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LEPROSY CONTROL AND RELIEF SERVICES BY VOLUNTARY AGENCIES IN KARNATAKA

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ABSTRACT

This study highlights the findings of a survey *of the voluntary agencies rendering leprosy control and relief services in Karnataka State. The nature and volume of contribution made by them towards Leprosy Control have also been studied. While most of the agencies rendered ambulatory medical care to leprosy cases, around half of them were involved in health education and case detection activities for leprosy. A few agencies also rendered in-patient care, physical rehabilitation services, vocational training and shelter for leprosy patients. Another important aspect brought out by this study was the collaborative relationship of these agencies between themselves, and with other government/non-government, health/non-health agencies. Based on the extent of their contribution towards the programme and the problems faced by them, certain suggestions were made for strengthening their leprosy relief services.*

Relief and welfare of leprosy cases has been a long standing service of philanthropic and missionary organisations in India. Their know-how and resources could be of great assistance in the effort to eradicate leprosy from the country. Strategies and policies for their involvement would differ in different States, depending upon the size and development of the voluntary sector and its role in leprosy services. This study was conducted in Karnataka in order to obtain detailed information of all voluntary agencies engaged in providing leprosy services. It excluded private practitioners of any system of medicine.

The objectives of the study were: (1) to rank order of all voluntary agencies according to (a) the range and volume of services provided, (b) financial strength, and (c) estimated population coverage; (2) to study the organisational relation-

ships of these agencies; and (3) to make suggestions for coordination and collaboration between officials of health/ non-health authorities, and the voluntary agencies for more effective leprosy control.

Methodology

Interviews were held according to a structured schedule. The respondents were mostly administrative chiefs. Record studies were made of memoranda of association, audited statements of accounts, balance sheets, and annual performance reports.

Data were obtained from all 24 voluntary agencies engaged in leprosy services in Karnataka at the time of study. Their names alongwith their study periods are listed district-wise in the Appendix 1.

Data Analysis: The data collected were analysed to obtain the dates of establishment and status of registration of different agencies; major objectives; financial strength and source of funds and other resources for doing leprosy work; range and volume of services; working and collaborative relationships; and the problems and future plans.

Study Findings

Location and Territorial Reach of Voluntary Agencies

The agencies were concentrated in seven of the State's 19 districts including Bangalore, Belgaum, Bijapur, Dakhin Kannada, Dharwad, Kolar and Mysore. A majority of (17) agencies received more than 75 per cent of their leprosy cases from the districts in which they were located.

Objectives of Voluntary Agencies

With the exception of three agencies, all the voluntary agencies came under the administrative and financial control of 19 registered societies. Seven of these were exclusively for leprosy service. Eleven rendered leprosy services as part of a wider spectrum of social welfare and medical relief objectives and one had no stated objective.

Periods of Leprosy Service

Duration of leprosy service ranged from six months to 91 years. Long durations existed mostly in agencies catering exclusively to leprosy cases. Several old established missionary hospitals had taken up leprosy work comparatively recently. Also, all the new agencies established less than five years prior to study were meant exclusively for leprosy services.

Financial Resources and Expenditures on Leprosy Services

It may be noted from Table 1, Col. 1, that the top three agencies in rank order of financial strength, were missionary hospitals for general medical care. There was great interagency variation of annual expenditures on leprosy activities (Col.2). There was also great variation in the proportion of total annual budget/expenditure on leprosy activities by those voluntary agencies not meant exclusively for leprosy service. Further, it may be observed that agencies with high financial strength incurred low proportionate expenditures on leprosy (Col. 3).

Source *of Funds*

Seventeen agencies generated internal revenues. Practically all had more than one external source of funds, which consisted mainly of non-governmental Indian and Foreign agencies and individual philanthropists. The Indian donor agencies were mainly the parent societies of the voluntary agencies. There was a notable absence of funding by the private industrial sector. None of the voluntary agencies which incurred large expenditures on leprosy service received any funds from Indian sources. The inescapable conclusion was that most of the voluntary effort was being financed by foreign charitable and philanthropic sources.

Procurement and Possession of Land

Two of the agencies possessed no land and the size and source of one was not obtained. The entire land possessed by five of the remaining agencies had been purchased by them. Seven possessed land donated by the Karnataka State Government, five by the parent society, three by local communities/

TABLE 1

TOTAL ANNUAL BUDGETS/EXPENDITURES AND BUDGET/EXPENDITURE ON LEPROSY SERVICE MADE BY VOLUNTARY AGENCIES IN KARNATAKA STATE - 1979-81

District	Name of Agency	Total Annual Budget Expend. in Rupees	Total Annual Budget/Expend. on Leprosy in Rupees	Percentage
Bangalore	KKLCS	N.A.	150,000.00(6) (Approx.)	-
	DRNCRC	N.A.	140,406.28(8)	-
	BBH	3,415,819.04(3)	38,938.25(15)	1.1
	CSIHB	3,697,655.13(2)	237,000.00(6)	6.4
	SHSWR	N.A.	390,853.84(2)	-
	LRUSt.J	7,256,088.11(1)	54,212.69(14)	0.75
Belgaum	BLHI.M	N.A.	241,247.01(5)	-
Bijapur	DALC	N.A.	55,902.00(13)	-
	BLCWC	N.A.	85,000.01(10)*	-
	Bag.LCWC	N.A.	150,000.00(7)**	-
Dakhin Kannada	S&STD-KMCH	Data not obtained	Not obtained	
	St.JLH	- do -	253,249.19(4)	
	RUSt.JH	- do -	-	-
	CHI	29,550.15(9)	21,773.68(17)	73.7
	HKNS	N.A.	115,102.23(9)	-
	AA	50,000.00(8)	Not obtained	-
	OHR&CDC	Data not obtained	282,706.09(3)	-
Dharwad	HHH&RTU	1,000,000.00(5)	950,000.00(1)	95.0
Kolar	ETCMH	153,276.17(7)	59/634.00(12)	38.9
	CSIHK	750,000.00(6)	20,000.00(18)	0.3
Mysore	MCHMH	3,000,000.00(4)	35,272.23(16)	1.2
	CSILDM	N.A.	60,000.00(11)	-
	SKKK	N.A.	8,000.00(19)	-
	CMLFLCU	N.A.	20,000.00(18)	-
	Total	19,352,388.23	3,379,297.46	-

Figures in brackets give the rank order of the agencies in the respective columns.

N.A. = Not Applicable = the agency does leprosy work only.

* = Spent in 6 months out of total grant of 309,280.00.

** = Out of total grant of 250,000.00.

philanthropists, two by local bodies and one by a local voluntary agency. A total of 400.85 acres of land was possessed by the voluntary agencies. There was considerable variation in the size of land holdings which ranged from 0.1 acres to 163 acres. Eight agencies possessed land to the extent of five acres or less, 11 possessed land between 5 and 25 acres, and two possessed 63.2 acres and 163 acres respectively.

Procurement of Buildings and Premises

Majority of the agencies occupied their own buildings which they had constructed from their own funds or funds specifically donated for this purpose. Others mostly occupied buildings which had been gifted, or loaned to them on a rent-free basis.

Procurement of Staff

Only six agencies had voluntary workers in their staff. The rest were all served by salaried staff. They were recruited mostly through advertisements or direct applications received from the public and some of which were in response to informal personal contacts. Three agencies employed leprosy in-mates and two used staff from Government agencies on a part-time basis.

Procurement of Anti-Leprosy Drugs

Anti-Leprosy drugs were mostly purchased in India or from abroad through import licence. A few also obtained them free from non-governmental foreign and Indian agencies. Free supply of anti-leprosy drugs from Government was found only in five agencies.

Procurement of Equipments and Vehicles

Majority of the agencies had to purchase their equipments and vehicles. Donation of equipments and vehicles had been made, but they were very few.

Range of Leprosy Control, Relief and Welfare Services

Eleven different types of activities were encountered in the study. The range of activities undertaken by individual agencies depended upon the objectives of their registered

societies and durations since establishment. Welfare support and ambulatory medical care were provided by the largest number of agencies, 23 and 21 respectively. Around half of the agencies were also engaged in communication and educational activities, case detection by survey, and bacteriological laboratory work. A lesser number of agencies provided physiotherapy, in-patient care, physical rehabilitation, vocational training and shelter or home-settlement. Only three agencies provided surgical services to leprosy cases.

Volume of Leprosy Control and Relief Services

Production of Educational Materials

Only seven agencies were found to have engaged themselves in the actual production of educational materials. Written material in the form of leaflets was the commonest type. Two exhibition sets of 20-25 panels on leprosy were produced by Belgaum Leprosy Hospital Leprosy Mission, Hindalga (BLHLM) and Hind Kusht Nivaran Sangh, Dakshina Kannada Branch (HKNS). Katherina Kasper Leprosy Control Scheme (KKLCS) was the only one agency which financed the production of a film on leprosy. None of the agencies produced either any slides or flash cards on leprosy.

Educational Efforts

Mass communication was done mainly by printed literature and 55,600 leaflets, 5,000 pamphlets and 100 booklets were distributed by seven agencies. Also 275 film shows and 43 public meetings were held by eight agencies. Educational sessions for specific population groups were held mainly in" schools and colleges.

Survey *Examination and Case Detection*

Official allotment of area and population for survey work had been made to eight of the 15 agencies engaged in this activity. Voluntary agencies officially or otherwise, covered 561,009 urban population, of which 559,509 was in Bangalore city alone and 1,500 in Manipal, Dakhin Kannada District. In addition,they covered approximately 621,979 rural population of which the largest 233,581 or 57.5 per cent was covered by BLHLM in Belgaum District, followed by 116,756 or 18.8 per cent covered by Hubli Hospital for Handicapped and Rehabilitation Training Unit (HHH&RTU) in Dharwad District. Church

of South India Hospital (CSIHB) had the largest survey responsibility of 255,361 population of which 200,000 was urban and 55,361 rural as shown in Table 2.

Amongst the eight agencies with official survey responsibility the highest enumeration of allotted population, 99.4 per cent was done by Gandhi Memorial Leprosy Foundation Leprosy Control Unit (GMLFLCU), followed by 56.6 per cent by KKLCS. Further, the 15 agencies, taken as a whole, had physically examined 268,038 persons in their study periods and had detected 1,068 leprosy cases. Detected cases constituted on an average 0.4 per cent of those physically examined, with a range of 1.5 per cent at Leprosy Relief Unit, St. John's Medical College Hospital (LRUSt. J.) to 0.03 per cent at GMLFLCU, Mysore as given in Table 3.

TABLE 2

AREA AND POPULATION FOR LEPROSY SURVEYS COVERED BY VOLUNTARY AGENCIES IN KARNATAKA STATE - 1981

Note: - should be specified.

District	Agency	Urban population covered	Rural population covered
Bangalore	KKLCS	1,70,000	-
	BBH	-	6,000
	CSIHB	2,00,000	55,361
	SHSWR	1,89,509	
	LRUST.J.	-	not defined
Belgaum	BLHLM	-	2.33.581
Bijapur	BLCWC	not defined	-
Dakhin	St.JLH	Not defined	not defined
Kannada	S&STD-KMCH	1,500	-
	HKNS	-	1,16,723
	ORH&CDC	-	12,000
Dharwad	HHH&RTU	—	1,16,756
Kolar	ETCMH	-	not defined
Mysore	CSILDM	-	50,000
	GMLFLCU		31,558
	Total	5,61,009	6,21,978

Note: - should be specified.

TABLE 3

VOLUME OF SURVEY, EXAMINATION AND CASE DETECTION, WORK IN LEPROSY BY VOLUNTARY AGENCIES IN KARNATAKA STATE - 1981

Name of District	Name of Agency	Population enumerated	Percentage of allotted population	Physically examined	Percentage of col. 1	Diagnosed as Leprosy	Percentage of col. 3
		1	2	3	4	5	6
Bangalore	KKLCS	96,157	56.6	63,506	66.0	317	0.5
	BBH	Nil	N.A.	Nil	–	Nil	–
	CSIHB*	67,162	26.3	47,309	70.4	62	0.13
	SHSWR	32,339	17.1	26,756	82.7	165	0.6
	LRUSt.J	2,618	N.A.	1,723	65.8	27	1.5
Belgaum	BLHLM	66,264	28.4	57,542	86.8	233	0.4
Bijapur	BLCWC	19,537	N.A.	15,490	79.3	155	0.8
	Bag.LCWC	Data not obtained					
Dakhin	S&STD-						
Kannada	KMCH	1,050	N.A.	500	47.6	2	0.4
	St.JLH	2,587	N.A.	2,280	88.13	20	0.87
	HKNS	12,282	10.5	10,195	83.0	27	0.26
	OHR&CDS	Nil	N.A.	Nil	–	Nil	–
Dharwad	HHH&RTU	10,324	8.8	9,095	88.0	12	0.13
Kolar	ETCMH	6,475	N.A.	4,534	70	35	0.77
Mysore	CSILDM	17,773	35.5	807	0.4	2	0.25
	GMLFLCU	31,360	99.4	28,301	90.2	11	0.03
	Total	365,928	–	268,038	65.5	1 ,068	0.44

N.A. = Not applicable since no official survey population allotted.

* = Nil during study period.

The largest annual clinic attendance of 21.496 was at (Sumana Halli Society for the Welfare and Rehabilitation of Leprosy Patients (SHSWR) followed by 17,686 at St. Joseph's Leprosy Hospital (St. JLH) and 1,528 at CSIHB. The largest number of leprosy cases were treated by St. JLH (4,641) followed by BLHLM (3,021) and HKNS (2,984) as given in Table 4.

TABLE 4

VOLUME OF AMBULATORY MEDICAL CARE TO LEPROSY CASES BY VOLUNTARY AGENCIES IN KARNATAKA STATE - 1981

District	Agency	Total clinic atten-dance	No. of leprosy patients treated	Ratio of clinic atten-dance to leprosy patients	New lep-rosy cases regis-tered	Percentage of new cases clinic attendance
Bangalore	KKLCS	12,990(6)	2,760(4)	4.7	564(1)	4.3
	DRNCRC	5,616(11)	108(17)	52.0	108(13)	1.9
	BBH	1,278(19)	48(20)	63.9	48(17)	3.7
	CSIHB	15,928(3)	2,086(5)	7.64	101(14)	0.63
	SHSWR	21,496(1)	318(12)	67.5	237(6)	1.1
	LRUSt.J	7,194(9)	286(13)	25.15	67(16)	0.93
Belgaum	BHLHM	4,271(15)	3,021(2)	1.4	302(4)	7.00
Bi japur	DALC	4,689(14)	140(16)	33.43	140(11)	2.9
	BLCWC	5,270(13)	327(11)	16.12	363(3)	6.8
	Bag.LCWC	2,730(17)	400(9)	6.8	400(2)	14.6
Dakhin	S&STD-					
Kannada	KMCH	3,400(16)	78(19)	43.6	157(9)	4.6
	St.JLH	17,686(2)	4,641(1)	3.8	283(5)	1.6
	HKNS	14,376(4)	2,984(3)	4.8	225(7)	1.6
	OHR&CDC	Nil	Nil	Nil	Nil	Nil
Dharwad	HHH&RTU	10,562(8)	852(8)	12.3	219(8)	2.0
Kolar	ETCMH	2,369(18)	393(10)	6.00	153(10)	6.5
	CSIHK	5,368(12)	1,285(6)	4.2	110(12)	2.0
Mysore	MCHMH	13,989(5)	1,115(7)	12.5	48(17)	0.34
	CSILDM	12,554(7)	250(14)	50.2	2(19)	.02
	SKKK	6,240(10)	98(18)	63.7	98(15)	1.5
	GMLFLCU	195(20)	170(15)	1.2	11(18)	5.6
	Total	1,68,192	21,366	7.8	3,636	2.3

Note: Rank order of each agency in the different columns is given in parentheses.

