directly by the principal author through interview during house-to-house survey. The respondent was invariably the wife. Because of nearly universal female illiteracy in the area under study, their own age and that of their older children was not known precisely by the women. Therefore, the age of the woman was arrived at by the investigator keeping in mind the factors tike the appearance of the woman, the number of years she had been married, the number of children she had borne, etc. The age of the children was arrived at by thorough probing, relating the event of the birth to some important festival or event in the area to assist recall. Polygamy was encountered, though not frequently, in which case the number of Eligible Couples was considered to be two or three depending upon the number of wives. If a man with multiple wives was found to have had vasectomy, then all of his wives were considered to be practising the terminal method of contraception.

The data was compiled, tabulated and analyzed. Proportions of the Eligible Couples practising contraception were studied according to the age of the wife, the number of living children and the number of living male children they had, and the age and sex of the youngest living child, with the view to assess family planning performance in this population. The data was subjected to Chi-square test to assess significance, the results of which are indicated in the tables.

Estimation of Sample Size: Complete house-to-house survey of the 14 target villages showed a total population of 6,893, with 1.088 Eligible Couples. Hence the proportion of Eligible Coupies in our target population was 15.8 per cent. This finding was used to determine the desired sample size according to the prescribed method*. At 95 per cent confidence limits, with allowable error of 10 per cent, the desired sample size was 2131.6 (say, 2132), With allowable error of 20 per cent, it was 532.9 (say, 533). Actual number of Eligible Couples surveyed was 1088 which gave allowable error of 13.997 per cent (say, 14%) at 95 per cent confidence limits.

RESULTS AND DISCUSSION

Out of 1088 Eligible Couples surveyed, there were 199 acceptors of contraception, all of whom were sterilized, 60 (30.1%) with tubal ligation and 139 (69.9%) with vasectomy. There were no acceptors of spacing methods. Hence, the Effective Couple Protection Rate was found to be 18.3 per cent only. Thus, it is observed that not only is the family planning coverage in this area low in comparison to the national and State figures, but also that the entire performance is based only on sterilization, with significantly more acceptance of male than female sterilization, with no spacing methods in evidence. A recent evaluation of the National Family Welfare Programme by the Programme Evaluation Organization of the Planning Commission. Government of India, states that in rural areas there seems to be an excessive concentration on sterilization, and suggests that this may be one of the factors contributing to the slow pace of acceptance. Another researcher has also drawn attention to the undue emphasis on sterilization. There seems to be far too many sterilization operations, which fail to have the desired impact of bringing down the birth rate. The National Family Welfare Programme seems to be encouraging this trend, as is obvious from the financial incentives given to both motivators and acceptors of sterilization, which are disproportionately higher than the incentive for acceptance of IUCD while other spacing methods carry no incentive whatsoever as has been shown in Table 2. The highest incentive, both for the acceptor as well as for the motivator, is for vasectomy, which may be the reason why.most of the acceptors in this area are those of vasectomy, a finding which is at variance from those of other resarchers who have all found majority of acceptors of sterilization to be those of tubal ligation.

Only 5.6 per cent of the Eligible Couples under 25 years of age 24.2 per cent of those aged 25-30 years. 41.4 per cent of those aged 30- 435 years and 15.5 per cent of those aged 35 years or more, were sterilized. This shows low coverage of under-25-year-olds with sterilization, while maximum coverage is seen in those aged 30-35 years as shown in Table 4.

About 11 per cent of the Eligible Couples having two living children and 38.6 per cent of those having three or more were sterilized. This shows maximum acceptance of sterilization in those having three or more living children, a finding which was constant in all the age-groups of Eligible Women. None of the couples having less than two living children accepted sterilization.

In all the age-groups, the majority of the Eligible Couples who accepted sterilization were those who had two living male children, followed by those who had thiee or more, with very few acceptors amongst those who had only one. None accepted sterilization without having a living male child. These observations demonstrate in all age-groups of Eligible Couples the preference for having at least two living male children before acceptance of sterilization as evidenced in Table 5.

About 25 per cent of Eligible Couples having male youngest living child, and 17-1 per cent ot those having female youngest living child, were sterilized. This pieforonce foi male youngest living child was significantly marked in those who

TABLE 4

PROPORTION OF ELIGIBLE COUPLES STERILIZED - DISTRIBUTION ACCORDING TO NUMBER OF LIVING CHILDREN

Number of Living Children	Age Group of Eligible Women					
	25 years	**25-< 30 yrs.**	**30- <35 yrs.**	**<35 years**	**Total**	
0	0/148	0/15	0/5	0/8	0/176	
1	0/162	0/48	0/15	0/10	0/235	
2	4/58 (6.9%)	13/90 (14.4%)	7/41 (17.1%)	2/40 (5.0%)	26/229 (11.3%)	X^2= 4.94 df=3 p<0.50
3 or more	18/21 (85.7%)	43/76 (56.6%)	70/125 (56.0%)	42/226 (18.6%)	173/448 (38.6%)	x^2=84.l7 df=3 p<0 001
Total	22/389 (5.6%)	56/229 (24.4%)	77/186 (41.4***%)***	44/284 (15.5%)	199/1088 (18.3%)	$x^2$115.30 df=3 p<0.001
x^2 df P	272.77 3 < 0.001	6.7.74 3 < 0.001	35 11 3 <. 0.001	8 30 3 <0.05	223.20 3 < 0 001	

TABLE 5

PROPORTION OF ELIGIBLE COUPLES STERILIZED - DISTRIBUTION ACCORDING TO NUMBER OF LIVING MALE CHILDREN

Number of Living Male Children	Age Group of Eligible Women					
	25 years	**25- 30 yrs**	**30- 35 yrs.**	**35 years**	**Total**	
0	0/233	0/60	0/33	0/23	0/349	
1	2/126 (1.6%)	7/103 (6.8%*)	11/58 (19.0%)	9/67 (13.4%)	29/354 (8.2%)	x^2= 18 96 df=3 p<0.001
2	17/20 (85.0)	41/53 (77.4%)	44/62 (71.0%)	18/83 (21.7%)	120/218 (55.0%)	x^2= 61.59 df= 3 p< 0001
3 or more	3/10 (30.0%)	8/13 (61.5%)	22/33 (66.7%)	17/111 (15.3%)	50/167 (29.9%)	x^2= 38.97 df=**3** p<0.001
Total	22/389 (5.6%)	56/229 (24.4%)	77/186 (41.4%)	44/284 (15.5%)	199/1088 (18.3%)	x^2= 11 5.30 df=3 p<0.001
x^2 df P	265.36 3 0001	126.77 3 < 0.001	66.35 3 < 0.001	42.89 3 <0.001	314.53 3 **<** 0.001	

were sterilized while the youngest living child was stilt below one year of age, in which case 57.6 per cent with male and 31.3 per cent with female youngest living child were sterilized. Acceptance of sterilization was highest while the youngest living child, male or female, was below one year of age, demonstrating highest motivation for sterilization while the youngest child is still befowone year of age. The findings also demonstrate higher motivation for sterilization after having a male child as the youngest child as depicted in Table 6.

CONCLUSIONS

The study shows that not only this backward tribal area sutlers from low family planning coverage of 18.3 per cent, but also that the only family planning service reaching this area was sterilization, with no spacing methods in evidence. The financial incentive for. both acceptor and motivator appears to determine popularity of a particular method of contraception, which in this case is sterilization particularly vasectomy.

TABLE 6
PROPORTION OF ELIGIBLE COUPLES STERILIZED - DISTRIBUTION ACCORDING TO AGE AND SEX OF THE YOUNGEST LIVING CHILD

Age of the Youngest Living Child	Sex of the Youngest Living Child			
	Male	**Female**	**Total**	
<1 year	68/118 (57.6%)	31/99 (31.3%)	99/217 (45.6%)	x^2,15.02;df 1; p<0.001
1-2 years	ID/133 (7.5%)	9/96 (9.4%)	19/229 (8.3%)	x^2-0.24;df 1, p>0 50
2- < 3 years	9/59 (16.2%)	6/65 (92%)	15/124 (12.1%)	x^2=1.05; df 1; p<.0.50
3- <4 years	16/39 (41.0%)	9/38 (23.7%)	25/77 (32.1%)	x^2-2.63; df 1: p<0.50
4-<5 years	6/23 (26.1%)	4/13 (30.8%)	10.36 (27 8%)	xU.09;df 1; p>0.50
5 years or more	19/131 (14.5%)	12.98 (12.2%)	31/229 (13.5%)	xio.24; df 1; p>0.50
Total	128/503 (25 4%)	71/409 (17.4%)	199/912	x^2 8 65: df 1; p<0005
x^2 df P	103.42 5 < 0.001	25.15 5 c 0.001	118.56 5 < 0.001	

*Note: 176 Eligible couples who had no living children have not been included in the denominator in this table.

Age of the woman, the number of living children as well as that of living male children the couple have, as also the age and sex of the youngest living child, were major determinants of acceptance of sterilization. Most of the acceptors of sterilization were from the older age-groups of 30 years or more, who have already contributed three or more living children to the population pool, of which at least two were male. The coverage in the younger age-groups and in those having less than three Irving children and no living male child was minimal. Preference for the male child has been seen consistently. Motivationfor sterilization has also been observed to be maximum while the youngest male child was found to be under one year of age.

Thus, in this area an evident need for the efforts to be increased was felt for both quantitative as well as qualitatiye'unprovements in family planning performances. However, the demographic profile and fertility pattern of family planning acceptors in this area have shown that the prtesery ffend of contraceptive practice cannot be expected to markedly influence the birth rate, since all the efforts seem to be concentrated on sterilization alone. The sterilization has been acceptable mostly to the older couples who have already contributed a lot to the population pool, while coverage was very deficient in the younger age-groups who were mainly responsible for the country's high birth rate because of their high fertility. Sterilization performed at a later age is bound to have a very limited impact on birth rate. Excessive emphasis on terminal methods of contraception, which are unlikely to find favour amongst the majority of the younger couples, diverts attention from the urgent task of promoting family planning among them. It is, therefore, necessary to lay adequate emphsis on the spacing methods to which, it has'been felt that the younger couples may be more amenable. Effective coverage of the highly fertile younger couples by means of spacing methods, would have a bigger and better impact on reduction of birth rate.

The current policy of indiscriminate payment of incentive money to both the acceptor and the motivator of sterilization at a uniform rate irrespective of the number of children the acceptor has at the time of sterilization, generates a demand for 'fruitless' sterilizations, without heed to biological or ethical considerations. The incentive money should be paid according to a graded scale based upon the number of children the acceptors have at the time of sterilization. Incentive money to both the motivator and the acceptor of sterilization having more than two or. at the most, three children should be stopped altogether. A special incentive should be given to those who accept, sterilization after having one or two children but no male child.

Lastly, the authors were aware of the fact that the present study is a small study in comparison to the vast dimensions of the National Family Welfare Programme and its findings cannot form the basis for generalisation. But its findings do strongly point to the need forundertaking similar evaluations in hilly and tribal regions of the country in respect of which there is great paucity of data at present.

Lkkjk'k

मध्य–प्रदेश राज्य के एक आदिवासी क्षेत्र में गर्भनिरोधक तरीकों को स्वीकारने वाले पात्र दम्पतियो के जनांकिकीय स्वरूप और प्रजनन ढांचे का अध्ययन करने के लिए एक अध्ययन संचालित किया गया था,

जिसका उद्वेश्य उस क्षेत्र में परिवार नियोजन कार्यक्रम के निष्पादन स्तर का अनुमान लगाना था। इस अध्ययन से यह परिणाम सामने आता है कि पात्र दम्पत्तियों संबंधी प्रभावी संरक्षण दर केवल 18.3 प्रतिशत था, जो बहुत कम है तथा यह दर केवल नसबन्दीः प्रमुखतः पुरूश नसबन्दी, तरीका स्वीकारने वाले केसों के आंकड़ों के आधार पर बनाई गई और बच्चों के जन्म में अन्तर रखने संबंधी तरीकों के प्रयोग को वस्तुत इसमें प्रदर्शित ही नहीं किया गया है। यह देखा गया कि नसबन्दी कराने वालों में अधिकांश तीस वर्ष अथवा उससे अधिक आयु की ऐसी महिलाएं थीं जिनके तीन अथवा इससे अधिक बच्चे थे और उनमें से भी कम से कम दो लड़के थे। सभी दम्पति लड़कों को वरीयता प्रदान करते थे तथा जिन बच्चा लड़का था उनमें नसबन्दी के प्रति अभिप्रेरणा स्तर अधिकतम पाया गया था। ऐसा प्रतीत होता है कि अभिप्रेरकों तथा नसबन्दी स्वीकारने वालों को मिलने वाले प्रस्तुत लेख में इस बात पर प्रकाश डाला गया है कि नसबन्दी स्वीकारने वालों को मिलने वाले प्रोत्साहन गर्भधारण के तरीके संबंधी उनके चुनाव को प्रभावित करते थे। प्रस्तुत लेख में इस बात पर प्रकाश डाला गया है कि नसबन्दी पर अत्याधिक जोर देने वाली रणनीति जन्म–दर पर केवल सीमित प्रभाव ही डाल सकती है तथा बच्चों के जन्म में अन्तर रखने संबंधी तरीकों को लोकप्रिय बनाने के लिए प्रयासों में वृद्धि की जानी चाहिए। निरर्थक नसबन्दी करने से बचा जाना चाहिए। इसके साथ–साथ देश के पहाड़ी तथा अन्य आदिवासी क्षेत्रों में जिनके संम्बन्ध में फिलहाल आंकड़े उपलब्ध नहीं है उन क्षेत्रों में भी इसी प्रकार के मूल्यांकन अध्ययनों का संचालन करने की आवश्यकता महसूस की गई है।

REFERENCES

1. RAGHAV, M. *et al* (198\) Evaluation of 2236 Tubectomies. J. *Indian Med. Assoc..* 77.

2. BENJAMIN, A.I. (1985) A Longitudinal Follow-up Study of Women Undergoing Laparoscopic Tubal Ligation in Ludhiana Block of Punjab. *Health and Population -Perspectives and issues,* 8 (1); p. 19-28.

