

STUDY ON UTILISATION OF MATERNITY AND CHILD HEALTH SERVICES IN RURAL JAMMU, INDIA

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ABSTRACT

The objective of this study was to assess the status of utilisation of maternity and child health services in rural areas of Jammu, India. Information was collected from currently married women within reproductive ages from three types of villages i.e. (1) villages where the primary health centre (PHC) was established; (2) villages where the sub-centre (SC) has been built up; and (3) villages with no PHC or SC. Overall, 28 villages, 2,063 households (with at least one currently married females within reproductive ages) were selected through multistage sampling technique. The study was based on information collected through 2,337 currently married females within reproductive ages.

Findings revealed that location of health centre played a positive role in terms of knowledge, awareness and utilisation of maternity and child health services. Education and per capita income were found to be positively associated with knowledge, type of services available and the extent of utilisation of maternal and child health services. Age, religion/caste do not provide any definite conclusion in terms of knowledge, awareness and utilisation of maternity and child health services. Incidence rates for various kinds of immunisations to children (0-3) years was very high and only a few point behind total score.

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India is moving ahead to reach the goal towards Health for All by 2000 AD through Primary Health Care, the Alma Ata Declaration in 1978) (WHO 1978). However, the ideology of Primary Health Care was not new to India. As early as 1952, Health Care Services were organised as a component of Community Development Programme based on concept of Comprehensive Health Care for the betterment of socio-economic status of people and improving their quality of life. It emphasised on provision of basic health care with main focus on preventive, promotive and "curative health care to all. Since 38 years of its inception, the concept and contents of health care have undergone a significant change and the health services have greatly expanded in terms of coverage, manpower, types of services and financial outlays.

In India, women of childbearing ages constitute around 22 per cent and children under five years are around 15 per cent of the total population. Mortality has been reduced to less than half, incidence rate of major communicable diseases has been drastically brought down, the life expectancy has increased by more than one and half times. But inspite of all these developments in health, the maternal mortality and child mortality especially infant mortality are unacceptably high. Every year about 2.5 million children die and 110 thousand women die from causes related to pregnancy and child birth (Majumdar, 1988). Therefore, the task of achieving the goal of Health for by 2000 AD for India is not an easy one and 9th Joint Conference of the Central Council of Health and Central Family Welfare Council at New Delhi in 1983 rightly recommended to give top most priority to the family welfare programmes including maternal and child health and primary health care (MOHFW, 1983).

In this context the National Health Policy Document 1983 identified some specific goals to be achieved by the year 2000 AD such as infant mortality rate below 60 per thousand live births, peri-natal mortality rate around 30 per thousand live births, mortality rate of 10 for every thousand pre-school children i.e. between ages one and four year and maternal mortality rate below 2 per thousand deliveries (MOHFW, 1984).

Several studies in India confirmed that the people, in general, do not see the need for ante-natal care during pregnancy and prefer to deliver at home with a dai (an untrained midwife) as an attendant (Ahluwalia 1963, Ghosh 1968, Charfes 1971, Matthews 1979, Bhatnagar et al. 1988 and R.G. 1988). In a South Indian village, about 22 per cent had some ante-natal care while another 10 per cent had it because of some problems during pregnancy (Matthews 1979). In urban slums of Delhi, about 21 per cent registered for ante-natal care while 16 per cent reported receipt of iron and folic acid tablets and about 12 per cent reported to have tetanus toxoid during ante-natal care (Bhatnagar et al. 1988).

Matthews (1979) reported around 70 per cent home deliveries in a South Indian village in early 1970s and the deliveries were mainly attended by untrained dais. Bhatnagar et al. (1988) also reported about 72 per cent deliveries took place at home in urban slums of Delhi and 76 per cent of these home deliveries were attended by untrained dais. Sample registration systems of India also provide statistics of home deliveries and attendant at those deliveries, e.g. in 1986, about 80 per cent deliveries in India were conducted at home and 61 per cent of the total deliveries were attended by untrained persons (R.G. 1988). Similarly, in rural areas of Jammu & Kashmir, about 95 per cent deliveries were domiciliary in nature and 79 per cent deliveries took place under the assistance of untrained dais (R.G. 1988).

The diet of mother and the child is severely restricted during and after delivery which leads to severe malnutrition and anaemia (Matthews 1979).

Knowledge regarding immunization was very low and the people have imaginary fear about immunization. In case of illness, people prefer traditional treatment as observed by Matthews (1979) in a South Indian village. Bhatnagar et al. (1988) also reported poor status of immunization in urban slums of Delhi. In these areas, about 62 per cent children registered for BCG, 28 per cent for polio while about 19 per cent for DPT injections with 3 doses.

Therefore, there is a need to assess the status of utilisation of maternity and child health services in India especially in rural areas. Keeping this in mind and with the available resources, a study of Utilisation of Maternal and Child Health Care and Family Planning Services in Rural Areas of Jammu Province was carried out in 1986-87 by the Department of Statistics, University of Jammu with the financial assistance from the University Grants Commission, New Delhi. Utilising this survey data, an attempt is made in the paper to depict the current utilisation of maternity and child health services in rural areas of Jammu after about a decade of Alma Ata Declaration. This study is the first one of its kind and no other reference available from this area i.e. Rural Jammu.

DATA AND THE SAMPLE

The objective of this survey (as mentioned earlier) was to examine the extent of utilisation of family planning as well as maternal and child health services in rural areas. Therefore, it was decided to collect information from three types of villages i.e. (i) villages where the primary health centre (PHC) is situated, (ii) villages where the sub-centre (SC) is built up; and (iii) villages with no PHC or SC.

Four primary health centres were selected at random from total number of PHCs in the district i.e. 28. From each selected PHC, two sub-centres were

selected at random. Further from each selected sub-centre, two villages (other than the sub-centre village) were selected at random from the list of all villages under the sub-centre. Therefore, the survey was carried out in 28 villages i.e.:

- i. four villages with primary health centre in the village (referred as EHC villages in this study);
- ii. eight villages with sub-centre in the village (referred as sub-centre villages in this study); and
- iii. sixteen villages with neither any primary health centre nor any sub-centre in the village (referred as other villages in this study).

Initially it was decided to select about 2400 households having at least one married female aged below 50 years. Thus by sampling 200 households from each selected PHC village, 100 households from each selected sub-centre village, and 50 households from each selected other villages, a total of 800 households from each category of village was sampled. However, the survey was carried out in 2063 households.

From each selected household, all the currently married females below 50 years of age were interviewed directly through a structured questionnaire by trained investigators. There were 2,337 married females from whom the information were obtained.

RESULTS

Prevailing level of awareness and pattern of utilisation of maternity and child health services were assessed through information supplied by the sampled eligible women regarding the place of availability of maternity and child health (MCH) services, knowledge regarding home visit by health workers for MCH advice and guidance, ante-natal, intra-natal and post-natal care during pregnancy and delivery apart from usual pregnancy histories and family planning. Findings from this survey are discussed the following paragraphs.

Knowledge Regarding Place for Maternity and Child Health Services

Question was asked to the respondents regarding their known places for maternity and child health services and their responses are depicted in Table 1,

In each of the three category of villages, primary health centre and district hospital were widely known to women as places for MCH services. However, respondents differ in terms of knowledge regarding places for MCH service by type

of village they live. Respondents in the PHC villages behave little differently than the respondents either from the sub-centre villages or from other villages. Approximately 88 per cent respondents from PHC villages reported primary health centre for MCH services in comparison with 82 per cent either from sub-centre villages or from other villages. Respondents in the PHC villages were more aware of availability of MCH services at the primary health centre because they are likely to be more exposed to the activities of a PHC as it is situated in their own village.

TABLE 1
PERCENTAGE DISTRIBUTION OF RESPONDENTS BY REPORTED PLACES FOR
AVAILABILITY OF MATERNITY AND CHILD HEALTH SERVICES AND BY TYPE OF
RESIDENCE

(Multiple Response)

Reported places for availability of MCH services	Type of Residence			Test Statistic (χ^2)
	PHC Villages	Sub-centre Villages	Other Villages	
Primary health centre	88.2	82.3	82.4	13.7*
Sub-centre	5.0	48.9	50.8	466.1*
Government dispensary	36.3	27.7	30.1	14.4*
District hospital	93.4	64.0	73.7	22.3*
Private clinics	5.2	5.4	3.8	2.5
Reported number of respondents	796	773	760	
(Non-reported number of respondents)	0	(2)	(3)	

*Significant at least 0.5 per cent level

Approximately 5 per cent respondents from PHC villages reported sub-centre as a place for MCH services but about 50 per cent from sub-centre as well as from other villages. Probably low response from respondents of PHC villages may be associated with their less chance of visiting sub-centre for services.

Comparatively more respondents from PHC villages were aware of MCH services at the government dispensary as against respondents either from sub-centre villages or from other villages.

District hospital for MCH services was stated by 93 per cent from PHC villages, 64 per cent from sub-centre villages, and 74 per cent from other villages. More respondents from PHC villages were aware of the district hospital as a place for MCH services in comparison with other two categories of villages. Similarly, more respondents from other villages were aware of MCH services at the district hospital in comparison with sub-centre villages.

Private clinic for MCH services was mentioned only by a negligible number of respondents.

Knowledge Regarding Services Provided at Health Centres

Respondents who had knowledge of places for MCH services were asked about type of services provided at such places, it appears from Table 2 that there are differences in knowledge regarding type of services provided at MCH centres by type of residence of the respondents.

Availability of 'medical care' at MCH centre was reported by more or less 75 per cent respondents from different types of villages.

'Preventive measures' at the health centre was mentioned by 84 per cent from PHC villages, 75 per cent from sub-centre villages and 66 per cent from other villages. Knowledge regarding availability of preventive measures varies directly with the location of the primary health centre. More respondents from PHC villages had knowledge of 'preventive measures' at health centre in comparison with respondents either from sub-centre villages or from other villages. Similarly, respondents from sub-centre villages were more aware of availability of 'preventive measures' at health centre in comparison with respondents from other villages.

About 8 in every 10 respondents from PHC villages had reported knowledge of 'maternal and child health care' at the governmental health care centre in comparison with about 6 from sub-centre villages and 5 from other villages. Hence knowledge regarding availability of maternal and child health care varies inversely with the type of residence (PHC villages to other villages).

Regarding availability of 'family planning advice and services', only 26 per cent from PHC villages had knowledge in comparison with about 59 per cent from sub-centre villages and 68 per cent from other villages and differences in proportions among villages are highly statistically significant. Perhaps villagers

nearer the health centre avail themselves of preventive, curative and MCH facilities besides family planning and those who are away from the health centre are infrequent users of preventive and MCH services at the health centre but may avail themselves or are approached by the health workers for family planning methods. Thus villagers nearer the health centre give more importance to medical care along with preventive and MCH care facilities at the health centres while villagers away from the health centre give more to family planning. This may be the reason behind anomalies in reporting availability of family planning services at the health centre by type of villages.

TABLE 2

PERCENTAGE DISTRIBUTION OF RESPONDENTS BY KNOWLEDGE REGARDING TYPE OF HEALTH SERVICE AVAILABLE AT THE HEALTH CENTRE AND BY TYPE OF RESIDENCE

Type of services available at the health centre	Type of Residence		
	PHC villages	Sub-centre villages	Other villages
Medical care	77.7	72.0	77.4
Preventive measures (Control of epidemics/ Immunisation services)	63.8	75.0	66.1
Maternal and Child Health Care (Ante-natal, intra-natal and post- natal)	75.9	59.3	50.0
Family planning	26.2	59.3	68.4
Malaria	0.3	0.3	0.4
Hearth and sanitation	0.1	0.4	0.1
Reported number of respondents	780	772	760
(Non-reported number of respondents	(16)	(0)	(-)

Knowledge Regarding Services Provided by Health Workers from the Health Centre at the Door Step

Health workers from the health centres are supposed to visit homes for advice and guidance for health as well as for maternal and child health care. In order to assess this respondents were asked about their knowledge of providing services at the door step of the villagers by health workers from health centres and the responses are reflected in Table 3.

TABLE 3

PERCENTAGE DISTRIBUTION OF RESPONDENTS HAVING KNOWLEDGE OF HEALTH WORKERS FROM HEALTH CENTRES FOR PROVIDING SERVICES AT THE DOOR STEP

Type of Residence	Per cent of respondents knew about health workers for providing services at the door step	Number of Respondents	
		Reported	(Not reported)
PHC villages	21.7	794	(5)
Sub-centre villages	63.8	774	(1)
Other villages	60.1	761	(2)
Test statistic (X^2)	342.4*		

* significant at least 0.5 per cent level

This knowledge differs significantly among respondents by type of residence. It is interesting to note that only 22 per cent from PHC villages were aware of services provided by health workers at villages as against 64 per cent from sub-centre villages or 60 per cent from other villages. As the health centre is situated at the village itself, respondents from PHC villages are more likely to visit the health centre frequently and therefore health workers perhaps pay little attention to visit homes at PHC villages. For this reason, knowledge regarding health workers providing services at the door step is low among respondents in PHC villages.

Knowledge Regarding Type of Health Workers Providing Services at the Door Step

Respondents who were aware of health workers from the health centres

visiting home to provide services were asked about the type (i.e. designation / rank) of such workers and their responses are depicted in Table 4.

TABLE 4
KNOWLEDGE OF VARIOUS CATEGORIES OF WORKERS AMONG RESPONDENTS WHO KNOW ABOUT HEALTH WORKERS PROVIDING SERVICES AT VILLAGES BY TYPE OF RESIDENCE

(Multiple Response)

Type of Health Workers	Type of Residence			Test Statistic (χ^2)
	PHC Villages	Sub-centre Villages	Other Villages	
Physician/Doctor	31.1	33.8	30.4	1.3
Auxiliary Nurse-cum-MkJwtfe (ANM)	40.1	43.3	51.4	9.1*
Lady Hearth Visitor (LHV)	53.3	54.7	43.8	12.1*
Malaria Worker	16.8	20.2	29.5	16.4*
Male Family Welfare Worker <MFWW)	13.8	8.1	3.3	22.5*
Immunization Worker	.	3.6	1.3	-
Extension Educator	.	0.6	0.4	.
Sanitary Inspector	.	.	1.5	.
Reported number of Respondents	167	494	457	
(Non-reported number of Respondents	(5)	(-)	(-)	-

*Significant at least 5 per cent level.

Approximately one-third of the respondents from each type of village mentioned physician/doctor visiting villages from health'centre to provide services.

The rank of auxiliary nurse-cum-midwife (ANM) was reported by 40 per cent respondents from PHC villages as well as from sub-centre villages but more than 50 per cent from other villages.

Lady health visitors (LHV) visit home for advise and guidance was reported by about 55-per cent from PHC and sub-centre villages and by 44 per cent from other villages. Knowledge of villagers in reporting LHV providing services at the door step is significantly lower at other villages as compared to those of PHC and sub-centre villages.

Usually ANMs live at the sub-centre and visit villages under their assigned sub-centre whereas LHVs from the PHC visit sub-centre to supervise the job of ANM as well as to provide services. Therefore, LHVs concentrate more on PHC and sub-centre villages. This may be the cause for differential in reporting of rank of ANM and LHV by type of villages.