It may be noted that in several agencies there was lack of correlation between their rank order in size of clinic attendance and rank order in number of leprosy cases treated, and there was great inter-agency variation in the ratio of clinic attendance to treated leprosy cases. This was owing to different clinic situations, practices and procedures. For example, at DRNCRC, SHSWR, DALC, and SKKK, where the ratio of clinic attendance of the treated number of cases was very high, clinics were located in settlement colonies easily accessible to leprosy cases. This ratio was also high in Bangalore Baptist Hospital (BBH) , LRUSt. J., Department of Skin and STD Kasturba Medical College Hospital (S&STD-KMCH), and Mary Culvert Holdsworth Memorial Hospital (MCHMH) , as these were large general hospitals in which leprosy cases constituted only a small proportion of the total OPD attendance of the department concerned. In CSILDM the high ratio was probably due to the excellent welfare support to leprosy cases offered by this agency and which was linked, as a matter of policy, to their regular clinic attendance.

The new cases detected constituted only 2.3 per cent of the total clinic attendances of agencies taken as a whole. It may be noted that this percentage was highest at Bagalkote Leprosy and Community Welfare Centre (Bag-LCWC) the new voluntary agency established in Bijapur District where it was 14.8 per cent.

Laboratory Service

A total of 4,202 skin smear tests were performed by 12 agencies. MCHMH and St. JLH had laboratory facilities, but did not perform any skin smear tests and for Church of South India Leprosy Dispensary, Mangala (CSILDM) the data could not be obtained. The volume of tests done ranged between nine i Church of South India Hospital (CSIHK) and 1,352 in HHH&RTU. Three agencies performed less than 100 tests, the other three performed between 100 and 200 tests and six performed over 200 tests.

Physiotherapy

A total of 893 leprosy cases were given physiotherapy by seven agencies out of 13 which had facilities for this service. While four agencies did not render the service during the study period, data could not be obtained from two agencies.

The number of patients receiving physiotherapy ranged between three at Ellen Thoburn Cowen Memorial Hospital (ETCMH) , Kolar and 336 at BLHLM, Belgaum. The total number of physiotherapy clinic attendance was 23,843 with 26.7 visits per case. The highest number of visits per case were made at Devibai Ram Narain Chellaram Rehabilitation Centre for Cured Leprosy Patients (DRNCRC) , where physiotherapy facilities were located in the settlement colony, and were thus easily accessible to the inmates. At other agencies 5-10 visits were made per case, and at BLHLM visits were below five.

Physical Rehabilitation

Protective shoes were virtually the only measure offered, and the largest number distributed were 216 by MCHMH, followed by 210 by BLHLM, 208 by BBH and 205 by CSILDM. Crutches and shoes with foot drop springs were given only to 10 or 12 cases which was a negligible number. There was complete absence of any artificial limbs.

In-patient Service

The largest number of hospitalised cases was 514 at HHH&RTU, followed by 478 at CSILDM, 387 at BLHLM, 326 at St. JLH and 105 at MCHMH. Average durations of stay ranged from 12.9 days at CSIHB to 101.4 days at CSIHK (Table 5).

Surgery

This was done at BLHLM, HHH&RTU and MCHMH. At BLHLM, 42 operations were performed but the number of cases was not obtained. At HHH&RTU 22 operations were done on 19 cases, and at MCHMH 19 operations were done on 11 cases. Hence, the total volume of surgical work was not significant.

Vocational Training

A total of 402 leprosy cases received vocational training. However, the largest number (232) was among inmates of settlement colonies which performed agricultural and horticultural work on land owned by the agencies. To what extent this could be looked upon as 'training' was doubtful. The second largest number (63) were trained in handicrafts, of which 52 were trained by HHH&RTU alone. Around 15-20 cases were trained in piggery, dairy and poultry mostly at DRNCRC, SHSWR and Olavina Halli Rehabilitation and Community Development Centre (OHR&CDC).

TABLE 5

VOLUME OF INPATIENT MEDICAL CARE ON LEPROSY CASES BY VOLUNTARY AGENCIES IN KARNATAKA - 1981

District	Agency	No. of Leprosy cases*	Total bed days utilised	Average duration of stay in days
Bangalore	BBH	21	279	13.3
	CSIHB	58	747	12.9
	LRU ST.J	90	1,362	15.1
Belgaum	BLHLM	387	10,468	27.0
Dakhin Kannada	S&STD	3	57	19.0
	St.JLH	326	12,215	37.5
Dharwad	HHH&RTU	514	17,165	33.4
Kolar	ETCMH	73	2,315	31.7
	CSIHK	10	1,014	101.4
Mysore	MCHMH	105	2,363	22.5
	CSILDM	478	**	**
	GHLFLCU	Nil	Nil	Nil
	Total	2,065	47,985	23.3

*** Number discharged, admitted, or average of the two**

**** Data not obtained**

Fifteen cases were trained in spinning and weaving by District Anti-Leprosy Committee (DA-LC) and RU St. JH., and eight leprosy cases were trained in block textile printing units at HHH&RTU and Rehabilitation Unit St. John's Hospital, Kan Kanday (RU St. JH). Another eight cases were trained in carpentry units at DRNCRC, SHSWR and HHH&RTU. Numbers trained in other vocations were practically negligible and included one each in rabbit farming, goat and sheep farming, sari culture and embroidery; four each in shoe making, candle making and batik and three in printing press.

Home Settlement/Shelter

A total of 444 leprosy cases were settlement inmates with the largest number, 140 at DALC, followed by 108 at DRNCRC. The total duration of stay by these 444 cases was 159,510 during the study period. It was further observed, that there was no turnover of cases in these agencies with the exception of HKNS, and that this service, once given, was treated as a permanent way of life by the leprosy cases.

Welfare Support

This consisted mainly of free distribution or payment for protective shoes and supplementary foods, of which the largest number of beneficiaries were at CSILDM and HKNS respectively. Free clothes were also given mainly by CSIHB and CSILDM. A large number of agencies were found to subsidise the expenditure of their leprosy cases - like on hospital stay. X-rays, eye treatment etc. DRNCRC, SHSWR and OHR&CDC ran free schools for the children of their settlement inmates. A total of 105 leprosy cases had been employed by 12 agencies - the largest number 28, by RU St. JH. Cash support in the form of loans and gifts was also given by a few agencies for purposes such as house construction, purchase of tools and implements, and travel for medical care etc.

Major Collaborative Relationships of Voluntary Agencies

These are described in relation to specific activities.

Communication and Education

The educational literature was occasionally written in collaboration with local leprologists, and was printed by local private presses. The film financed by KKLCS had been produced in collaboration with a local retired leprologist and technical film experts of Karnataka State Government. It had been bought by SHSWR, S&STD-KMCH and HHH&RTU. Central Information and Broadcasting Ministry, State Health Education Bureau, District Health Officers, and Sholapur branch of Pune Leprosy Committee, were other sources of leprosy films used by different agencies. Various local sources e.g. Engineering Colleges and Publicity Units of Information and Broadcasting Ministry, were tapped to obtain cine-projectors by Bijapour Leprosy Community Welfare Centre (BLCWC). GremeIters General Relief Funding Agency and HKNS Headquarters at Delhi were used to procure slides on leprosy by CSIHB and HKNS, respectively. SHSWR obtained slides from State Health Directorate and Gandhi Memorial Leprosy Foundation, Wardha.

The agencies were also found to establish relationships with Directorate of Public Instruction, Educational authorities, local AIR Stations, and Dioceses of Church of South India for undertaking educational schemes.

Survey, *Examination and Case Detection*

German Relief Society, Amici Dei Lebrosi, and an agency in Werzbarg, Germany, had given funds for survey work to SHSWR. Several agencies had relationships amongst themselves and with village panchayats, Medical Officers of Primary Health Centres, School teachers. Municipal authorities, and Local Urban Leprosy Control Centres, for survey work. Use was being made of Leprosy Paramedical Worker (PMW) training facilities at Wardha by BLCWC.

Medical Care of Leprosy Cases

To and fro referrals existed between several voluntary agencies. Similar relationships existed in Bangalore with Half Way Home of the Mental Hospital; Lady Willingdon Hospital, and the Government Leprosy Hospital; in Belgaum with the District Civil Hospital and private practitioners; in Bijapur with the local Urban and National Leprosy Control Centres, Local Ayurveda Hospital, and Municipal authorities; in Dakhin Kannada with Father Muller's Charitable Institutions and Wenlock Hospital; in Kolar with village headmen, postmen, and ex-leprosy patients for drug distribution; in Mysore, clinic of Sarvodaya Kushta Kalyan Kutir (SKKK) was run by private physician on the Board of Hemchand Jain Charitable Trust.

Outside Karnataka referrals mainly took place to Schiefflin Leprosy Research and Training Centre (SLR&TC), Salem Hospital, and St. Thomas Hospital, Tamil Nadu. Bijapur agencies referred cases to Kondhwa, Pune, Maharashtra.

Laboratory Service

In Belgaum, BLHLM used laboratory facilities of J.L. Nehru Medical College; in Bijapur, DALC used laboratory facilities of ULC and NLCC and BLCWC occasionally sent specimens to Leprosy Demonstration and Research Centre at Chingleput, Tamil Nadu.

Physical Rehabilitation

The voluntary agencies met their requirements of protective shoes from the cobblery units at St. John's Medical College Hospital, SHSWR and BBH in Bangalore; RHU St. Jh., Dakhin Kannada; and MCHMH Mysore. They also referred cases

for protective shoes to SLR&TC, Karigiri, Tamil Nadu, and Datapur Leprosy Colony, Wardha.

Referrals for artificial limbs were made mainly to St. Martha's Hospital, Bangalore; Physical Rehabilitation Centre of Kasturba Medical College, Manipal; Salem Hospital and SLR&TC Karigiri, Tamil Nadu which was also the main source of supply of micro-cellular rubber for cobblery units in Karnataka.

Surgery

The major referral centres for this service inside Karnataka were HHH&RTU, Dharwad; plastic surgery unit of St. John's Medical College Hospital, Bangalore; MCHMH, Mysore; and Surgery Department, St. Joseph's Hospital, Dakhin Kannada. Several agencies also referred cases outside Karnataka to SLR&TC Karigiri, and Salem Hospital in Tamil Nadu, and Richardson Leprosy Hospital in Miraj, Maharashtra.

Vocational Training

With exception of LRU St. J. which received cases from Government Leprosy Hospital, Bangalore, the agencies were found to provide this service to their own leprosy cases, and there was hardly any interagency referrals for this purpose.

Agencies engaged in this activity, obtained assistance for the setting up of their units, from concerned authorities such as Animal Husbandry Division, Public Health Engineering Department and Industries Department of Karnataka State, Karnataka Khadi and Village Industries Boards, Local Bodies, Banks, Block level veterinary and agricultural agencies, and National Students Service Scheme etc. In addition, assistance in staff training had been secured notably from Agricultural College, Pune, Maharashtra. They also had a wide network of suppliers and buyers. Some of the latter were in European countries.

Home Settlement

The collaborative relationships consisted in seeking help for the construction of settlement facilities and for obtaining food for inmates. For example. Action for Food Production (AFPRO), Caritas-India, Helpage India, and Karnataka State Government, had helped SHSWR. Khadi Village

Industries had helped AA for its Gobar Gas Plant; DRNCRC had received food articles from CARE.

Welfare Support

Practically all voluntary agencies had made efforts to obtain help in cash and kind from outside sources to render this service to leprosy cases. For example, SHSWR had arranged for free spectacles for its leprosy cases from private opticians in Bangalore city. CSIHB procured food articles for distribution from Christian Medical Association of India. DALC received donations of clothings and utensils from private parties in Bijapur city. BLCWC had secured cash loans for leprosy cases from Bank of Baroda and Syndicate and Corporation Banks. Private eye specialists in Bijapur city had helped BLCWC to organise eye camps for leprosy cases. Bagalkote Municipality had provided funds to Bag. LCWC, to supply blankets and chappals to leprosy cases. SKKK had obtained protective gloves and clothing for free distribution to leprosy cases from St. Bartholomews Church, Mysore. Similarly, Lions and Rotary Clubs, Mother Teresa, University of Germany, Swiss Leprosy Relief Work Emmaus, CASA and individual philanthropists in India and abroad helped St. JLH, RU St. JH, HHH&RTU, MCHMH and CSILDM in rendering welfare support to leprosy cases. An orphanage in Betal Danish Pet, Tamil Nadu, received children of leprosy cases of KKLCS and Karnataka State Council for Child Welfare helped SHSWR to run a Balwadi for children of its inmates. Employment for leprosy cases had been sought by DRNCRC through National Society for Equal Opportunity for the Handicapped.

Problems of Voluntary Agencies

1. *Financial*

(a) Inadequacy and uncertainty of funds expressed by all agencies; (b) delayed disbursal and stoppage of Government grants, and recently introduced government rule of auditing by State Health Directorate founds to be costly and cumbersome - expressed by all concerned agencies; and (c) refusal of Government grant on the basis of religious objectives of registered society expressed by one agency.

2. Inadequate and poor maintenance of buildings in some agencies.

3. Difficulties in procurement of anti-leprosy drugs expressed by most agencies.

4. Delayed allotment, by government of survey area and population to new agencies and reallotment to older agencies.

5. Lack of laboratory facilities to detect Dapsone resistant cases expressed by one agency.

6. Lack of adequate staff to follow up defaulters, expressed by one agency.

7. Resistance on the part of village folk to set up leprosy clinics, stated by two agencies.

8. Acute need for a well equipped hospital with full range of specialist staff such as Physiotherapist, Leprologist, Surgeon, Neurosurgeon, ENT Surgeon, Orthopedic Surgeon, Plastic Surgeon, Pathologist and Biochemist, and facilities for reconstructive surgery was expressed by agencies in Bangalore, Dakhin Kannada and Bijapur.

9. All agencies rendering home settlement/sheIter services to leprosy cases were confronted with the problems of rising costs and lack of turnover of their inmates. Their efforts to re-settle the inmates after vocational training, on land procured from State Government had not proved successful. Inmates were reluctant to leave the sheltered existence and at DRNCRC they had filed a suit claiming the Agency's land as their own. CHI, an agency meant for shelter of female leprosy cases, lacked the funds and premises to cope with heavy demand.

10. Practically all agencies rendering vocational training, found it difficult to make this activity self supporting owing to their uncompetitive prices. This was because of small scale of production and very simple machinery to suit the deformities of leprosy cases. Their attempts to secure foreign buyers were handicapped by cumbersome procedures of the Government.

11. Great difficulty in securing admissions for leprosy cases in Government hospitals.

12. Prolonged vacancies of Medical Officer posts in some agencies which could not afford to offer sufficiently attractive salary.

13. Inadequate communication between the Government and voluntary agencies.

Future *Plans of Voluntary Agencies*

1. Expansion of mass education and communication activities were planned by HKNS in Dakhin Kannada.

2. Increased training in leprosy to village primary health care workers was planned by CSIHB. LRU St. J. planned to strengthen teaching on leprosy in its undergraduate medical education.

3. Expansion of survey work was planned by three agencies in Bangalore, two agencies in Bijapur; three agencies in Dakhin Kannada, and one in Mysore.

4. Two agencies planned to shift their survey work from rural to urban areas.

5. New, fully equipped, laboratory and physiotherapy units were planned by KKLCS and SHSWR in Bangalore.

6. Augmentation of in-patient facilities were planned by CSIHB (30 beds in Hoskote), SHSWR (20 beds), BLCWC and DALC together (40 beds) , CSIHK (6 beds).