3. VARMA, B.D. *et al.* (1988) A Profile of Acceptors of Terminal Method of Family Planning in a Rural Community. J. *Family Welfare.* 34(3). p. 20-27.

4. SAXENA. SC. ef *al.* (1988) Family Planning Practices in Rural Population ol Lucknow *Indian j. Community Health.* 4(2). p. 8-12.

5. GOVERNMENT OF INDIA. Ministry of Health and Family Welfare. Department of Family Welfare. *Family Welfare Programme in India.* Year Book 1986-87. p. 17-19.

6. ANANDAN. V. (1986) Family Planning at Nagpur - A Sample Study. *J. Family Welfare.* 32(3), p. 75-83.

7. COWAN. B. AND GREWAL, H.N.S. (1983) Delivery of Health Care - The Role ol Medical Colleges. *Bull. N.F.I.,* 7(2).

8. MAHAJAN. B.K. (1984) Sampling. In; Methods in Biostatistics. 4th ed., p. 85.

9. GOVERNMENT OF INDIA, Planning Commission (1986) Programme Evaluation Organization: Evaluation Report'on Family Planning Programme.

10. ROY, SOMNATH (1987) Uses of Contraceptives for Family Planning. *Health and Population • Perspectives and Issues.* 10(1)**,** p. 3-25.

11. SAMAL. R.K. AND MUKHERJEE. P.K. (1985) A Comparative Study of Some of the Epidemiologic Characteristics of the Acceptors of Vasectomy and Tubectomy in an Industrial Hospital. *Indian J. Community Med..* 10(1). p. 5-10.

12. AGGARWAL, O.P. *et al.* (1986) Fertility Pattern of Rural Womep in India - A Community Survey. *Indian J. Community Med..* 11(1), p. 33-38.

Health and Population
- Perspectives & Issues 11 (4):184-189, 1988

INTER AND INTRA-TRIBAL DIFFERENCES IN ATTITUDES TOWARDS FAMILY PLANNING

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ABSTRACT

The attitudes of Gond and Bhil tribal males from' Madhya Pradesh (Ns.620) towards family planning practices were studied using a standardised scale. The G ond tribals reported more positive attitudes than Bhils. Also, the acceptors reflected more positive attitudes than non-acceptors. The results on inter and intra-tribal differences in attitudes are discussed in cultural context and need for differential intervention programme suggested.

The phenomenon of population explosion is one of the greatest problems that the world has ever witnessed in its history. Never before has the human race been so numerous or grown so rapidly; nor can the present population growth continue for long in the future without disastrous consequences.

In order to cope with the problems of population explosion, attempts are made to encourage couples to adopt measure(s) of family planning. The Indian Family Planning (Welfare) Programme depends for its success on voluntary acceptance by the people, through the processes of motivation and education.

The success of any planned change is achieved only when programme planners are aware of the struggle between the forces for change and the forces for stability that exist in culture and society. These change-inhibiting factors in all societies are known as barriers. The negative attitude of people towards family planning is also considered as one of thefactors which act as barrier in the adoption of family planning devices. Attitude is usually considered as an important psychological factor that determines human action. People in different culturesform definite attitudes towards what is desirable and what is undesirable which, in turn, determine one's readiness to undertake various courses of action.

PAUCITY OF ATTITUDINAL STUDIES ON TRIBAL POPULATION

The significance of expressed approval of birth control as a variable in contraceptive behaviour has been indicated by Stycos and Back, inkeles and Smith have suggested that birth control attitudes were a good predictor of people's birth control behaviour. Kirk suggests that psychological acceptance of birth control precedes its effective practice, which was methodically confirmed in Indian

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conditions by Kapoor and Bhargava' and Bhargava and Kapoor in their several studies on reproductive couples. Using multivariate analysis (specially MANOVA and Factor Analysis), on a set of some sixty variables, they have attempted to identify some five key variables which affect adoption behaviour and acceptance of family planning. Katiyar found that value orientation did not exert significant infuence on the attitude towards small family size among acceptors. In the case of non-acceptors, however, values for fewer children seemed to be correlated with activism, free will, aspiration, adventure, individualism, modernism, optimism, secularism and conscientiousness. Further. Sorcar and Mia" also found that family planning attitude and acceptance are significantly related. However, almost no attitudinal study on tribal population in India is available involving an objective measure of attitudes towards family planning with different components.

The tribes, being relatively isolated from the main stream of society and because of their primitive belief system which treat supernatural forces more important and decisive than planning and individual efforts, have generally shown either resistance towards innovation or alienation.

OBJECTIVES

Against the above background the present study attempted to determine the attitudes of tribal people towards family planning. The people from Bhil and Gond tribes of Madhya Pradesh were included in the study. It addressed the cardinal question: why some people, among the tribals. accept and adopt ideas and means of family planning while others do not? It was hypothesized that the acceptors would have positive' attitude than non-acceptors. In addition, the differentials in the responses of tribal groups were also examined,

MATERIALS AND METHOD

Sample. Six hundred and twenty married male tribals (314 Bhils and 306 Gonds) of Ihabua and Chhindwara districts of Madhya Pradesh were systematically selected for the study. Their wives were in the reproductive age group of 15 to 45 years. Out of this, Bhil acceptors and non-acceptors were 154 and 152 respectively; whereas. Gond acceptors and non-acceptors were 161 and 153 respectively. The samples were drawn from the target couple register (TCR) and the records of acceptors of family planning devices which were available at the Primary Health Centres.

Tool: A Likert type 4-point scale was used. It dealt with four major domains, namely, Social. Financial. Moral and Marital, of attitude which involved items measuring attitudes towards family planning, birth spacing, use of contraceptives, and the size of family. The scale was standardized in Hindi language and contained with acceptable levels of reliability and validity. Each item of the scale was read out to the individual respondent and the obtained ratings were recorded by the investigator.

*For detailed methodology, please see Reference No. 10.

RESULTS

The main effecte of the'type of tribe and degree of acceptance of family planning for attitudinal measures were significant. Table 1 shows that Bhils consistently scored lower than Gonds across all the subrareas (domains) of' attitudinal measure. Similarly, the acceptance displayed \significantly more favourable attitude than non-acceptors across all the domains/Table 2 shows two-way ANOVA of these measures on tribal group membership x acceptance of family planning interaction was significant for social, F (1,616)=7.4 p_< .01>and marital, F (1,616) £60.38, fj <.01 domains. The analysis of mean scores showed that on the social aspect of attitude the difference between acceptors and non-acceptors was greater among Gonds than Bhils, though in both the groups acceptors scored higher than the non-acceptors.

DISCUSSION

The results indicated significant differences between Bhil acceptors and non-acceptors on different attitudinal domains. Similar results were observed in the Gond sample. It was also observed that the differences on financial attitude and moral attitude were insignificant between tribal group and acceptor—non-acceptor groups. The acceptors showed more favourable attitude towards family planning than the non-acceptors, as they were much aware about the positive effects of family planning.

The analysis of attitude towards family planning indicated that the Gond respondents shared more positive attitude towards family planning than the Bhils. In general, the acceptors displayed more favourable attitude towards family planning than non-acceptors. Also, the two tribes differed in the degree of acceptance of family planning characterised by more positive stance expressed by the Gond tribe.

TABLE 1

MEAN SCORES ON ATTITUDINAL MEASURES AS A FUNCTION OF MAIN EFFECTS

Attitudinal Domains	Tribals		Acceptance of Family Planning	
	Bhil N=306	Gond N=314	Acceptors N=315	Non-Acceptors N=305
Social	7.19	9.72	9.21	7.70
Financial	6.50	8.13	7.54	7.10
Moral	8.36	9.16	9.51	8.46
Marital	6.93	7.42	7.78	6.55

TABLE 2
ANOVA STATISTICS ON THE MEASURES OF ATTITUDE TOWARDS FAMILY PLANNING

Source of variation	df	Social		Financial		Moral		Marital		Total Score	
		MS	F	MS	F	MS	F	MS	F	MS	F
Tribai Group (A)	1	6.28	314.0*	2.643	188.78**	1.573	42.51**	0.253	14.05**	34.63	266.38**
Acceptance (B)	1	2.208	110.4**	0.182	13.0**	1.091	29,486**	1.529	84:94**	1 7.598	135.37**
AXB	1	0.148	7.4**	0.003	0.214	132	3.567	1.087	60.389**	1.094	8.42**
Error	616	0.02		0.014		0.37		.01		.13	

**P< .01; *p <.05.

The difference between the two tribes in respect of family planning seems to be linked to the socio-cultural ethos and ecological features of these groups. The Gond tribe is located in an area which has greater contact with industrialisation and exposed to modern influences than the Bhil tribe (Shrivastava, 1987). This will imply that intervention has to be initiated at individual as welt as environmental levels.

Lkkjk'k

मध्य प्रदेश राज्य के गौंड तथा मील आदिवासी कबीलों के पुरूषों (एन –620) के परिवार नियोजन संबंधी व्यवहार के प्रति अभिवृत्तियों का अध्ययन एक मानक के आधार पर प्रस्तुत लेख में किया गया है। गौंड जाति के पुरूषों में भील पुरूषों की तुलना में परिवार नियोजन के प्रति अधिक सकारात्मक अभिवृति देखी गई हैं। परिवार नियोजन के उपायो के स्वीकार्यता वर्ग में इसे अस्वीकार करने वालों की तुलना में अधिक सकारात्मक अभिवृत्तियां पाई गई है। अवधारणाओं में अन्तर एवं अन्तः–जातीय विभेदकों संबंधी परिणामों पर सांस्कृतिक संदर्भ में विचार–विमर्श किया गया है तथा जातिगत मध्यस्थता कार्यक्रम की आवश्यकता पर बल दिया गया है।

REFERENCES

1. BHARGAVA, M. AND KAPOOR, S.D. (1986)*Factor Analysis of ATFP Scale. *Indian Journal of Psychometry and Education,* 16:1 &2, pp. 17-24.

2. BHARGAVA, M. AND KAPOOR, S.D. (1986) *Socio-Psychological Correlates of Adoption Behaviour: A Methodological Study In Family Planning.* Agra, National Psychological Corporation.

3. HAKIM, M.A. AND SINGH, Y. *Manual for Attitude Scale Towards Family Planning.* Agra: National Psychological Corporation.

4. INKELES, A. AND SMITH, D. (1974) *Becoming Modern.* London: Harward University Press.

5. KAPOOR, S.D. (1978) Men With Vasectomies: A Quasi-Experimental Evaluation. *Indian Journal of Psychology.* 53(4), pp. 203-218.

6. KAPOOR, S.D. (1981) Factorts Responsible For Low Adoption Rates In Family Planning Programme. *Psycho-Lingua,* Xl(2), pp. 127-132.

7. KAPOOR, S.D. AND BHARGAVA. M. (1981) The Prediction Potentiality of Adoption Behaviour from People's Attitudes, *Indian Journal of Psychology,* 56, pp. 85-99.

8. KATIYAR, R.K. (1976) Determinants of Values in the Small Family Norm. *Journal of Family Welfare.* 22(3), pp. 62-67.

9. KIRK, D. (1974) The Effectiveness of Family Planning Programme in the Less Developed Countries: Evidence from Survey Data. In MILLER, K.A & INKELES, A. (Eds.) *Studies in Agricultural Economics, Trade and Development.*

10. SHRIVASTAVA, V.K. (1987) Psychological Barriers in the Adoption of Family Planning Devices in Tribals of Madhya Pradesh. Sagar: HSG University, Unpublished Ph.D. Dissertation.

11. SORCAR, N.R. AND MIA, A. (1982) Role of Psychological Variables in Family Planning Practices. *Journal ot Family Welfare,* 29: pp. 41-45.