Knowledge of malaria worker working in the village is significantly higher among respondents in other villages (30 per cent) in comparison with respondents either from PHC villages (17 per cent) or from sub-centre villages (20 per cent).

For every 100 respondents, only 14 from PHC villages reported male family welfare workers (MFWW) working at the village in comparison with only 8 from sub-centre villages and 3 from other villages. Respondents differ significantly in terms of reporting MFWW working in the villages by type of residence. It appears that performance of male family planning workers is very low and they do not pay attention to their work especially in villages away from the sub-centre whereas female workers (ANMs) visit much more especially in remote areas in comparison with male workers.

Apart from above workers, other health workers were mentioned by a few respondents from each type of villages.

ANTE-NATAL CARE

Ante-natal care means care for pregnant women thus improving the foetal and maternal outcome of each pregnancy. In this part, therefore, an assessment will be made regarding the status of ante-natal care in the survey area.

Information relating to ante-natal, intra-natal, and post-natal care were recorded for each live birth which occurred to currently married females aged below 50 years during the last three years prior to interview.

Coverage for Ante-natal Care (ANC)

Mothers were asked about their status of registration for ante-natal care during pregnancy. Table 5 reveals that for every 100 live births in 86 cases, mothers were registered for ante-natal care in PHC villages, 73 in sub-centre villages and 63 in other villages. Status of registration differs significantly by type of residence of mothers for ante-natal care. Thus location of health centre in the village itself played a positive role in registering for ante-natal care.

TABLE 5

PER CENT OF BIRTHS WHICH OCCURRED TO RESPONDENTS DURING THE LAST THREE YEARS PRIOR TO REFERENCE DATE OF THE SURVEY, BY STATUS OF REGISTRATION OF MOTHER FOR ANTE-NATAL CARE AND BY TYPE OF RESIDENCE

Type of Residence	Per cent of live births ante-natally registered	Number of eligible respondents	
		Reported	(Non-reported)
PHC villages	86.1	518	(20)
Sub-centre villages	73.3	461	(16)
Other villages	63.3	439	(22)
Test Statistic (χ^2)	66.5	1418	

Births where mothers were registered for ante-natal care were further examined for various demographic and socio-economic characteristics. It appears from Table 6 that the status of registration for ante-natal care of the mothers at birth differs significantly by age. Around 76 per cent mothers below age 35 years were registered for ANC in comparison with only 64 per cent at age 35 years and above.

Live births orders were inversely related with the registration status for ante-natal care. In about 81 per cent of cases, mothers were registered for antenatal care related to live births orders: 1-2 in comparison with 73 per cent among live birth orders: 3-4 and 56 per cent among live birth orders: 5 or more. Registration for ante-natal care appeared to be more among mothers at early parities.

Among live births in Hindus, approximately 86 per cent in "other castes" (i.e. bania, jat, etc.) were registered for ANC followed by 76 per cent from upper castes (i.e. brahmin, rajput, kayastha, etc.) and 63 per cent from scheduled castes and scheduled tribes. It appears that the incidence of registration for ANC was low among scheduled castes and scheduled tribes in comparison with any other caste groups.

TABLE 6
PERCENTAGE OF LIVE BIRTHS TO MOTHERS DURING THE LAST THREE YEARS
PRIOR TO SURVEY BY DEMOGRAPHIC
AND SOCIO-ECONOMIC CHARACTERISTICS OF MOTHERS AND BY REGISTRATION
STATUS FOR ANTE-NATAL CARE

Demographic and socio-economic characteristics	Registration Status			Number of Respondents		Test Statistic
	Yes	No.	Total	Reported	(Not Reported)	
All live births	74.9	25.1	1000	1416	(58)	
<u>Age of mother at birth:</u>						
15-24	74.4	25.6	1000	360	(12)	16.6*
25-34	77.7	22.3	100.0	853	(31)	
35-49	63.9	36.1	1000	205	(15)	
<u>Order of live birth:</u>						
1-2	61.2	38.8	100.0	717	(23)	51.8*
3-4	73.3	26.7	100.0	518	(23)	
5 or more	55.7	44.3	100.0	183	(12)	
<u>Religion/Caste</u>						
Upper Caste Hindu	76.4	23.6	1000	536	(25)	65.5*
Other Caste Hindu	86.4	13.6	100.0	345	(11)	
Scheduled Castes and Scheduled Tribes, Hindu	63.3	36.7	100.0	479	(19)	
Non-Hindu	69.3	30.7	100.0	58	(0)	
<u>Education of mother:</u>						
Illiterate	66.5	33.5	1000	593	(26)	196.7*
Primary or below	61.0	39.0	1000	210	(11)	
Upto middle but above primary	84.5	15.5	1000	226	(11)	
Upto high school but above middle	93.3	6.7	100.0	297	(8)	
High school and above	96.7	3.3	1000	92	(2)	
<u>Education of father:</u>						
Illiterate	51.0	49.0	100.0	296	(13)	161.9*
Primary or below	60.8	39.2	100.0	102	(4)	
Upto middle but above primary	74.2	25.8	100.0	225	(10)	
Upto high school but above middle	82.7	17.3	1000	556	(23)	
High school and above	93.2	6.8	100.0	237	(8)	
<u>Per capita family Income:</u>						
Less than Rs.150	61.5	38.5	100.0	476	(26)	73.3*
Rs.150-Rs.299	79.4	20.6	100.0	603	(20)	
Rs.300 and above	85.8	14.2	100.0	337	(12)	

* Significant at least 0.5 per cent level

Other religion group (mostly Muslims) were more likely to register for ante-natal care than Hindus but it is not possible to make any legitimate conclusion because of small sample size of other religion group.

Education played a positive role for registration of ante-natal care. Among live births to illiterate mothers, 57 per cent were registered for ante-natal care whereas in case of births to literate mothers with number of years of schooling eight years (middle) or less, 83 per cent were registered for ANC, and 97 per cent in case of mothers with at least high school education registered for ANC.

Registration for ante-natal care of mothers related to births varies directly with the education of the father. Among live births related to illiterate fathers, 51 per cent cases were registered for ANC during pregnancy and the tempo of registration increases gradually with increase in education of the father. Percentage of births to fathers with educational levels 'literate but upto primary level', 'above primary but below middle', and 'at least high school', the cases which were registered during pregnancy for ante-natal care were 61 per cent, 74 per cent, and 93 per cent respectively.

Registration for ante-natal care was directly related to the per capita income in the family. About 62 per cent of pregnancies in families with per capita income upto Rs.149 were registered whereas it rose to about 86 per cent in families with per capita income Rs.300 and above.

Registration for Ante-natal Care by Type of Health Institutions and by Type of Services Received

Mothers who have registered for ante-natal care were asked about the type of health institution where registered for each pregnancy during the last three years prior to the survey reference date and the type of services received during ante-natal period such as tetanus toxoid and prophylaxis (tablets of iron and folic acid).

From Table 7, it reveals that most of the pregnancies (i.e. 80 per cent) from sub-centre villages were registered at primary health centre followed by pregnancies from PHC villages: 73 per cent and other villages: 62 per cent. The pregnant mothers from sub-centre villages are more likely to register at primary health centre in comparison with respondents either from PHC villages or from other villages.

Quite a sizeable percentage from PHC villages (23 per cent) and other villages (26 per cent) registered at hospital. Hospitals may have been nearer to residents of PHC villages as well as to residents of other villages. Less percentage

from sub-centre villages registered at hospital in comparison with PHC villages and sub-centre villages. Probably, this was due to hospital being far off from sub-centre villages than PHC villages and other villages.

TABLE 7

PERCENTAGE DISTRIBUTION OF PREGNANCIES WHICH ARE REGISTERED FOR ANTE-NATAL CARE (ANC) BY PLACE OF REGISTRATION (ANC), BY TYPE OF SERVICES AVAILABLE AND BY PLACE OF RECEIVING SUCH SERVICES FOR EACH CATEGORY OF VILLAGES

Subject	Type of Residence			Test Statistic (0c2)
	PHC villages	Sub-centre villages	Other villages	
Number of pregnancies registered for ante-natal care (ANC)	446	338	278	
Total	100.0	100.0	100.0	
<i>A. Place of registration for ANC.</i>				
Primary Health Centre	72.9	79.6	61.9	24.0*
Sub-centre	0.4	8.3	2.1	37.8*
Hospital	23.1	10.9	26.3	26.7*
Private clinics and other places	3.6	1.2	9.7	27.5*
<i>B. Tetanus toxoid</i>				
i. Received during pregnancy	98.7	99.7	100.0	
ii. Place of receipt:				
Primary Health Centre	72.6	79.6	61.9	23.9*
Sub-centre	0.5	8.3	2.1	37.8*
Hospital	22.2	10.6	26.3	26.9*
Private clinics and other places	3.4	1.2	9.7	28.5*
<i>C. Prophylaxis Against Anaemia.</i>				
i. Received during pregnancy	95.5	98.2	99.3	10.9*
ii. Place of receipt:				
Primary Health Centre	71.3	78.7	61.5	21.9*
Sub-centre	0.2	7.7	1.8	38.6*
Hospital	20.6	10.6	26.3	25.7*
Private clinics and other places	3.4	1.2	9.7	28.5*

*Significant at least 0.5 per cent level

A few mothers from sub-centre villages registered at the sub-centre for ante-natal care while a negligible member of mothers from other villages registered at the sub-centre for such care.

Surprisingly, more mothers from other villages registered at private clinics/other places for ante-natal care followed by PHC villages and sub-centre villages even though the number registered at such centre were small.

Almost all mothers registered for ante-natal care reported to receive tetanus toxoid (TT) from the same places where they registered for ante-natal care. However, slightly fewer mothers reported to receive prophylaxis (i.e. tablets of iron and folic acid) in comparison with tetanus toxoid (TT).

Incidence of Home Visit by Health Workers to Non-registered Pregnant Mothers for Ante-natal Care

Enquiries were made from respondents, who were pregnant, but not registered for ante-natal care, regarding their receiving ante-natal advice at home from lady health visitor (LHV) and auxiliary nurse midwife (ANM) from the nearest health centre. The extent of such home visits is depicted in Table 8.

TABLE 8

PERCENTAGE OF PREGNANCIES NOT REGISTERED FOR ANTE-NATAL CARE WHICH WERE VISITED AT HOME BY FEMALE HEALTH WORKERS FROM HEALTH CENTRES FOR EACH TYPE OF RESIDENCE

Subject	Type of Residence			Test Statistic (X ²)
	PHC Villages	Sub-centre Villages	Other Villages	
Female health workers (ANM/LHV) visited home for ante-natal care (ANC)	3.6	5.2	9.8	3.0
Number of pregnancies	56	96	122	

Approximately, 10 per cent of pregnant mothers from other villages, 5 per cent from sub-centre villages and about 4 per cent from PHC villages reported to receive ante-natal advice at home by female health workers (ANM/LHV). These differences were not significant. In the survey area, it appears that there is hardly any home visit by female health workers for ante-natal care. But it is also

necessary to note that probably some of the mothers might have been registered at the health institutions after receiving advice at home by the female health workers and they were excluded from here because of the design of the questionnaires. This might have an impact for the low estimate of home visit by female health workers for ante-natal advise and care.

INTRA-NATAL CARE

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Intra-natal care is important for the survival of mother and the child. In India, most of the deliveries took place at home and one-fifth of these deliveries were attended by trained persons (RG, 1988). Utilisation of untrained persons at delivery and prevailing unhygienic and non-sterile conditions at home is responsible for a large number of babies and mothers becoming infected with disease germs leading to high infant and maternal mortality. Non-availability of trained health personnel and poverty to some extent are responsible for the high incidence of home deliveries apart from social and ritual taboos (Majumdar 1989). Therefore, an attempt is made here to understand the prevailing intra-natal care by examining: (1) type of place where the babies are delivered; (2) type of attendants who helped in delivering the child; and (3) reason behind home deliveries.

Type of Place for Deliveries

The places of delivery are revealed in Table 9 by various demographic and socio-economic characteristics. In this sample, about 85 per cent of the live births were delivered at home, about 5 per cent at PHC or at sub-centre and about 10 per cent at government hospital.

Even though for every four deliveries, three deliveries were conducted at home but still deliveries at home vary directly with age of the mother. Only 9 per cent deliveries to mothers aged below 25 years took place at PHC/sub-centre compared with 3 per cent to mothers aged 25 years and above. About 12 per cent mothers between ages 25 and 34 years delivered at government hospitals in comparison with little over 9 per cent below age 25 and 3 per cent at ages 35 and above. Thus, delivery at government hospital follow an inverted J-shaped curve by age of mothers. Overall, it appears that places at delivery differ significantly by age of mothers.

Live birth order is inversely associated with deliveries at home and similar relationship is also observed with deliveries at government hospital. Almost 9 in every 10 deliveries occurred at home with live birth order three or more in comparison with 8 having live birth order one or two. Thus, places at delivery differ significantly by live birth order.

TABLE9

**PERCENTAGE DISTRIBUTION OF BIRTHS BY PLACE OF DELIVERY AND BY
VARIOUS SOCIO-ECONOMIC DEMOGRAPHIC CHARACTERISTICS**

Demographic and socio-economic characteristics	Place of Delivery				Number of Respondents	
	Home	Primary Health Centre/ Sub-centre	Government Hospital	Total	Reported	(Not-Reported)
All births	85.4	4.7	9.9	1000	1409	(67)
<u>Age of mothers at birth</u>						
15-24	82.0	8.6	9.4	100.0	361	(01)
25-34	85.1	3.3	11.6	100.0	845	(39)
35-49	93.2	3.4	3.4	100.0	203	(07)
Test statistic (χ^2_2)	131*	16.6*	12.3'			
<u>Order of l've birth</u>						
1-2	78.1	7.0	14.9	100.0	712	(2B)
3-4	92.7	2.1	5.2	1000	516	(25)
5 or more	94.0	2.8	3.2	1000	161	(14)
Test statistic (χ^2_2)	62.8*	17.7*	41.4*			
<u>Religion/Caste</u>						
Upper caste Hindus	81.4	8.0	10.6	1000	539	(24)
Other caste Hindu	82.0	3.8	14.2	1000	338	(18)
Scheduled caste and scheduled tribe. Hindu	93.2	2.0	4.8	1000	476	(22)
Non-Hindu	78.6	1.8	19.6	1000	56	(3)
Test statistic (χ^2_3)	359*	23.0*	27.0*			
<u>Education of mother</u>						
Illiterate	94.5	1.5	4.0	100.0	589	(30)
Literate but upto primary	66.2	5.2	8.6	1000	210	(11)
Above primary but upto middle	64.4	3.6	12.0	1000	225	(12)
Above middle but upto high school	76.5	6.5	15.0	1000	294	(11)
Intermediate and above	56.0	14.3	29.7	1000	91	(3)
Test statistic (χ^2_4)	121.8*	42.3*	73.8*			
<u>Education of father</u>						
Illiterate	96.0	1.3	2.7	100.0	295	(16)
Literate but upto primary	91.2	1.0	7.6	100.0	102	(4)
Above primary but upto middle	88.3	2.7	9.0	100.0	224	(11)
Above middle but upto high school	64.4	4.5	11.1	100.0	551	(28)
Intermediate and above	69.6	12.7	17.7	100.0	237	(8)
Test statistic (χ^2_4)	76.6*	42.3*	35.0*			

* Significant at least 0.5 per level

<u>Per capita family income</u>						
Less than P.s.150	95.5	1.5	3.0	100.0	476	(26)
Rs 150-Rs 299	63.8	3.7	12.5	100.0	600	(23)
Rs 300 and above	73.8	11.2	15.0	100.0	333	(16)
Test statistic (χ^2_2)	76.5*	43.2*	40.3*			
<u>Type of residence</u>						
PHC villages						
Sub-centre villages	81.5	4.5	14.0	100.0	513	(25)
Other villages	89.3	4.6	6.1	100.0	458	(19)
Test statistic (χ^2_2)	86.0	5.0	9.0	100.0	438	(23)
	12.1"	0.2*	17.7*			

* Significant at least 0.5 per cent level

Hindu mothers delivered more at home in comparison with respondents belonging to other religion group.