7. LRU St. J. planned to fully equip the staff for their reconstructive surgery unit.

8. New vocational training units in kitchen gardening, spinning and powerloom weaving, carpet weaving, cobblery, tailoring and poultry were together planned by DALC and BLCWC in Bijapur. In Dakhin Kannada AA had planned bee keeping, agarbatti unit, printing press, and mini oil, rice and flour mills; RU St. JH. planned to construct accommodation for vocationally trained leprosy cases to enable them to reside near its premises, who wished to stay and execute orders of the agency. ETCMH planned to diversify its vocational training.

9. Renovation and modernisation of existing equipments and facilities was planned by BLHLM, DALC, St. JLH, CHI and AA.

10. Research studies on social stigma and epidemiology were envisaged by HKNS.

11. Stoppage of leprosy work in the future was envisaged by DRNCRC, MCHMH and CSILDM. SKKK had no plans as it was an association of leprosy cases which existed mainly on small donations collected from door to door by its members.

Discussion

The study revealed the important role of voluntary agencies in leprosy control and relief services in Karnataka State. However, their catchment area was more or less confined to the seven districts in which they were located, comprising, only 54 per cent of the State's population (1981 census).

Only five new voluntary agencies had been established in the five years immediately preceding the study, three of which were located in Bangalore and two in Bijapur. On the other hand, four of the old agencies had clearly expressed absence of any plans for future expansion of leprosy services. Hence expansion of the existing or emergence of new voluntary agencies, on the desired scale was unlikely in the immediate future. A major reason for this, as emerged by the study, was that internal revenues generated by voluntary agencies were not large enough to impart the requisite financial strength and they were heavily dependent on donations and grants which were both inadequate and irregular. They received very little by way of charity from the public. This was despite the fact that all the agencies were controlled by Registered Societies, donations to which could attract tax exemption as specified under the law*.

The study also showed that, all recently established agencies had to purchase land and very few could afford to purchase readymade buildings or occupy premises on a rental

*This tax relief has probably been affected by the Finance Act, 1983.

basis. Also there were hardly any voluntary workers with the voluntary agencies. They depended on services of salaried personnel, selected through formal recruitment procedures. A regular supply of anti-leprosy drugs was vital for these agencies and, here too, it was found that only a few of them had to purchase their requirements in India or abroad through import licences.

To bring about an expansion of the existing agencies, and setting up of new agencies in the voluntary sector, it is essential for the Government to prescribe an overall policy for its encouragement and support in the field of leprosy. In order to be successful such a policy needs first and foremost, to define the role of voluntary agencies and the specific services and activities by which these roles are to be performed. It was apparent, from the present study, that the voluntary agencies had taken up a wide variety of services and activities as and when it suited them to do so. Sooner or later they ran into difficulties which could be overcome only with strong financial and other types of governmental support. In the absence of an overall policy which defined the role of the voluntary sector, decision making by the Government on requests for help was done very slowly.

In order to formulate such a policy it was important to priorities different services and activities being rendered for leprosy cases, the existing contribution of the voluntary agencies in their performance, problems and difficulties, and then decide upon those which should attract maximum governmental encouragement and support.

Communication and educational efforts, case detection through physical examinations of surveyed populations, and continuous treatment of all detected cases till pronounced non-infectious, are activities which fall in the sphere of leprosy control and are therefore of high priority.

The study showed considerable educational efforts by majority of the voluntary agencies, both by way of mass communication and talks to selected population groups. A few had also engaged in the production of educational materials and one of them had even taken the initiative of producing a film. The voluntary agencies had not mentioned any particular problems in this area. However, only two mentioned specific

plans for expansion of mass communication and educational work. There was, thus, great scope for encouraging and assisting voluntary agencies to extend their educational efforts beyond schools and colleges where it was presently concentrated. It may include private practitioners, opinion leaders, officials in non-health departments, and other selected groups, in order to generate strong social and political support for leprosy control at local levels. The production of educational materials could also be diversified to include flash cards, slides and exhibition sets. These efforts require a high level of creativity and imagination, and government should therefore actively encourage them by extending any legitimate help, when sought, for activities in this field. It should also, wherever appropriate, accord recognition by way of State or National Awards for good work done in this field.

Case detection by field surveys is another area which requires high levels of motivational skills and preserverence in the field staff. The study has clearly shown the capabilities of voluntary agencies in this work. For example, BLHLM, Belgaum, HHH&RTU, Dharwad and CSILDM, Mysore, now found it infructuous to continue survey work in their allotted populations owing to their efforts having brought down prevalence rates of leprosy to around one per thousand. They had succeeded in this because of the innovative strategy of providing welfare support and domiciliary delivery of anti-leprosy drugs, to all cases who complied with prescribed treatment and other measures. In their experience, survey work is now more fruitful in urban than in rural areas. All requests for official allotment of survey areas by new voluntary agencies or re-allotments by old agencies should, therefore, be speedly considered and decided.

With regard to treatment of leprosy cases, practically all voluntary agencies had facilities for their ambulatory medical care. Half of them also had facilities for in-patient care, and four agencies had plans to expand their bed capacity for leprosy admissions. Although the agencies were not totally dependent on government for their supply of anti-leprosy drugs, three of them, namely CSIHB, Bangalore, CSIHK, Kolar and MCHMH, Mysore, experienced shortage of these drugs in the open market. One was of opinion that it was partly due to the launching of multi-drug regimens in National Leprosy Control Programme. They had conveyed this to the government but did

not receive any response till the time of study. In this connection it is suggested that request made to the government for supply of anti-leprosy drugs by a voluntary agency should be considered against officially allotted survey responsibility to that agency. Obviously, there is no point in detecting cases if they cannot be treated.

Support services of laboratory, physiotherapy, and physical rehabilitation should ideally be present in any agency rendering medical care to leprosy cases. The study showed that out of 21 agencies providing medical care to leprosy cases, 15 had laboratory, 13 had physiotherapy and 11 had physical rehabilitation services. Two agencies, viz. KKLCS Bangalore and St. JLH, Dakhin Kannada had plans for improvement of their existing facilities in these areas. However, the number of leprosy cases to which these supportive services were rendered were much less than the number of cases treated by the concerned agencies. This could be due to several factors, both in the service providers and the leprosy cases themselves. It was observed that very energetic educational efforts are required from the providers of service and even these may not succeed, since physiotherapy required repeated visits over long periods of time and use of any protective appliance revealed the fact that the person was a case of leprosy. The promotion of these services is, therefore, an area of mutual cooperation and collaboration between all concerned. It is suggested, that each urban area especially in those parts of the country where leprosy prevalence rate was five and above, should have atleast one centre providing these services to leprosy cases. Standards could be prescribed for the facilities of staff and equipment at such centres, after close consultation between government and experienced voluntary agencies. Establishment of such centres could then take place according to the set standards. As a matter of policy, voluntary efforts may be encouraged to expand in hitherto uncovered urban areas and set up agencies with comprehensive medical and support services according to the set standards.

For leprosy cases detected in villages, answer to the problem of prevention and reduction of deformities and disabilities lay in making theraself relient in the prevention and reduction of deformities. Health guides and other village level health workers could be trained to impart skills of oil massage and exercises required for the common hand and foot deformities in leprosy. They can propagate these to the

cases in their villages as a part of their routine primary health care activities. This measure can be supplemented by training cobblers and blacksmiths, who preferably are cured leprosy cases, atleast one in each village or for a group of villages in high and medium endemic areas, in production of protective shoes and kitchen appliances. This requires linkage between health agencies and rural employment schemes after training. They should be enabled to procure necessary tools and materials through cash loan from rural banks and cooperatives.

A sizable proportion of leprosy cases, rural and urban, would require consultation and care from specialist physicians, orthopaedic and plastic surgeons, and specialist laboratory services. In view of the problem expressed by several agencies that leprosy cases referred to general hospitals found it difficult to obtain services, it is suggested that atleast one specialist should be available in the hospital exclusively for leprosy cases in each high and medium endemic State. Such institutions, already existed in the country e.g. JALMA at Agra, Uttar Pradesh and CLTRI at Chingleput in Tamil Nadu. Similar institutions should also be set up in Karnataka, and all other States where leprosy is a problem, but lacked services of a specialist in the institution.

The ultimate objective of all the measures suggested above was to enable leprosy cases to earn a livelihood. The efforts made by the voluntary sector in the area of vocational training of leprosy cases showed that there were no such facilities in Mysore district. In Kolar district these were virtually non-existent, with only a small handicrafts unit at ETCMH which trained just two leprosy cases during the study period. The largest number of leprosy cases had been trained in agriculture and horticulture. However, it was difficult to determine the extent to which the performance of agricultural and horticultural activities by leprosy cases could be looked upon as vocational training. With the exception of HKNS, Dakhin Kannada and HHH&RTU, Dharwad, these facilities existed in precisely those agencies which had fairly large land holdings, and provided settlement facilities to leprosy cases. Their inmates apparently used their existing skills and occupied themselves in these activities.

The possibility of leprosy cases becoming self supporting through agricultural and horticultural pursuits were very

remote, even if they become beneficiaries of re-distributed surplus land in rural areas through coordination between health agencies and schemes of land reform in Karnataka State. OHR&CDC, Dakhin Kannada, was the only agency which had attempted to resettle leprosy cases as marginal farmers and had experienced great difficulty, since Karnataka State Government could not give more than five "cents" of land per case and this was found insufficient to make a family self supporting. Leprosy cases can be settled as farmers, only if they agree to form cooperatives. The small land holdings given by the Government to each case, can then be pooled for joint labour and generation of extra income through sale of surplus produce. Integrated Rural Development Programme, rural banks, etc. can loan money to such cooperatives for acquiring the necessary inputs to raise the yield from cooperative land. By coordination at block level between the agencies and the BDOs Office, agricultural extension education efforts for such cooperatives can be organised. Unless such a cooperative spirit arose amongst leprosy cases which belonged to the landless peasantry and wished to continue as farmers, it was not possible to see any prospect of economically rehabilitating them through vocational training units of agriculture and horticulture in a few voluntary agencies. Voluntary agencies can, therefore, be encouraged to play an important catalytic role in the formation of such land cooperatives by leprosy cases, with active support from the Government.

Economic rehabilitation of leprosy cases in areas other than farming would greatly depend upon their being trained in vocations, which enabled them, after obtaining cash loans, to set themselves up as independent, self-employed persons. Animal husbandry such as piggery, rabbit farming, goat and sheep farming, tailoring, cobblery and carpentry, were examples of such vocations. Although quite a few agencies had set up vocational training units in these vocations the number of leprosy cases trained in each was found to be negligible.

Other types of vocational training encountered in the study were seri-culture, spinning and weaving, block textile printing, batik, press etc. in which, after acquiring skills, leprosy cases would inevitably have to hunt for jobs. Their difficulties in this regard would be tremendous. Moreover, many of the concerned voluntary agencies complained that these training units ran at a loss, and this was due to both, the rise in cost of equipment and raw materials and to the

low productivity inherent in their situation. Marketing was, thus, their major managerial problem. In order to render help, the Government can try to make existing export procedures less 'cumbersome'. This would ease the situation for those agencies which had buyers abroad. Government can also look into its own purchases in Health and other Departments, and prepare a list of the items which it can reserve for purchase from such vocational rehabilitation training units for the handicapped, provided their prices were not exorbitant. These measures, however, can only be of marginal help. The study clearly showed that a very high level of managerial efficiency was required to make such vocational training a self sustaining activity, and the agencies in which these were lacking were bound to fail.

In view of the above findings, it is suggested that the Government can adopt a selective policy and encourage setting up of only those training units which were related to simple vocations of self employment such as animal husbandry, dairy, cobblery, carpentry etc. These required less sophisticated management and would also be of greater benefit to the leprosy cases.

Finally, the study showed the great pitfalls in the provision made of home-settlement shelter facilities to leprosy cases by voluntary agencies. They were confronted with ever rising costs of living, and a sense of dependency and even ownership disputes with the latter. It is, therefore suggested that such services should not be encouraged in the voluntary sector. Indeed, no new voluntary agency should be permitted to acquire Government's land purely for this purpose.

Lkkjk'k

इस अध्ययन के माध्यम से कर्नाटक राज्य में स्वैच्छिक संगठनों द्वारा कष्ठरोग नियंत्रण के लिए प्रदान की जाने वाली सेवाओं तथा राहत कार्यों के बारे में किये गये सर्वेक्षण के परिणामों पर प्रकाश डाला गया है। कुष्ठरोग नियंत्रण की दिशा में इन संगठनों द्वारा प्रदान की जा रही सेवाओं के स्वरूप तथा इनके योगदान के बारे में भी अध्ययन किया गया था। यह पाया गया कि इनमें से अधिकांश संगठन चिकित्सकीय सेवायें प्रदान करने में लगे हुए थे, तथा इनमें से लगभग आधी संख्या में संगठन ऐसे थे

जो स्वास्थ्य शिक्षा तथा केस–निदान संबंधी कष्ठरोग सेवायें प्रदान करने के कार्य में लगे हुए थे। कुछ एजेन्सियां ऐसी भी थी जो कुष्ठरोगियों की देखभाल सायिक प्रशिक्षण तथा प्रश्रय देने के कार्यों में लगी हुई थी। इस अध्ययन के माध्यम से जो एक और महत्वपूर्ण तथ्य सामने आया, वह यह था कि इन संगठनों ने परस्पर सरकारी/गैर–सरकारी, स्वास्थ्य/गैर–स्वास्थ्य एजेन्सियों के साथ भी सहभागी संबंध स्थापित कर रखे थे। कार्यक्रम के प्रति उनके योगदान तथा उन्हें हो रही समस्याओं को ध्यान में रखते हुए कुछ ऐसे सुझाव प्रस्तुत किए गये हैं जिनके माध्यम से इन एजेन्सियों द्वारा कुष्ठ रोग राहत संबंधी प्रदान की जाने वाली सेवाओ का सुदृढ़ीकरण किया जा सकता है।

NAMES OF VOLUNTARY AND GOVERNMENTAL AGENCIES, RENDERING LEPROSY CONTROL AND RELIEF SERVICES IN DIFFERENT DISTRICTS OF KARNATAKA STATE - 1981 AND THEIR STUDY PERIOD

S.No.	Name of District	Name of Service Agency	Study period
I.	Bangalore	Katherina Kasper Leprosy Control Scheme (KKLCS)	1980-81
		Devibai Ram Narain Chellaram Rehabilitation Centre for Cured Leprosy patients (DRNCRC)	
		(Navajeevana Nilaya)	1979-80
		Bangalore Baptist Hospital (BBH)	1980
		Church of South India Hospital (CSIHB)	1980-81
		Suman Halli Society for the Welfare and Rehabilitation of Leprosy Patients (SHSWR)	1980
		Leprosy Relief Unit, St. John's Medical College Hospital (LRUSt.J)	1980
II.	Belgaum	Belgaum Leprosy Hospital Leprosy Mission, Hindalga (BLHLM)	1981
III.	Bijapur	District Anti-Leprosy Committee (DA-LC)	1980-81
		Bijapur Leprosy and Community Welfare Centre (BLCWC)	June '81-Dec. '81
		Bagalkote Leprosy and Community Welfare Centre (Bag.LCWC)	Jan.'81-June '81
IV.	Dakshina Kannada	Dept. of Skin & S.T.D., Kasturba Medical College-Hospital, Manipal (S&STD-KMCH)	1980-81
		St. Joseph's Leprosy Hospital, Mangalore (St.JLH)	1980
		Rehabilitation Unit, St. Joseph's Hospital, Kankanday (RUST.JH)	1980-81
		Cheshire Homes India, Mangalore Unit (CHI)	1980-81
		Hind Kusht Nivaran Sangh, Dakshina Kannada Branch (HKNS)	1980
		Abhay Ashraya (AA)	1980
		Olvina Halli Rehabilitation and Community Development Centre (OHR&CDC)	1979
V.	Dharwad	Hubli Hospital for the Handicapped & Rehabilitation Training Unit (HHH&RTU)	1981
VI.	Kolar	Ellen Thoburn C-owen Memorial Hospital (ETCMH)	1980
		Church of South India Hospital (CSIHK)	1980-81
VII.	Mysore	Mary Culvert Holds-worth Memorial Hospital(MCHMH)	1980
		Church of South India, Leprosy Dispensary, Mangala (CSILDM)	1980-81
		Sarvodaya Kushta Kalyan Kutir (SKKK)	1980
		Gandhi Memorial Leprosy Foundation Leprosy Control Unit (GMLFLCU)	1980

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SEX PREFERENCE OF CHILDREN IN RURAL GHANA (WEST AFRICA)

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ABSTRACT

An attempt has been made in this paper to study the sex preference of children among a sample of husbands and wives in rural Ghana (West Africa). The analysis is based on the data obtained from the DANFA Comprehensive Rural Health and Family Planning Project Ghana - a demonstration, teaching and research project developed and implemented jointly by the University of Ghana Medical School and School of "Public Health, University of California, Los Angeles. The salient correlates of intensity of sex preference have been examined by using multivariate statistical techniques. The results of analysis revealed that while there is no overall preference for male children among wives, there is a definite preference for sons among the husbands. The wives who desire equal number of sons and daughters, less sons than daughters, and more sons than daughters are almost equally distributed. But the husbands on an average desire three sons for every two daughters. In multivariate analysis, the age at first marriage, ethnicity and number of living children have been found to be significant correlates of intensity of desire for male children by the husbands which has been measured by an index.