12. STYCOS, J.M. AND BECK, K.W. (1964) *The Control of Human Fertility in Jamaica.* Ithaca, New York: Cornell University Press.

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A CRITICAL APPRAISAL OF MASS MEDIA AND A PLEA FOR TRADITIONAL MEDIA IN HELTH EDUCATION AND COMMUNICATION

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ABSTRACT

Education and communication are important components of health care system. The knowledge and expertise of the scientists and the doctors regarding the management of health should be transmitted to the target user group. The target population should be told about what is good for their health.

In most developing countries, seventy five per cent or more of the healthbudget is still devoted to hospital and doctor-based care for less thjan 25 per cent of the population only. Similarly, 90 per cent of the total media budget is spent for the garish and vulgar entertainment of less than 25 per cent of the population. Folk art is functional and spontaneous. Every activity in the village has its relevant music, dance or theatre. The folk performing art is changing its structure continuously over the centuries, modifying itself to the needs of the changing situations making it functionally relevant to the society. The traditional media with its effective reach and powerful input and with its personalised communications will help in reaching the goal of health for all, all for health.

World Health Organisation has announced the programme of 'Health for All, All for Health'. This involves a massive programme of health care system. People's involvement should be viewed as a felt need and health should be the fundamental right of the people. The knowledge of the scientists and the doctors regarding the management of health should be transmitted/communicated to the target user group. The target population should be told about what is good for their health. It is something to achieve an enormous fund of knowledge regarding researches on various aspects of health but it is quite a different thing to transmit the essence of that knowledge to the user population so that they get the maximum benefit out of these programmes with the minimum of investment and administrative cost. The importance of the proper and effective communication system in this massive programme cannot be neglected.

The Alma Ata Declaration has identified health education and community participation as the first of the major elements of the concept of primary health care, Significantly, this perspective of primary health care has led to a fundamental reappraisal of the concepts and methods of conventional health education and

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mass communication in health. These trends have been articulated by the WHO Expert Committee on New Approaches to Health Education for Primary Health Care. It has described the conventional approach as 'patronising, paternalistic and victim blaming'. It emphasises that people themselves need to fully understand the problems and to fully collaborate with their health care providers for their solutions. For this purpose, it has been suggested that health care providers develop people-oriented health programme and use approaches of health education and mass communication to strengthen the involvement of the people. Hence, education and mass communication becomes a two-way process: far from merely seeking cooperation of communities in carrying out plans already made, the new approach to health education aims at encouraging people to be actively involved in the planning and maintenance of their health and also of their communities.

INADEQUACY OF MASS MEDIA

Mass communican in health field is very often associated with another similarly value-loaded approach, namely 'Health Education'. The emphasis here is on person-to-person contact. Presumably, embarrassed by the sight of swarms of people easing themselves along railway lines, a. mass education campaign was launched to promote use of sanitary latrines in rural areas. This above-down approach of mass communication and education failed to make an impact. There was a communication and education component of the Mass BCG Campaign, launched in the early fifties. Later on, it was discovered that BCG does not impart any protection to adults in India, More recently, a very expensive Satellite Instructional Television Experiment (SITE) was conducted to 'instruct' rural people about health, nutrition and family planning, among other things. This was the message sent to them from the sky. Experiences with mass communication campaigns in the fields of family planning and nutrition in India were even more disastrous. People refused to queue up for sterilisation inspite of saturation bombing by a formidable formation of mass media. Mass media campaign in nutrition used (or distorted) so-called scientific data to create markets for vitamins, tonics, baby-foods, etc.

The target audience for mass media is not 'the rural masses'. The instruments of mass education presume a certain uniformity of class, education and way of thinking. Social homogeneity is, however, not a fact in the structure of a village or even a city slum, nor is it to be found at the level of rural or urban semi-literates in most countries of South Asia.

Even if the messages were widespread it is doubtful that people would read the 'desirable' messages. In States (Kerala, Southern India), or countries (Sri Lanka) where there is greater literacy<comprehension of the printed word in rural areas may not be as uniform as is thought to be - the experience being that the printed word does not necessarily persuade best. In Sri Lanka, literacy is above 90 per cent and the print medium has been around for more than 200 years but the struggle to lower birth rates goes on, not through posters and pamplets as might be presumed, but through interpersonal contact. Mr. Abeywickrema, Executive Director of the Sri Lanka Family Planning Programme said that they have stopped 'wastefully printing and distributing literature or posters free of cost'.

There are community television sets in the villages. But they are few and the problems of community viewing are both endemic and persistent. The programmes for rural viewers are produced in the cities by experts brought up on western mass media'' methods and approved by studio executives, or the TV set is not in order, or the audience' consists' mainly of children. Slowly urban entertainment, rather than rural education; becomes the easy way out. Films, songs and foreign programmes takeover.

The Indian experience with the Satellite Instructional Television Experiment ,(SITE) can be considered as a specific example of the difficulty of reaching people through television. It was conducted during the year 1975-76 and was detailed to produce TV, programmes with rural interest topics. The response to these programmes was monitored in 2,330 villages. One important conclusion was that the three Base Production Centres could broadcast in different languages of the different States, not to speak of the different dialects in each ''State. Even in an experiment with a fairly specific content and limited objective the mass approach 'was' clearly the culprit. Several centres were unable to cope with the multiplicity of cultures''' After SITE the Space Applications Centre (SAC); Government of India; at 'Ahmedabad a was asked by Indian TV to make some science' programmes for rural areas 'an programmes for the villages of the 'Kheda district of Gujarat. The 'programmes' were broadcast from a special' transmitter a Pij. An urban school broadcasting scheme in Dhacca does not reach' the children-for whom.It was intended because the timings the programme interferes with the hours of 'study the apparatus was also too precious to be used or the TV was perceived as entertainment only and was not in the mainstream of formal education.

HEALTH MESSAGE-AND THE MEDIUM

In employing entertainment as a means for conveying health messages and influencing social behavior care should be taken to mix message with the medium. Hearth messages can be very effective –when they are presented as part of entertainment programmes. In particular, the health professional should identify 'existing' credible channels of communication ,including traditional **o**nes in order to reach the public.

Even, with this .wholehearted, backing. From the media in conveying health messages to the greatest number of people we risk haying only health for some and not Health for All'.

In most developing countries, seventy five percent or more of the health budget is still devoted to hospital, and doctor based care for less than 25 per cent of the population only. Similarly, 90 per cent of the total media budget is spent for the garish and vulgar entertainment of less than per cent the population. Naturally, something Significance must be done to set the a things now. Some new dynamic forceful, and potent method of taking Immunization to the people and making it an Integral part of the everyday life, of the villagers who constitute80 per cent of India’s population.

Survey and research work conducted by the Centre for Community Health and Social Medicine, Jawahar Lal Nehru University, New Delhi and National Institute of Design, Ahmedabad, and Osmania University, Hyderabad, have shown that radio and television have failed miserably in delivering the goods, and it has reached the wrong targets. The cost benefit analysis of the end product indicate massive wastage of scarce resources and public money.

The Indian society is a complex social system with different caste, class, creed and religion. The high rate of illiteracy added to the inadequacy of mass media to reach the village population. Inspite of national adult literacy campaigns, over 350 million remain illiterate. To them, mass media proved too glamorous impersonal and unbelievable in contrast with the familiar performance of traditional artists whom the villager 'could not only see and hear but even touch'. Traditional media can be used to reach these people in the process of change and development of the country. Traditional media in India can be effectively utilised for social development and health communication.

Over the years, a huge propaganda machinery has been assembled by the government. It was linked with AIR, Doordarshan, Field and Audio-visual publicity to generate thousand of metres of cellulloid, video and audio tapes, TV and radio fillers, full length documentaries, soap opera and millions of reams of paper. But neither it is cost-effective nor it has reached the desired population. The head of a big advertising agency admits. "It is very important to understand whom you are communicating to, and we have our limitations in that direction". Another head of an agency points out: "So far we have been beaming urban values to rural people". Another question which is relevant is that whether Doordarshan's commitment to health programme is big enough to give them prime time slots every time they are needed inspite of a loss of revenue. Will the ill equipped media units of the health and family welfare departments at the district, block, village level be able to put the communication strategy to any constructive use?

THE ROLE OF FOLK PERFORMING ARTS

The communication potential of India's traditional performing arts has been proved time and again by many instances of national importance. *AJha* the popular ballad of Uttar Pradesh and its counterparts like *Laavani* of Maharashtra, *Gee-Gee** of Karnataka. *Viflupattu* of Tamil Nadu and *Kayigan* of Bengal which change their contents and focus depending upon the contemporary need and were effective in arousing the conscience of the people against the colonial rule of the British.

Folk art is functional and spontaneous. Every activity in the village has its relevant music, dance or theatre. The folk performing art is changing its structure continuously over centuries, modifying itself to the needs of the changing situations making it functionally relevant to the society. Tradition is the process of the transmission of age-old values and the contextual manifestation and interpretation of the universal. Tradition is not only a repetitive behaviour pattern or some persistent symbol or motif in the community culture, it is also an assertion of an

identity, a revival and regeneration of the life-force of the community. The traditional performing art is an asethetic of the constant concept of belongingness and affinity in a cultural context. In traditional societies, art is an integral part of the general life of the people. In primitive societies, there is no real distinction between art and life or between fine arts and applied' arts.

Oral tradition survives in a particular society only because it fulfils some social function. There are many diverse function of oral tradition in folk societies. These may be broadly-grouped into the functions of recreations or amusement, education, socialisation, social control pretest, propaganda media, communication of new ideas, knowledge and values.

Various oral traditions like folk-song, ballad, epic-lays, folk-tales, myths, provern, riddle etc. provide good recreation and amusement to the people in their work and leisure. The folk-songs through their enchanting tune and interesting themes convert dull work into play while providing an avenue to forget the fatigue and the hazards of the work. Women in the village sing songs while transplanting the seeds, weeding the field, drawing water from the well. Oral tradition plays a vital role in educating the younger generation. The simple tune of the song enlighten the bender minds of the children with the useful knowledge of geography, history, politics and simple arithmetic, the moral songs teach them the norms and conducts of the society. The proverbs prevalent in the villages impart technical knowledge regarding ploughing, sowing, irrigating, harvesting, etc. to the villagers. Oral tradition also helps in socialisation and modifying their behaviour according to the need of the community. Oral tradition is highly effective in exercising social control. Myths, legends and ballads are effective devices of social control. Myths and legends while narrating the life history of the mythical heroes describe the consequences of simple acts done even by mighty persons. These instances inculcate righteous among the folk. Proverbs are very effective in exercising social control in the villages and powerful in modifying behaviour pattern. There are countless number of proverbs aimed at modifying the behaviour and also for teaching the right conduct. Oral tradition in India has served as a vehicle of social protest and has helped mobilising public support for a cause. They have made people aware about the existence of injustice, exploitation and oppression in the society and motivate them to remove the causes of injustice for bringing the desired change in the society. Oral tradition specially folk songs are one of the most powerful media to direct the attention of the people towards a particular programme. During the recent election in the country the members of various political parties took help of folk-song to popularise their party candidates and the manifesto adopted by their party. Development officials also adopt the oral media to popularise high yielding varieties of seeds, agricultural implements, fertilisers and technical know-how etc. among, the cultivators.

'Women' are considered to be the important carrier of oral tradition. The existing oral tradition in India shows signs and continuity and growth. No celebration is conceivable, may it be of a child birth or marriage without the singing of a folk-song and the presentation of folk rituals appropriate to that particular ceremony. *Madhubani* of Bihar and *pad* of Rajasthan are complete audio-visual

communication structure, perpetuated by women in the rural areas of India. Secular themes and messages are interpolated *easily* into these ritual performances. A well known *Awadhi* folk-song sung by the women in the railway train is compared to the cowife who takes away the husband. The women in the Bhojpuri folk opera *Bidesia* deals with the temptation and the resulting torments of an immigrant labourer to the urban areas and his wife. In the ritual *Vadu, Tusu* song of Bengal changes in the social millieu need for technological improvements and even the significance of Damodar Valley Corporation (DVC) a significant hydro-electric project are reflected.

CONCLUSION

The framework of communication for health education and awareness should be a fusion of various techniques of personalised communication styles at different levels. A proper coherence has to be established between urban and rural people, so that masses in the villages can involve themselves in the health care programme and the role of NGOs in this is significant. The traditional media with its effective reach and powerful input and with its personalised communications will help in reaching the goal of 'Health for All, All for Health'.