Deliveries at home and at PHC/sub-centre varied significantly amongst the castes with the highest percentage of home deliveries taking place in scheduled castes and scheduled tribes.

Home deliveries varied inversely with education of the mothers and fathers. Thus, education played a positive role in selecting the medically safe place for delivery.

Per capita income in the family was negatively associated with home deliveries and place of birth differed significantly by per capita income.

For every 20 deliveries, about 18 deliveries took place at home in those who lived in sub-centre villages, 17 in those who lived in other villages, and 16 in those who lived in PHC villages. Approximately 14 per cent births from PHC villages took place at government hospital followed by 9 per cent from other villages and 6 per cent from sub-centre villages. Overall, mothers differed significantly by type of residence in selecting the place for deliveries.

Type of Attending Assisting at Home Delivery

Type of person attending home deliveries is depicted in Table 10 by demographic and socio-economic characteristics. Most of the deliveries at home were attended by untrained persons such as untrained dai: 55 per cent and member of household, friends and relatives: 7 per cent. About 38 per cent home deliveries were attended by trained persons, such as, trained dai: 13 per cent, ANM: 12 per cent, LHV: 11 per cent and doctor/physician: 2 per cent.

TABLE 10

**PERCENTAGE DISTRIBUTION OF HOME DELIVERIES BV TYPE OF ATTENDANTS AND BY
DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS**

Demographic and socio-economic characteristic*	Type of Attendants at Delivery							Number of Respondents	
	Household members	Untrained dai	Trained dai	ANM	LHV	Doctor	Total	Reported	(Not reported)
All home deliveries	7.0	55.4	12.7	11.8	10.8	2.3	100.0	1201	(3)
<u>Age of mother at delivery</u>									
15-24	6.0	55.6	12.2	9.8	11.9	3.7	100.0	295	(1)
25-34	6.3	53.4	15.7	13.2	11.2	2.2	100.0	717	(2)
35-49	10.1	62.4	10.1	9.5	7.4	0.5	100.0	189	(-)
Test statistic (χ^2_2)	3.3	1.9	1.9	3.5	2.7	5.3			
<u>Order of live birth</u>									
1-2	7.0	54.6	12.1	11.0	11.5	3.8	100.0	555	(1)
3-4	4.6	54.5	14.5	13.9	11.0	1.3	100.0	476	(2)
5 or more	13.0	60.0	10.0	8.6	7.7	0.5	100.0	170	(-)
Test statistic (χ^2_2)	12.7*	1.7	2.7	3.7	2.1	8.8*			
<u>Religion / caste</u>									
Upper caste Hindu	6.4	46.0	11.4	14.8	16.0	1.4	100.0	438	(1)
Other caste Hindu	4.0	45.0	18.1	18.1	11.6	3.2	100.0	276	(1)
Scheduled caste and scheduled tribe: Hindu	6.0	69.6	9.4	5.4	4.5	2.9	100.0	443	(1)
Non-Hindu	2.3	50.0	25.0	6.7	16.0	-	100.0	44	(1)
Test statistic (χ^2_3)	7.3	55.5*	18.0*	32.8*	31.8*				

<u>Education of mother</u>									
Illiterate	11.3	62.7	9.5	7.9	6.8	1.6	100.0	557	(-)
Literate but upto primary	5.6	59.4	15.6	7.2	7.6	4.4	100.0	180	(1)
Above primary but upto middle	1.6	56.1	13.1	13.8	14.3	1.1	100.0	169	(1)
Above middle but below intermediate	2.2	39.7	17.0	20.5	17.9	2.7	100.0	224	(1)
Intermediate and above	5.9	27.4	17.6	25.5	19.6	4.0	100.0	51	(-)
Test statistic (χ^2_4)	32.9*	51.5*	11.2*	38.0*	29.1*	6.3			
<u>Education of father</u>									
Illiterate	10.6	59.4	11.3	10.6	7.4	0.7	100.0	283	(-)
Literate but upto primary	8.6	67.7	9.7	6.6	1.1	4.3	100.0	93	(-)
Above primary but upto middle	8.6	69.0	10.6	5.6	3.7	2.5	100.0	197	(1)
Above middle but below intermediate	5.6	55.1	14.5	11.5	10.8	2.5	100.0	463	(2)
Intermediate and above	1.8	36.2	14.5	24.2	15.2	3.1	100.0	165	(-)
Test statistic (χ^2_4)	15.0	41.2*	3.8	33.2*	33.7*	5.4			
<u>Per capita family income</u>									
Less than Rs.150	9.9	54.0	13.0	11.4	10.4	1.3	100.0	454	(1)
Rs.150-Rs.299	5.0	56.4	12.4	12.5	11.5	2.2	100.0	502	(1)
Rs.300 and above	5.7	56.0	13.1	11.0	9.6	4.4	100.0	245	(1)
Test statistic (χ^2_2)	9.7*	0.6	0.1	0.5	0.6	7.1			
<u>Type of residence</u>									
PHC villages	2.2	34.8	16.7	30.0	13.0	2.4	100.0	417	(1)
Sub-centre villages	2.4	66.3	10.3	3.4	16.6	0.8	100.0	409	(-)
Other villages	17.3	66.4	11.0	0.6	0.5	4.0	100.0	375	(2)
Test statistic (χ^2_2)	89.6*	109.7*	9.5*	203.2*	61.1*	9.2			

*Significant at least 5 per cent level

More home deliveries were attended by untrained persons in women having birth order live or more. Type of persons attending home deliveries differed significantly by order of live birth.

Trained persons attended home deliveries more in non-Hindu women. Among Hindus, trained persons attended more deliveries to other castes followed by upper castes and scheduled castes. The type of persons attending home deliveries differed significantly by caste.

Home deliveries attended by trained persons increased with increase in education. Women differ significantly by education in terms of selecting birth attendant at home deliveries.

Comparatively, untrained persons attend deliveries more to women whose spouses are literate but education may be up to primary level than those whose spouses have no education. Apart from this, education of father was significantly associated with trained person as attendant at home deliveries.

No significant difference was found in type of attendant for home deliveries per capita family income.

More women from other villages called untrained persons for assistance at deliveries conducted at home in comparison with those living in sub-centre villages followed by those living in PHC villages. More women from PHC villages were assisted by trained persons in their deliveries at home followed by respondents from sub-centre villages and other villages. Even though the volume is small but still it is interesting to note that doctor/physician assisted more in deliveries at home in other villages as compared to PHC and sub-centre villages. Women in this study, differed significantly in terms of selecting birth attendant at home deliveries by type of residence.

Reasons Behind Home Deliveries

Women who delivered at home were asked about their reason behind home deliveries and the responses are depicted in Table 11. In approximately 85 per cent deliveries conducted at home, the mothers never imagined any problem, whereas distance of government institution from home was reported in about 14 per cent of cases, and only one per cent cases indicated availability of trained persons for home deliveries.

No consistent relationship was observed in reasons behind home deliveries and by age of the mothers.

TABLE 11

PERCENTAGE DISTRIBUTION OF BIRTHS BY PLACE OF DELIVERY AND BY VARIOUS SOCIO-ECONOMIC DEMOGRAPHIC CHARACTERISTICS

	Reason for Home Delivery				Number of Resopndents	
	Never Imagine any problem associated with it	Availabi- lity of trained persons for delivery	Due to distance (institutions for delivery is far away from home)	Total	Reported	(Not Reported)
All home deliveries	64.7	09	14.4	100.0	1145	(59)
<u>Age of mothers</u>						
15-24	81.4	1.1	17.5	100.0	260	(16)
25-34	66.6	0.9	12.3	100.0	690	(29)
35-49	61.7	0.5	17.6	100.0	175	(14)
Test statistic (χ^2_2)	5.9*	0.3	6.2*			
<u>Order of live birth</u>						
1-2	85.4	0.7	13.9	100.0	529	(17)
3-4	66.3	0.8	12.9	100.0	460	(18)
5 or more	77.6	1.3	21.1	100.0	156	(14)
Test statistic (χ^2_2)	7.3*	0.4	6.8*			
<u>ReligionA3aste</u>						
Upper caste Hindus	81.1	0.4	18.5	100.0	408	(31)
Other caste Hindu	95.5	0.3	4.2	100.0	266	
Scheduled caste and scheduled tribe, Hindu	81.6	1.2	17.2	100.0	425	(16)
Non-Hindu	61.8	4.5	13.7	100.0	44	(-)
Test statistic (χ^2_3)	31.6*	8.8*	31.0*			
<u>Education of mother</u>						
Literate	79.7	1.3	19.0	100.0	528	(29)
Literate but upto primary	80.3	1.2	18.5	100.0	173	(8)
Above primary but upto middle	89.6	-	10.4	100.0	163	(7)
Above middle but below intermediate	93.8	-	6.2	100.0	211	(14)
Intermediate and above	96.0	2.0	2.0	100.0	50	(1)
Test statistic (χ^2_3)	34.5*		31.4*	100.0		
<u>Education of father</u>						
Illiterate	78.3	0.3	21.4	100.0	272	(11)
Literate but upto primary	73.3	2.2	24.5	100.0	90	(3)
Above primary but upto middle	82.4	2.1	15.5	100.0	188	(10)
Above middle but below intermediate	87.9	0.6	11.5	100.0	437	(28)
Intermediate and above	96.2	-	3.8	100.0	158	(7)
Test statistic (χ^2_4)	37.8*	-	35.6*			

<u>Per capita family income</u>						
Less than Hi 150	63.1	1.1	15.8	100.0	439	(16)
fls.150-Rs.29fl	88.2	0.6	13.2	100.0	472	(31)
Rs.300 and above	64.6	0.8	14.6	100.0	234	(12)
Test statistic (χ^2)	1.7	9.7	1.2			
<u>Type of residence</u>						
PHC villages	99.0	0.0	1.0	100.0	399	(19)
Sub-centre villages	84.2	1.8	14.0	100.0	400	(9)
Other villages	68.8	0.6	30.4	100.0	346	(31)
Test statistic (χ^2)	130.7*	7.1*	29.5*			

* Significant at least 5 per cent level

About 21 per cent mothers with birth order five or more, mentioned 'distance' (i.e., government institution for delivery is far away from home) as against 13 per cent of birth order four or less. About 86 per cent mothers of birth order upto four, never imagined any problem associated with home deliveries as against 78 per cent with birth order five or more. Reasons behind home deliveries differed significantly by live birth order.

Hindus never imagined any problem for delivering child at home more than other religion group. 'Distance' - i.e. the government institution for delivery is established far away from home was more or less same for both religions group. Near about 5 per cent mothers from other religion group stated availability of trained persons at home for home delivery whereas only 1 per cent Hindu mothers reported the same. It appears that there is a significant difference between Hindus and other religions in terms of stating reasons behind home deliveries.

Approximately 18 per cent of home deliveries in upper caste and 17 per cent in scheduled caste Hindus, took place at home because government institutions were far away, whereas it was only 4 per cent in other caste Hindus. About 96 per cent mothers belonging to other caste Hindus never imagined any problem associated with home deliveries, as against little over 81 per cent either from upper caste Hindus or from scheduled caste Hindus. Hindu mothers differed significantly in stating reasons behind home deliveries by caste.

Reason like never imagine any problem with home delivery* was positively associated with education of mothers. Distance of government institution from home as a factor for home delivery was inversely associated with education of mothers. Overall, it seems that reasons behind home deliveries differed significantly by education of mothers.

Education of fathers followed a similar pattern.

No clear cut relationship was noticed by per capita family income and stating reasons behind home deliveries.

Among children delivered at home, in 99 per cent cases, mothers from PHC villages 'never imagine any problem' associated with home delivery in comparison with about 84 per cent from sub-centre villages and 69 per cent from other villages. More than 30 per cent mothers of deliveries in other village stated 'distance' as a reason behind home deliveries as compared with about 14 per cent from sub-centre villages and 1 per cent from PHC villages. These differences were significant.

INCIDENCE OF IMMUNISATION AMONG CHILDREN (0-3) YEARS

An attempt was made to assess the status of immunization among children who were born in the last three years prior to survey reference date. Pattern of immunization of children is shown in Table 12. Respondents who have reported having births during the last three years prior to survey reference date were asked about immunization status of this child. Approximately 85 per cent of the children were immunized with BCG and polio vaccines while about 87 per cent with DPT injections.

Rate of immunization was highest in the children of mothers between ages 25 and 34 years. Immunization rates varied significantly with live birth order. Approximately 3 out of four children at live birth order five or more were immunized either by BCG, polio or DPT but nine out of ten children were immunized of live birth order four or less.

Hindu children were likely to be immunized more in comparisons with other religions. Among Hindus, children of other caste Hindus were more likely to be immunized by various kind of immunizations than children of upper caste Hindus. Lowest immunization rate was found among scheduled caste children. These differences were significant.

In general, there was a positive association between immunization of children and by education of mothers and education of fathers.

Children of labourers (i.e. agriculture and other) were immunized least. The rate of immunization varied significantly with the occupational status of fathers and family per capita income.