The relevant literature on the subject has been reviewed and implications of sex preference of children on the fertility behaviour have been discussed.

An analysis of sex preference of children is important from the sociological as well as demographic perspective. Firstly, preferences for children of a particular sex can have a profound effect on the actual completed family size. Any policy directed towards fertility reduction must take into account not only overall family size desired but also sex composition of the desired number of children and the reasons for the

existence of such preferences. Secondly, there is an inverse relationship between the degree of son preference and the status of women in a particular society. A society in which there is no sex preference for children is likely to be more sexually egalitarian than the one where such preference exists. The degree of boy preference can thus serve as a rough but useful index of the status of women in a society.

The relative value of male and female children is the outcome of many economic, social, cultural and demographic factors as well as the role assigned to sexes by the society. Further, it has been pointed out that in many third world countries patrilocal residence male inheritance, and payment of dowry as a prerequisite for marrying one's daughters are generally associated with sone preference while in a few societies which follow matrilineal system and where payment of bride price rather than dowry is customary, the daughters are preferred. A review of literature shows that preference for predominance of sons with atleast one daughter is very common around the world. Studies about U.S.A., Latin America, Middle East, India, Pakistan, Bangladesh and Far East were conducted but sub-Saharan Africa was excluded because data for these areas were 'either insufficient or non-existent'. Results of some of the studies from the Middle East and North Africa summarised reveals that there is a strong son preference in rural areas of Algeria, Egypt and Tunisia. For Turkey and Lebanon some preference for male children was indicated, while for Morocco no evidence of preference for male children was found. It was further, revealed that North African countries had a strongter son preference than the Middle East, and rural areas had stronger son preference than the urban areas. In Latin American countries an overwhelming preference for boys was found in men. Religious differences were not clear since in Middle East countries the preference for sons was equally strong in Christians and Muslims. In some countries, higher education was related to lower son preference but in Korea, India and Taiwan preference for male progeny was found to be equally prevalent in all educational groups. Some other studies from India have also revealed that desire for sons is relatively stronger in males, -'lower income groups and those living in rural areas.

The high premium placed on sons as against daughters in the developing societies, is due to a variety of economic, religious and social reasons. Sons are considered important for help in agricultural production, security in times of old

age or sickness, performance of prescribed religious rituals and kinship continuity. The preference for male progeny is, however, not unique to the developing societies. To some extent the preference for a son also exists in the developed countries. The difference is thus only a matter of degree.

Although not much empirical evidence is available, it has been suggested that with regard to children tropical Africa has pursued a strategy of maximum growth in which no particular preference was given to the children of either sex. In order to operate a system of bride-wealth transactions daughters are needed to bring in wealth if sons are to acquire brides. According to Goode however, the high emotional significance of the son-mother relationship seems to be salient in the African societies and this is "probably in part an outgrowth of the impact of polygamy on the son-mother tie; the son was emotionally dependent on his own mother whose uniqueness was emphasised by the existence of other members and other sons in the family. Further, it has been reported that sons are the support of their fathers. Chiefs in particular, stress this. The more sons and son's sons a chief has, the more secure does he feel... they support him in all circumstances.

The economic importance of male children in Ghana is also obvious from the fact that while less pressure is put on the daughters to make contributions towards the support of their parents. Sons are morally obligated to take care of their parents in old age or in sickness and if compared with daughters, they can put more hard work on fishing and farming for providing support to their parents and other relatives. In such tribal societies a person who abandons his relatives is considered as 'good for nothing'[18],[19].

The effect of sex preference on the desired number of children or actual fertility is available from some studies but evidence in this regard is less conclusive. With simulation models it has been shown that in the face of high mortality rates, parental desire for surviving sons would be sufficient explanation of high observed fertility in the developing countries[20].

On the basis of analysis of data from the United States it has been found that birth intervals were largest for women having equal number of boys and girls, intermediate for those

having more boys than girls and shortest for those having more girls than boys. If birth intervals could be taken as an index of fertility, then it seems that unbalanced sex composition of the children tends to increase fertility levels[21]. Based on the analysis of American fertility data, in another study, it has been observed that sex preference operates to affect family size if the desired sex composition is not readily achieved.

Though the above studies, among others, have found a positive effect of boy preference on reproductive desires and behaviour, there are also studies which have failed to find any such relationship. In order to see the relationship between desire for sons and fertility behaviour, four bodies of data have been analysed in another study - two from North India, one from East Pakistan (now Bangladesh) and one from Morocco. Further to test the hypothesis that in countries with strong son preference, limitation of family is constrained by the strong desire to ensure the survival of one or more sons. The evidence to the contrary was found and families having no sons or a predominance of daughters tended to have fewer children. In another study carried out in Kenya, East Africa, it was observed that the desire for additional children was not a function of parental preference for one sex. In this study the desire for additional children was found to be equally strong in those having only male children and those with only female children.

Although the subject of sex preference of children has been studied by many scholars in diverse cultures, there is no systematic study of correlates of parental sex preference. Furthermore, the studies of this kind are very few in Africa. As mentioned before, Williamson who studies sex preference of children all over the world excluded sub-Saharan Africa because of either insufficient or non-existent data. There is thus a need for studying sex preference among African populations where fertility rates are very high. In addition, the attitudes of both husbands and wives should also be taken into account in order to conduct the study of this kind to serve the population policy best.

Objectives and Methodology and Data Sources

The main objective of this paper is to examine the sex preference of desired children among a sample of husbands and

wives in rural Ghana and to analyse salient correlates of these preferences. The analysis is based on the data gathered in 1972 by the DANFA comprehensive Rural Health and Family Planning Project, Ghana (West Africa), a demonstration, teaching and research project developed and implemented jointly by the University of Ghana Medical School and the University of California School of Public Health.

In the KAP studies, the surveys of both (male and female) the respondents who specified the number of additional children wanted were asked a further question: "Among these how many boys and how many girls do you want to have?" But in order to determine the total number of boys and girls wanted by the respondent, it was necessary to ascertain the sex distribution of living children. This information, however, was not available in the KAP studies or household census registration. For the wives, the required information was obtained from the retrospective fertility history which contained data about all the surviving children of the wife and their sex. The number of boys and girls ascertained in this manner was added to the number of additional boys and girls wanted by the wife. But in a society where polygamy is common and marital instability is considerable, the number of children of the wife cannot be safely assumed to be the children of her current husband except in those cases where the marriage was monogamous and both husband and wife had not had any previous marriage. Since, there was no other way of ascertaining the sex distribution of the living children of the husband and the analysis was considered important, it had to be limited to monogamous husbands who and their wives had been married only for the first time. In such cases, the number of living boys and girls obtained from the retrospective fertility history of the wife was taken to be the children of the husband also and added to additional boys and girls wanted by him in order to ascertain the sex distribution of number of children desired by the husband.

The intensity of sex preference by both husbands and wives has further been measured quantitatively by the Index I, defined as: $I = 100*E/C$ where "E" is the excess of the number of sons desired by respondent over the number of daughters, and "C" is the number of children desired. The index varies between -100 and +100, the extreme values corresponding respectively to the cases when only daughters and only sons are desired. The index assumes the value of 0(zero) when there

is no preference for a particular sex or equal number of sons and daughters is desired. Furthermore, the preference for a male or female child is indicated by the sign of the index; if the preference for boys is greater, it is positive and if more girls are wanted, it is negative^.

Findings and Discussion

The sex preference of children desired by both husbands and wives is given in Table 1 which indicates that while 14.2 per cent of the husbands desired equal number of sons and daughters, the corresponding percentage for the wives works out to be 34.9. Further, 9.1 per cent of the husbands and 29.1 per cent of the wives indicated a preference for daughters; and a little more than three-fourths of the husbands and one-third of the wives desired more sons than daughters. It thus appears that while for the wives sex preference works both ways; it is overwhelmingly for male children in the case of husbands.

The value of the index for husbands and wives works out to be about 22 and 3 respectively which shows that while on an average husbands desire a little more than three sons for every two daughters, there is little overall sex preference for the wives. These differences are statistically significant (t= 8.05; p=< 0.000) and indicate that the intensity of preference for a son is greater for the husbands as compared to wives. This confirms the results of another study conducted in Kenya, which also revealed that the husband desire more sons than

TABLE l

SEX PREFERENCE DESIRE CHILDREN BY RURAL GHANAIAN OF HUSBAND AND WIVES

	Husbands		Wives	
	Number	Percentage	Number	Percentage
Desiring equal number of sons and daughters	39	14.2	249	34.9
Desiring less sons than daughters	25	9.1	208	29.1
Desiring more sons than daughters	211	76.7	257	36.0
Total	275	100.0	714	100.0

daughters while there is no overall sex preference among the wives. Findings of another paper has shown that polygamous husbands and those with previous marital histories desire significantly higher number of children than those married monogamously and only once[2]. The inclusion of the former group in the analysis would have further strengthened our conclusion regarding strong preference for male progeny on the part of husbands as compared to the wives.

Sex Preference of Desired Children by Wives by Selected Characteristics

The analysis has shown that sex preference by wives works both ways and as a consequence of this the overall index is close to zero. However, it would be of interest to know if there are any significant differentials in this pattern. An attempt has therefore been made to examine the sex preference of desired children in relation to the following characteristics of the wives: age, age at first marriage, education, occupation, religion, ethnicity, type of marriage (monogamous vs. Polygamous), type of conjugal relation (customary vs. mutual consent or friendship), type of family (nuclear vs. extended) and number of previous marriages. The results of this analysis are given in Table 2 which indicates that except for age there is no significant relationship between the sex preference and the characteristics of the wives. Even though there are significant age differentials in the sex preference of children desired by the wives (X^2=17.22; P=0.028), no clear trend is discernible. This pattern of sex preference probably is an outgrowth of peculiar rural Ghanaian culture which finds expression among the females of all socio-economic, religious and ethnic groups.

TABLE 2

Characteristics of the wives	No. of cases	Desires equal No. of sons and daughters		Desires less sons than daughters		Desires more sons than daughters	
		No.	Percentage	No.	Percentage	No.	Percentage
(1)	(2)	(3)	(4}	(5)	(6)	(7)	(8)
Age							
Less than 20	25	8	32.0	6	24.0	11	44.0
20-24	130	61	46.9	28	21.5	41	31.5
25-29	174	66	37.9	44	25.3	64	36.8
30-34	165	52	31.5	54	32.7	59	35.8
35 or above	220	62	28.2	76	34.5	82	37.3

X^2 = 17.22 df= 8 P =0.0279

Table 2 continued...

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Age at first marriage							
Less than 16	68	20	29.4	20	29.4	28	41.2
16-19	389	132	33.9	121	31.1	136	35.0
20-24	207	75	36.2	52	25.1	80	38.6
25 or above	21	10	47.6	6	28.6	5	23.8
		X^2 = 5.26 df = 6 P= 0 5073					
Education							
None	565	189	33.5	176	31.22	200	35.4
Primary	80	30	37.5	20	25.0	30	37.5
Middle	60	26	43.3	12	20.0	22	36.7
Higher	8	3	37.5	0	0.0	5	62.5
		X^2 = 8.71 df = 6 P= 0.1907					
Occupation							
Housewives	90	38	42.2	25	27.8	27	30.0
Fanners	384	135	35.2	111	28.9	138	35.9
Traders & others	240	76	31.7	72	30.0	92	38.3
		X^2 = 3.50 df = 4 P= 0.4780					
Religion							
Protestant	259	93	35.9	73	28.2	93	35.9
Catholic	24	7	29.2	9	37.5	8	33.3
Muslim	45	17	37.8	11	24.4	17	37.8
Traditional	384	131	34.1	114	29.7	139	36.2
		X^2 = 1.60 df = 6 P= 0.9523					
Ethnicity							
Ga	212	70	33.0	72	34.0	70	33.0
Ewe	175	56	32.0	52	29.7	67	38.3
Akan	145	55	37.9	41	28.3	49	33.8
Others	143	48	33.6	34	23.8	61	42.7
		X^2 = 6.65 df = 6 P= 0.3538					

Table 2 continued . . .

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Type of marriage							
Monogamous	495	176	35.6	147	29.7	172	34.7
Polygamous	219	73	33.3	61	27.9	85	38.8
		X^2 = 1.09	df = 2	P = 0.15801			
Type of conjugal relation							
Customary	624	213	34.1	186	29.8	225	36.1
Mutual consent	73	29	39.7	16	21. 9	28	38.4
		X^2 = 2.09	df = 2	P=0.3522			
Type of family							
Nuclear	396	133	33.6	120	30.3	143	36.1
Extended	318	116	36.5	88	27.7	114	35.8
		X^2 = 0.0.85	df= 2	P=0.6554			
Number of previous marriages							
None	495	175	35.4	135	27.3	185	37.4
1	176	62	35.2	56	31.8	58	33.0
2 or more	43	12	27.9	17	39.5	14	32.6
		X^2 = 4.11	df = 4	P= 3910			

Intensity of Sex Preference by Husbands by Selected Characteristics

It was found that, unlike wives, there is a definite preference of male children among husbands. Our average sex preference index works out to be 22, indicating that for every two daughters the husbands desire a little more than three sons. In order to find if there were any socio-economic, religious or ethnic differentials in the intensity of preference for sex of desired children, first one-way analysis of variance of mean sex preference index with each of the following independent variables is done: age, age at first marriage, education, occupation, religion, ethnicity, lineality, type of conjugal relation, type of family, and number of living children. The sex preference index according to various independent variables in the analysis is given in Table 3. Since, many of these variables are likely to be interrelated and in order to find out the net effect of each of these variables on the intensity of sex preference by the husbands, analysis of covariance is performed.

TABLE 3

SEX PREFERENCE INDEX VALUE OF DESIRED CHILDREN BY HUSBANDS BY SELECTED CHARACTERISTICS

Selected characteristics	No. of cases	Mean sex preference	Standard deviation	Standard error
(1)	(2)	(3)	(4)	(5)
Age				
15-23	18	28.7	31.3	7.6
25-34	108	19.1	27.6	2.6
35-39	97	22.9	28.6	2.9
40 or above	49	22.3	22.3	3.2
Age at first marriage				
below 16	16	13.3	24.5	7.0
16-19	12	14.6	47.9	14.5
20-24	97	21.4	27.6	2.8
25-29	97	21.3	25.7	2.6
30-34	35	24.6	26.1	4.4
35 or above	18	28.2	19.3	4.4
Education				
None	146	21.2	23.1	1.9
Primary	37	20.3	29.7	4.9
Middle	75	21.6	33.2	3.8
Higher	16	25.5	27.7	6.9

Table 3 continued ...