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शिक्षा एवं संचार, स्वास्थ्य परिचर्या प्रणाली के महत्वपूर्ण घटक हैं। स्वास्थ्य प्रबन्ध के विषय में वैज्ञानिकों और चिकित्सकों के ज्ञान और विशेषताओं को लक्षित जनसंख्या वर्गों तक पहुंचाया जाना चाहिए। लक्षित जनसंख्या वर्गों को यह बताया जाना चाहिए कि उनके स्वास्थ्य के लिए क्या अच्छा है।

अधिकाश विकासशील देशों में कुल स्वास्थ्य बजट का 75 प्रतिशत अथवा इससे अधिक भाग अभी तक अस्पतालों अथवा डाक्टरों द्वारा प्रदान की जाने वाली सेवाओं के लिए निर्धारित किया जाता है जो 25 प्रतिशत से भी कम जनसंख्या के लिए प्रतीत होता है। इसी प्रकार संचार माध्यमों के लिए निर्धारित कुल बजट का 90 प्रतिशत भाग 25 प्रतिशत से भी कम जनसंख्या के लिए केवल दिखावटी अथवा निरर्थक प्रकार के मनोंरजन पर खर्च किया जाता है। लोककला क्रियाशील तथा नैसर्गिक है। गांव की प्रत्येक गतिविधि के लिए उससे संबंधित अपना अलग संगीत, नृत्य अथवा रंगभूमि होती है। लोककलाएं सदियों से स्थितियों में हो रहे परिवर्तन के अनुसार अपने स्वरूप को बदलती रहती है और समाज के अनुरूप क्रियाशील होती रहती हैं पारम्परिक संचार माध्यम अपनी प्रभावशाली पहुंच तथा सशक्त लोकप्रियता के कारण और अपनी संचार विशिष्टता के कारण सभी के लिए स्वास्थ्य प्रंदान करने के लक्ष्य को प्राप्त करने में सहायता कर सकते हैं।

REFERENCES

AGGRAWAL, B.C. (1977) ***Satellite Instructional Television Experiment; Social Evaluation Impact on Adults.*** Bangalore, Indian Space Research Organisation.

BANERJI, D. (1979) Epidemiological Issues in Nutrition. ***Indian Journal of Nutrition and Dietetics,*** 16, p. 189-194.

BANERJI. D. AND ANDERSON. S. (1983) A Soiological Study of the Awareness Symptoms Suggestive of Pulmonary Tuberculosis. ***Bulletin of World Health Organisation.*** 29(5) p. 665-683.

BARUA, B.N.M. (1981) BCG Vaccination ***in*** Rao K.N. (ed): Texfooo* ***of Tuberculosis,*** New Delhi, Tuberculosis Association of India, p. 542-565.

BAUMAN, RICHARD (1967) Verbal Art as Performance. ***American Anthropologist,*** 77{2), p. 290-311.

BENEDICT. RUTH (1935) ***Patterns of Culture,*** London, Routledge & Kegan Paul Ltd.

BHAGWAT, DURGA (1958) ***An Outline of Indian Folklore,*** Bombay; Popular Book Depot.

CHOUDHURI, ROMA (1964) ***Ancient Indian Folk-Literature, Studies in Indian Folk Culture,*** ed. by Shankar Sen Gupta and K.D. Upadhyaya, Calcutta. Indian Publications.

CROOKE. WILLIAM (1896) ***The Popular Religion and Folklore of Northern India.*** London: A Constable Co.

DARRYL D'MONTE (1983) Mass Media and Environment. ***Vidura,*** October. 1983.

GARGI, BALWANT (1967) ***Folk theatre of India.*** Seattle: University of Washington Press.

GOVERNMENT OF INDIA (1956) ***Conference on Social and Cultural Factors in Environmental Sanitation in Rural India.*** New Delhi, Publications Division.

INDIAN INSTITUTE OF MASS COMMUNICATION (1978) ***Communication and the Traditional Media,*** New Delhi.

JOHN A. LENT (1981) ***Mass Media in the Developing World, Four Conundrums.*** (Paper, presented to the International Scientific Conference) Increasing Importance of Folk Media in Third World Nations. ***Vidura.*** October.

KAKAR, V.N. (1979) ***Population Communication in India,*** New Delhi. Ministry of Health and Family Welfare.

MUKHOPADHYAY, DURGADAS (1988) ***Culture Performance, Communication,*** B.R. Publishing Corporation, Delhi.

MUKHOPADHYAY, DURGADAS (1978) Lesser ***Known Form of Traditional Arts in India.*** Sterling Publishers, New Delhi.

HALDER, S. JAHANGEER ***et al.*** (1983) ***The Evaluation of the Use of Folk Song and Folk Talents in Family Planning Publicity and Education.*** (Survey conducted by Information Education Motivation Unit of the Family Planning Division, Dhaka).

WORLD HEALTH ORGANISATION (1978) ***Primary Health Care: Report of the International Conference on Primary Health Care, Alma-Ata, USSR, Septmber 6-12.*** Geneva, World Health Organisation.

WORLD HEALTH ORGANISATION (1983) ***Report of the Expert Committee on New Approaches to Health Education in Primary Health Care, Geneva, October 12-18,1982.*** **Geneva World Health Organisation (WHO Technical Report Series No. 690)**

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DEVELOPMENT OF A SCALE TO MEASURE ATTITUDE OF THE LESS EDUCATED TOWARDS POPULATION ISSUES

M.Z. Khan*, Z.H. Qureshi and Samiur Rahman*****

ABSTRACT

The country faces an explosive population situation, yet efforts to popularise small family norms are yielding indifferent results - underscoring the need to educate people and to modify their attitudes towards population issues. But how to measure their attitude?

The present paper reports the development of a summated rating scale designed to measure the attitude of the less educated towards population issues. It was assumed to have six interrelated dimensions and, spanning them, a large number of items were assembled. Subsequently, 42 items were tested over a sample of population education learners (N=98). Finally, 23 items with high discriminal power were selected for the scale. Split-half and full-test reliabilities of the scale were sufficiently large; and, difference in the scores of contrasted groups assured its validity.

Even in the present form, the scale should be useful in measuring the attitudes towards population issues not only of the less educated but also of people from other strata of society.

The Directorate of Adult Education. Ministry of Human Resource Development, in conjunction with the United Nations Fund for Population Activities has launched an ambitious programme to integrate population education with adult literacy programmes. The scheme is being implemented through State Resource Centres. Over a period of twelve months, the learners are given population education along with other educational inputs. The moot question, however, is: How to assess the impact of population education on the learners? Towards this, attention needs to be focussed on knowledge and attitude towards population issues and its practice among the learners. Measurement of their attitude towards population issues is what the present study is concerned with.

Considerable attention has been paid to the population problem in the country. Population size and growth have been studied for their effect on social and economic development. Valuable information has been accumulated on population control strategies and related decision-making process. The knowledge of and attitude towards population issues and the practices as also their

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impact on different population groups have been studied. A few attempts have also been made to ascertain attitude of people towards population problem. It would not thus take long to see that the problem of measuring people's attitude towards population issues has hardly received the amount of research attention that it deserves.

There is no denying the fact that attitudes have a "Key-role in directing and channelling social behaviour. The underlying assumptions of the concept are that the human behaviour cannot be interpreted on the basis of a single process, as it is a dynamic resultant of motivational, emotional, perceptual and learning processes, operating concurrently. It is a function not only of the immediately present stimuli but also of more enduring dispositions. Stated differently, an attitude is a predisposition to respond and it is generally durable and consistent. This aside, patterns of attitude are not impervious to influencing forces or efforts directed towards their modification. In relation to attitude towards population issues, the role of population education stands out. As a part of an ongoing population education work, the present study outlines the development of a scale to measure attitude of adult learners towards population issues. The choice has been on the summated rating or Likert scale, as it is economical to construct, easy to administer and has considerable discriminal power.

METHOD

Item Selection The efficiency of a summated rating scale depends on the care exercised m selecting its items. Keeping this jn view, a large number of periodicals, reference books and research reports have been scanned and a large number of items have been culled out. These items have been grouped under six dimensions: (i) social values: (ii) socio-religious beliefs; (iii) implications for person/family; (iv) implications for community: (v) economic implications: and (vi) standard of living.

In keeping with the Likert format, these items have been assigned five-point response categories - ***Strongly agree'. Agree', No opinion', Disagree',*** and ***Strongly disagree'.*** Effort has been made to intersperse negative and positive items. Initially. 105 items were selected covering the six dimensions. These were rendered into *Hindi.* Both the English and Hindi versions were seen through by several subject and language experts. In the light of their comments, items were modified in terms of content and language. These items were pre-tested on an equivalent group. On the basis of the response pattern as well as investigators' observations. 63 items were dropped. The remaining 42 items were used for scale development.

Sampling: Attention was focussed on the learners in South-East Delhi in five experimental Population Education Centres run by a State Resource Centre in collaboration with Delhi Administration and voluntary agencies. In most of these centres, the proportion of illiterate and semi-literate women coming from lower strata of society was sizeable. As such a purposive sample of 98 women learners was taken, hopefully sufficient for the purpose of scale testing.

RESULTS AND DISCUSSION

item Analysis The set of 42 selected items, along with personal date schedule, was administered on 98 subjects in interview situation. Their responses have been scored 5 to 1 or 1 to 5 depending upon (heir positive or negative thrust. On the basis of the total scores of the subjects, the 35th and 65th percentiles have been computed so as to have lower (N=35) and upper (N- 35) contrast groups. Next, using the scores of the subject from the lower and upper groups, item-wise cross-tabulation has been carried out. Initially, the tests of chi-square and contingency coefficient have been applied. These tests did bring out the discriminal power of most items; nonetheless, border-line items posed some difficulty. As such, t-values of the items were calculated and have shown in Table 1.

Having done this, the items with a contingency co-efficient value of 0.320 or better and with a t-value having a probability of .001 or less have been retained in the scale as have been given in Appendix A.

Dimensionality As assumed, the scale has six dimensions, although the 23 items thus selected are unevenly distributed over them. Item numbers 6.14.15.17. 18 and 19 mainly define "socio-religious beliefs': item numbers 13.21 and 22. social value pattern'; item numbers 7 8. 9 and 16. 'implications for person/family'; item numbers, 4, 10.11 and 12, "implications for community': item numbers. 2.5.20 and 23. 'economic implications'; and item numbers. 1 and 3 standard of living'. Do these. dimensions make for a unified psychological entity, for which the attitude scale was developed? To ascertain this, inter-correlations between the six dimensions were computed, using the method of product-moment correlation as given in Table 2. All the correlations are positive, ranging between 0.192 and 0.718. and bring out the non-dimensionality of the scale.

Reliability: The importance of reliability in scale construction can hardly be over-emphasized. To ascertain the reliability of the scale, it has been administered on a sample of one hundred women learners. Subsequently, the responses have been scored separately for odd and even numbered items so as to determine split-half reliability. The two scores have been tabulated and product-moment correlation has been computed. The split-half reliability of the scale, + 0.710 (df=98; p<0 .001) and full-test" reliability +0.716 (df=98; p.<001) are sufficiently large. These also indicate a high degree of internal consistency. On the whole, the scale appears to be sufficiently consistent and reliable.

Validity The construct' validity of the scale is, to a great deal, evident from its dimensions and the thrust ol the scale items. This apart, its validity was ascertained by comparing the mean scores of sharply contrasted groups from normal population (sample size: 150). The mean score (N= 50) of those subjects having 0-2 children was 65.88 (SD=9.194); whereas that of those (N=50) having 3 or more children was 68.43 (SD=11.956). Perhaps people having a large number of children are more favourably disposed towards population issues. Next, with the help of interview items the awareness of the people about population issues was assessed. These

TABLE 1
ITEM ANALYSIS STATISTICS

Items	Chi-square (df»4)	Contingency coefficient	t-value (df= 66)
1 (N)	21.630	0.485	5.377
2 (N)	9 802	0.350	3.079
3 (N)	29-296	0.543	6.660
4 (N)	13.594	0.403	3.454
5 (N)	18.646	0.486	3.325
6 (N)	22.112	0.490	4.964
7 (N)	35.460	0.579	7.495
8 (N)	21.206	0-482	4.618
9 (P)	9.192	0.340	3.201
10 (N)	24050	0.505	6.846
11 (N)	16.666	0.438	4.421
12 (N)	10.702	0.364	3276
13 (N)	14.100	0.409	3.386
14 (N)	15.660	0.427	4.089
15 (N)	11.500	0.375	3.176
16 (N)	33.442	0.568	7.307
17 (N)	16.270	0.434	3 828
18 (N)	25.602	0.517	6.020
19 (N)	14.066	0.409	4.000
20 (N)	31.880	0.559	7.009
21 (N)	34.082	0.572	6.220
22 (N)	8.152	0.323	3.181
23 (N)	29.362	0.543	6.000

Letters P and N in parenthesis denote positive and negative items

Table 2
INTER-CORRELATION MATRIX OF THE SCALE DIMENSIONS
(ALL POSITIVE VALUES)

Dimension	1	2	3	4	5	6
Social values (1)	1.000					
Socio-religious belie(s(2)	0.536	1.000				
Implications for person/family (3)	0.102	0.350	1.000			
Implications for community (4)	0.718	0.288	0.266	1.000		
Economic implications (5)	0.243	0.192	0.234	0.284	1.000	
Standard of living (6)	0.245	0.303	0.363	0.408	0.421	1.000

data were utilized for the present purpose. Those having high awareness (N= 50) had a mean attitude score of 101.6 (SD = 37.65); while those having low awareness had only 56.84 (SD as17.061). Lastly, the adoption of family welfare planning (FWP) methods by people and their attitude towards population issues were compared. Two contrasting groups of 50 subjects each were formed, one making noor irregular use of FWP methods, and the other making regular use. The mean attitude score of those, making no/irregular use of FWP methods (mean a 66.98; SDa14.418) is distinctly lower than those of making regular use of FWP methods (mean a= 73.39; SD =12.566). This indicates that the test is valid for the purpose it has been developed.