TABLE 12
IMMUNIZATION RATE PER THOUSAND CHILDREN (0-3) YEARS OF AGE BY VARIOUS
KIND OF IMMUNIZATIONS AND BY DEMOGRAPHIC AND SOCIO-ECONOMIC
CHARACTERISTICS

Demographic and socio-economic characteristics	Immunization Rate per 1000 Children Age (0-3) years for			Number of Respondents
	BCG	Polio	DPT	
All children (0-3) years* *	850	852	867	1476
<u>Age of mothers</u>				
15-24	821	818	852	372
25-34	874	874	884	884
35-49	798	821	826	220
Test statistic (χ^2_2)	11.1*	8.6*	5.8	
<u>Live birth order</u>				
1-2	884	874	895	740
3-4	835	854	859	541
5 or more	759	759	779	195
Test statistic (χ^2_2)	20.1"	16.3*	18.0*	
<u>Religion</u>				
Hindu	853	853	869	1417
Other religions	769	820	837	59
Test statistic (χ^2_2)	3.6	0.7	0.7	
<u>Castes (Among Hindus)</u>				
Upper castes	892	879	896	563
Other castes	922	889	901	356
Scheduled castes and scheduled tribes	757	795	813	498
Test statistic (χ^2_2)	56.2*	20.3*	20.2*	

<u>Education of mothers</u>				
Illiterate	746	765	782	619
Literate but upto primary	856	868	874	221
Above primary but upto middle	910	917	950	237
Above middle but below intermediate	962	917	931	305
Intermediate and above V	955	952	944	94
Test statistic (χ^2_4)	95.3*	61.5*	67.5*	
<u>Education of fathers</u>				
Illiterate				
Literate but upto primary	658	664	687	311
Above primary but upto middle	806	846	879	106
Above middle but below intermediate	837	848	852	235
Intermediate and above	910	906	914	579
Test statistic (χ^2_4)	966	942	970	245
	132.1*	115.5*	118.0*	
<u>Occupation of fathers</u>				
Labourer (Agriculture and other)	657	674	692	132
Agriculture worker (own)	700	728	756	206
Other workers (private service, construction, family trade, students, etc.)	853	855	867	303
Business	905	893	891	243
Government/semi-governmental services	921	919	936	592
	103.3*	82.9*	83.0*	
<u>Per capita family income</u>				
Less than Rs.150	766	776	795	504
Rs.151-Rs.299	879	891	899	623
Rs.300 and above	907	881	906	349
Test statistic (χ^2_2)	39.9*	32.1*	31.8*	
<u>Place of work of father (with reference to residence)</u>				
Work within the village of the residence	830	840	853	1124
Work elsewhere than the place of residence	914	894	917	352
	15.1*	6.5*	9.7*	
Test statistic (χ^2_2)				
<u>Type of residence</u>				
PHC villages	912	910	918	538
Sub-centre villages	890	901	910	477
Other villages	733	731	761	461
Test statistic (χ^2_1)	71.1*	76.1*	64.2*	

* Significant at least 5 per cent Level ** Alive or Dead

Women whose husbands normally resided in the village (i.e. work within the village boundary) were less likely to immunize their children than those whose husbands worked normally outside the village. The difference was significant.

In PHC villages, children were more likely to be immunized than those from sub-centre villages and similarly, in sub-centre villages, children were more likely to be immunized than those of other villages. These differences were significant.

Age Specific Immunization Rate of Children Aged (0-3) Years

An attempt was made to assess the immunization coverage of children below three years of age by various kinds of immunizations age in mothers and type of village. The results are shown in Table 13.

Overall the immunization rate for DPT was highest followed by BCG and Polio. The immunization rates for various kinds of vaccines (i.e. BCG, Polio, DPT) were highest among those who were born to mothers in PHC villages followed by sub-centre villages and other villages. Accessibility of PHC/sub-centre increases the rates of immunizations. The immunization rates were more in general, below one year of age compared with age at one year and above. Therefore, it seems that the acceptance of Immunization of various kinds is increasing.

DISCUSSION

Respondents from PHC villages, probably, think that the district hospital is better equipped and so most of them consider it as the best government health infrastructure. On the other hand, they pay little attention to the sub-centre because most of them may not be aware of existence of such health infrastructure at the grassroot level. Thus most known government institutions for health care in order of popularity among PHC village respondents were district hospital, primary health centre, government dispensary and sub-centre, and these differed significantly from respondents of sub-centre and other villages. Primary health centre was the most known governmental institution for health care followed by district hospital, sub-centre and government dispensary among respondents from sub-centre villages and other villages.

Respondents were mainly aware of availability of curative services in case of illness and preventive services at government health institution. Comparatively, they were less aware of services and advice for maternity care and family planning which are provided at the government health institution. This suggests that there is a great need to educate people regarding kind of services available at each type of government health infrastructure from grassroot level to district hospital.

TABLE 13
AGE SPECIFIC IMMUNIZATIONS RATE PER THOUSAND CHILDREN BELOW
THREE YEARS OF AGE BY KIND OF IMMUNIZATIONS AND BY TYPE OF
RESIDENCE

Current age/age at death of children (in months)	Incidence rate of immunization per 1000 children (0-3 years)											
	Type of residence											
	PHC villages			Sub-centre villages			Other villages			All type of villages		
	BCG	Polio	OPT	BCG	Polio	DPT	BCG	Polio	DPT	BCG	Polio	DPT
0-2	632	636	618	758	531	594	500	452	452	626	542	557
3-5	843	778	860	693	800	846	429	381	429	748	692	763
6-8	957	909	891	870	905	909	800	706	865	681	838	886
9-11	1000	963	966	926	923	923	700	750	875	924	918	937
12-35	952	960	964	915	956	956	786	790	603	886	904	909
Total	913	907	914	894	895	904	724	719	753	846	845	862

Knowledge of health workers providing medical advice and services at the village level by visiting homes is very poor especially in PHC villages. Less number of people at PHC villages were aware of services provided by health workers at the village because it is likely that residents from PHC villages visit primary health centre more frequently in case of need and they may have little confidence in health workers other than the doctors/physicians.

Respondents were more aware of ANM/LHV visiting home for advice and guidance than male health workers such as family welfare workers and malaria worker. In general, there is little interaction between females in the household with male from outside and this might have an influence in under-estimating home visit by male health workers because respondents were females.

The rate of registration for ante-natal care was quite high, and most of those registered for ante-natal care reported to receive tetanus toxoid (TT) and folifer tablets. However, there was wider gap between numbers ante-natally registered the recipients of folifer tablets during ante-natal period and research is needed to find out reasons behind this gap.

The paradox of this study is that inspite of high level of registration for ante-natal care, most of the deliveries were domiciliary and were assisted by untrained persons. This is not unique in India and other studies confirm this observation (Ahluwalia 1963, Ghosh 1968, Charles 1971, Matthews 1979, Bhatnagar et al. 1988). It seems that some social taboos are associated with home deliveries in India (Majumdar 1988). For this reason, probably, most of the respondents do not foresee any problem with home deliveries. More detailed and elaborate investigations are needed to find out reasons behind home deliveries including the role of culture, prejudice and rumour.

Rates of various kinds of immunizations to children aged (0-3) years were only a few points behind the total score. This showed a very effective implementation of universal programme on immunization (UPOI).

Education and per capita income played a positive role in terms of knowledge of types of services available and the utilisation of maternity and child health services. On the other hand, age, religion/caste did not provide any definite conclusion in terms of knowledge, availability of type of services and the extent of utilisation of such services.

Location of health centre in the same villages played a positive role in terms of knowledge, awareness and utilisation of maternity and child health services.

Poverty and non-availability of trained persons in India are to some extent responsible for high incidence of domiciliary delivery as well as high attendance at delivery by untrained person and domiciliary deliveries vary directly with infant mortality as well as per cent of female deaths due to maternal causes (Majumdar 1989). Therefore, this study suggests that factors associated with home deliveries are to be investigated first and proper action such as a strong programme on information, education and communication is to be launched to remove prejudice, ignorance and myth associated with institutional deliveries. This will help to reduce infant and maternal mortality further by some points.

There is also a need to study the situation that prevails in various government health centres and whether that has an influence on the reluctance to deliver a child at these places.

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प्रस्तुत अध्ययन का उद्देश्य जम्मू (भारत) के ग्रामीण क्षेत्रों में दी जाने वाली मातृ एवं शिशु स्वास्थ्य सेवाओं के उपयोगिता स्तर का पता लगाना है। इस अध्ययन के लिए सूचनाये तीन प्रकार के गांवों में रहने वाली प्रजनन-आयु वर्ग की विवाहित महिलाओं से एकत्र की गई थी, अर्थात् उन गांवों से (1) जिनमें न कोई प्राथमिक स्वास्थ्य केन्द्र ही था और न कोई उप-केन्द्र ही था। इस अध्ययन के लिए मल्टी स्टेज सेम्पलिंग तकनीक के माध्यम से 28 गांवों में ऐसे 2063 परिवारों का चयन किया गया था, जिनमें प्रत्येक परिवार में प्रजनन आयु वर्ग की कम से कम एक महिला थी। यह अध्ययन प्रजनन आयु वर्ग की 2337 विवाहित महिलाओं से एकत्र की गई सूचनाओं पर आधारित था।

अध्ययन से प्राप्त निष्कर्षों से पता चला है कि मातृ एवं शिशु स्वास्थ्य सेवाओं से संबंधित जानकारी, सेवाओं की उपलब्धता तथा सेवाओं के स्वरूप और इनके उपयोगिता स्तर जैसे घटकों से सकारात्मक संबंध होना पाया गया था। मातृ एवं शिशु स्वास्थ्य सेवाओं के बारे में आवश्यक जानकारी, जागरूकता एवं उपयोगिता के बारे में आयु और धर्म/जाति जैसे घटक कोई निश्चित निष्कर्ष प्रदान नहीं करते थे।

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KNOWLEDGE OF COMMUNITY ABOUT LEPROSY: ROLE OF DEMOGRAPHIC VARIABLES IN RURAL ORISSA AND ANDHRA PRADESH

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ABSTRACT

Any public health programme is expected to be accessible to all the strata in a community equally and the knowledge communicated through the programme should be perceivable by all the individuals. National Leprosy Eradication Programme (NLEP) is one such programme that has been imparting health education to community since more than four decades in India. The role of social stratification in determining the results of the programme needs to be studied. As such, knowledge of 1199 rural community members from the States of Orissa and Andhra Pradesh about leprosy and its control programme was measured and cross tabulated with their demographic characteristics. The results show a significant association of sex, caste, educational status and economic status of the respondents with their knowledge levels in general and the nature of the influence of these variables in knowledge differed between the two States, which may be attributed to their unique indigenous cultural characteristics that need to be considered for success of the programme.

National Leprosy Control Programme was launched in India in 1953 and renamed in 1981 as National Leprosy Eradication Programme (NLEP). The programme has adopted Survey-Education-Treatment (SET) pattern in which 'education' i.e. educating the community about scientific facts of leprosy through programmed health education activities, is one of the major components. Apart from 'education' the activities of 'survey' and 'treatment' are also of educative value to the community. However, NLEP in India has been in operation since more than four decades and the levels of knowledge imparted by the NLEP to the community, need to be studied. This has been attempted by various people in different cross-cultural and geographical settings like urban areas (Mutatkar: 1978, Ashok Kumar: 1983), rural areas (Mutakar and Tare: 1988, Ashok Kumar: 1988),

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tribal areas (Upadhyaya: 1988), rural-urban comparison (Kurup and Kannan: 1991). There are also studies of global nature representing the whole India (GOI: 1986, 1987, 1990).

It has been a general observation that the levels of knowledge acquired by the individual community members, though living in a homogenous socio-cultural environment, vary to a great extent. The reasons for such disparity could be that primarily the health education communicated by NLEP does not reach some strata or individuals of the community and secondarily the message which reaches the community members is not comprehended by all of them uniformly and these phenomena are likely to be influenced by various demographic variables. As such, it is attempted in this paper, to see whether there is any significant relationship between knowledge and four major demographic variables such as sex, caste, educational status and economic position.

MATERIALS AND METHOD

The data for this paper were culled out from a larger project "Evaluation of the Impact of Health Education in SET Pattern"* conducted by CSSRL, GMLF, Wardha during 1985-88.

Two States viz. Orissa and Andhra Pradesh were selected in view of their high prevalence rate {11-12 per thousand) and relative cultural similarities. In each State two Leprosy Control Units (LCUs), one the oldest and the other the most recent in the State - were selected for the study. Thus the selected four LCUs -(a) Attibara (Sambalpur Dist.) established in 1958, (b) Bhawanipatna (Kalahandi Dist.) established in 1977, from Orissa and (c) Ramachandrapuram (East Godavari Dist.) established in 1955, (d) Nalgonda (Nalgonda Dist.) established in 1982 from Andhra Pradesh were the study area. All the LCUs in the study were under Monotherapy. Further, one sector from each LCU- reflecting the rural characteristics broadly was selected for field work. The villages were selected through stratified random sampling method. Sample size from each village was decided in proportion to population of the village. The households of community members in each sampled village were selected randomly from the total list of households of that village. The total sample for the study was 1199 community members with 600 belonging to Andhra Pradesh and the rest (559) to Orissa. The data have been collected with the help of an Interview Schedule, from the heads of the households who were never afflicted by leprosy.

The responses of the respondents for six basic questions pertaining to the causative organism, curability, source of treatment, operational aspects of the

The project was directed by R.K. Mutatkar and S.P. Tare. CSSRL. GMLF. Wardha

control programme, etc., of leprosy have been considered for calculating the knowledge index. By scoring 3 marks to each correct answer, 2 marks to a neutral answer and 1 mark to wrong answer, each respondent could possibly secure a score ranging from a minimum of 6 to a maximum of 18.

$$\text{Knowledge Index} = \frac{\text{Marks secured} - \text{Minimum marks}}{\text{Maximum marks} - \text{Minimum marks}}$$

This index was scaled in 5 categories ranging from 0 to 1. These categories were as follows:

0.0-0.2 0.3-0.4 0.5-0.6 0.7-0.8 0.9-1.0

Thus, the calculated index was further grouped as "high" and "low" for the purpose of cross tabulation.

Characteristics of the Respondents

The socio-demographic characteristics of the respondents show that males, married persons and agricultural labourers were comparatively more in the sample in Orissa than in Andhra Pradesh. On the other hand, the sample consisted of more unmarried persons, people from high castes, illiterates and low income group in Andhra Pradesh than in Orissa.

RESULTS

The knowledge index values, put under five categories is shown in Table 1.

For the purpose of cross tabulation and applying statistical tests, the first three categories *i.e.* (0.0-0.6) are considered as low knowledge group. The categories from 0.7-1.0 are considered as high knowledge group (Table 1).

The high and low knowledge groups of both the States have been cross-tabulated with the demographic variables and the results are presented below:

i. *Knowledge and Sex:* Comparison between the two States shows that 213 (37%) males and 1 (5%) females in Orissa possessed high knowledge, whereas, it is 211 (52%) and 87 (45%) respectively in Andhra Pradesh. Males as well as females of Andhra Pradesh possessed better knowledge than Orissa. The chi-square test shows no association between sex and knowledge in Andhra Pradesh but a significant association between the two variables was observed in Orissa. It is also worth noting that it is males who possessed high knowledge in both the

States.

TABLE 1
KNOWLEDGE AND THE STATE

	0.0-0.2	0.3-0.4	0.5-0.6	0.7-0.8	0.9-1.0	Total
Orissa	3	59	377	186	28	599
Andhra Pradesh			293	277	21	600
Total	3	14	670	463	49	1199

TABLE 2
KNOWLEDGE AND SEX

	Orissa			Andhra Pradesh		
	Low	High	Total	Low	High	Total
..Male	366(63%)	213(37%)	579(100%)	194(49%)	211(52%)	405(100%)
Female	19(95%)	1(5%)	20(100%)	108(55%)	87(45%)	195(100%)
Total	385	214	599	302	298	600

$\chi^2 = 8.50$ (Significant at $P = 0.01$)

2.9485 (Not significant at $P = 0.05$)

ii. *Knowledge and Caste*: The chi-square test shows that there is significant influence of caste on the knowledge levels of the community members in Orissa (Table 3) with 54 per cent of the high caste, 34 per cent of lower caste and 28 per cent of tribals in high knowledge group.