(1)	(2)	(3)	(4)	(5)
Occupation				
Not working, students, trainees, unemployed and retired persons	7	22.4	11.3	4.3
Professional and technical personnel, Govt, officers, business executives and other white collar workers	19	28.0	24.4	5.6
Farmers	195	21.7	26.1	1.8
Drivers and other transport workers, postmen, messengers, linemen etc.	10	13.1	42.3	13.6
Laborers, watchmen, cooks and other manual workers	15	29.6	24.9	6.5
Village artisans, bakers, masons, carpenters, toolmakers, mechanic, jewellers etc.	27	15.0	33.9	6.6
Alcohal distillers, retail traders, sales and shop assistants	2	0.0	28.3	20.2
Religion				
Protestants	116	20.3	26.7	2.4
Catholic	18	25.7	27.7	6.5
Muslim	26	26.0	27.7	5.5
Traditional	112	21.4	28.0	2.6
Ethnicity				
Ga	98	18.5	29.4	3.0
Ewe	55	29.8	22.5	3.0
Akan	63	17.2	32.2	4.0
Others	56	23.0	19.7	2.6
Lineality				
Patrilineal	153	22.6	27.6	2.2
Matrilineal	122	20.1	26.8	2.4
Type of conjugal relations				
Mutual consent/friendship	13	16.3	17.2	4.7
Customery	253	22.2	27.3	1.7
Type of family				
Nuclear	175	21.9	24.7	1.8
Extended	100	20.7	31.3	3.1
Number of living children				
0-2	118	17.8	26.2	2.4
3-5	112	26.8	27.3	2.6
6+	45	18.1	28.3	4.2

In the latter analysis occupation, religion, ethnicity (tribe) and type of family are introduced as factors (norminal variables), while the numerical variables age, education, age at first marriage and number of living children are included as covariates. In the analysis of covariance, the joint effect of factors and covariates are found to be statistically non-significant. The multiple classification analysis (MCA) shows that the above variables explain only 9 per cent of the variation in the intensity of sex preference in the husbands. Thus our prediction in this regard is not very strong. The summary of the results of one way analysis of variance and analysis of covariance are shown in Table 4. It further shows that the variables which have statistically significant relationship with the extent of son preference by the husband are: age at first marriage, ethnicity and number of living children.

The relationship between age at first marriage and intensity of sex preference is positive and linear (Table 3). This relationship though not found to be statistically significant in our bivariate analysis reaches a level of statistical significance when in the multivariate analysis other variables are controlled.

TABLE 4

SUMMARY OF RELATIONSHIP BETWEEN DEPENDENT VARIABLE Y (SEX PREFERENCE INDEX) AND INDEPENDENT VARIABLES X_i TO X_n

	Significance of relationship*	
	Bivariate analysis ($Y=a+b_1x_1$)	Multivariate analysis ($Y=a+b_1x_1+b_2x_2 \ldots + b_nx_n$
1. Age	NS	NS
2. Age at first marriage	NS	S
3. Education	NS	NS
4. Occupation	NS	NS
5. Religion	NS	NS
6. Ethnicity	S	S
7. Lineality	NS	NS
8. Type of conjugal relationship	NS	NS
9. Type of family	NS	NS
10. Number of living children	S	S

*Significant at .05 level of probability
S = Significant, NS = Not Significant

The intensity of desire for a male child is found to be lowest in the husband belonging to Akan tribe and highest for those of Ewe ethnic group. The value for Ga's is slightly higher than the Akan group. These ethnic differences in the intensity of desire for a male child are found to be statistically significant both in the one way analysis of variance and analysis of covariance.

Though there are statistically significant differences in the intensity of desire for sons according to number of living children, the relationship is curvilinear. For those having 0-2 living children and 6 or more children the value of sex preference index is 17.8 and 18.1 respectively, while for the husbands having 3 to 5 living children the corresponding value works out to be 26.8.

Further, no statistically significant relationship is found between intensity of sex preference on the one hand and age, education, occupation, religion, lineality, type of conjugal relationship, type of family on the other (Table 4).

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Lkkjk'k

इस लेख के माध्यम से घाना (पश्चिमी अफ्रीका) के ग्रामीण क्षेत्रों में चुने गये दम्पत्तियों में , बच्चों के लिंग भेद के सन्दर्भ में, उनकी अधिमान्यता (प्रेफरेन्स) का अध्ययन करने का एक प्रयास किया गया है। यह विश्लेशण डी. ए. एन. एफ. ए कम्परीहेन्सिव रूरल हैल्थ एण्ड फैमिली वेलफेयर प्लानिंग प्रोजेक्ट, घाना से प्राप्त आंकड़ों पर आधारित है। यह एक प्रदर्शनात्मक, शिक्षणपरक तथा अनुसंधानपरक प्रायोजना थी, जिसे यूनीवर्सिटी आफ घाना मेडिकल स्कूल, तथा स्कूल ऑफ पब्लिक हैल्थ, यूनीवर्सिटी, आफ कैलीफोर्निया, लॉस एन्जेलस द्वारा संयुक्त रूप से विकसित तथा क्रियान्वित किया गया था। लिंग–अधिमान्यता की सघनता को प्रभावित

करने वाले प्रमुख सहसंबंधों की जांच करने के लिए बहुचर सांख्यिकी–तकनीकों (मूलटीवेरिएट स्टेटिस्टीकल टेक्नीकस) को प्रयोग में लाया गया था। विश्लेषण के परिणामों से ज्ञात हुआ कि पत्नियों में पुत्र–प्राप्ति की भावना सामान्यतः इतनी अधिक व्यापक नहीं थी जितनी की उनके पतियों में थी। उनके पति निश्चित रूप से पुत्र–प्राप्ति को अधिक वरीयता देते थे। ऐसी महिलायें जो पुत्र तथा पुत्रियां बराबर संख्या में प्राप्त करने की इच्छा रखती थी, जो पुत्रियों की अपेक्षा पुत्र कम संख्या में प्राप्त करना चाहती थी, तथा जो पुत्रियों की अपेक्षा पुत्र कम संख्या में प्राप्त करने की इच्छा रखती थी, उनकी संख्या लगभग प्रायः समानरूप से विभाजित थी। किन्तु जहां तक पुरूषों का सम्बन्ध था वह प्रायः दो पुत्रियों के साथ तीन पुत्रों की प्राप्ति की इच्छा रखते थे। इस विश्लेषण द्वारा यह पता चला कि प्रथम विवाह के समय आयु, जातीयता तांम जीवित बच्चों की संख्या आदि जैसे कुछ महत्व–पूर्ण संहसंबंध थे जो पतियों में पुत्र–प्राप्ति की इच्छा की प्रबलता को प्रभावित करते थे। इन सहसंबंधों का आमापन इन्डेक्स के माध्यम से किया गया था।

इस में विषय से संबंधित सामग्री की समीक्षा की गई है तथा बच्चों में लिंगभेद के आधार पर वरीयता देने संबंधी प्रजनन व्यवहारों पर विचार व्यक्त किये गये हैं।

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ADMINISTRATORS VIEW POINT OF BLOOD BANK SERVICES

R. C. Anand, R. K. Sarma and M. Srivastava

ABSTRACT

Blood Bank Services is one of the most important and vital area of the hospital. Unfortunately , since independence (1947) no concented effort has been made to improve, modernise or restructure this service in India, though rapid advances have been made in the field of medicine, surgery etc. Hospitals and the community have become increasingly dependent on these Blood Bank services.

Hospital Administrators have now got increasing responsibility to ensure that Blood Bank service is one of the highest standards and functioning with maximum efficiency. To achieve this, the hospital administrator has to have a complete knowledge of this service. This article gives indepth knowledge of complex administrative functioning of an efficient and effective Blood Bank.

Blood Bank service forms an integral part and important component of the supportive services in the hospital. It is responsible for collection, processing, storing and distribution of human blood and its products.

The term 'Blood Bank' is frequently used to identify a unit performing any function in the use of whole blood. A complete Blood Bank includes two activities. Donor service for blood collection and transfusion service. In some instances the blood bank may prepare certain blood products.

The increasing demand of blood as a therapeutic agent has come as a consequence of the advancement in medicine. The advancement in urbanisation and industrialisation has introduced new health hazards leading to greater demand for blood and its derivatives in the treatment and preservation of life.

The practical application of blood transfusion and advance

in transfusion technique, such as plasma fraction, plasma phere-sis and discovery of equipment like cell separators has revolutionalised the treatment philosophy. But for the modern blood bank services, the concept of organ transplant, cardiothoracic surgery, neuro-surgical manouvres would not have been practicable today. Management of cancer patients, congenital disturbances, burns and other diseases has also placed heavy demand on the blood banks for blood and its components.

In India, blood banking has lagged behind the developments in other fields of medicine. The need to develop proper blood banking practice in the country is of utmost importance both from the point of view of primary health care at district and sub-district level and for sophisticated medical care in larger hospitals.

The various committees constituted by the Government of India from time to time to review the hospitals and health services have recommended measures for the development of blood bank services. Study Group on Hospitals had stated that deficient blood bank services in India leads to lowering of standards and results in serious risks to patients' lives.

The report of Hospital Review Committee (Delhi Hospitals) has recommended that immediate attention should be paid to organise blood banks in Delhi hospitals properly equipped and staffed[2]. Hospital Review Committee for Delhi hospitals which was constituted in the year 1978-79 has commented about AIIMS Blood Dank that 'Need for blood products is increasing in these specialised hospitals and blood bank services area is a weak link in patient care in this hospital. The Committee further recommended that a special Committee be set up to work up the norms of space, equipment, manpower, workload, etc. of hospitals as a supportive services-^.

Operating Responsibility

Blood banks are usually run as a section of the department of pathology or organised as a separate unit under the Director of Pathology. A specially trained medical and nursing team is essential for its successful operation.

Space Requirements

The staff and the space needed will vary with the com-

mitments of each centre. A minimum of 200 sq. mts. of space is recommended for a blood centre producing approximately 3000-4000 units of stored blood annually and 300 sq. mts. for a centre producing 6000-8000 units. While the total area need not be large, it must be adequate for the expected work volume and be arranged to facilitate the work of personnel and easy management of donors.

The modern concept of blood bank organisation and operation should be based on workload rather than the bed strength of the hospital. A total area required to house the blood transfusion unit should be at least 1000 sq.fit. This should include:

1. Reception room - 12'xl2'
2. Bleeding room - 15'xl5'
3. Donors resting room-cum-refreshment room - 10'xlO'
4. Laboratory - 10'xlO'
5. Cleaning and sterilization room – 15'xl5'
6. Store - 10'xlO'
7. Office - 10'xlO'

Reception Room

This room is meant for receiving the donors, taking histories, filing records and preliminary testing of donors haemoglobin, blood group and weight etc. The donor should be made comfortable and should be provided with some reading material so that he or she should feel at home while waiting for their turn. Either a social worker or some technical personnel should there be to answer some of the questions asked by the donors.

Bleeding Room

This is the room where actual process of blood taking is done. This room should be connected to the reception room on one side and resting room on the other. It is better if the Bleeding Room is air-conditioned.

Donors Resting Room-cum-Refreshment Room

The donor is offered some refreshment and the records are completed. Donor should be kept in this room for about 15 minutes to half an hour for any untoward reaction.

Laboratory

This room should be quite and without any disturbance. None should be permitted to enter this room when the technicians are working.

Cleaning and Sterilization Room

This could be divided into two portions:

1. Cleaning side.
2. Sterilization where distillation plant, autoclave can be installed.

Store

This room is meant for keeping all stores pertaining to blood bank.

Office

This room is required for the doctor and technicians.

Recommendations of ISI (Indian Standard Institution,1983) regarding various areas which should be in the Blood Bank are given below:

Facility	Category A		Category B		Category C		Category D		Category E	
	Room No	Areas Sq.m	Room No	Areas Sq.m	Room No	Areas Sq.m	Room No	Areas Sq.m	Room No	Areas Sq.m
Reception And waiting	-	-	-	10.5	1	17.5	1	21.0	1	28.0
Bleading Area	-	-	-	-	-	-	1	17.5	-	17.5
Donor’s rest room with kitchenette	-	-	1	17.5	1	21.0	1	17.5	1	17.5
Laboratory And blood strorage area	-	-	1	14.0	1	21.0	1	28.0	1	28.0
Office	-	-	-	-	1	10.5	1	10.5	1	10.5

Stores	-	-	-	-	1	10.5	2	10.5	2	10.5
Bottle washing area	-	-	-	-	1	10.5	1	14.0	1	17.5
Doctors room with toilet	-	-	-	-	-	-	-	1	17.5	17.5
Social worker with motivevators Room with attached toilet	-	-	1	17.5	1	17.5	1	17.5	1	17.5
Toilet	-	-	1	10.5	1	10.5	1	10.5	1	10.5
Janitors closet	-	-	-	-	1	3.5	1	3.5	1	3.5

Staffing

Whatever be the size of the centre, there will be six main categories of staff i.e. medical officer, a donor organiser, administrative officer, donor attendant, laboratory staff and transport staff. WHO in a guide to formation and operation of transfusion service has suggested the staff in relation to size of laboratory as below^.

Medical Officer

There must be atleast one medical officer in each blood bank, in large establishment, more will be required and one of them may have to spend a considerable time on administrative work.

Serologist

A rough estimate of the number required may be made by dividing the number of samples required each day by fifty.

Clerical Staff

At least one clerk will be needed either full time or part time.

Washing up Staff

As all laboratories need absolute cleanliness of all the

apparatus, so there is always a need for efficient washing up facilities.

Animal Attendants

If antiglobulin serum is prepared, rabbits will have to be kept which will necessitate animal attendant.

However, the staff requirement for a blood bank based on the criterion of bed strength or on workload suggested by different bodies are as under:

Staff	200-499 beded	500 or more beded
Medical Officer	2	2
Technicians	4	8
Nurses	1	2
Laboratory Assistant	3	5
Sweeper	1	2
Clerk	1	1
Driver	1	1
Cleaner	1	1
Blood donor organiser	1	1
Voluntary blood donor orgns.	1	1

(Report of Study Group on Hospitals, 1968 and follow-up Report, 1978, Government of India)

Staffing pattern as accepted by the Director General of Health Services is as under:

Staff	500 beded	700 beded	1000 beded
Senior BTO	-	1	1
Assistant BTO	1	1	2
Junior Medical Officer	1	1	1
House surgeon	1	1	2

Technical Supervisor	-	1	2
Technical Assistant	1	2	3
Technician	4	5	6
Laboratory Assistant	2	3	4
Laboratory Attendant	1	2	2
Nursing orderaly	2	3	4
Sweeper	1	2	3
Nurse	1	1	2
Social worker	1	1	2
Driver	1	1	1
Store-Keeper	1	1	1
Stenotypist	-	-	1

Blood Banking

The term blood bank was coined firstly by Fantus at the Cooks County Hospital, Chicago, USA in the year 1937. As blood banking is included in the discipline of pathology, the blood bank is usually operated as a section of the Department or organised as a separate unit under the Director, Department of Pathology.

Procurement of Blood

Organising blood bank for efficient transfusion led to the problem of feeding the bank constantly with blood.