CONCLUSION

To recapitulate, with a view to measuring the attitudes of female learners towards population issues a scale has been developed. Under six dimensions, a large number of items were assembled. Subsequently, 42 items were tested over a sample of female learners, and out of these, 23 items with high discriminal power were selected for the scale. The values of split-half and full-scale reliability are found to be large. Also, the scores of contrasted groups markedly differ, assuring its validity.

Nonetheless, it should be possible to further improve the scale by testing it on different population groups, singly or along with other tests. Further, when, it is administered on different population groups and a body of information is accumulated, it should be possible to evolve norms. Yet. even without all these sophistications, the scale in its present form would be useful in measuring attitudes towards population issues not only of women from lower socio-economic strata but also of other population groups.

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हमारे देश में जनसंख्या विस्फोट की स्थिति बनी हुई है, छोटे परिवार के मानदण्डों को लोकप्रिय बनाने के लिए किए गये प्रयासों के विभिन्न परिणामों के फलस्वरूप लोगों को शिक्षित किए जाने तथा जनसंख्या संबंधी मुद्दों के बारे में उनके दृष्टिकोण में बदलाव लाने की आवश्यकता को कम आंका गया है। प्रश्न यह है कि उनके दृष्टिकोण का पता कैसे लगाया जाए।

प्रस्तुत लेख में जनसंख्या संबंधी समस्याओं के बारे में अल्पशिक्षितों के दृष्टिकोण की जानकारी के लिए' संकलित मूल्याकन मानक' विकसित करने पर विचार किया गया है। छः परस्पर संबद्ध परिणामों की कल्पना की गई है। परिणामस्वरूप, जनसंख्या शिक्षार्थियों (एन–98) के एक सैम्पल के रूप में 42 मदों का परीक्षण किया गया था। अन्ततः उच्च विवेकीय शक्ति के साथ 23 मदों को मानक के रूप में चुना गया है। मानक की अध–खुली और पूर्ण–परीक्षित विश्वस्नीयताएं पर्याप्त थी, तथा विभिन्न समूहों के मदों के अन्तर से इसकी वैधता व्यस्त होती है।

अपने विद्यमान रूप में भी, यह मानक जनसंख्या संबंधी मुद्दों के प्रति दृष्टिकोण को जानने के लिए उपयोगी सिद्ध होगा, न केवल अल्पशिक्षितों बल्कि समाज कव अन्य वर्गों के दृष्टिकोण का पता लगाने मे भी सहायक सिद्ध होगा।

REFERENCES

1. CHANDHASEKHAR. S. (1967) *India's* ***Population: Facts, Problems and Policy***. New Delhi Meenakshi. Agarwala. S.N. (1974) ***India's Population Problem.*** New Delhi Taia-McGraw Mandelbaum. D.G. (1974) *Human Fertility in India,* Berkeley UCP.

2. MITRA A. (1974) Population in India's Development. In Bose, A. et *al.* (Eds); ***Population in India's Development*** New Delhi Vikas. Cassen. R.H. (1978) ***Population, Economy and Society***, London Macmillan.

3. DANUA. A.K. (1983) ***Family Planning: An Adaptive Strategy***, New Delhi: Inter-India. 4

4. SESCHALAM. P (1984**)** ***Decision-making in Family Welfare Planning.*** New Delhi: Marwah.

5. BALAKRISHNA. S. (1971) ***Family Planning Knowledge, Attitude and Practice,*** Hyderabad NIRD: Khan. M.E. (1979) ***Family Planning Among Muslims in India,*** New Delhi Manohar.

6. RAO. D. (1983) People's Attitudes Towards Population Education. ***Journal of Family Welfare.*** 30. 4 p. 45-53; Kumar. Raj (1985)- Attitude ot Girls Towards Marriage and Planned Family. ***Journal of Family Welfare.*** 31. 3.

7. LINDGRAEN, HC. (1974) ***An Introduction to Social Psychology,*** New Delhi: Wiley- Eastern Private Limited.

8. KHAN, M.Z. & KRISHNA, K.P. (1982) ***Attitude of Adolescents*** *Towards Police,* New Delhi' ICFS.

9. EDWARDS. A.L. (1969) ***Techniques of Attitude Scale Construction,*** Bombay Vakils. Fetter and Simons.

10. EDWARDS (1969) op. ***Cit.***

APPENDIX A

Instructions: Listed below are the statements on main population issues. Against each statement you have five alternatives, namely, ***Strongly Agree', 'Agree', No Opinion', 'Disagree',*** and ***Strongly disagree'*** You are expected to read to the learner or respondent each statement carefully so that the respondent could react to it. If the respondent strongly agrees with the statement put a tick ( ) mark on ***'Strongly agree'.*** Similarly, anyone of the five categories of responses to a statement would be tick-marked depending upon to what extent the respondents agrees or disagrees with it. There is no right or wrong answer. We are interested in having respondent's personal opinion on these issues. Remember, you have to 'tick' mark anyone of the five alternatives in all the statements.

1. Standard of living of the people will remain the same whether population in the country increases or decreases. ***STROGLY AGREE/AGREE/NO OPINION/DISAGREE/STRONGLY DISAGREE.***
2. Whether less educated or more educated, women hardly add anything to the household or to the nation.
3. Parents with a large number of children provide them sufficient vegetables, fruits and milk.
4. The prestige of parents in the /NIHFW/community is as high as the number of children they have.
5. Those who have many children regard them as future source of income.
6. It is a matter of destiny that who will have how many children.
7. It is good both for boys and girls to marry early for it helps in adjusting with each other quickly.
8. Husband and wife have happiness and satisfaction whether children are born to them in quick succession or with time-gap.
9. It is important for that family that the wife should be educated and working.
10. Uneducated mothers look after tr.oir children as well as educated mothers.
11. Persons from large family groups are more responsive to other peoples joys and sorrows.
12. A family having a large number of persons also has a higher standing in the mohalla.
13. The place of women is in the household and not in offices or legislatures.
14 Those who take to pills, contraceptives, termination of pregnancy etc. earn the displesure of God.
15. In regions having hot climate, couples are bound to have a larger number of children.

16. Early marriage and early arrival of children is good for the husband, wife and the family.
17. People who eat meat, fish. etc. have more children than those who are vegetarian.
18. As children are a gift of God. one should not try to raise barriers in their arrival.
19. Child birth is the will of God. it has little to do with early marriage.
20. The rich will remain rich and the poor will remain poor whether population increases or decreases.
21. A woman gets happiness and a sense of fulfillment when she has a large number of children.
22. No matter how many daughters one has, it is important for him to have a son to provide continuity to the lineage.
23. It does not make any difference whether girls are educated or not because they are only to look after children and to do household work.

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POST PLACENTAL DELTA T - FOLLOWED UP FOR 12 MONTHS (N= 50)

Lavanya Rai* and A. Padma Rao**

ABSTRACT

The sutured copper T* *an innovation in IUD design for postpartum use was evaluated in fifty women. Insertion was done by hand or insertor in the fourth stage of labour. Follow-up was done at regular intervals for 12 months. Continuation rate at the endofone year was 60 per cent. Expulsion (15.6%) the main drawback of postpartum IUD has not been completely overcome by this Delta T. Removal rate was 24.4 per cent. Incidence of bleeding, pain and infection were low and no major complications were reported. Post placental insertion of IUD is simple and safe. Suture devices to some extent have overcome the problem of expulsion but there is still room for further improvement.*

Immediate post-partum period is ideal time for motivation of family planning and therefore would be the opportune time for IUD insertion. But post-partum IUD has not been popular because of discouragingly high incidence of expulsion, fear of perforation and infection. Rosenfield, Castadot and many others have proved that risk of infection and perforation are not more than in non-puerperal insertion. To overcome the main hazard of 'expulsion' suture lUDs were devised (Delta loop and Delta T). Biodegradable suture projections of chromic catgut No. 2 attached to the horizontal arm in Cu. T device, facilitates retention during involution of uterus. This paper presents findings of a study of post placental insertion of Delta T in fifty patients with one year follow-up.

METHOD AND MATERIALS

Fifty patients who delivered by vaginal route were taken for post-partum insertion of Delta T from January 1984 to April 1984 at Kasturba Medical College Hospital, Manipal. Delta T with single catgut suture and long marker tail was used. Women with prolonged rupture of membranes or any sign of infection were not included in the study. Post placental insertions were done by hand introduction soon after delivery of the entire placenta and membranes in many, while loop insertor was used in some. Antibiotics were given only to those who had instrumental deliveries and episiotomies. All IUD insertions were done by the author. Cases were followed-up at the end of 2nd, 6th and 12th month after insertion, by clinic visits.

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RESULTS

Majority of acceptors (76%) were from social class II and III whereas there were none from social class IV. Ninety-four per cent of women were aged between 20-29 years and 86 per cent were Para I and II. Manual insertion of IUD was done in 72 per cent while insertor was used for insertion in 28 per cent.

There were only minor problems in 10 per cent of patients in the immediate puerperium. Three patients complained of increased bleeding in the first post-natal week which subsided spontaneously. One patient with after pains responded to analgesics. Endometritis which manifested in one with low grade fever, foul smelling lochia and uterine tenderness responded to antibiotics.

During the first check-up at second month, long marker tail of Delta T was cut short. Involution of the uterus was complete in all the women.

Table 1 shows the event rate at different periods of follow-up. At the end of one year, continuation rate was 60 per cent. This was less mainly because of high expulsion rate (15.6%). Follow-up was 90 per cent.

Expulsion Among the seven expulsions of the device four were complete expulsions noticed by patients themselves, the remaining three were partial, noticed by the author at the time of clinic visits. All the expulsions occurred in the first two months, earliest being on the 18th post-natal day.

Expulsion in relation to mode of insertion was 12.9 per cent for hand insertion as against 21.4 per cent for insertor insertion. It was also interesting to note that all seven expulsions occurred in the first 20 cases.

TABLE 1
EVENT RATE AND FOLLOW-UP N =50

Events	**2nd month**		**6th month**		**12th month**	
	NO.	**Percentage**	**No.**	**Percentage**	**No.**	**Percentage**
Total cases	**50**	**100**	**40**	**80**	**36**	**72**
Lost (or follow-up	5	10.0	5	12.5	5	13.9
Followed-up	45	90.0	35	87.5	31	86.1
Removal	3	6.7	4	11.4	4	12.9
Expelled	7	15.6	-	-	-	-
Continued users	35	77.7	31	68.8	27	60.0
To be followed-up	40	80.0	36	72.0	32	64.0

Removal: Overall removal rate was 24.4 per cent and most of the removals were within the first six months. The reasons for removal are depicted in Table 2.

Miscellaneous reasons like husband's insistence, fear of malignancy, etc. prompted removals in four patients. Embedding and inversion of the device was noticed in one each, while searching for the missing tail. Multiple insertion occurred in a case due to accidental insertion of 2nd IUD during first follow-up as the tail of the previous IUD was missing. However, at the second visit marker. tails of both IUDs were visible at the os. They were removed for fear of menorrhagia and pain due to increased bulk of material.

Menorrhagia was the commonest of bleeding problems while backache was a constant factor in all who had pain related problems. However, these problems were short lasting rn many, only four removals were for this reason. Some had more than one side effect. General complaints mainly consisted of leucorrhoea, generalised weakness, etc. Leucorrhoea was commonly found in the first visit. The long marker tails might have caused increased vaginal secretion because leucorrhoea subsided after cutting the tails short. Tail had curled up inside in two of the four patients, with missing tail.

TABLE 2
REMOVAL N=45

Reason	No.	Percentage
Pain and Bleeding	4	8.9
Multiple insertion	1	22
Embedding	1	2.2
Inversion	1	2.2
Miscellaneous	4	8.9
Total	**11**	**24.4**

TABLE 3

SIDE EFFECTS N=345

Complications	No.	Percentage
Bleeding	10	222
Pain related problems	14	31.1
General complaints	14	31.1
Missing tail	4	8.9

TABLE 4

POST INSERTION ONSET OF MENSTRUATION AND LACTATION STATUS N=45

Months	2nd Month		6th month		12th month	
	No.	Percentage	No.	Percentage	No.	Percentage
Number followed-up	45	90.0	35	87.5	31	86.1
Onset of menstruation	7	15.5	22	62.8	28	90.3
Lactating	45	100	22	62.8	8	25.8

Post-partum IUD insertion did not affect lactation in any way. Majority of the women had onset of menstruation by sixth month, average being about the third month. No expulsion of the device occurred after the onset of menstruation.