However, there was no significant influence of caste in Andhra Pradesh. Interstate comparison shows that the high caste respondents are almost equally informed in both the States with 54 per cent in Orissa and 49 per cent in Andhra Pradesh possessing high knowledge, whereas, the lower caste respondents of Andhra Pradesh are better informed with 50 per cent, against 34 per cent in Orissa. With reference to tribal population too, it appears that those of Andhra Pradesh are better informed than Orissa with 43 per cent and 28 per cent respectively, possessing high knowledge.

iii. *Knowledge and Educational Status*: There was a significant influence of

education on the knowledge levels of the respondents in both the States. While in Orissa 26 per cent of illiterates, 48 per cent of middle educated and 62.5 per cent of those matric and above have higher knowledge, it was 47 per cent, 53 per cent and 72 per cent respectively in Andhra Pradesh (Table 4), which shows that the influence of education on knowledge levels is more in Orissa than in Andhra Pradesh.

TABLE 3
KNOWLEDGE AND CASTE

ORISSA

Level of Knowledge	High	Middle	Low	Tribes	Others	Total
Low High	39(46%)	3(100%)	256(66%)	87(72%)	-	385
	46(54%)		134(34%)	34(28%)	-	214
Total	85(100%)	3(100)	390(100%)	120(100%)	-	599

$$\chi^2 = 17.57 \text{ (Significant at } P = 0.001)$$

ANDHRA PRADESH

Level of Knowledge	High	Middle	Low	Tribes	Others	Total
Low High	118(51.3%)	-	144(49.8%)	4(57%)	36(50.7%)	302
	112(48.7%)		145(50.2%)	3(43%)	35(49.3%)	298
Total	230(100%)	3(100)	289(100%)	7(100%)	71(100%)	600

$$\chi^2 = 0.1724 \text{ (Not significant at } P = 0.05)$$

iv. *Knowledge and Economic Position:* There was a significant association between economic position and knowledge levels of the respondents in Orissa. A comparison between the two States with reference to rich economic group doesn't show much variation with 61 per cent in Orissa and 58 per cent in Andhra Pradesh possessing high knowledge.. However, in middle economic group it was 47 per cent, 58 per cent respectively in the two States and in low economic group the interstate difference was largest being 29 per cent and 47 per cent in Orissa and Andhra Pradesh respectively. It shows the respondents of low economic group are comparatively better informed in Andhra Pradesh, than their counterparts in Orissa. Indeed, economic position of the respondents did not significantly influence their level of knowledge in Andhra Pradesh.

TABLE 4

KNOWLEDGE AND EDUCATIONAL STATUS ORISSA

Level of Education	Low Knowledge	High Knowledge	Total
Illiterate	255(74%)	88(26%)	343(100%)*(57%)**
Upto Middle	121(52%)	111 (48%)	232(100%)(39%)
Matric and above'	9(37.5%)	15(62.5%)	24(100%)(4%)
Total	385	214	599

χ^2 Value = 37.47 (Significant at $P \ll .001$)

ANDHRA PRADESH

Illiterate	228(53%)	204(47%)	432(100%)(72%)
Upto Middle	64(47%)	73(53%)	-137(100%)(22%)
Matric and above	8(28%)	21 (72%)	29(100%)(4%)
N.A.	2	-	2
Total	302	298	600

$\chi^2 = 7.74$ (Significant at $P = 0.05$) 'Row percentages' "Column percentages

DISCUSSION

When knowledge is imparted to the community members, it is expected to reach all strata of the community in a comprehensible form. However, data presented in this paper show that there is a significant influence of sex of the respondents on their knowledge levels. Higher proportion of males possessing high knowledge over females in both the States shows that knowledge in both the States was not accessible to the males. In comparison with Orissa both males and females of Andhra Pradesh possessed higher knowledge. The lower standards of knowledge of females in both the States could be attributed to a variety of reasons embedded in the culture, determining the status of women in society and their

exposure to public health programmes.

Caste of the community members in Andhra Pradesh has no significant influence on their levels of knowledge, whereas in Orissa this was so. It shows that the health education of any source was reaching certain caste groups more than others in Orissa. While the higher caste community members of both the States are equally informed the lower caste members in Orissa are less informed and tribals are still less informed. It may be noted that the difference in knowledge in different caste groups may be because health workers do not cover the localities of all the castes uniformly, which may be taken into consideration while implementing the programme in rural areas, or the higher caste villagers have better accessibility to better sources of knowledge than their lower caste counterparts.

TABLE 5

Economic Position	Orissa			Andhra Pradesh		
	Low	High	Total	Low	High	Total
Rich	24(39%)	37(61%) (17.28%)	61	18(42%)	25(28%)* (8.44%)**	43
Middle	68(53%)	60(47%) (28.03%)	128	37(42%)	51 (58%) (17.22%)	88
Poor	293(71%)	117(29%) (54.67%)	410	246(53%)	220(47%) (77.32%)	466
N.A.	.	.	.	1	2	3
Total	385	214	599	302	296	600

X² = Value - 32.66764726 (Significant at P = 0.001) 4.775910362 (Not significant at P - 0.05) •Row percentages
"Column percentages

As it could be expected, formal education of the community members had significant influence on their knowledge levels in both Andhra Pradesh and Orissa. While the knowledge levels of community members with middle and above education were more or less same in both the States, the illiterates in Andhra Pradesh possessed higher knowledge than their counterparts in Orissa again showing more uniform population coverage with SET activities in Andhra Pradesh.

Economic status of the community members also played a more significant

role in acquiring the knowledge in Orissa than in Andhra Pradesh. However, less number of the respondents from poor economic group possessed high knowledge in both the States which shows that the knowledge was less accessible to the poor. This should be of serious concern of the programmers. While there is no difference in the knowledge levels of both the States with reference to high and middle economic groups, comparatively very poor proportion of low economic group of Orissa had high knowledge.

CONCLUSIONS

Based on the above discussions the following conclusions may be drawn.

Sex of the community members influences their knowledge levels. The health education activities of NLEP are not accessible to females in both the States. In other words whatever the knowledge imparting element in the community it is not taking females into consideration. Considering the potentials of females in promoting social change the educational interventions should be implemented in such a way to draw their attention ensuring their involvement in the task.

In the study further it was found that the knowledge imparting activities are concentrated only around higher caste community members in Orissa, whereas in Andhra Pradesh, the knowledge was more or less equally accessible to the respondents of all the caste groups. The field workers performing duties at the grassroot level must be guided to educate the people of all the caste groups. As it is found in many other instances the present results also confirmed in both the States that formal education influences the levels of knowledge, resulting in higher knowledge among better educated and lower knowledge among less educated and illiterates. This calls for improving the educational efforts so that the messages communicated are comprehended by the illiterates as well, who constitute nearly as much as 75 per cent of Indian rural population. However, it appears that the messages are better comprehended by illiterates in Andhra Pradesh than in Orissa. Similarly, it was found that knowledge is more accessible to community members from high economic group in both the States. The people of low economic group in rural population of both the States were neglected and this was more so in Orissa.

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किसी भी प्रकार के जन स्वास्थ्य कार्यक्रम के बारे में यह अपेक्षा की जाती है कि वह कार्यक्रम समान रूप से समुदाय लोगों की पहुंच में होना चाहिए तथा कार्यक्रम के माध्यम से जो सूचनायें दी जाती हैं वह सभी व्यक्तियों की समझ में आ सकें। राष्ट्रीय कुष्ठ रोग उन्मूलन कार्यक्रम भी एक ऐसा ही कार्यक्रम है जो भारत में पिछले चार दशकों से भी अधिक समय से समुदाय को स्वास्थ्य संबंधी शिक्षा प्रदान कर रहा है। कार्यक्रम के लक्ष्य निर्धारित करने के लिए इस कार्यक्रम के लक्ष्य निर्धारित करने के लिए इस कार्यक्रम के परिणामों को निश्चित करने के लिए सामाजिक स्तरीकरण की भूमिका का पता लगाना बहुत जरूरी है। कुष्ठ रोग और कुष्ठ रोग उन्मूलन कार्यक्रम के बारे में जानकारी स्तर का आंकलन किया गया था और प्राप्त सूचनाओं की उनकी जनांकिकीय विशिष्टताओं के संदर्भ में समीक्षा की गई थी।

अध्ययन से प्राप्त निष्कर्षों से पता चलता है कि सामान्यतः उत्तरदाताओं के जानकारी स्तर और उनके लैंगिक, शैक्षिक तथा आर्थिक स्तर जैसे विभेदकों में परस्पर महत्वपूर्ण संबंध हैं तथा दो राज्यों के उत्तरदाताओं की जानकारी में इन विभेदकों के प्रभाव में भिन्नता है। ऐसा उनकी सांस्कृतिक विशेषताओं के कारण हो सकता है तथा इस घटक को भी कार्यक्रम की सफलता के विचारार्थ रखा जाना चाहिए।

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ANALYSIS AND ASSESSMENT OF KNOWLEDGE ABOUT AIDS AMONG STUDENTS OF GANDHIGRAM RURAL UNIVERSITY

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ABSTRACT

This paper deals with the level of knowledge about AIDS among 599 students, including 307 males and 292 females, of Gandhigram Rural University, Tamil Nadu. The study has revealed that at least 50 per cent of the student community is not fully aware of the mode of transmission of AIDS. Girl students, urban students and the students of faculties of health and agriculture have better knowledge about AIDS. The variables like age, sex, medium of learning and the courses in which they study had influenced the knowledge level of students about AIDS.

Indians constitute one-seventh of the world population. About half of them fall below the age of 25, and majority of them go to schools, colleges and universities for higher education. It is clear that learning for life is gaining momentum. However, as we live in an era of population explosion, environmental degradation and diseases like AIDS, it is important to acquire knowledge about them by all of us to lead safe and healthy life. Now awareness of AIDS by students is getting more importance as they are more vulnerable to this killer disease due to their age and social behaviour.

Now there are more than 7121 colleges and 159 universities in India imparting education to thousands of students every year¹. Many institutions like National Council of Educational Research and Training, New Delhi, and similar other organisations are no doubt doing excellent work in areas like environmental and population education. Recently the Ministry of Human Resource Development and Youth Affairs has started a programme "University Talks Against AIDS". The time has come to include AIDS as one of the subjects to be taught on the campus.

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Only a few have attempted to study the level of knowledge of AIDS among students of different socio-economic backgrounds² and organised programmes to improve their knowledge of AIDS.

At the micro level, most of the parents do not teach their children about various aspects of reproductive health care and they learn about this mainly from sources other than their parents. Therefore, learning for life in educational institutions becomes more important than learning for earning.

Hence, the study was aimed at assessing the level of knowledge about AIDS among the university level students of different socio-economic backgrounds so as to suggest a methodology to impart knowledge about AIDS to students.

MATERIALS AND METHOD

This study was undertaken in the beginning of the academic year (1993-94) by contacting 50 per cent of the total students individually who are studying in the Gandhigram Rural University in Tamil Nadu. Altogether 599 students from different departments, irrespective of their sex were interviewed using an interview schedule and data were analysed, using SPSS package.

RESULTS

Out of the total of 1320 students enrolled in the Institute, 599 including 307 male and 292 female students constituted the sample of the study (Table 1).

TABLE 1

DISTRIBUTION OF RESPONDENTS BY SEX AND FACULTY

Faculty	Sex		Total
	Male	Female	
Health	55 (17.8)	51 (19.0)	106 (19.5)
Agriculture	67 (21.8)	42 (14.0)	109 (17.5)
Science	50 (16.0)	75 (25.0)	125 (20.0)
Arts	135 (44.4)	124 (42.0)	259 (43.0)
Total	307 (100.0)	292 (100.0)	599 (100)

Out of the total of 307 male students, 43.9 per cent of them specified correctly all modes of transmission of AIDS as compared to 51 per cent of girl

Students whereas 35.5 per cent said that it spreads only by sexual act and 14 per cent by blood and blood products while 5.3 per cent said to have no idea about the mode of transmission (Table 1-A). The study has shown that half of the student community is not fully aware of the mode of transmission of AIDS. Further analysis of data (Table 2, 3) have shown that there is a significant difference in the level of knowledge about AIDS by sex. 15 per cent of female students had a high score as compared to only 6.6 per cent of male students.

When the level of knowledge about the AIDS was analysed, coursewise, it was found that (Table 4, 5) the students who belong to the faculties of health and agriculture have better knowledge than the students of the faculties of science and arts. Further analysis indicated that biology background could be one of the reasons for the difference in the level of knowledge about AIDS among the students (Table 6, 7).

It was also noted that urban students had an edge over their rural counterparts in knowledge about AIDS (Table 8, 9). Urban students answered questions on all aspects of AIDS better than their rural counterparts. But the edge was not significant.

TABLE 1 A

PERCENTAGE OF STUDENTS WHO ANSWERED CORRECTLY ABOUT MODE OF SPREAD OF AIDS BY SEX

Mode of Spread of AIDS	Sex		Total
	Male	Female	
Blood and blood products only	43 (14.0)	25 (8.6)	68 (11.4)
Syringes and needles only	4 (1.3)	12 (4.1)	16(2.7)
Sexual act only	109 (35.5)	77 (26.3)	186 (31.0)
Blood, its products, syringes, needles and sexual act	135 (43.9)	149 (51.0)	284 (47.4)
Don't know	16 (5.3)	29 (10.0)	45 (7.5)
Total	307 (100.0)	292 (100.0)	599 (100.0)

The medium of learning at higher secondary school level had also influenced knowledge about AIDS (Table 10, 11) and the difference in level of knowledge between Tamil and English medium at high school was found to be statistically significant.

Student's age too had influenced the level of knowledge about AIDS (Table 12, 13). Highest scores were obtained by students aged 19-20 years as compared with those aged less than 18 years or 23 years and above.