Cadaver blood and placental blood are also theoretically acceptable but they do not cater to the full demand and are fraught with difficulties including social taboos. The organisation of blood donors on a substantial scale first came about during the first World War (1914-18) in Britain. It was in 1921, the London blood transfusion service was formed as a voluntary organisation mainly due to the efforts of the British Red Cross Society.

In some countries like America, commercial blood banks operate side by side with those run by Red Cross Society. Some

of these commercial banks operate on profit motives and hence all requirement of blood is obtained from paid donors.

In the blood transfusion language, any person parting with his blood for use of another person is called a donor. Three types of donors are described:

1. Voluntary donor
2. Bank system or replacement donor
3. Paid donation

Voluntary Donation

Any person parting with his blood without any ulterior motive or extraneous pressure could be called a voluntary donor. In India, 2.0 per cent of total blood donation is made voluntarily.

Bank System or Replacement Donor

Under this system, donors are recruited by the receipient himself, and the donors replace the blood used for his relations or friends. This system is widely practised in USA. As a variation, a person can obtain blood on credit for a fixed period for themselves and their families or friends by donating earlier. This credit is transferrable and the American Association of Blood Bank has set up a clearing house which attends to these transactions. The clearing house programme effects a quick transfer of credit from one member bank to another so that a patient does not suffer.

Group Coverage Plan

A variation of replacement system is practised widely in USA. It envisages assurance of coverage of a group of individual like an industry, factory or small community by blood bank, in return for a certain prefixed level of donation from the community.

Group coverage plan is also followed by Chandigarh Red Cross Society who have entered into agreement with about forty firms in that area. Each firm provides 10.0 per cent of its staff as donors per year and in return the entire firm is covered for blood during the year.

Paid Donation

Under this system, the donor receives recompense. The transfusion service is thereby relieved of some responsibility towards the donors and may sell the blood and blood derivatives to a hospital or to the recipient at a profit.

Eighty five per cent of all the donors in India are professionals, and they are paid anything ranging from Rs.7 to Rs.25 for one donation.

Blood Storage

Immediately upon collection, the blood must be placed in a proper refrigerator and stored continuously until used at 4 to 6°C. The refrigerator should be equipped with a recording thermometer and an alarm mechanism to assure storage temperature control.

Conscipcuous designation of ABO Group - If a label colour code is used, it must be as follows:

Group A	Yellow
Group B	Pink
Group C	Blue
Group AB	White

Rh factor system must be prominently indicated.

Quality Control in Blood Banking

To prevent mistakes in the blood bank, a procedure of continuously monitoring the reagents, supplies, techniques, and personnel must be carried out to ensure accurate results. Quality control of equipment, reagents and procedure is of little avail if no attention is given to person performing the test and the plans in which the tests are performed. A technologist working in the blood bank should be qualified and trained for the job expected of a technician. A detailed job description should be written which outlines the employee’s tasks and responsibilities.

For the hospital administration, it is an important area, as the efficient use of blood bank service will result in better patient care and hence the betterment of the community image of the hospital.

Lkkjk'k

''रक्त बैंक सेवा'' अस्पताल के सभी सेवा क्षेत्रों में से एक प्रमुख तथा महत्वपूर्ण सेवा क्षेत्र है। किन्तु यह एक विडम्बना ही है कि भारत में स्वतन्त्रता प्राप्ति के पश्चात से (अर्थात 1947से) इन सेवाओं में सुधार लाने, इन्हें आधुनिक बनाने अथवा इन सेवाओं का पुर्नगठन करने की दिशा में कोई ठोस प्रयास नहीं किए गए हैं, जबकि चिकित्सा तथा सर्जरी के क्षेत्र बहुत तीव्र गति से विकास हो चुका है, अस्पताल तथा समुदाय वर्ग आज रक्त बैंक सेवाओं'' पर अधिक से अधिक निर्भर हो चुका है।

''रक्त बैंक सेवाओं'' को उच्च कोटि का स्टैन्डर देने तथा इन सेवाओं को सर्वोत्तम ढंग से क्रियाशील बनाने की दिशा में अस्पताल प्रशासकों का दायित्व आज निरन्तर बढ़ रहा है। इस उद्देश्य की प्राप्ति के लिए एक अस्पताल प्रशासक को इन सेवाओं का पूरा ज्ञान होना आवश्यक है। इस लेख में उन सभी प्रकार की जटिल प्रशासनिक प्रक्रियाओं के बारे में विवेचना की गई है जिनके माध्यम से रक्त बैंक सेवाओं को प्रभावशाली तथा कुशल बनाया जा सकता है।

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STUDY OF COMMUNITY HEALTH VOLUNTEERS SCHEME IN THE DISTRICT OF AJMER, RAJASTHAN

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ABSTRACT

Community Health Volunteers (CHVs) scheme was launched in the State of Rajasthan in 27 PHCs on 2nd October, 1977 alongwith other States on the basis of one PHC in each district. The PHC area in district of Ajmer which was under study, three batches of 58 CHVs had been trained and working in the field, while the fourth batch of 23 CHVs under training was expected to complete the training by the end of September, 1978. There had been three drop-outs during the training period.

Findings revealed that though generally, criteria of selection were adhered to, but there were some deviations like limited community involvement, lack of awareness on the part of community leaders and community about the scheme and its selection dynamics. It was strongly felt that the selection processes may be strengthen further.

The training being a vital component in the scheme, there is a room to strengthen further the training of key trainers, by way of full coverage. At present most of the key-trainers (medical and para-medical) remained untrained. The training methodology of CHV should not be limited only to lecture-discussion it should be more field based and strong emphasis be given on promotive and preventive aspects.

Study further reveals that inputs like drugs, educational aids, stipends and honorarium to CHVs were not regular and timely. Serious attention both at State and Central level be given by the Programme Officers so that a methodology is evolved to ensure a regular and timely supply of such inputs be maintained down to the line of functionaire.

A number of administrative problems also need to be thoroughly studied so that remedial means can be taken up which will go a long way for the achievement of the objectives of the scheme and its smooth and efficient running.

Community Health Volunteers (CHVs) scheme was evolved to deliver primary health care services for the rural masses of our country by selecting a worker and train him from each village with a population of one thousand. The scheme was initiated from 2nd October, 1977 and was gradually extended in a phased manner throughout the country except the States of Jammu and Kashmir and Kerala.

The scheme was launched in the State of Rajasthan in 27 PHCs on 2nd October, 1977. The investigators got an opportunity to study the scheme under operation in one of the PHCs in the State of Rajasthan. The findings of the study cannot be generalised because the scope of this study being very limited. However, the study might open scope for further detailed studies on the implementation of the scheme. The broad objective was to study the various aspects of implementation of CHV scheme in one district, including policies and administrative set up.

The specific objectives of the study were: (i) to study the procedure and fulfilment of criteria for selection of CHVs; (ii) to study the training facilities, type and range of training given; (iii) to study the type and nature of work undertaken by CHVs; (iv) to study the relationship between PHC staff and CHVs; and (v) to study the problems faced by PHC and CHVs in the operation of the scheme.

Methodology

The study was conducted in one PHC of the district. Methods-of data collection employed were (i) interview-cunr discussion with C.M.H.O., Dy. C.M.H.O., M.O. Incharge, PHC staff, CHVs under training and working in the field; (ii) the study of available records, circulars, orders and various documents at various levels, *e.g.* CMHOs office and PHC; and (iii) study of records maintained by CHVs and the reports sent by M.P.Ws to PHC.

Observations and Discussion

The details of the scheme studied are described under different headings.

Procedure of Selection: To know the process of selection, the study of records i.e. proposals received by the PHC regarding the decision of selection of candidates by the community was carried out. This was supplemented by interviewing the M.O. Incharge, PHC, PHC staff and a sample of community health volunteers presently undergoing training in the PHC.

Source *of Information to CHVs About the Scheme:* The majority of the CHVs (50 per cent) came to know about the scheme through PHC staff, (30 to 49 per cent) were informed by the community leaders and about 10 to 20 per cent through other sources e.g. community, friends, etc.

Agencies Approached by the CHVs About Nominations: Majority of CHVs approached the community leaders and panchayat officials for this purpose, while a small percentage of about 20 per cent approached M.O. Incharge, PHC and other staff.

Selection of CHVs: The majority of names (60 per cent) for selection of CHVs were proposed by panchayat and community leaders, about 30 per cent names were proposed by the community and about 10 per cent names were proposed by the PHC staff. About 60 per cent of CHVs were selected by holding community meetings.

Out of total 109 candidates nominated by community 26 (23.8 per cent) candidates were rejected by the PHC and the reasons provided by the M.O., PHC for rejecting these candidates were: (i) could not read and write; and (ii) the community recommended more than one candidate for training from the same area, while one candidate had been already selected.

Although there was involvement of community leaders and also of community to some extent in the selection of CHVs, they were not fully aware of selection dynamics and there was a room to strengthen further the selection process.

Criteria of Selection

Age and Sex: The majority of CHVs (84.62 per cent) be-

longed to 17-26 years age group and none of the CHVs was female as shown in Table 1.

Education Status: None of the CHVs was illiterate, while majority of (87.2 per cent) had education status of less than 10th standard as shown in Table 2.

Occupational Status: Majority of CHVs (93.6 per cent) had agricultural work as their main occupation. Whereas, only 5.2 per cent of them were labourers and remaining 1.2 per cent were engaged in some sort of business like shop-keeping, etc.

The scheme initially did not provide any guidelines regarding the age of CHVs. However, in the revised guidelines the age of CHVs selected should not be less than 30 years with education upto the 6th standard. Regarding educational background it is observed that it has been strictly adhered to. Regarding the involvement of females, it is suggested that the selection of female workers should be encouraged.

TABLE 1

DISTRIBUTION OF CHVs ACCORDING TO THEIR AGE AND SEX

Age Group	Sexwise Distribution				Total No. and percentage
	Male	Percentage	Female	Percentage	
17-21	36	46.2	—	—	36(46.2)
22-26	30	38.5	—	—	30(38.5]
27-31	9	11.5	—	—	9 (11.5)
52-56	3	3.8	—	—	3 (3.8]
All Age Groups	78	100.0			78(100.0)

TABLE 2

DISTRIBUTION OF CHVs ACCORDING TO THEIR EDUCATIONAL STATUS

Educational Status	Number of CHVs	Percentage
7th Standard	25	29.5
8th and 9th Standard	43	57.7
10th and 11th Standard	10	12.8
Total	78	100.0

Training: To study the component of training, the inter-view-cumdiscussions were held with CMHO, M.O. Incharge, PHC and PHC staff. The CHVs under training were also interviewed. The information was supplemented by studying available records at HFWTC and PHC.

Training of Key Trainers: Among the officers, only CMHO, Dy.CMHO (Health) and M.O. Incharge, PHC were trained at NIHFW for a period of six days for orientation in CHV scheme,but the same M.O. Incharge was transferred within two months of launching the scheme in the PHC. The other M.O. in PHC and their M.O. appointed under CHV scheme also remained untrained so far.

Out of the Key Trainers (para-medicals) , the Sanitary Inspector and Vaccination Supervisor were'trained at HFWTC, Ajmer for a period of 6 days. The LHV who was also engaged in training had not received any orientation training in CHVs scheme. Therefore, it is suggested that the key trainers need to be trained in order to have better insight of the scheme, particularly in training process and procedures.

Training of CHVs: For this purpose the PHC area was divided into four areas and 20 CHVs were chosen from each area. Efforts were made to organise training in such a way that at a time 20 CHVs from one of the 4 specified areas were included in one batch, thereby completing the training in whole PHC area by the end of September 1978. The break-up of CHVs trained and who were undergoing training and the number of CHVs who could successfully complete the prescribed training is given in Table 3:

TABLE 3

DISTRIBUTION OF CHVs ACCORDING TO THEIR TRAINING STATUS AND DROP-OUTS

Batches	CHVs selected for training	CHVs completed training	Drop-out during training
First	20	20	-
Second	20	20	-
Third	20	18	2
Fourth	25	24	1
All Batches	85	82	3

Selected for training in the fourth batch 25 CHVs were to fill up the gap created due to drop-outs. There had been one drop-out in the fourth batch also, raising the total number of drop-outs during training to 3 CHVs. Although guidelines regarding the scheme clearly indicate that in case of any dropout, the replacement will be trained at the cost of community, it was reported that there was a constant dialogue going on between community leaders and health department, and community leaders were pressing hard for their stipend. This clearly shows that the community and community leaders were not fully aware of the scheme.

Duration of Training: The guidelines laid down by the Government of India in respect of duration of training for CHVs envisage 200 hours of training, spread over a period of three months. As no relevant data was made available regarding the fulfillment of training duration in terms of 200 hours, it was difficult to comment upon, but the training was spread over a period of three months.

Ideally the information should have been assessed by examining the time table and getting the remarks about sessions covered and not covered, and compared to the guidelines issued by Government. But due to the non-availability of relevant documents, the PHC staff and CHVs under training were interviewed to know their views in this regard. However, the following observations were made: (i) the PHC staff expressed that Central Government directives were followed in this regard; (ii) that the following systems were covered in the training *e.g.* Allopathic, Ayurvedic and Homoeopathic and (iii) about 35 per cent of CHVs expressed that more of curative medicine should have been taught.

Training Methods: Majority of CHVs expressed that the lecture/discussion was the most frequent method adopted. Demonstrations were also given sometimes in the field area of the PHC. Regarding the training period in hours no date could be produced regarding the division of total training sessions into class room teaching and practical's etc. However, majority of CHVs undergoing training expressed that the training was mostly limited to class room teaching.

Additional Inouts Provided to the PHC

Manpower: One additional Medical Officer (Modern Medicine).

Training Aids: Visual aids in the form of charts and pamphlets, CHV manuals in Hindi, furniture articles like Chairs, Black Board, Tables were also supplied.

Medicines and Materials: CHV kits were provided to all the three batches soon after training or during training. But only kits for first two batches were properly equipped and kits for third batch were equipped by PHC.

The medicines supplied to the CHVs were almost similar as suggested by Government of India with minor change to suit the local needs and availability. But PHC staff and CHVs interviewed, expressed irregular and inadequate supply of medicines However, the PHC staff and CMHO were not fully aware of the reasons for short supplies of medicine. Another interesting finding regarding the medicines was that although the PHC had received Ayurvedic medicines for distribution among CHVs, but it had not been done so far. The reason putforth by the PHC staff for not doing so was that they require guideliens from some expert in Indian Medicine, in regard to dosage etc. before the same was distributed among CHVs for use.

Payment of Stipend and Honorarium: Only first two batches, it was observed who had undergone training were paid stipend and the third batch under training was not paid so far. This was because of the decision taken by the M.O. PHC to pay stipend to trainees at the end of third month, to avoid complications due to payment to drop-outs during training period. As regards payment of honorarium to CHVs working, only two months honorarium was paid so far. This is a serious and important lapse which needs to be corrected, so that payment of honorarium is regular and timely as to sustain CHVs interest in the work.

Distribution of Population and Number of Villages to CHVs: The majority of CHVs about (90 per cent) had been allocated population btween 800 to 1200 which does not appear to be a gross deviation from the norm of (1 CHV: 1000 population). The variations in the allocation of population among CHVs had been done keeping in view the difficult terrain and to allow easily accessible CHVs to the community as given in Table 4.

Regarding the allocation of number of villages to CHVs, almost 54 per cent of CHVs had to look after more than one village, ranging between 2 to 3 villages. However, it was noticed after studying the detailed allocation at the PHC that in majority of cases, the actual residence of CHVs was in the centre of their allocated areas as given in Table 5.