DISCUSSION

Continuation rate at the end of one year for post placental Delta T was 60 per cent. Hence, the main drawback of expulsion of the device .does not seem to have been overcome with the biodegradable device. Immediate post placental manual insertion of IUD seems to have lower expulsion rate compared to insertor insertion, but the number of insertor insertion is too small in this study. High fundal placement of the device is necessary for retention of the device. It was also noticed that expulsion decreased with the experience of the investigator.

Table 5 shows that, expulsion rate in devices without biodegradable material is only marginally more compared to Delta T. In fact Thiery M. had expulsion rate of

TABLE 5

COMPARISON OF EXPULSION RATE WITH OTHER STUDIES (POST PLACENTAL INSERTION)

Author	IUD	Expulsion rate per 100 users at one year
Aznar. R.	T. Cu. 220 C.	26.3
	Delta T.	17.3
Thiery. M.	T. Cu. 220 C.	11.1
	Delta T.	8.0
Rao, A.P.	T. Cu. 200	233
Present Study	Delta T.	15.6

11.1 with T.Cu. 220 < much less than other studies using Delta T. This raises doubts as to the validity of Laufe's hypothesis of addition of catgut to prevent expulsion.

There were no accidental pregnancies in this study. Whether physiological infertility due to lactation contributed to contraceptive efficacy is difficult to define. Even though majority lactated upto the ninth month it was only partial lactation. This may not have contributed much for contraception.

Major complications like ectopic pregnancy, perforation of the device did not occur in this study. Rare problems like 'inversion' of the device in utero, multiple insertion' and 'Embedding' were noted. 'Inversion' of IUD is said to be common with post-partum insertion because of contractions of the involuting uterus. Actual incidence is not available but biodegradable device again should lessen this hazard because of its attachment to the placental site. 'Multiple insertion' is a iatrogenic problem. Seven cases of multiple insertion were reported by researchers, out of Which two were asymptomatic.

Although expulsion rate is high, low index of side effects and low pregnancy rate, makes insertion of IUD in fourth stage of labour and early puerperium a good method of family planning. It is easy to insert, simple and safe. Minor problems like post insertion bleeding and pain are masked by lochia and after pains.

As most of the expulsions occur wjthin the first few months, it can be detected during post-natal check-up and reinsertion of IUD can be done. Therefore for optimal efficacy early follow-up is mandatory after post placental and early postpartum insertion.

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पचास महिलाओं को प्रसवोत्तर प्रयोग हेतु नई पद्धति की कॉपर–टी लगाने के पश्चात उनका मूल्यांकन किया गया था। प्रसव के चौथे चरण मै हाथ से या प्रवेशक द्वारा इसे लगाया गया था। बारह महीने तक नियमित अन्तरालों में इसका पुनःपरीक्षण किया गया था। एक वर्ष की समाप्ति पर इसकी सततता दर 60 प्रतिशत थी। अन्तः गर्भ निरोधक की प्रसव के बाद की विशेष कमी–निर्वासन (15.6 प्रतिशत) को डेल्टा–टी द्वारा भी पूरी तरह दूर नहीं किया जा सका था। निष्कासन दर 24ण्4 निर्वासन–समस्या कुछ हद तक हल हो पाई है, किन्तु इनमें अभी और भी सुधार किए जाने की आवश्यकता हैं।

गर्भनिरोधक लगाया जाना सरल और सुरक्षित है। गर्भाशय में लगाये जाने वाले साधनों से निर्वासन–समस्या कुछ हद तक हल हो पाई है, किन्तु इनमें अभी भी और सुधार किए जाने की आवश्यकता है।

REFERENCES

1. ROSENFIELD. A.G. & CASTADOT. R.G. (1984) Early Post-Partum and Immediate Post Abortion Intra Uterine Contraceptive Device Insertion. *Am. J. of Obst. & Gyn.* 118 (9)- p. 1104.
2. THIERY. M.. PAREWIJCK, W. &.VAN DER PAS. H. (1982) Immediate Post-partum IUD Insertion Comparison of Sutured and Non-sutured Device **-** *Cont. Del. Syst.* 3; p. 231.
3. THIERY. M.. VAN DER PAS. R. DELBIKE, L. & VAN KETS. H. (1980) Comparative Performance of Two Copper-wired lUDs (ML Cu 250 and T Cu200) Immediate Post-partum and Interval Insertion. *Cont. Del. Syst.* 1 - p. 27.
4. LAUFE, L.E. & FRIEL P.G. (1980) Improving IUD Performance with Biodegradable Materials - Biodegradables and Delivery System for Contraception. *Progress In Contraceptive Delivery Systems Series* 1: p. 97-108; England 1980. MTP Press Ltd.
5. AZNAR. R., AREVALO. N.. BAZAN, T., ALVARADO, A. & REYNOSO, L. (1982) One Year Experience * With A Delta Lippes Loop D and T Cu-220 C. *Cont. Del. Syst.* **3: p.** 234.
6. AZNAR. R.. AREVALO, N.. BAZAN, T, REYNOSO, L. & ALVARADO. A. (1982) Post Placental Insertion of Three Different lUDs. Cont. *Del. Syt.* **3:** p. 242.
7. AZNAR, R., REYNOSO. L. MONTEMAYOR, G. & GINER, J. (1980) Post Placental Insertion of lUDs. *Cont Del. Syst* 1 - p. 143.
8. RAO, A.P. (1985) Or. M.D. Adatia Oration in Bombay.
9. MILLEN. A. & BERNSTEIN. G.S. (1976) Accidental Insertion of Multiple lUDs. *Obstet. Gynecol.* 47(3): p. 369.

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TOWARDS DEVELOPING HEALTH ATLAS OF INDIA: AN EXERCISE IN HEALTH CARTOGRAPHY

A. Indrayan*

ABSTRACT

Maps of India for diseases like tuberculosis, leprosy and goitre, and for diet pattern are already available. Some maps are available for an indicator like infant mortality rate. All these maps lack objectivity on choice of the number of categories that India should be divided into, on the cut-offs for such division, and on the width of each category. To minimize this subjectivity, the author has carried out the cluster analysis of the State-level data and devised maps for some health indicators. The health indicators analysed were crude death rate, birth rate, infant mortality rate, and the expectation of life at birth. Different health indicators provide a different picture. To get an integrated picture, all the four indicators were considered together in a multivariate setting and mapping done on the basis of health dusters of the States obtained after appropriate statistical analysis. This analytical study could be an important step towards health cartography.

India is a country of vast social, cultural and economic disparities, it is not surprising that health status of the people also differs from area to area. Realisation and measurement of these differences, which sometimes are marked, is an important step towards understanding the process leading to such differences, and to suggest measures needed to combat these vast differentials. The areas needing special attention were to be identified and allocation of resources accordingly made. Maps are important tool to provide visual impact to the differences. Such maps on various aspects of health have been tried before with a considerable success. The examples of maps for somediseases under national programmes like filaria, leprosy and goitre have been given. Maps on protein calorie malnutrition, and on pattern of cereal consumption were drawn long time age. The major concern in this communication is with the maps for health indicators. For indicators like infant mortality rate (IMR), a map is already available. All these maps, be in the area of communicable diseases, nutrition or health indicators, lack objectivity on three inter-related aspects as follows:

Consider, for example, the IMR map with categories -75. 75-99.100-124 and 125+[6]. The number of categories in this case is 4, the width of the middle two categories is 25, while the other two intervals are open-ended, and the starting point is chosen as 75. The choice of all these three aspects is apparently based on convenience rather than chosen through an analysis of data regarding the natural

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boundaries, the number of categories and the width of the intervals. It becomes questionable as to why India is divided only in 4 categories and not 6, why starting cut-off is 75 and not 60, and why the length of the interval is 25 and not 20. In this study, it has been shown that different cut-offs lead to different maps and possibly with different conclusions. The effort in this communication is to reduce, if not eliminate, this subjectivity by discovering 'natural' cut-offs and the 'natural' number of categories, and thus the width of the intervals. These 'natural' cut-offs are based on extent of dissimilarity of one area with the others. An attempt has also been made to minimize the within category differences and maximize the between category differences. Some details of the actual statistical procedure have been described in the next section. Introducing such objectivity in health cartography may be the very first attempt in the entire world.

Another deficiency with the current maps is that each map is based on just one index. It has been shown that different health indicators provide a different picture and thus it is difficult to comprehend an integrated picture. To overcome this problem, the whole set of indicators together in a multivariate setting had been analysed and presented in a map based on this set to give a unified picture. This was also, an entirely a new approach in the context of mapping of health.

Despite all that is mentioned in the above paragraphs, the present analysis is not without its demerits. These have been mentioned in the Discussion section.

METHOD AND MATERIALS

Health is a complex quantity and defies direct measurement. Efforts to develop a single comprehensive measure of health have not yet been successful. WHO Expert Committee opined that a combination of several measures could be used till such time that a single comprehensive measure is developed. Several approaches -demographic, epidemiological, psychological, social and economic - to measure levels of health have been proposed and examined[7,8]. In the context of a developing country like India, the problem is confounded by non-availability of reliable data on many aspects of health such as frequency of illness and duration of restricted activity. Among all those proximate indices which could possibly be considered at community level, reliable data are available on crude death rate (CDR), crude birth rate (CBR), infant mortality rate (IMR), and expectation of life at birth (ELB). Three of these are mortality measures while CBR is important in view of India's typical population problem. It has been assumed that these four indicators together measure health status. Legitimate questions can be raised about validity of this set in adequately measuring level of health of a community. WHO Expert Committee considered CDR and expectation of life at one year as comprehensive indices while IMR as a specific index[9]. The study on international data considered ELB..CBR and per cent[10]. Population under 14 years as health indices of the countries. In fact, a set of four indices is more comprehensive and possibly the best set available under the existing Indian conditions. All of our indices have desirable properties of being objectively measured, reasonably accurate, readily available, and universally understood[11].

The smallest unit in India on which data on the health indicators are available on nationwide basis is a State. The present mapping, therefore, is based on the State level data.

Information on COR and CBR for each State was obtained from the Sample Registration System. This is a nationwide survey generally considered reliable because of the in-built double check system. Information on IMR was obtained from the Yearbook, and is again based on a nationwide survey. These three rates pertain to the year 1978. Information on ELB is for the quinquennial 1976-80 and was obtained from the Expert Committee Projections. It was supplied by a Government of India's office through an office letter which has not been published. Note that all these sources belong to the Government of India. Complete information was available only for 13 of the 22 States at the time of the initiation of the study. Two (West Bengal and Bihar) of the remaining nine States are big and others are very small belonging to the north-eastern region. These alongwith Union Territories have been excluded from the analysis. The excluded area account for 21.92 per cent of the country's population, out of which West Bengal and Bihar alone account for 18.16 per cent.

The statistical technique used to discover natural cut-offs and to decide on the number of categories is cluster analysis. The technique is essentially multivariate but can be simplified for use in univariate setting. The following is a brief description of the technique.

A measure of dissimilarity called Euclidean distance is computed between one State and each of the other States. The States which are most similar, ***i.e..*** those with least distance, are merged together to form a cluster. The process is repeated and one State or cluster is merged everytime in successive stages so that finally one big cluster consisting of al! the 13 States is obtained. This is called heirarchical agglomerative technique. While such clustering is done, a measure of compactness on the basis of within clusters and between clusters distances is calculated at each stage of the clustering process. It is this measure of compactness which suggests the number of clusters appropriate for a particular data. States in each cluster are automatically identified through an in-built process, and the cut-offs separating one cluster with the others are obtained from the data pertaining to the States falling in different clusters.

RESULTS

To illustrate the contrast obtained by arbitrary cut-offs, maps based on four different cut-offs for (MR have been given in Figure 1. The number of categories is arbitrarily chosen as 4. It is worth noting as to how the picture changes depending on the categories chosen. For example, in figure 1(b), Kerala, Karnataka and Maharashtra belong to the lowest IMR category, while only Uttar Pradesh to the highest IMR category. In contrast, in Figure 1(d), only Kerala is in the lowest IMR category, and Uttar Pradesh, Madhya Pradesh, Rajasthan and Orissa are in the highest IMR category. Tamilnadu and Haryana moved from the second category in Figure 1(b) to the third category in Figure 1(d).