TABLE 2
PERCENTAGE OF STUDENTS WHO ANSWERED CORRECTLY ABOUT AIDS BY SEX (n=599,
Males=307, Females=292)

Question about AIDS	Male		Female		Combined	
	n	%	n	%	n	%
AIDS a communicable disease'	209	68.1	151	51.7	360	60.00
AIDS a STD	212	88.6	240	82.2	512	86.47
Causative agent	238	77.5	200	68.5	438	76.50
AIDS a killer disease	280	91.2	224	76.7	504	84.00
AIDS has no signs and symptoms of its own	176	57.3	121	41.4	297	49.50
Using condom can prevent AIDS	237	77.2	131	44.9	368	61.50
Sex with single partner can prevent AIDS	204	66.4	171	58.6	375	63.50
AIDS can be cured	224	73.0	201	68.8	425	70.90
Expansion of AIDS	109	33.0	108	37.0	208	33.50

TABLE 3
KNOWLEDGE ABOUT AIDS BY SEX

Level of Knowledge	Score	Sex		Total
		Male	Female	
Low	Less 7	46 (15)	85 (29)	131 (22).
Moderate	8-14	210 (68.4)	163 (56)	373 (62)
High	14-20	51 (6.6)	44 (15)	95 (16)
Total	20	307 (100)	292 (100)	599 (100)

Pearson Chi-Square 17.684 df=2 p=.00014

Mantel-Haenszel test for linear Association 9.81 df=1 p=.001

TABLE 4

PERCENTAGE OF STUDENTS WHO ANSWERED CORRECTLY ABOUT AIDS BY FACULTY

Questions about AIDS	Faculty							
	Science n=125		Hearth n=106		Agriculture n=109		Arts n=259	
AIDS a communicable disease	61	48.8	75	70.8	73	67.0	151	58.3
AIDS a STD	105	84.0	96	90.6	99	90.8	212	81.9
Causative agent	87	69.6	82	77.8	98	89.0	171	66.0
AIDS a killer disease	104	80.8	94	88.8	95	87.0	214	82.0
AIDS has no signs and symptoms, of its own	60	48.0	54	50.9	80	73.0	103	40.0
Using condom can prevent AIDS	66	52.8	64	60.0	80	73.0	158	61.0
Sex with single partner can prevent AIDS	78	62.0	81	77.0	65	60.0	151	58.0
AIDS cannot be cured	87	69.0	82	78.0	83	76.0	173	66.8
Expansion of AIDS	49	40.0	75	70.6	33	30.0	95	36.0

TABLE 5
KNOWLEDGE ABOUT AIDS BY FACULTY

Level of Knowledge	Score	Faculty				Total
		Health	Agriculture	Science	Arts	
Low	Less 7	14(13)	13(12)	29(23)	75(29)	131(22)
Moderate	8-14	64(60)	91(83)	75(60)	143(55)	373(62)
High	14-20	28(27)	5(5)	21(17)	41(16)	95(16)
Total	20	106(100)	109(100)	125(100)	259(100)	599(100)

Pearson Chi-square = 40.97 df = 6 p = .00000

Mentet Haenszel Test for Linear Association 11.33 df = 1, p = .0007

TABLE 6
PERCENTAGE OF STUDENTS WHO ANSWERED CORRECTLY ABOUT AIDS BY THEIR BIOLOGY
SUBJECT AT HIGHER SECONDARY LEVEL

Question about AIDS	Biology subject at +2			
	Studied n=359		Not studied n=240	
AIDS a communicable disease	226	63.0	134	55.5
AIDS a STD	319	88.8	193	80.0
Causative agent	294	82.0	144	60.0
AIDS a killer disease	306	85.2	198	82.0
AIDS has no signs and symptoms of its own	193	53.8	104	43.3
Using condom can prevent AIDS	226	63.0	142	59.0
Sex with single partner can prevent AIDS	237	66.0	138	57.5
AIDS cannot be cured	265	73.8	160	66.7
Expansion of AIDS	132	37.0	76	32.0

TABLE 7
KNOWLEDGE ABOUT AIDS BY THEIR SUBJECT BIOLOGY AT HIGHER SECONDARY LEVEL

Level of Knowledge	Score	Biology subject		Total
		Studied	Not studied	
Low	Less 7	54(15)	77(32)	131(22)
Moderate	8-14	251(70)	12(54)	373(62)
High	14-20	54(15)	41(14)	95(16)
Total	20	359(100)	240(100)	599(100)

Pearson Chi-Square 27.8907 df = 2 p=.00000 Mantel Haenszel test for Linear Association 8.64
df = 1 p = .0032

TABLE 8
PERCENTAGE OF STUDENTS WHO ANSWERED CORRECTLY ABOUT AIDS BY THEIR RESIDENCE

Question about AIDS	Place of Residence			
	Rural N.223		Urban N=376	
AIDS a communicable disease	128	57.4	232	61.7
AIDS a STD	191	85.7	321	85.4
Causative agent	127	57.4	232	61.7
AIDS a killer disease	185	83.0	319	84.0
AIDS has no signs and symptoms of its own	104	47.3	198	53.4
Using condom can prevent AIDS	130	60.4	238	63.2
Sex with single partner can prevent AIDS	127	57.0	248	66.0
AIDS cannot be cured	149	66.8	276	73.4
Expansion of AIDS	61	27.4	147	39.4

TABLE 9
KNOWLEDGE ABOUT AIDS BY PLACE OF RESIDENCE

Level of Knowledge	Score	Place of Residence		Total
		Rural	Urban	
Low	Less 7	53(23.8)	78(21)	131(22)
Moderate	8-14	148(66.2)	225(60)	373(62)
High	14-20	22(10)	73(19)	95(16)
Total	20	223(100)	376(100)	599(100)

Pearson Chi-Square 9.59099 df = 2 p=.00827 Mantel Haenszel test for Linear Association 5.91 df = 1 p = .015

TABLE 10**PERCENTAGE OF STUDENTS WHO ANSWERED CORRECTLY ABOUT AIDS BY MEDIUM OF LEARNING**

Question about AIDS	Medium of Learning			
	Tamil N=371		English N=228	
AIDS a communicable disease	218	58.0	142	62.0
AIDS a STD	310	80.9	198	86.5
Causative agent	264	71.2	174	76.3
AIDS a killer disease	308	83.0	196	86.0
AIDS has no signs and symptoms of its own	192	52.0	105	48.0
Using condom can prevent AIDS	227	61.2	141	61.8
Sex with single partner can prevent AIDS	217	58.5	158	69.3
AIDS cannot be cured	255	68.7	170	74.6
Expansion of AIDS	104	28.0	104	45.6

TABLE 11**LEVEL OF KNOWLEDGE ABOUT AIDS BY MEDIUM OF LEARNING**

Level of Knowledge	Score	Medium of Learning		Total
		Tamil	English	
Low	Less 7	92(25)	39(17)	131(22)
Moderate	8-14	243(65)	130(57)	373(62)
High	14-20	36(10)	59(26)	95(16)
Total	20	371(100)	228(100)	599(100)

Pearson CN-Square 28.744 df = 2 p=.0000 Mantel Haenszel test for Linear Association 21.48 df = 1 p = .0000

TABLE 12
PERCENTAGE OF STUDENTS WHO ANSWERED CORRECTLY ABOUT AIDS BY AGE

Question about AIDS	Age					
	Less 18 n=183		19-22 n=363		23+ n=53	
AIDS a communicable disease	98	52.5	226	62.3	38	71.7
AIDS a STD	148	80.5	314	86.5	50	94.3
Causative agent	122	66.7	274	75.5	42	79.2
AIDS a killer disease	139	76.0	318	87.6	47	88.7
AIDS has no signs and symptoms of its own	90	49.0	162	50.0	25	47.2
Using condom can prevent AIDS	94	51.4	237	65.3	37	69.8
Sex with single partner can prevent AIDS	92	50.3	245	67.5	38	71.7
* AIDS cannot be cured	124	67.8	260	71.6	41	77.4
Expansion of AIDS	35	19.1	147	40.5	26	49.1

TABLE 13
LEVEL OF KNOWLEDGE

Level of Knowledge	Score	Age			Total
		Less 18	19-22	23+	
Low	Less 7	140(33)	293(17)	24(13)	457(22)
Moderate	8-14	31(59)	59(68)	24(34)	114(62)
High	14-20	12(8)	11(15)	5(53)	28(16)
Total	20	183(100)	363(100)	53(100)	599(100)

Pearson Chi-Square 34.29 df = 4 p=.0000

Mantel Haenszel test for Linear Association 10.53 df = 1 p = .001

DISCUSSION

About 80 per cent of the students irrespective of their socio-economic background know that AIDS is a killer and a sexually transmitted disease. But more than one-third of them do not know that AIDS is a communicable disease, its prevention, treatment and even expansion for the acronym "AIDS". Even students were not aware of the signs, symptoms and the causative agents of AIDS which support the findings of Sharma, *et al.* (1991) and Balaganesh, *et al.* (1992). Statistically significant variables like age, sex, biology background, medium of learning and the course in which the students study had influenced the level of knowledge on AIDS. The study suggests that such variables must be brought to the notice of health educators who impart knowledge on AIDS to the student community at the university level. In addition, a basic course on reproductive biology to non-science students would certainly help to acquire better knowledge about AIDS. Reinforcement to the students whose medium of learning was the mother tongue and to the students who hail from rural areas are very essential to ensure better results while imparting knowledge on AIDS.

लक्ष्य

प्रस्तुत लेख में तमिलनाडू राज्य के गांधीग्राम ग्रामीण विश्वविद्यालय के 599 छात्रों, जिनमें 307 छात्र और 292 छात्राएँ शामिल हैं। की एड्स संबंधी जानकारी के स्तर पर प्रकाश डाला गया है। अध्ययन से प्राप्त निष्कर्षों से पता चलता है कि कम से कम 50 प्रतिशत छात्रों को इस बारे में पर्याप्त जानकारी नहीं है कि एड्स का संक्रमण किस प्रकार होता है। छात्राओं, शहरी छात्राओं और स्वास्थ्य एवं कृषि संकायों के छात्रों को एड्स के बारे में कहीं अधिक अच्छी जानकारी उपलब्ध थी। इस अध्ययन से यह निष्कर्ष भी सामने आया है कि आयु-भेद, लिंग-भेद, शिक्षा प्राप्ति का माध्यम तथा जिन पाठ्यक्रमों में वह अध्ययनरत है उनका स्वरूप आदि ऐसे विभेदक घटक हैं जिन्होंने एड्स के बारे में छात्रों के जानकारी स्तर को प्रभावित किया था।

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KNOWLEDGE ABOUT LEPROSY AMONG THE FAMILIES OF DEFORMED LEPROSY PATIENTS IN CASTE GROUPS

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ABSTRACT

Family is a source of social support to its patients especially of chronic diseases, such as leprosy. Knowledge about illness helps a family to detect it and guide their patients in seeking treatment and its compliance and in utilisation of available facilities for their betterment. This paper seeks to understand the extent of knowledge of the families of deformed leprosy patients about their disease. A sample of 150 families belonging to Forward, Backward *and* Scheduled Caste groups from two districts in Tamil Nadu was selected for the study of their knowledge about leprosy in its various components - symptoms, causation, transmission, treatment, rehabilitation and cure. The results showed that most of the families (90%) were aware of the importance of treatment, while very few families (37%) knew about rehabilitation and transmission (28%). There was a significant difference in the extent of knowledge about rehabilitation and cure among the families in caste groups. A greater thrust for rehabilitation of leprosy patients and education of patients and their families about the facilities available and curability of leprosy is called for.

Family is a source of social support to its members especially those who are patients of chronic illness, and more so, a stigmatised disease such as leprosy which is as much a social problem as a medical problem. It was found that knowledge of the affected family about leprosy was significantly associated with their leprosy patients attendance at treatment clinics¹. Lack of treatment compliance results in aggravation of the disease and manifestation of deformities causing social, economic and psychological problems to the patient and his family. A family facing socio-economic problems due to their deformed leprosy patient

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accepts him less than a family not facing such problems. Thus, the knowledge of a leprosy affected family about the disease is a key factor in treatment compliance of its leprosy patient which helps in arresting further progress of disease and manifestation of deformities and disabilities leading to low acceptance in the family.

A family's accessibility to information and health resources, educational level, occupation, values, culture and life-style depends upon its position in social hierarchy structured broadly by an elaborate caste system in India. In a way, social hierarchy reflects the life-situation of its various caste groups. Very little is known about the role of caste in morbidity^{3,6} and more so, in the stigmatised disease of leprosy. It is, therefore, of interest to understand the extent of knowledge about leprosy among the families of deformed patients in various caste groups. Though various studies on knowledge of leprosy patients about their disease are available^{7,13}, there is a dearth of such studies on the affected families and more so, of deformed patients. This paper attempts to fill this gap.

OBJECTIVE

The objective of this study is to understand the extent of knowledge about leprosy in its various aspects - symptoms, cause, transmission, treatment, rehabilitation and cure - among the families of deformed leprosy patients in various caste groups.

MATERIALS AND METHOD

The basic data for this study were drawn from the project "Acceptance level of leprosy patients in the family"^{*}, conducted by the Centre for Social Science Research on Leprosy, Gandhi Memorial Leprosy Foundation, Wardha during 1989-90 and the same has been reanalysed.

Two districts - one with the highest prevalence (South Arcot, Prevalence Rate 16.4/1000) and the other with the lowest prevalence (Kanyakumari, Prevalence Rate 4.8/1000) were selected for the study. Both the districts were under monotherapy at the time of investigation. In each district, two leprosy control units (LCUs) - one in an urban and the other in a rural area were selected using the same prevalence criteria. A sample of 500 patients and their families drawing 125 from each control unit were selected through systematic random sampling method. Of the 500 sample families, 150 (30%) were having deformed patients. For the present study, the data on the families of these deformed patients were

^{*}The project was directed by A.M. Kurup, Chief Research Scientist, CSSRL, GMLF, Wardha.

analysed. The data were collected from the head of the family through an inter, low schedule.

The caste status of all the families was categorised into three groups based on their status approximation: (i) Forward Caste group consisting of economically, educationally and socially dominant castes occupying the upper stratum of society; (ii) Scheduled Caste group which are mostly poor, landless, illiterate, engaged in labour or less remunerative occupations forming the lowest stratum; and (iii) Backward Caste group comprising the rest of the castes which are mostly artisans, small peasants, etc. less literate, constituting the middle stratum of the society.

RESULTS

Characteristics of the Patients In the Sample Families

A look at the medical characteristics of the patients in the sample families reveals that majority of them belonged to high endemic area (65.3%), multi-bacillary type of leprosy (74.7%), had been suffering from the disease for more than 10 years (53.3%) and were severely deformed (77.3%). The social variables indicate that most of them were males (72%), above 35 years of age (80%) and married (70%). Nearly one-third of them changed their occupation due to their disease. Majority of the families (57.3%) faced social and economic problems due to their leprosy patients. Similarly, majority of the families (54%) did not accept their patients well. These variables show the extent of opportunities for exposure of the affected families to the disease of their patients (Table 1).

Knowledge

The true response for a set of statements under each component of knowledge - symptoms, causation, transmission, treatment, rehabilitation and cure, are presented in Tables 2-7. A summary of the mean number of families having knowledge about each of these components with the X^2 values is presented in Table 8. Broadly, majority of the families (56.5%) had correct knowledge about leprosy. Of all the components of knowledge most of the families were aware of the importance of regular treatment and the consequences of its delay (89.4%) followed by symptoms (69.7%), cure (66.3%), causation (49.3%), rehabilitation (36.8%) and transmission (27.7%).