TABLE 4
DISTRIBUTION OF POPULATION AMONG CHVs

Population alloted	Number of CHVs	
	Number	Percentage
Upto 800	25	32.1
801 to 1000	25	32.1
1001 to 1200	20	25.6
1201 to 1400	6	7.6
More than 1400	2	2.6
Total	78	100.0

TABLE 5
DISTRIBUTION OF CHVs ACCORDING TO THEIR NUMBER OF VILLAGE ALLOTTED

Number of Villages	CHVs	
	Number	Percentage
One	36	46.1
Two	25	32.1
Three	17	21.8
Total Villages	78	100.0

Nature *and Type of Activities Performed by CHVs:* The information was collected through interviews/discussions with the sample of CHVs working in the field, MPWs, Health Supervisors and M.Os in the PHC. The information was supplemented by studying certain records maintained by CHVs *e.g.* records regarding distribution of medicine, patients treated, EP record, record of malaria cases, daily diary etc. Although the policy decision taken by Government of India clearly indicates that the CHVs would not be asked to maintain any type of record, majority of CHVs would not be asked to maintain any type of record indicates that the CHVs expressed that they were asked to do so during their training. It was also observed that the MPWs have also been asked to report the performance of CHVs in their area, though not envisaged under the scheme. This has been adopted in the district, probably as method of control and supervision of CHVs. Therefore, study of these reports was also done to supplement the information on type of activities performed by CHVs.

Activities Performed by CHVs as Reported by CHVs: Majority of CHVs had kept a fixed time of 1-2 hours for health work and after that mostly emergency patients, if any were attended. The activities performed by them were:

1. First aid and treatment of minor ailments.
2. Distribution of chloroquin tablets to fever cases.
3. Taking slides of malaria cases.
4. Distribution of Nirodhs to people on demand.
5. Referral to MPWs, Multipurpose Supervisors and PHC.
6. Assisting the MPWs in immunization by identifying and motivating the public.
7. Campaigning for family welfare programme; and
8. Health talks for personal and environmental sanitation.

Type of Activities Performed by CHVs as Revealed Through the Study of Records

a. Activities performed frequently by CHVs and valued most were:

1. Treatment of minor ailments and first-aid;
2. Distribution of chloroquin tablets to fever cases;
3. Mostly referrals to Multipurpose Supervisors and PHC and in limited case to MPWs;
4. Consulting the MPWs in case of difficulty;
5. Assisting the MPWs in immunization by way of identifying cases and motivation cases; and
6. Distribution of Nirodhs to those who were desirous to have at their place of work.

b. Activities performed infrequently by CHVs and valued less were:

1 Health Education;

2. Environmental sanitation;

3. Campaigning for family welfare work;

4. Taking malaria slides; and

5. Chlorination of wells.

This indicates that CHVs were mostly engaged in curative work. But a healthy sign was of referrals and cooperation with health workers, which was doubted and talked about very much that CHVs will not allow even serious cases to be referred to proper quarters.

Relationship between CHVs and Health Workers: Almost all MPWs reported that the relationship was cordial. The same views were expressed by CHVs. The PHC staff and MO expressed that they have not received any adverse reports in regards to the relationship between CHVs and other health workers. However, the M.Os reported that there were reports that the CHVs sometimes charge for their services but so far no action had been taken.

Problems Identified: Problems as conceived by CHVs were:

1. All the CHVs viewed that stipend and honorarium should be paid regularly.

2. Majority of (80 per cent) CHVs expressed that honorarium should be raised to about Rs.150-200 per month.

3. Majority of (75 per cent) CHVs wanted that the post of CHV should be regularised and there should be promotional avenues.

4. Majority of (75 per cent) CHVs felt that there should be increase in (double) drugs like Analgestics, Cough mixture. Kaolin Powder, Piperazine Tablets, Tetracycline ointment, eye drops etc.

5. Twenty-five per cent expressed their inability to continue as CHVs if they get better prospectus.

6. Twenty-five per cent CHVs felt that they should be provided accommodation in PHC during their training.

Problems as conceived by M.Os and staff of PHC:

1. Irregular payment of honorarium resulting in demoralisation of CHVs.

2. Inadequate teaching aids and stationery.

3. Inadequate and irregular supply of medicines and drugs for quarterly replinishments of kits. They also expressed that the quantity of curative medicines should be increased as they were in much demand and utilised more by CHVs.

4. Facilities for accommodation should be provided to CHVs.

5. So far there had been 4 drop-outs and it was felt that by passage of time it was likely to increase. So there is a need to strengthen the selection process and community to be educated more in respect of CHV scheme.

6. Non-involvement of M.Os of Allopathic dispensaries in the CHVs scheme, had affected proper liaison between CHVs and Allopathic dispensaries and other dispensaries of Indian medicine.

7. Although the PHC had developed methodology to supervise working of CHVs but it was primitive. The methodology should be developed at national level, for supervision of CHVs through PHCs, so that the CHVs at least give equal attention to curative, preventive and promotive aspects and referrals are made to appropriate quarters at right time.

Summary

The CHV scheme was launched on 2nd October, 1977 in the State of Rajasthan in 27 PHCs along with other States on the basis of one PHC in each district. The PHC area in district of Ajmer which was under study, three batches of (58 CHVs) had been trained and working in the field, while the fourth

batch of 23 CHVs under training was expected to complete the training by the end of September, 1978. There had been three drop-outs during the training period.

It was observed that generally, criteria of selection were adhered to, though there were some deviations like limited community involvement, lack of awareness on the part of community leaders and the community about the scheme and its selection dynamics. Therefore, a strong need was felt to strengthen further the selection process.

The training being a vital component in the scheme, there is a room to strengthen further the training of Key-Trainers, by way of full coverage. At present most of the Key Trainers (Medical and Para-Medical) remained untrained. This can be further supplemented by resisting the frequent transfers of trained personnel.

The training methodology of CHVs was mostly limited to lecture and discussion method. About 25 per cent of CHVs expressed that more curative medicine should have been taught. Therefore, there was need to strengthen training process and strong emphasis should be laid in training to educate the CHVs that their domination role should be in the field of promotive and preventive aspects. The need to educate community about the expectations from CHVs was also felt. This would help in reducing the fear among medical personnel that CHVs may act as self-styled medical practitioners and indulge in mal-practices.

The success of any programme will need certain inputs, it was observed that inputs like drugs, educational aids, stipend and honorarium to CHVs were not regular and timely. This invites serious attention of programme officers both at State and Central level so that a methodology is devised to ensure regular and timely supply of such inputs down to the line of functionaries.

Regarding the type of activities performed by CHVs, it was observed that relationship between CHVs and other health workers was cordial. Tne CHVs were more inclined to render curative work and distribution of malaria tablets. The CHVs also provided family planning assistance to the community by way of distribution of Nirodhs on demand.

A number of problems mostly administrative in nature need to be thoroughly studied so that appropriate remedial measures can be taken up which will go a long way for the achievement of objectives of the scheme and its smooth and efficient running, which is the need of the present time.

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2 अक्टूबर 1977 को अन्य राज्यों के साथ–साथ राजस्थान राज्य के अर्न्तगत 27 प्राथमिक स्वास्थ्य केन्द्रों में जनस्वास्थ्य रक्षक योजना (अथवा सीएचवी स्कीम) लागू की गई थी। प्राथमिक स्वास्थ्य केन्द्रों का गया था। अध्ययन के लिए अजमेर जिले में चुने गये प्राथमिक स्वास्थ्य केन्द्र में 56 जन स्वास्थ्य रक्षकों के तीन बैचों को प्रशिक्षित किया जा चुका है तांम ये लोग अब क्षेत्रों में कार्य कर रहे है। 23 जन स्वास्थ्य रक्षको का प्रशिक्षण सितम्बर, 1978 तक पूरा हो जाने की सम्भावना थी। इस अवधि में तीन लोगों ने प्रशिक्षण अधूरा छोड़ दिया था।

परिणामों से ज्ञात होता है कि यद्यपि इनके चयन के लिए सामान्यतः निर्धारित चयन–प्रक्रियाही अपनायी गई थी किन्तु कुछेक बार इससे अलग भी हटना पड़ा था, जैसे समुदाय तथा समुदाय के नेताओं को योजना और इसकी चयन पद्धति के बारे में पर्याप्त जानकारी न होना आदि। अतः यह महसूस किया गया कि चयन प्रक्रिया को और सुदृढ़ करना बहुत जरूरी है।

यह प्रशिक्षण क्योंकि योजना का बहुत महत्वपूर्ण अंग है अतः यह जरूरी है कि प्रमुख–प्रशिक्षकों को प्रशिक्षण देकर इसे और सुदृढ़ किया जाये तथा इसका विस्तार किया जाये। अधिकांश प्रमुख प्रशिक्षक (मेडिकल तथा पैरा–मेडिकल) इस समय भी अप्रशिक्षत है। प्रशिक्षण प्रक्रिया को केवल लेक्चरर–डिसकशन तक ही सीमित नहीं रखा जाना चाहिए। इसे क्षेत्र गतिविधियों पर आधारित किया जाना चाहिए तथा स्वास्थ्य– वर्धक एवं रोग निवारक पहलुओं पर विशेश बल दिया जाना चाहिए।

अध्ययन के परिणामों से यह भी ज्ञात होता हे कि जन स्वास्थ्य रक्षकों को दवाइयों, शिक्षण संबंधी सहायता–सामग्री, स्ट्राइफंड तथा आनरेरियम आदि समय पर तथा नियमित रूप से नहीं दिया जाता था। राज्य तथा ध्यान दिया जाना चाहिए ताकि एक ऐसी पद्धति का विकास हो सके, जिससे छोटे से छोटे स्तर पर कार्य करने वाले को भी इस प्रकार की सामग्री सही समय पर तथा नियमित रूप से प्राप्त होती रहे।

अनेक ऐसी प्रशासनिक कठिनाइयां भी है जिन पर गंभीरता से अध्ययन किया जाना चाहिए, ताकि समस्याओं के समाधान के स्थायी उपाय ढूढ़े जा सकें, जिससे कि योजना का सुचारू तथा कुशल ढंच से संचालन किया जा सके और लक्ष्यों को प्राप्त किया जा सके।

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LIST OF ABREVIATIONS USED

CHVs	:	Community Health Volunteers
M.P.Ws	:	Multipurpose Workers
P.H.C.	:	Primary Health Centre
C.M.H.O.	:	Chief Medical and Health Officer
M.O.	:	Medical Officer
HFWTC	:	Health and Family Welfare Training Centre
NIHFW	:	National Institute of Health and Family Welfare
LHV	:	Lady Health Visitor
FP	:	Family Planning

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SOCIO-PSYCHOLOGICAL CORRELATES IN THE ADOPTION OF HEALTH INNOVATIONS AMONG TRIBALS WITHIN INTENSIVE SERVICE ZONE OF PRIMARY HEALTH CENTRE

A.K. Chakrabarti, J. P. Gupta and B.N. Tyagi

ABSTRACT

This study was carried out to identify important socio-psychological factors acting as facilitators or inhibitors in the adoption by villagers in a tribal community of health innovations funnelled through the Primary Health Centre. In addition, it endeavoured to explore and analyse the tribal community's existing health behaviour pattern related to medical care. The investigations which were carried out in a tiny tribal village revealed a number of socio-cultural factors contingent upon adoption or rejection of health innovations and also brought out some interesting aspects of tribal behaviour pattern in seeking medical care and in the brewing mistrust among tribals towards medical care rendered by Primary Health Centre. The level of adoption behaviour of tribals were measured in terms of their knowledge and usuage of health innovations in the areas of primary medical care, control of communicable disease, environmental sanitation and family welfare.

The findings highlighted that the level of awareness of tribals in the village regarding health innovations in the areas of medical care, communicable diseases, environmental sanitation and family welfare were very poor although the village was situated very near to the PHC. It was found that the tribal's parents did not know what for health personnel gave vaccinations to their children. As far as family planning was concerned they came to know about vasectomy when they were already vasectomised under the pressure exerted by the police, revenue and health officials at district, block and village level.

The behavioural dynamics of tribals in seeking medical care indicated their deep faith in religious rites and indigenous system of medicine. Findings further revealed that they were not reluctant in accepting the modern medical system.

In India, it has always been a crucial problem for health planners and administrators to provide adequate, accessible and acceptable health care facilities to the millions of people mostly living in rural areas of the sub-continent, particularly since independence. To achieve this esteemed end, a vast network of Primary Health Centres (PHCs) had gradually been introduced at Block level since Second Five Year Plan. The PHC alongwith its sub-centre became instrumental in introducing medical care and health practices based on Western medical technology hitherto unknown to the rural community. With the passage of time the PHCs assumed the role of the change-agent to replace the age-old health culture comprising primitive magico-religious healing system and/or traditional indigenous systems of medicine with Western medical technology. This process of introduction of new health practices could be termed as the attempt to introduce 'health innovations' in the context of community's existing health culture. As a result, the services provided by the PHC symbolised a purposive intervention to bring about changes for the uplift of the pre-existing traditional health-culture of communities. In spite of adequate input of resources, many a plan of action, to introduce health innovations for improving the health status of the community have failed to achieve the desired objectives due to community's rejection of innovations. To gain insight into this bewildering phenomenon, it is necessary to understand the socio-psychological factors contributing to the non-acceptance of health innovations.

A number of studies have been conducted for indentifying socio-cultural and psychological factors related to acceptance or rejection of basic health care services in rural India. But hardly any study has been conducted on any tribal population within intensive service zone of PHC in order to eliminate 'distance' and the resulting 'remoteness of service' as an intervening variable effecting the adoption of health innovations. To achieve this end, care has been taken in this study to select a village nearest to the PHC so that the socio-psychological barriers and promoters to the adoption of health innovations could be studied, eliminating the effect of commu-

nication gap resulting from the distance between PHC and the village. The main thrust of the study is to determine the extent to which tribals adopted PHC introduced health innovations and what socio-psychological factors acted as barriers and promoters to the adoption behaviour of the community.

Conceptual Framework: Three core-concepts have been developed for the study, namely, *innovation, health innovation* and *health culture.* The concept of innovation utilised in this study is highly in conformity with Roger and Shoemaker' s6 definition which conceptualises innovation as "an idea, practice or object perceived as new by the individual. It matters little, as far as human behaviour is concerned, whether or not an idea is objectively new as measured by the lapse of time since the first use or discovery. If the idea seems new and different to the individual it is an innovation" In defining innovation, unlike Roger and Shoemaker's emphasis on single individual, Zaltman et al.7 used the term 'relevant unit of adoption' in order to include not only a single individual but also a group of individuals or any larger social organisation within the category of prospective adopters.

Innovation is spread by diffusion process. Without the effective diffusion the desired adoption and utilisation of a new idea from the source of innovation to its target group, *i.e.,* the group consisting of ultimate users or adopters, cannot be achieved. The decision for adoption by the target group is contingent upon the interaction of change-agents and opinion leaders with the culture, norms and behaviour pattern of target social system. It has been evidenced that non-adoption of innovations by members of any community is not necessarily based on their rational evaluation. Many times rationality in evaluating an innovation is defeated in course of the complicated process of interaction that occurs during the attempts of change-agents for dissemination of innovation among the members of community whose perceptual and thought processes are programmed by the interplay of a myriad of socio-cultural and psychological variables characterising the health culture of the community. One of the important aspects in understanding the process of adoption is the health-culture of the community and its sensitivity to a variety of social, economic, political and technological forces.

Concept of health-culture of a community includes: (i)

the cultural meaning of health and sickness; (ii) cumulative health practices derived from various systems of medicine and non-professional sources that are acquired by community as social inheritence; (iii) diffusion of health practices from external sources; (iv) active efforts to acquire health practices from outside; and (v) cultural innovations by the current generation to deal more effectively with prevailing health problems.

In India, during the post-independence era, the network of PHCs was set up to promote and preserve the health of rural population. A PHC located in a tribal area offers service primarily based on Western medical system which is strikingly in contrast to the existing tribal concepts of health, illness and treatment of diseases. Thus, in the context of tribal health-culture, PHC services could be termed as "health innovations".