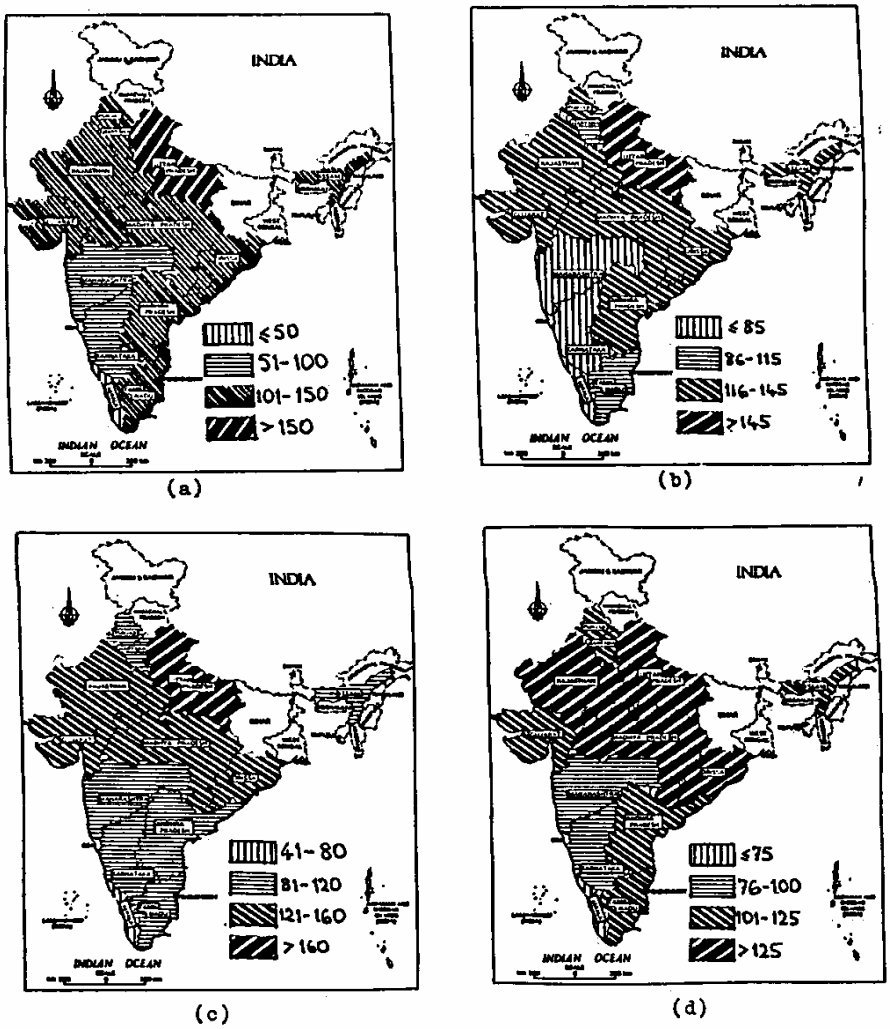

Fig. 1 Infant mortality rate in Indian States (1978) - maps obtained by using different cut-offs.

Figure 2 provides maps for varying number of categories. The cut-offs still remain arbitrary. As the number of categories increases from three to six, the contrast between the States becomes more sharp. Figures 1 and 2 highlight the need to objectively determine the cut-offs and the number of categories, and consequently the width of the categories. The method of cluster analysis takes care of this to a large extent. The numerical results of this analysis, done separately for each health indicator, are not being given here for the sake of brevity, but are given later when all the four indicators are analysed simultaneously asa vector. The maps obtained on the basis of this analysis have been shown in Figure 3 for CDR, CBR, IMR and ELB. The cut-offs now obtained on the basis of the data of the States falling in different clusters are also mentioned. The maps provide 'natural' categories.

There are two problems with the maps in Figure 3. One is that different indicators group into different number of natural categories. Even if each indicator is deliberately grouped into four categories, as has been done in Figure 4 for illustration, the second problem is that different indicators provide a different picture. For example, in Figure 4(a), Rajasthan is in the highest CDR category, but it is in the second category with respect to ELB in Figure 4(d). To get an integrated picture, it is necessary that ail the indicators are considered simultaneously. When the indicators are considered together in a multivariate setting, the result of the cluster analysis is as given in Table 1. The measure of compactness is in column 5. A sudden jump in the maximum distance within a cluster, shown in column 2 of Table 1, also suggests a cut-off. Considering the values in column 2 and in column 5, and ruling out very high or very low number of clusters due to operational considerations, the appropriate number of clusters looks to be four. The maximum distance is 3.80 at this stage but jumps to 12.03 at the next stage. The ratio in column 5 for four clusters is 0.63 which is not too low. Thus, the decision was taken on four clusters. The clusters so obtained have been shown in Figure 5. Thus, if the set of four indicators has been assumed to measure health, it has been noted that Kerala tops and Uttar Pradesh is at the bottom of the health spectrum of India. While this conclusion has been easily obtained without doing all this intricate exercise, primarily because these two States are wide apart from the others, what is important is the objective division of the other 11 States into two clusters.

DISCUSSION

It is easily seen from the maps presented that arbitrary cut-offs and arbitrary number of, categories, in some cases, can substantially alter the health picture of the States.of India. It can be argued that the arbitrariness is not absolute since there always are restrictions placed by the minimum and the maximum value, and nobody would like to have too many or too few categories. Nevertheless, there is no denying that the maps provided so far in the literature arbitrarily assume three or four or five or six categories, and the cut-offs too are arbitrary. When it is left to the data, the method of cluster analysis does divisions objectively to a great extent. The method also allows consideration of the four indicators together to provide an integrated picture.

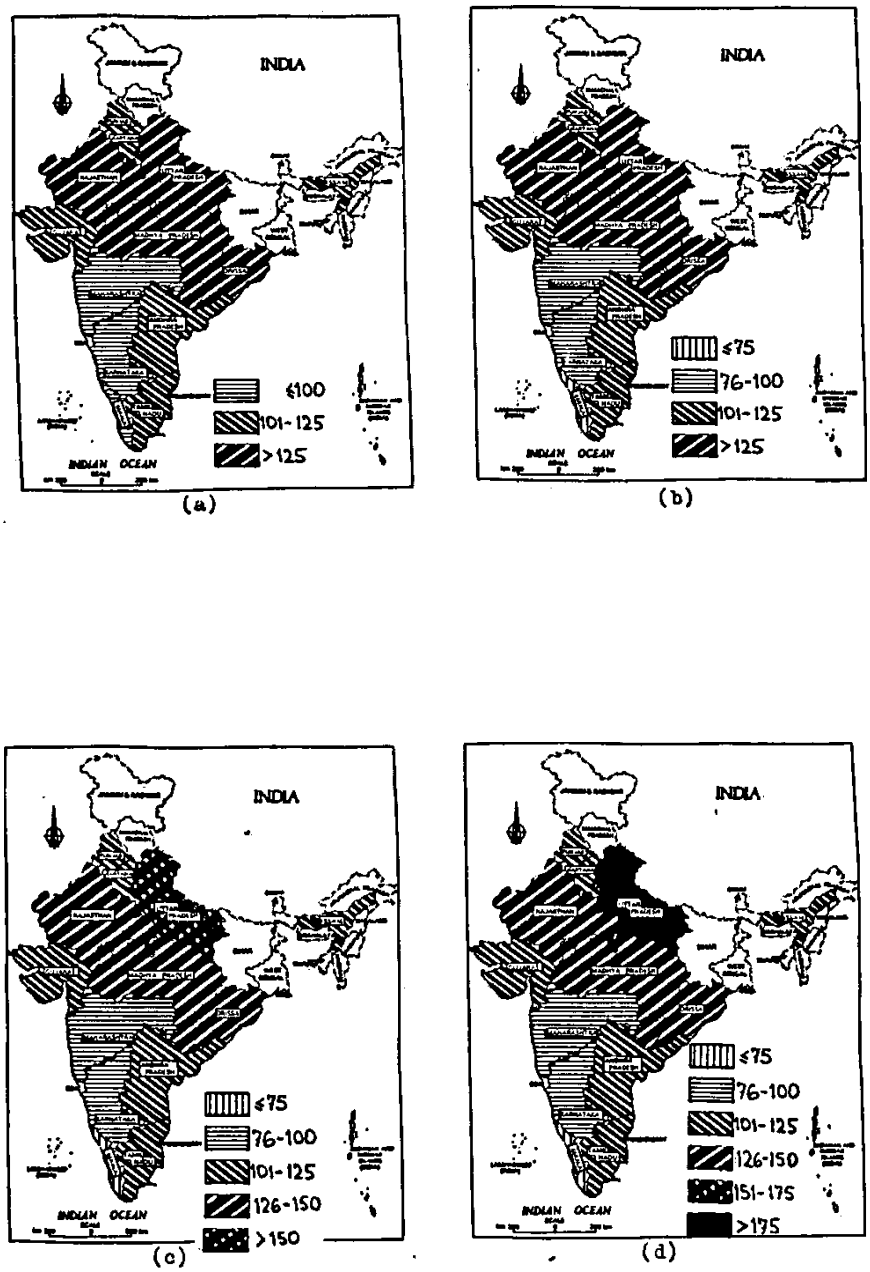

Fig. 2: Infant mortality rate in Indian States (1978) - maps obtained with different number of categories.