TABLE 1
CHARACTERISTICS OF THE PATIENTS IN THE SAMPLE FAMILIES

CHARACTERISTICS OF THE PATIENTS IN THE SAMPLE FAMILIES			
Variable	Category	Frequency (N = 150)	
		, No.	Percentage
A. Medical			
Endemicity	High	98	(65.3)
	Low	52	(34.7)
Type of Leprosy	MB	112	(74.7)
	PB	38	(25.3)
Duration of Disease	< 5 years	31	(20.7)
	5-10 years	39	(26.0)
	> 10 years	80	(53.3)
Deformity	Moderate	34	(22.7)
	Severe	116	(77.3)
B. Social			
Sex	Male	108	(72.0)
	Female	42	(28.0)
Age Group	< 35 years	28	(18.7)
	36-50 years	60	(40.0)
	> 60 years	62	(41.3)
Marital Status	Unmarried	23	(15.3)
	Married	105	(70.0)
	Widowed	18	(12.0)
	Separated	4	(02.7)
Change in Occupation	No	85	(56.7)
	Yes	47	(31.3)
	N.A.	18	(12.0)
Social and Economic problems faced	Yes	86	(57.3)
	No	64	(42.7)
Acceptance in the Family	Low	81	(54.0)
	High	69	(46.0)

A. Symptoms, Causation and Transmission

Though a fairly large number of families were having good knowledge about symptoms (69.7%), comparatively fewer number of families were aware of causation (49.3%) and more so, transmission (27.7%). Similarly, while most of them knew that leprosy starts with a patch (72.7%), comparatively less number of them were aware that these do not itch and pain (63%). Majority of them were aware (56%) that leprosy is caused by germs, a generic term used by people to the invisible micro-organisms in the environment. On the other hand very few families (22.7%) knew that prolonged contact with a leprosy patient can also cause leprosy. Similarly, knowledge about transmission was not only poor but also the least of all components of knowledge (27.7%) (Tables 2-4). The results suggest that they had a lot of misconceptions about causation, transmission and symptoms.

TABLE 2
KNOWLEDGE ABOUT SYMPTOMS OF LEPROSY AMONG THE FAMILIES OF DEFORMED LEPROSY PATIENTS IN CASTE GROUPS

Symptom	Scheduled Castes (N=37)	Backward Castes (N = 102)	Forward Castes (N=11)	Total (N = 150)
Leprosy starts with a patch	23 (62.2)*	76 (74.5)	10 (90.9)	109 (72.7)
Anaesthesia on limbs	24 (64.8).	80 (78.4)	10 (90.9)	114 (76.0)
Patches of leprosy do not itch and pain	19 (51.3)	66 (64.7)	10 (90.9)	95 (63.3)
Oily and shiny appearance on the face	22 (59.4)	73 (71.5)	10 (90.9)	105 (70.0)
Loss of eye brows	21 (56.7)	69 (67.6)	10 (90.9)	100 (66.6)
Mean	21.8 (58.9)	72.8 (71.4)	10 (90.9)	104.6 (69.7)

* Percentage in parenthesis

B. Treatment and Rehabilitation

Most of the families were fairly aware of the usefulness of early and regular treatment and the consequences of its default. On the other hand, knowledge about rehabilitation is very poor in general (36.8%), and more so about reconstructive surgery facilities (21.3%), vocational training (22.0%) and supply of artificial limbs (30.7%). Since most of the patients' in the study families were severely deformed, males, married and in the productive age-group, knowledge about vocational training, artificial limbs and reconstructive surgery helps them to seek corrective steps and utilise the facilities for betterment of their patients. Nearly one-third of the patients changed their occupation mostly due to their deformities. Knowledge about vocational training would help them to seek appropriate skills to get a suitable job for their patients (Tables 5 and 6).

TABLE 3
KNOWLEDGE ABOUT CAUSATION OF LEPROSY AMONG THE FAMILIES OF DEFORMED LEPROSY
PATIENTS IN CASTE GROUPS

Causation	Scheduled Castes (N=37)	Backward Castes (N = 102)	Forward Castes (N = 11)	Total (N = 150)
Leprosy is caused by germs	20 (54.0)*	57 (55.8)	7 (63.6)	84 (56.0)
Leprosy is not hereditary	22 (59.4)	69 (67.2)	9 (81.8)	100 (66.7)
Leprosy is not a curse of God	11 (29.7)	58 (56.8)	9(81.8)	78 (52.0)
Prolonged contact with a leprosy patient	10 (27.0)	21 (20.5)	3 (27.2)	34 (22.7)
Mean	15.7 (42.4)	51.2 (50.2)	7 (63.6)	74 (49.3)

C. Cure

While most of the families were aware that leprosy can certainly be cured (81.3%), half of the families believed that cure means disappearance of deformity (49.7%). The families need to be educated about the fact that the deformities of their patients will not disappear even after they are declared RFT (released from

treatment). This would prepare them psychologically to adjust with the changed body image of their patients (Table 7).

D. Caste Status and Knowledge

Of the three caste groups, the mean number of families having knowledge about leprosy in general is the least in the Scheduled Caste group (48.1%) followed by Backward (57.8%) and Forward Caste (72.7%) groups (Table 8). Chi-square test was applied to see the significance of knowledge (variation) among the three caste groups. The difference in total knowledge among these groups was not found statistically significant, though the extent of knowledge about leprosy among the families progressively increased from the Scheduled to Backward and Forward Caste groups.

TABLE 4

KNOWLEDGE ABOUT TRANSMISSION OF LEPROSY AMONG THE FAMILIES OF DEFORMED LEPROSY PATIENTS IN CASTE GROUPS

Transmission	Scheduled Castes (N-37)	Backward Castes (N = 102)	Forward Castes (N-11)	Total (N = 150)
Through prolonged skin to skin contact	15 (40.5)*	26 (25.4)	3 (27.3)	44 (29.3)
Sharing of dothes, utensils etc	14 (37.8)	21 (20.5)	4 (36.3)	39 (26.0)
Mean	14.5 (39.2)	23.5 (23.0)	3.5 (31.8)	41.5 (27.7)

In individual components of knowledge, similar observation was made with respect to symptoms, causation, and treatment and control. However, knowledge variation about rehabilitation and cure were found statistically significant ($P = .01$ and $.02$ respectively). Of the three caste groups, the Scheduled Caste group families were least aware of rehabilitation facilities for leprosy patients (16.7%), followed by Backward (40.5%) and Forward (69.1%) Caste groups. Incidentally, awareness of rehabilitation facilities among the Scheduled Caste families is not only the least but also in all other aspects of knowledge as compared to other caste groups. They were known little about vocational training centres (5.4%), reconstructive surgery (8.1 %) and supply of artificial limbs (10.8%). They were also

least aware that leprosy deformities can be corrected (24.3%) (Table 6).

Of the three caste groups, about three-fourths of families in the Scheduled Caste group (73%) faced socio-economic problems due to their deformed leprosy patients followed by Backward (53%) and Forward (45%) Caste groups. This shows need for awareness and utilisation of rehabilitation facilities in general and more so, among the Scheduled Caste families, the worst affected.

About cure, majority of the families in the Scheduled Caste group (62.2%) were not aware that deformities will not disappear with cure (RFT) followed by Backward (45%) and Forward (36%) Caste groups. Similarly, they were less hopeful that leprosy can certainly be cured (43%), followed by Backward Caste group (12%). In contrast, all the Forward Caste group families were aware that it can certainly be cured (Table 7).

TABLE 5
KNOWLEDGE ABOUT TREATMENT AND CONTROL OF LEPROSY AMONG THE FAMILIES OF DEFORMED LEPROSY PATIENTS IN CASTE GROUPS

Treatment	Scheduled Castes (N=37)	Backward Castes (N = 102)	Forward Castes (N = 11)	Total (N= 150)
Early treatment cures leprosy	29 (78.3)*	94 (92.1)	10 (90.9)	133 (88.7)
Treatment arrests progress of disease	32 (86.4)	95 (93.1)	11 (100)	138 (92.0)
Treatment prevents the disease from spreading to others	32 (86.4)	92 (90.1)	11 (100)	135 (90.0)
Delay in treatment causes deformity	31 (83.8)	90 (88.2)	10 (90.9)	131 (87.3)
Irregular treatment delays cure	32 (86.4)	91 (89.2)	11 (100)	134 (89.3)
Mean	31.2 (84.3)	92.4 (90.5)	10.6 (96.3)	134.2 (89.4)

* Percentage in parenthesis

The misconception that leprosy is a curse of God still prevailed in a large majority of the families in the Scheduled Caste group (70%) followed by Backward (43%) and Forward caste groups (18%) (Table 3) (P .01).

DISCUSSION

The results indicate that there is a greater need to educate the families of leprosy patients about rehabilitation and cure in particular and causation, transmission, symptoms and treatment including disability management in general! Knowledge about rehabilitation and cure is more important as the patients in the sample families were all deformed and more so, with greater severity and long duration. Similarly, they need to be widely educated that deformities can be corrected and that they will not disappear with RFT.

TABLE 6

KNOWLEDGE ABOUT REHABILITATION FACILITIES FOR LEPROSY PATIENTS AMONG THE FAMILIES OF DEFORMED PATIENTS IN CASTE GROUPS

Rehabilitation facilities	Scheduled Caste (N = 37)	Backward Castes (N = 102)	Forward Castes (N = 11)	Total (N = 150)
Leprosy deformities can be corrected through operation	9 (24.3)*	44 (43.1)	8 (72.7)	61 (40.7)
Reconstructive surgery centres	3 (8.1)	23 (22.5)	6 (54.5)	32 (21.3)
Supply of artificial limbs	4 (10.8)	34 (33.3)	8 (72.7)	46 (30.7)
Vocational training centres	2 (5.4)	25 (24.5)	6 (54.5)	33 (22.0)
Leprosy hospital/ leprosarium	13 (35.1)	81 (79.4)	10 (90.9)	104 (69.3)
Mean	6.2 (16.7)	41.4 (40.5)	7.6 (69.1)	55.2 (36.8)

* Percentage in parenthesis

Studies have brought out that surgical correction of deformities of leprosy is most rewarding in improving body image and erosion of stigma, functional 'capabilities and reduction of psychiatric morbidity and acceptance of patients in the family. This assumes greater significance in view of the fact that most of the patients in the sample families are males .and of productive age group. Rehabilitation through economic activities not only raises the income of the family but also respect and recognition for the patient in the family¹⁸. Thus, awareness of rehabilitation facilities will greatly help the family to take appropriate corrective measures so that social, economic and psychological problems can be eliminated or reduced and acceptance of the patients will be greatly enhanced.

TABLE 7

KNOWLEDGE ABOUT CURE OF LEPROSY AMONG THE FAMILIES OF DEFORMED LEPROSY PATIENTS IN CASTE GROUPS

Cure	Scheduled Castes (N = 37)	Backward Castes (N = 102)	Forward Castes (N = 11)	Total (N = 150)
Leprosy can certainly be cured Cure does not mean disappearance of deformity	21 (56.7)* 14 (37,8)	90 (88.2) 56 (54,9)	11 (100) 7 (63,6)	122 (81.3) 77 (51.3)
Mean	17.5 (47.2)	73 (71.5)	9 (81.8)	99.5 (66.3)

* Percentage in parentheses

The knowledge variation in various aspects of leprosy among the three caste groups can be attributed to differences in their educational background, accessibility to information, outreach of health education in leprosy programme, etc. This brings out the need to reach health education to all caste groups with greater vigour to dispel the myths about causation, transmission, symptoms, cure and to enhance knowledge about facilities for rehabilitation. The health education programme needs to take note of the deficiency in various aspects of knowledge among the three caste groups and should remove them. This would help in detection of suspected cases and put them to treatment so that further progress of the disease and deformities and transmission to other members in the society can be prevented.

In view of the goal of elimination of leprosy by 2000 AD as a public health problem in India, a multi-pronged strategy has been adopted by the Government. One of the approaches of this strategy is education of families and community to extend their support to leprosy patients for their regular treatment and social and economic rehabilitation¹⁷. It has been brought out clearly in this study that though knowledge about treatment is fairly good (90%), knowledge about rehabilitation (37%) is very poor among the families of deformed leprosy patients. This calls for a concerted effort in the National Leprosy Eradication Programme to educate the families of deformed leprosy patients, more so, of Scheduled Castes, about rehabilitation measures and certainty of cure of their patients in particular, and other aspects of knowledge in general. In view of the rapid decline of prevalence of leprosy with the introduction of Multi-Drug Therapy (MDT) in early 80s, rehabilitation of the deformed leprosy patients numbering around 3 lakhs in the country assumes significance. Adequate thrust needs to be given in the programme both to create facilities for rehabilitation of leprosy patients and to educate their families about these facilities and their support for social and economic rehabilitation of their patients.

TABLE 8
MEAN NUMBER OF FAMILIES HAVING KNOWLEDGE ABOUT VARIOUS
ASPECTS OF LEPROSY IN CASTE GROUPS

Knowledge	Scheduled Castes (N = 37)	Backward Castes (N = 102)	Forward Castes (N=11)	Total (N = 150)	χ^2	P Value
1. Symptoms	21.8 (58.9*)	72.6 (71.4)	10 (90.0)	104.6 (69.7)	4.52	NS
2. Causation	15.7 (42.7)	51.2 (50.2)	7 (63.6)	74 (49.3)	1.64	NS
3. Transmission	14.5 (39.2)	23.5 (23.0)	3.5 (31.8)	41.5 (27.7)	3.97	NS
4. Treatment and control	31.2 (84.3)	92.4 (90.5)	10.6 (96.3)	134.2 (89.4)	1.73	NS
5. Rehabili- tation	6.2 (16.7)	41.4 (40.5)	7.6 (69.1)	55.2 (36.8)	11.92	0.01
6. Cure	17.5 (47.2)	73 (71.5)	9 (81.8)	99.5 (66.3)	8.44	0.02
Total	17.8 (48.1)	59.0 (57.8)	8.0 (72.7)	84.8 (56.5)	3.05	NS

* Percentage in parentheses NS = Not significant

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Lkkjk'k

जीर्ण रोगों, विशेष रूप से कुष्ठ रोग जैसी भयानक बीमारी की दशा में समाज में रोगी के लिए उसका परिवार सबसे बड़ा सहारा होता है। रोग के बारे में जानकारी होने से, परिवार के लोगों को अपने रोगी की बीमारी का शीघ्र निदान कराने, उसे सही उपचार दिलाने तथा उसकी बेहतरी के उपचार के लिए उपलब्ध सेवाओं को उपयोग कराने में मदद मिलती है। प्रस्तुत लेख में कुष्ठ रोग से पीड़ित रोगियों के परिवारों को रोग के बारे में जानकारी की सीमा का पता लगाने का प्रयास किया गया है। कुष्ठ रोग और इस रोग के लक्षणों, रोग के कारणों, रोग की संक्रमण प्रणाली, रोग के निदान, रोगियों के पुर्नवास और उपचार संबंधी विभिन्न घटकों के बारे में जानकारी प्राप्त करने के लिए अध्ययन हेतु तमिलनाडू राज्य के दो जिलों से उन्नत जाति, पिछड़ी जाति और अनुसूचित जनजाति के 150 परिवारों को चुना गया था। अध्ययन से प्राप्त परिणामों से पता चलता है कि अधिकांश परिवार (90 प्रतिशत) रोग का इलाज कराए जाने के महत्व के बारे में पूर्णतः जागरूक थे, जबकि थोड़े से परिवारों (37 प्रतिशत) को रोगियों के पुर्नवास के बारे में आवश्यक जानकारी थी। रोगियों के पुर्नवास और रोग के उपचार के संबंध में विभिन्न जाति-समूहों के परिवारों की जानकारी में उल्लेखनीय अन्तर देखने में आया था। कुष्ठ रोग से पीड़ितों के पुनःस्थापन, रोगियों तथा उनके परिवारों को रोग संबंधी आवश्यक शिक्षा दिए जाने और रोग के निदान आदि के लिए उपलब्ध सेवा सुविधाओं तथा रोग का उपचार हो जाना पूरी तरह संभव है, आदि पक्षों के बारे में जागरूकता लाने की आवश्यकता है।

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MATERNAL AND CHILD HEALTH SERVICES IN DEHLON BLOCK OF LUDHIANA DISTRICT: RESULTS OF THE ICDS EVALUATION SURVEY

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ABSTRACT

A cross-sectional sample survey in Dehlon Block, District Ludhiana, was carried out under the ICDS (Integrated Child Development Services) Scheme to evaluate the performance of the project which had been functional for three years. This paper describes the health situation of the beneficiaries of the programme, i.e. 0-6 years old children, pregnant women and lactating mothers in the Block. Provision of services was observed to be deficient in the underprivileged scheduled and backward castes. Lack of coordination between the functionaries of the parent department of the ICDS programme and the health sector seems to be an important obstacle in the way of efficient implementation of the programme.