Methodology

Sample: The sample of the study consisted of 96 respondents who were the heads of even number of households belonging to a tiny village predominantly inhabited by Gond tribals. Selection of the tiny tribal villages was made randomly from a total of villages which fulfilled the conditions of the selection criteria: (i) the village should be inhabited predominantly by tribal population; (ii) the total number of households in the village should not be more than 100; and (iii) it must be located within the intensive service zone of the PHC.

The criterion to select a village within the intensive service zone of the PHC was formulated with specific intention to eliminate the intervening effect of communication gap arising from the distance between a village and PHC. It was considered that in contrast to a remote-area village, a village very near to PHC could justifiably be expected to have been exposed to all PHC attempts to introduce health innovations to bring about changes in health behaviour of the community.

Tools: A structured schedule was prepared to collect demographic and other background informations of the selected village. For this purpose, records-studies, observations and interviews were carried out. An interview schedule consis-

ting of structured as well as open ended items, pretested for its reliability and content validity, was developed. It was to determine: (a) the level of adoption behaviour of the members of the community in respect of innovations introduced by the PHC; and (b) to identify various socio-psychological characteristics ranging from age, sex to attitudinal characteristics such as fatalism, secular orientation, etc.

*Analysis*ı The data generated from the interview schedule had undergone certain simple statistical treatments. The statistical methods used included (a) descriptive statistics, and (b) chi-square tests.

Results

The three levels of adoption behaviour considered in this study were in accordance with the three major stages involved in the process of adoption of any innovation. The levels of adoption behaviour were: (i) awareness of health innovations -the primary level;(ii) trial with the health innovations -the intermediate level; and (iii) adoption or the practice of it - the optimal level. Analysis of data revealed that the general level of adoption of health innovations of tribal villagers was neither at the intermediate nor at the optimal level. Even after fifteen years of inception of the Primary Health Centre situated only 3.5 Kms. away from the village, adoption behaviour of tribal villagers staggered at the primary level. Out of 96 villagers interviewed, only 43 (45 per cent) were found to be adequately aware of various health innovations introduced by the PHC. Two respondents (2 per cent) were found to have exhibited optimal level and only eight (8 per cent) the intermediate level of adoption behaviour as far as the health practices were concerned. Inspite of PHC's efforts to make people aware of the primary medical care, control of communicable diseases, environmental sanitation and family welfare practices, the level of awareness, a pre-requisite in any adoption of innovation, remained low for majority of tribals. Rejection of the messages of health innovations right at the primary level of adoption typically represented how various socio-cultural factors acted as barriers to tribals against accepting these new ideas.

In view of the very few optimal and intermediate level adoptors, it was decided to make two broad categories of respondents, namely. Innovation Aware (IA) group and Innovation

unaware (IU) group. The former included all the respondents belonging to any of the three adoption level (i.e. primary, intermediate and optimal) and the latter included those found to be unaware of the health innovations introduced by PHC. To confirm the extent to which hypothesised socio-psychological factors play significant role in the adoption of health innovations, the findings of the study for each of those factors have been given as under.

Family Structure: The analysis shows that 54.8 per cent and 54.2 per cent respondents were from joint and nuclear families, respectively. Among the Innovation Aware respondents 16 (6S.8 per cent) belonged to nuclear families. The obtained chi-square (X = 11.56; d.f. = 1) value indicates that Innovation-Aware and Non-Aware groups differ significantly beyond .001 level of probability with respect to the type of family structure they belong to.

Age: It was found that 55.9 per cent respondents within the age group below 30 years and 54.8 per cent above that age-range were aware of health innovations. A chi-square value of 0.2 indicates that Innovation Aware and Innovation Unaware groups do not differ significantly with regard to age.

Social Status: Except two Harijan families, rests of the villagers were Gond tribals and their sub-castes. Among 64 Gond and the 2 Harijan villagers who were considered to be having higher social status in the village community, 47 respondents (71.2 per cent) were found to be belonging to IA group. In contrast, only 6 respondents (20 per cent) among the 30 villagers belonging to lower sub-castes among Gonds were found to be in the IU group. A chi-square value of 21.87 at 1 df, which is significant beyond .001 level of probability, implies that difference between IA and IU groups with regard to social status is highly significant.

Education: Only 5 (5.2 per cent) among 96 respondents were literate. All these literate respondents were found to be belonging to IA group.

Formal Participation in Local-Self Government: All the 5 respondents who had ever participated in the local self-government as *Pancha* or any other higher capacity were found to be in the IA category of respondents.

Media Accessibility: Radio was found to be the only available organised communication media in the village. The radio-set was acquired as a gift to the village under a State govern ment mass-education programme one year back. It was revealed that all the 25 (100 per cent) respondents who were regular radio listeners belonged to IA group.

Frequency of Visit to the Town: All the 30 (100 per cent) respondents who used to visit the district town at least once a month were found to be in IA category. In contrast, majority of respondents (65.27 per cent) who hardly ever visited the district town turned-out to be belonging to IU group.

Political Knowledge: All the 37 (100 per cent) responden-dents who had fairly good political knowledge in reference to the other's in the community were in the IA group. Only 16 (27.1 per cent) among those who nad poor political awareness were found to be aware of various health innovations introduced by the PHC.

Urban Occupation Pull: A vast majority of respondents (93 per cent) who were found to be keen to leave village with salary double the present income belonged to IA group. The obtained chi-square value of 25.65 is found to be significant beyond .001 level of probability. It is indicative of the fact that IA groups differ significantly in regard to the urban occupation pull.

Fatalism: The respondents were divided into two categories in accordance with the High and Low scores on Fatalism subscale. In the High Fatalism group only 8 (19.5 per cent) and in the Low Fatalism group 45 (81.8 per cent) were found to belong to IA category. The obtained chi-square value of 36.88 obtained at 1 df indicates that IA and IU respondents differ most significantly beyond .001 level of significance on the dimension of fatalism.

Secular Orientation: Thirty seven respondents who exhibited secular orientation in expressing their views on several issues were all found to be belonging to IA group.

DISCUSSION

The findings of the study revealed that inspite of the

proximity of the village to the PHC, the general level of adoption of health innovations introduced by PHC throughout the 15 years of its existence is utterly unsatisfactory. It may be pointed out that the level of adoption behaviour of tribals was measured in terms of their knowledge, trial and practice of health innovations in the areas of primary medical care, control of communicable diseases, environmental sanitation, family welfare and personal hygiene. Among 96 tribals interviewed, only 2 (2.1 per cent) were found to be in the optimum level of adoption, 8 (8.3 per cent) in the intermediate level of trial, and 43 (44.81 per cent) respondents were fairly aware of the various health care practices rendered by the PHC. In contrast, 43 (44.8 per cent) respondents were not even aware of these innovations.

A number of socio-psychological factors such as family structure, social status, education, formal participation in village bodies, communication, frequency of urban visits, political knowledge, urban occupation pull, fatalism and secular orientation were found to be having significant bearing upon adoption behaviour. Closer analysis of data further reveals that a number of socio-psychological factors acting as barriers to adoption behaviour are, joint family structure, lower sub-caste within Gond social-system, illiteracy, lack of formal participation in village bodies, non-accessibility to media, lack of urban contact or occupational mobility, dearth of political knowledge, fatalism and lack of secular orientation. Conversely, it has been possible to identify the socio-psychological factors which could be termed as promoters for the adoption of health innovations. These factors include nuclear family structure, higher sub-caste within Gond social system, literacy, formal participation in village bodies, accessibility to media, frequent urban contact, political awareness, disbelief in fatalism and secularism.

It may be pointed-out that contrary to our assumption, the tribals below 30 years of age and those above that were not significantly different in their adoption behaviour. This might be due to the strong stereotyped and authoritarian village leadership monopolised by the village elders which was strictly adhered to by all in such a small and well-knit tribal community.

Considering the type of variables acting as either barrier or promoter to health, it may lead one to go in for a co-

smopolitan and local differentiation among tribals following Couldner's typology. Various socio-psychological factors identified as promoters to adoption behaviours in this study, such as, political awareness, urban contact, urban occupation pull, use of mass media, may lead a person to develop a cosmopolitan orientation in which one tends to belong to outer reference group rather than one's own community. This orientation is conducive to the adoption of innovation more promptly than those who are locals with the tendency to belong to inner reference group of the community reluctant to accept the process of change by refusing to adopt innovations in their life style.

Conclusion

The analysis of the findings suggests a number of implications for effective utilisation of PHC resources to enhance the process of adoption of health innovations.

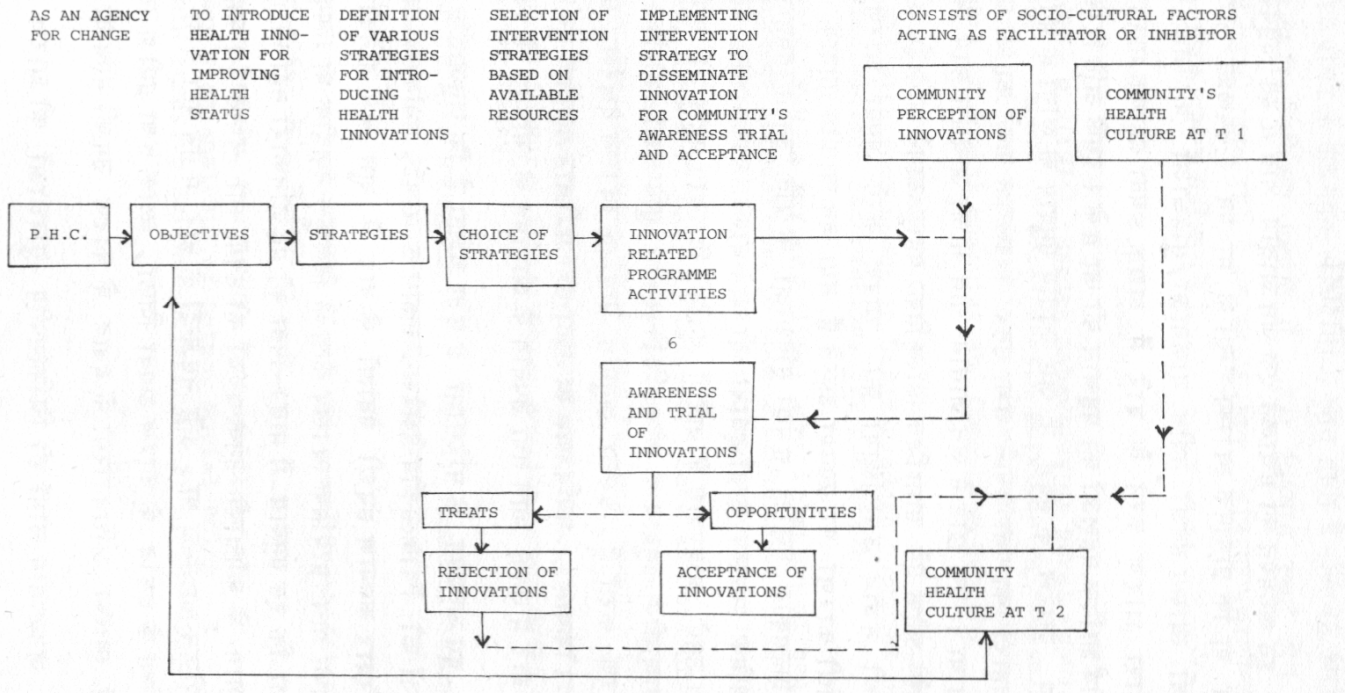
Firstly, the question arises as to why, even after 15 years of inception of PHC in the area and the village being located within the intensive service zone of the PHC, only 2.1 per cent of tribals were found to be the optimum level adopters of innovations introduced by the PHC and a large number of tribals amounting to 44.8 per cent fully unaware of the utility of the innovations. The study is a pointer to the extent of effectiveness of PHC as an agency for change in improving the health status of its target population. Secondly, if taken for granted that the PHC utilised all its resources the way it should, leads one to question the adequacy of its strategy for implementing change in the area of existing health culture of the community. In this respect, serious consideration is necessary to be given in the scanning of socio-cultural environment where change is to be introduced by gaining an adequate understanding of the socio-psychological factors acting as barriers and promoters to health.

The study being rather limited in nature and the size of the sample, its conclusions can be generalised only to the population from which the sample was drawn. Replication of the study with wider coverage of objectives and sample is necessary. It would be more effective if such a study is linked up with an agency action plan for introducing health innovations in any community in line with the proposed model for scanning socio-cultural environment for the dissemination of health innovations introduced by the PHC. (Exhibit at Annexure I).

ANNEXURE I

EXHIBIT - I

SCHEMATIC REPRESENTATION OF THE PROCESS OF DISSEMINATION OF HEALTH INNOVATIONS INTRODUCED BY PRIMARY HEALTH CENTRE



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इस अध्ययन का संचालन एक जन जातीय गांव में इस उद्देश्य से किया गया था कि प्राथमिक स्वास्थ्य केन्द्रों के माध्यम से उपलब्ध कराई जाने वाली स्वास्थ्य संबंधी नवीन योजनाओं/सुविधाओं की वहां के लोगों द्वारा धारण करने के बारे में बाधक अथवा सहायक महत्वपूर्ण सामाजिकीय देखरेख के संदर्भ में जनजातीय समुदाय के लोगों के वर्तमान स्वास्थ्य व्यवहारों का पता लगाने तथा उनका विश्लेशण करने का भी प्रयास किया गया था। एक छोटे से जनजातीय गांव में जो अन्वेशण कार्य किया गया था, संबंधी नवीन उपलब्धियों को धारण करने अथवा धारण न करने संबंधी कारणों पर प्रकाश डालते हैं तांम जनजातीय समुदाय द्वारा चिकित्सकीय देखरेख संबंधी सुविधाओं के प्रति उनकी व्यवहार शैली और प्रति उनके अविश्वास के बारे में कुछेक दिलचस्प पहलु भी सामने आये हैं। धारण, करते हैं, इसका अनुमान प्राथमिक स्वास्थ्य देखरेख, संक्रामक रोगों की रोकथाम, पर्यावरण–स्वच्छता तथा परिवार कल्याण संबंधी सेवाओं के बारे में उनके ज्ञान तथा उपयोग के आमापन के माध्यम से किया गया था।

इस अध्ययन के परिणामों से पता चलता है कि जनजातीय समुदाय के लोगों को चिकित्सकीय देखरेख, संक्रामक रोगों, पर्यावरण–स्वच्छता तथा परिवार कल्याण संबंधी सेवाओं के बारे में बहुत कम जानकारी थी, यद्यपि उनका गांव प्राथमिक स्वास्थ्य केन्द्र के बिल्कुल नजदीक था। यह भी पता चला कि इस समुदाय में माता–पिता को यह जानकारी नहीं थी कि स्वास्थ्य विभाग के कर्मचारी उनके बच्चों को टीके क्यों लगाये जाते हैं। जहां तक परिवार नियोजन का संबंध था, उन्हें नसबन्दी के बारे में तब पता चला था जब पुलिस के दबाव के कारण अथवा जिला, ब्लाक तथा ग्रामीण स्तर के राजस्व एवं स्वास्थ्य अधिकारियों के दबाव के कारण उनकी नसबन्दी की गई थी।

जनजातीय लोगों की चिकित्सकीय–सुविधाओं को धारण करने के

बारे में व्यवहार शैली के अध्ययन परिणामों से ज्ञात होता है कि वह धार्मिक रीतियों तथा देशी चिकित्सा पद्धति में गहरा विश्वास रखते थे। परिणामों से यह भी ज्ञात होता है कि वह आधुनिक चिकित्सा प्रणाली धारण करने से भी अधिक संकोच नहीं करते थे।

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