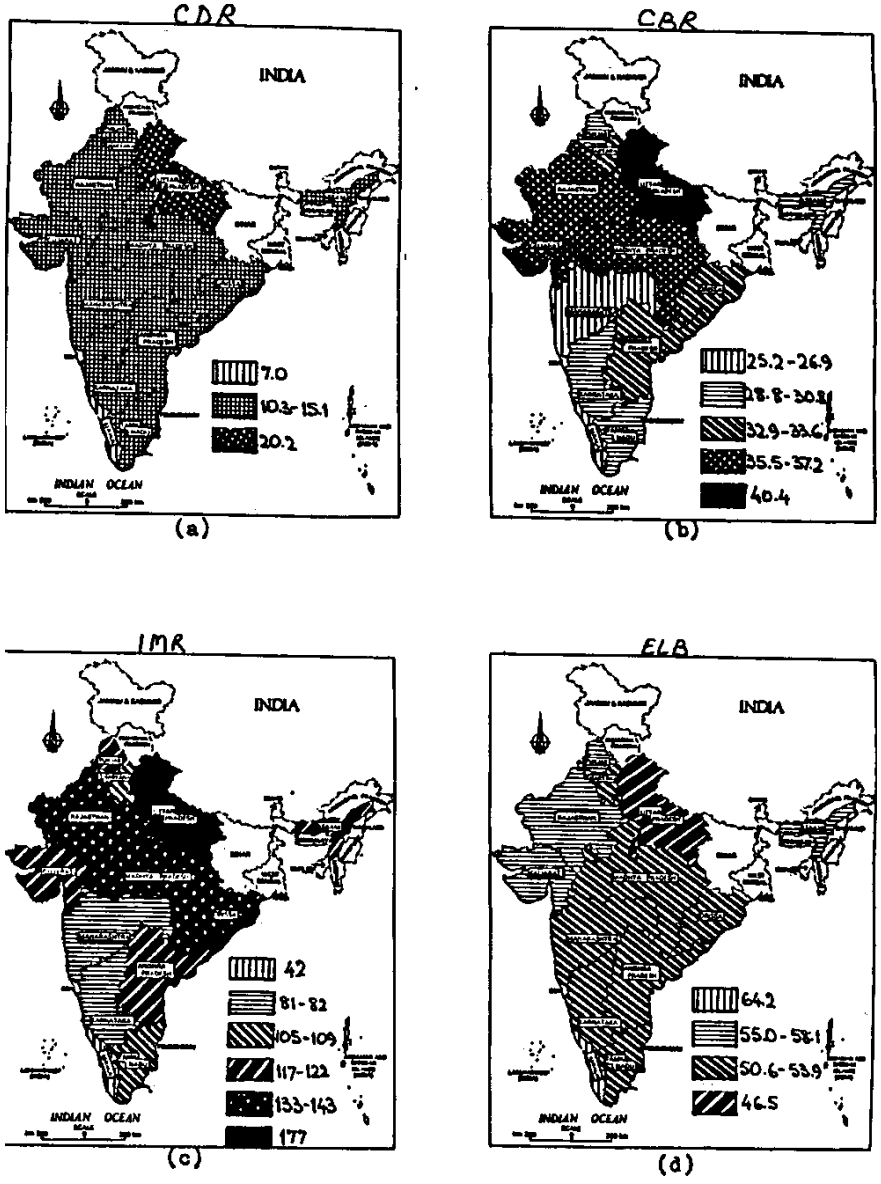

Fig. 3: Clusters ot States obtained by 'natural[1] categorisation of individual

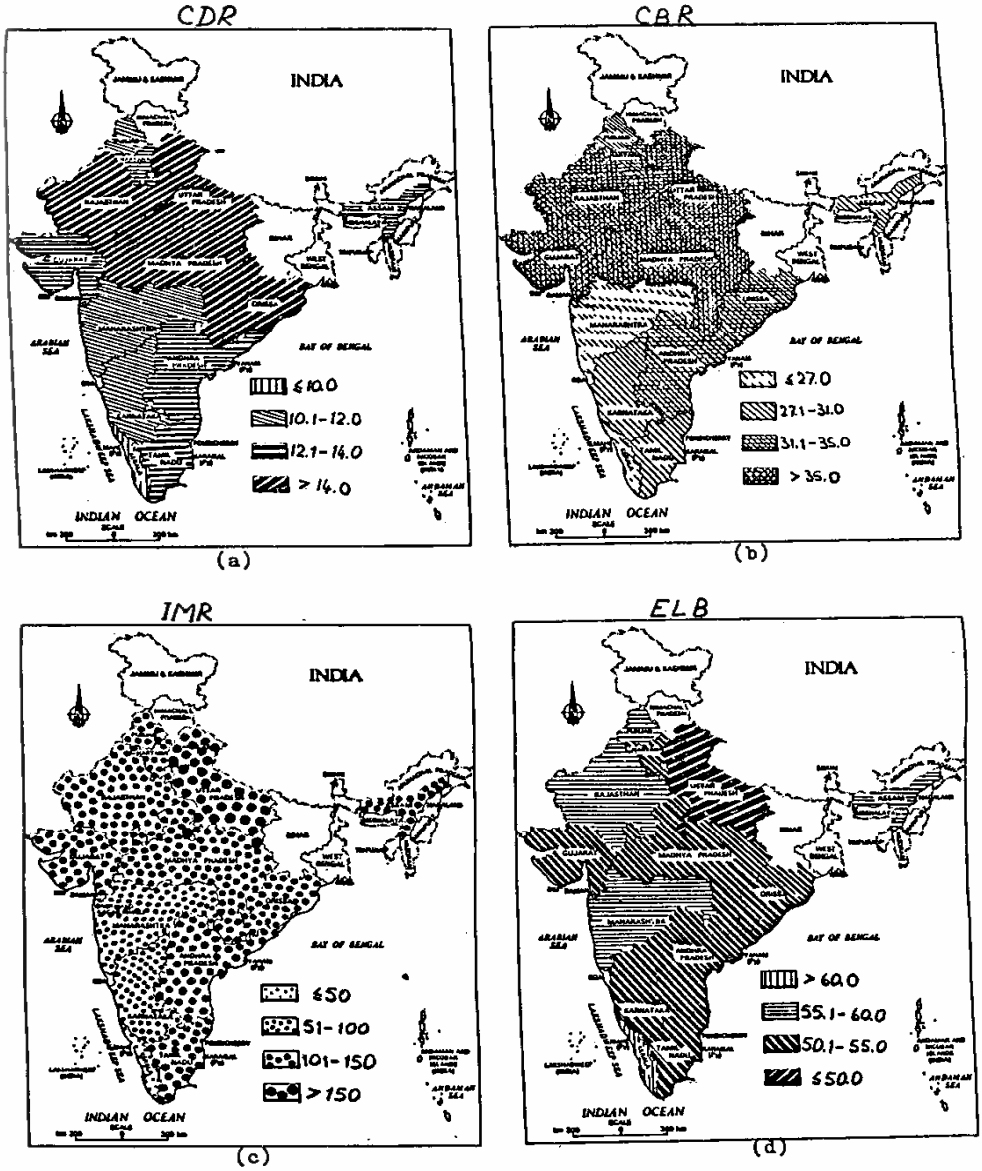
CDR
INDIA
≤10.0
10.1-12.0
12.1-14.0
>14.0
INDIAN OCEAN
(a)
CBR
INDIA
≤27.0
27.1-31.0
31.1-35.0
>35.0
INDIAN OCEAN
(b)
IMR
INDIA
≤50
51-100
101-150
>150
INDIAN OCEAN
(c)
ELB
INDIA
>60.0
55.1-60.0
50.1-55.0
≤50.0
INDIAN OCEAN
(d)

TABLE 1

CLUSTER ANALYSIS OF 13 STATES ON SIMULTANEOUS CONSIDERATION OF THE FOUR HEALTH INDICATORS

Number of clusters	Maximum distance within a cluster	Number of distance within < max.	Number of distance in all £max.	Ratio (3)/(4)
(1)	(2)	(3)	(4)	(5)
13	0.00	0	0	1
12	0.34	1	1	1.00
11	0.57	2	3	0.67
10	0.67	3	4	0.75
9	0.69	4 '	5	0.80
6	1.28	5	10	0.50
7	1.47	9	14	0.64
6	2.87	11	34	0.32
5	3.11	19	36	0.53
4	330	25	40	0.63
3	12.03	45	60	0.75
2	30.22	66	76	0.87
1	65.98	78-	78	1.00

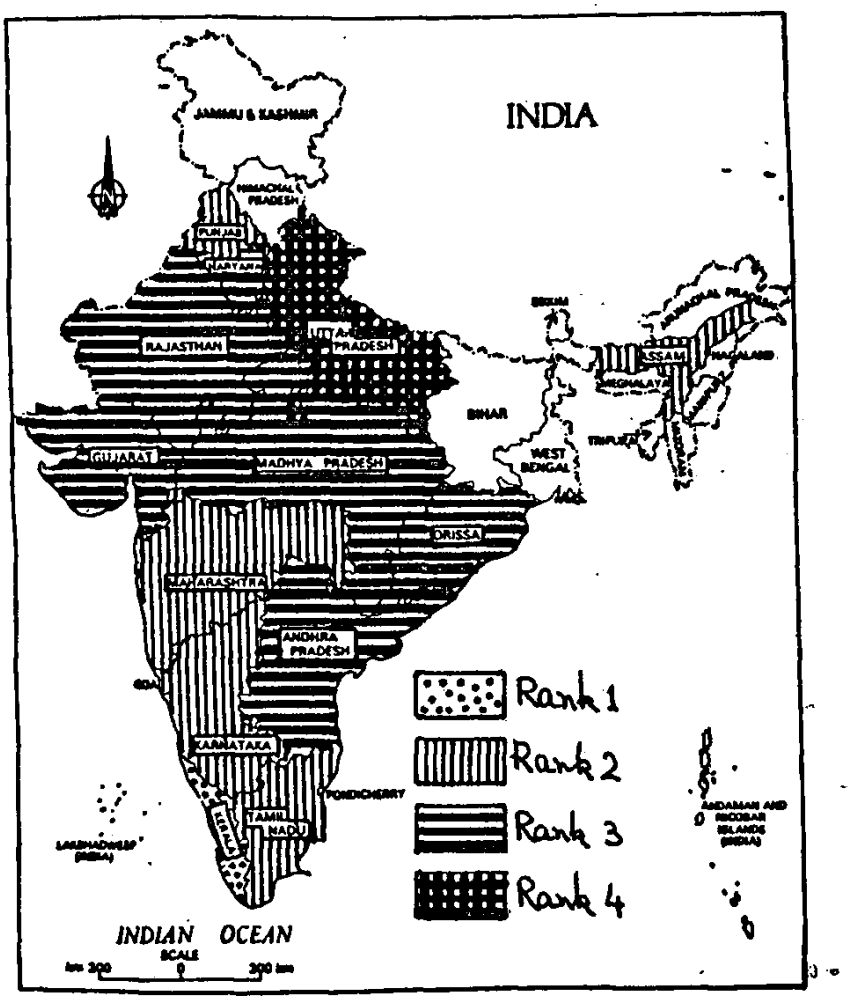

Fig. 5: Clusters of States obtained by simultaneous considerations of all the four indicators.

The procedure is not without its demerits. One problem is that the analysis is based on State-level data. There is no doubt that the mapping based on a smaller unit would serve a better purpose of area planning. Non-availability of accurate data for a unit smaller than a State in a developing country like India puts a natural limitation beyond redemption in the current setting.The maps can still be used for understanding and appreciating the differences between the States and for planning and allocation by the Centre to the States.

The second problem is that the present analysis is limited to only four health indicators. It has already been stated in the Materials and Method section that the reliability-availability and other considerations do not allow the author to go any further, and that this may be just about the best possible set of indicators available within limitations.

The effort has been a miniature of what can be developed into a natural health atlas of India. If and when data are available on indicators like proportional mortality rate, expectation of life at oneyear. or on indicators like duration of restricted activity per person, or on vital capacity per person, on each State or a smaller unit, a full atlas can be developed. For some diseases, the incidence and prevalence for various areas are already available. For some diseases, even maps are available. These can be put together or re-drawn on somewhat objective considerations. For some other diseases, for whom the data may be available in a fragmented manner in Ihe literature, based on small individualised studies, the data may be compiledtogether to give a picture of the entire country. All these together need a gigantic efforts and a lot of resources. Still the efforts are on to find these resources so that a full health atlas of India could be developed.

Lkjk'k

क्षयरोग, कुष्ठ रोग गलघोंटू जैसे रोगों और पौष्टिक आहार प्रतिमान संबंधी जानकारी देने वाले मानचित्र भारत में पहले से उपलब्ध हैं। शिशु मृत्यु दर दर्शाने वाले कुछेक मानचित्र भी यहां उपलब्ध हैं। इन सभी मानचित्रावलियों में, वर्गों की संख्या जिसके आधार पर भारत को विभाजित किया जा सके तथा इस प्रकार के विभाजन के कटाव और प्रत्येक वर्ग की व्यापकता संख्या वस्तुनिष्ठा का अभाव है। इस विशयपरकता को कम करने की दृष्टि से लेखक द्वारा राज्य स्तरीय ऑकड़ों का एकीकृत विष्लेषण किया गया है तथा कुछेक स्वास्थ्य निवेशकों के लिए नक्शे तैयार किए गए हैं। स्वास्थ्य निर्देशकों द्वारा अशोशित मृत्यु दर, जन्म दर और जन्म के समय प्रत्याशित जीवनावधि का विश्लेशण किया गया है। विभिन्न स्वास्थ्य निर्देशकों से अलग–अलग स्थिति की जानकारी प्राप्त हुई है। एकीकृत स्थिति का पता लगाने के लिए सभी चार निर्देशकों द्वारा अनेक स्थितियों में एक साथ विचार किया गया था और

समुचित सांख्यकीय विश्लषणों के पश्चात राज्यों में स्वास्थ्य समुदायों के आधार पर इक्कठ्ठे स्वास्थ्य मानचित्र तैयार किए गये हैं। यह विश्लेशणात्मक अध्ययन स्वास्थ्य मानचित्रांकन की दिशा में एक महत्वपूर्ण एवं सटीक प्रयास सिद्ध होगा।

REFERENCES

1. PARK, J.E. (1974) *Textbook of Preventive and Social Medicine,* Fourth Edition. Jabalpur, Banarsidas Bhanot, p. 457.

2. PARK, J.E. & PARK, K. (1985) *Textbook of Preventive and Social Medicine,* Tenth Edition. Jabaipur. Banarsidas Bhanot. p. 352.

3. GOVERNMENT OF INDIA (1978) *Pocketbook of Health Statistics of India.* New Delhi, Ministry of Health and Family Welfare.

4. GOPALAN. C. & RAGHAVAN, VIJAY (1971) *Nutrition Atlas of India.* Hyderabad. National Institute of Nutrition, p. 63.

5. INDIAN COUNCIL OF MEDICAL RESEARCH (1964) *Diet Atlas of India. ICMR Special Report Series No. 48.* Hyderabad, Nutrition Research Laboratories, p. 19.

6. UNICEF (1984) *An Analysis of the Situation of Children in India.* New Delhi, United Nations Children's Fund, Regional Office for South Central Asia. p. 26.

7. WORLD HEALTH ORGANIZATION (1971) *Statistical Indicators for the Planning and Evaluation of Public Health Programmes.* Technical Report Series No. 472, Geneva, World Health Organization.

8. WORLD HEALTH ORGANIZATION (1976) Statistical Indices of Family Health. Technical Report Series No. 587, Geneva, World Health Organization.

9. WORLD HEALTH ORGANIZATION (1957) *Measurement of Levels of Health.* Technical Report Series No. 137, Geneva. World Health Organization.

10. FULOP, T. & REINKE. W.A. (1981) Statistical Analysis of Interdependence of Country Health Resource Variables, With Special Regard to Manpower Related One. *Bulletin of World Health Organization,* 59: p. 129.

11. AUSTER. R„ LEVESON. I. & SARACHEK. D.-(1969) The Production of Health: An Exploratory Study. *Journal of Human Resources.* 4' p. 411.

12. GOVERNMENT OF INDIA (1982) *Sample Registration Bulletin.* New Delhi, Registrar General of India, p. 16, 33 and 35.

13. GOVERNMENT OF INDIA (1983) *Family Welfare Programme in India.* Yearbook. New Delhi, Ministry of Health and Family Welfare, p. 48.

14. GOVERNMENT OF INDIA (1979) *Pocketbook of Health Statistics of India.* New Delhi. Ministry of Health and Family Welfare, p. 46-47.

15. ANDERBERG, M.R. (1973) *Cluster Analysis for Applications.* New York. Academic Press.

16. DUBES. R. & JAIN, A.K. (1976) Clustering Techniques: the User's Dilemma. *Pattern Recognition,* 8- p. 247.

17. SAS (1979) *SAS User's Guide.* Raleigh, SAS Institute Inc.