The Integrated Child Development Services (ICDS) Scheme was started in the country in 1975 as a pilot project in 33 experimental blocks, in response to the priority need of improving maternal and child health, "...in pursuance of the National Policy for Children and recognising that it is in early childhood that the foundations for physical, psychological and social development are laid and that provision of early childhood services, especially to the economically weaker and more vulnerable sections of the community, will help prevent or minimise the wastage emerging from infant mortality, morbidity, malnutrition and stagnation in schools". It was subsequently extended to other parts of the country in a phased manner, so that by the end of March, 1990 the scheme had been introduced in 3452 blocks.

Pre-project information about the MCH services in Dehlon Block is not available. However, with the presumption that the situation in this Block would

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have been not significantly different from the overall picture of Ludhiana District, the available information regarding MCH services in Ludhiana District for the year 1989-90, when this project was sanctioned, are given in Table 1. This evaluation survey was conducted in the last quarter of 1992-93, when the project was three years old.

TABLE 1

MATERNAL AND CHILD HEALTH PERFORMANCE OF LUDHIANA DISTRICT, 1989-00

Activity	Percentage Target Achievement
IMMUNISATION	
Expectant Mothers	95.9
Children (B.C.G.)	177.8
Children (D.P.T.)	132.3
Children (OPV)	132.2
PROPHYLAXIS AGAINST NUTRITIONAL ANAEMIA	
Children	85.3
Mothers	91.4
PROPHYLAXIS AGAINST BLINDNESS CAUSED BY VIT.	
A DEFICIENCY	
Children, single dose	126.4

Source: Directorate of Health and Family Welfare (Punjab), State Bureau of Health Intelligence (1990): Health Information of Punjab 1990.

MATERIALS AND METHOD

Dehlon Block was selected randomly by the Central Technical Committee (CTC), ICDS, in the first stage. The materials and methodology of the survey were as per guidelines received from the CTC-ICDS². Six Anganwadis were selected randomly according to the survey guidelines in the second stage. All households in the Anganwadi area were included in the survey.

OBSERVATIONS

Out of a total of 1112 households, 1052 (94.6%) were actually surveyed, covering a total population of 6163.

Caste Distribution. 652 (62%) of the households surveyed were scheduled caste, 329 (31%) were higher caste and the remaining 71 (7%) belonged to backward caste. Hence, this project block was observed to be populated mostly by scheduled caste.

Occupation: 482 (46%) of the heads of households were labourers, 252

(24%) cultivators (own land), 154 (15%) were in service, 76 (7%) had their own business, 64 (6%) were skilled workers, the rest being engaged in other occupations. So, nearly half of the households in this block were observed to be labourers, while about a quarter were cultivators.

Age and Sex Distribution: Children under 6 years constituted 14.4 per cent of the population. Women in the reproductive age-group (15-45 years) constituted 22.6 per cent of the population. The sex ratio (number of females per 1000 males) was only 853 (Table 2).

TABLE 2
DISTRIBUTION OF TOTAL POPULATION BY AGE AND SEX

Age-group	Males	Females	Persons	Sex Ratio (F/1000 M)
0-6 years	487	400	887 (14.4)	821
6-15 years	702	584	1286 (20.9)	832
15-45 years	1542	1396	2938 (47.7)	905
45 yrs. or more	595	457	1052 (17.0)	768
All ages	3326	2837	6163 (100.0)	853

Figures in parentheses indicate percentages. χ^2 - 5.96, df = 3, $p > 0.10$.

Castewise Distribution of Beneficiaries: The total number of beneficiaries (1083) constituted 17.6 per cent of the population. Child beneficiaries were 14.4 per cent, pregnant women were 0.5 per cent and lactating women 2.7 per cent of the population. There was no significant variation in the pattern of utilisation of ICDS by caste (Table 3).

Because of small numbers, the beneficiaries belonging to backward caste have been included with the scheduled caste to form the underprivileged group in the subsequent analysis and referred to as S.C.B.C.

TABLE 3**CASTE WISE DISTRIBUTION OF BENEFICIARIES**

Caste	Total population	Number of Beneficiaries			All (C+P+L)
		Children (C)	Pregnant Women (P)	Lactating Women (L)	
SC	3660	572 (15.6)	22 (0.6)	119 (3.2)	713 (19.5)
Others	2045	256 (12.5)	6 (0.3)	37 (1.8)	299 (14.6)
BC	456	59 (12.9)	3 (0.3)	9 (2.0)	71 (15.5)
Total	6163	867 (14.4)	31 (0.5)	165 (2.7)	1083 (17.6)

Figures in brackets are percentages of the total population (castewise).

SC = Scheduled Caste, HS = Higher Caste, BC = Backward Caste.

χ^2 -5.01, df = 4, p =0.286.

1. 0-6 Years Old Children

Immunisation Status: The immunisation status was assessed in the 1-2 years old children (n=149) (Table 4).

TABLE 4**IMMUNISATION STATUS OF 1-2 YEARS OLD CHILDREN**

	S.C., B.C.			Others			Total		
Total	M	F	All	M	F	All	M	F	All
Children	60	43	103	28	18	46	88	61	149
Vaccine Coverage (Number of children received vaccine):									
BCG	45 (75)	34 (79)	79 (77)	28 (100)	18 (100)	46 (100)	73 (83)	52 (85)	125 (84)
DPT*	45 (75)	31 (72)	76 (74)	24 (86)	18 (100)	42 (91)	69 (78)	49 (80)	118 (79)
OPV*	48 (80)	27 (63)	75 (73)	24 (86)	18 (100)	42 (91)	72 (82)	45 (74)	117 (78)
Measles	28 (47)	18 (42)	46 (45)	19 (68)	15 (83)	34 (74)	47 (53)	33 (54)	80 (54)

*All 3 primary doses.

Figures in brackets indicate percentage coverage in each group (to the nearest whole number).

M = Males; F = Females.

BCG. 84 per cent of all 1-2 years old children (83 per cent males and 85 per cent females) had received BCG vaccine. Castewise, the BCG coverage was 77 per cent (75 per cent males, 79 per cent females) in SC, BC and 100 per cent in the other castes.

DPT. 79 per cent of the 1-2 years old children (78 per cent males, 80 per cent females) had received all 3 primary doses of DPT vaccine. DPT coverage in the SC, BC children was 74 per cent (75 per cent males, 72 per cent females), while in the other caste it was 91 per cent (86 per cent males, 100 per cent females).

OPV. 78 per cent of the children (82 per cent males, 74 per cent females) had received all 3 primary doses of OPV. OPV coverage in the SC, BC was 73 per cent (80 per cent males, 63 per cent females), and in the other caste it was 91 per cent.

Measles Vaccine: 54 per cent of the 1-2 years old children (53 per cent males, 54 per cent females) had received measles vaccine. Coverage in the SC, BC was 45 per cent (47 per cent males, 42 per cent females), and in the other caste the coverage was 74 per cent (68 per cent males, 83 per cent females).

The sexwise differences in vaccination coverage for each of the vaccines, as well as within each caste-group, were found to be statistically insignificant. However, the inter-caste differences in vaccination coverage, *i.e.*, the higher coverage in the other castes for all the vaccines as compared to the SC, BC, were statistically significant for DPT ($p = 0.015$) and OPV ($p = 0.011$), and highly so for BCG ($p = 0.0004$) and Measles vaccine ($p = 0.0009$).

Nutritional Status of the 1-6 Years Old Children. 678 out of the total 724 children in the age-group 1-6 years were actually weighed, the rest being absent at the time of the survey. 85 per cent of the other caste as compared to 59 per cent of the SC, BC children were on "the Road-to-Health (Normal/Grade I). 14 per cent of the SC, BC children as compared to 3 per cent other caste were severely malnourished (Grade III/IV). The difference in the prevalence and severity of malnutrition between the castes was statistically highly significant ($X^2 = 43.8$, $df = 2$, $p = 0.0000$). The agewise prevalence of malnutrition, *i.e.*, in <3 years old toddlers and the 3-6 years old, was similar in each of the caste-groups. Sexwise, in each caste-group, the females suffered more from severe malnutrition, but the differences in each age-group were statistically insignificant ($p > 0.05$). Hence, the prevalence of malnutrition as well as that of severe malnutrition is observed to be significantly higher in the SC, BC children.

None of the Anganwadis surveyed had Growth Charts for the children, and

TABLE 5
NUTRITIONAL STATUS OF 1-6 YEARS OLD
CHILDREN

Age		SC, BC Casts*					Other Castes					Total 1-6 Years Old Children				
		N/I	II	III/IV	Total weighed	Absent	N/I	II	III/IV	Total weighed	Absent	N/I	II	III/IV	Total weighed	Absent
1-3 yrs.	M	71 (80)	35 (30)	12 (10)	118 (100)	8	43 (91)	4 (9)	0	47 (100)	3	114 (89)	39 (24)	12 (7)	165 (100)	11
	F	63 (61)	27 (28)	14 (13)	104 (100)	8	33 (85)	4 (10)	2 (5)	39 (100)	2	98 (67)	31 (22)	16 (11)	143 (100)	10
3-6 yrs.	M	88 (61)	39 (27)	18 (12)	145 (100)	7	56 (89)	5 (8)	2 (3)	63 (100)	9	144 (69)	44 (21)	20 (10)	208 (100)	18
	F	61 (56)	25 (23)	23 (21)	109 (100)	6	40 (75)	11 (21)	2 (4)	53 (100)	3	101 (62)	36 (22)	25 (15)	162 (99)	9
AI	M	159 (80)	74 (28)	30 (11)	263 (99)	15	99 (90)	9 (8)	2 (2)	110 (100)	12	258 (69)	83 (23)	32 (9)	373 (100)	27
	F	124 (58)	52 (24)	37 (17)	213 (99)	14	73 (79)	15 (16)	4 (4)	92 (99)	5	197 (65)	87 (22)	41 (13)	305 (100)	19
		283 (59)	126 (28)	67 (14)	476 (99)	29	172 (85)	24 (12)	6 (3)	202 (100)	17	455 (67)	150 (22)	73 (11)	678 (100)	46

M=Males; F=Females

Nutritional Grade. N/I/II/III/IV= Normal/Grade I/Grade II/Grade III/Grade IV. Figures in brackets Indicate percentages in each age-sex group

according to the Anganwadi Workers and the Mukhya Sevikas, had never received any since the beginning of the project. As a result growth monitoring of the children in all 6 Anganwadis was non-existent, although the children were periodically weighed and a record kept in a register. In the absence of the Growth Charts, identification of the nutritional grade of the children was not possible for the Anganwadi Workers.

Handicap and Deficiency Diseases. One 62 months old scheduled caste girl had post-polio residual paralysis in the lower limb. No child was found to be blind or suffering from night-blindness or goitre.

Supplementary Feeding: Table 6 shows the distribution of 1-6 years old children who were given supplementary food. Forty per cent of them (35 per cent 1-3 years old and 43 per cent 3-6 years old) received supplementary food ($p = 0.04$). Only 58 per cent of those who did get supplementary food, in each age-group, received it regularly and they constituted only 20-25 per cent of the surveyed children aged 1-3 and 3-6 years. According to the survey guidelines² anything received for less than 180 days (6 months) in a year is considered as irregular.

TABLE 6
DISTRIBUTION OF 1-6 YEAR OLD CHILDREN BY RECEIPT OF
SUPPLEMENTARY FOOD

Age	Total Number Survived	Number Not Received	Number Received		
			Regularly	Irregularly	Total Received
1-3 yrs.	308 (100)	199 (65)	63 (58) (20.4)	46 (42) (14.9)	109 (100) (35)
3-6 yrs.	370 (100)	210 (57)	93 (58) (25.1)	67 (42) (18.1)	160 (100) (43)
Total	678 (100)	409 (60)	156 (58)	113 (42)	269 (100) (40)

Figures in brackets indicate percentages.
Received vs. Not Received: $X^2 = 4.3$, $df=1$, $p=0.04$.

Receipt of iron and Folic Acid and Vitamin-A Only 6 per cent of the children (5 per cent 1-3 years old and 9 per cent 3-6 years old) received Iron and Folic Acid, while 29 per cent (24 per cent 1-3 years old and 35 per cent 3-5 years old) received Vitamin A (Table 7). Hence, provision of these supplements was observed to be very deficient. This was in glaring contrast to the percentage target

achievement for these nutritional supplements reported for Ludhiana District as a whole in 1989-90. Obviously introduction of ICDS Scheme had no beneficial influence on intake of these essential nutritional supplements by children 1 -5 years in Dehlon Block.

TABLE 7
DISTRIBUTION OF 1-6 YEARS OLD CHILDREN BY RECEIPT OF IRON-FOLATE AND VITAMIN A

Age Group	Iron-Folate			Vitamin-A		
	M	F	Total	M	F	T
1-3 years	8 (47)	9 (53)	17 (100)	50 (56)	40 (44)	90 (100)
(n = 373)			(5)*			(24)*
3-6 years	13 (48)	14 (52)	27 (100)	63 (59)	43 (41)	106 (100)
(n = 305)			(9)*			(35)*
All	21 (48)	23 (52)	44 (100)	113 (58)	83 (42)	196 (100)
(n = 678)			(6)*			(29)*

(Note: 678 children were weighed, the rest were absent.)

Figures in brackets indicate percentages.

* Indicates percentage of 'n'.

ii. Lactating Mothers

Table 8 shows the caste and age distribution of the lactating mothers. According to the survey guidelines² a lactating woman is a mother of a child aged 0-12 months (whether the child is alive or dead). The highest proportion of the lactating women were aged 25-35 years, followed by 18-25 years, in both caste-groups. Those aged <18 years or over 35 years were negligible.

155 out of total 165 lactating mothers (94%) were actually surveyed, the rest being absent at the time of the survey. One lactating mother was found to have goitre.

Receipt of Ante-natal Care. 139 of them (90%) had received ante-natal

care; 13 (9%) had their first ante-natal care contact in the second month of pregnancy, 18 (13%) in the third month, 19 (14%) in the fourth, 19 (14%) in the fifth, 26 (19%) in the sixth and 44 (32%) after the sixth month of pregnancy. Hence it is observed that less than a quarter of the women (22%) had their first ANC visit/contact in the first trimester, more than half (54%) in the second trimester, while nearly one-third (32%) had it in the third trimester of pregnancy.

TABLE 8

CASTE AND AGE DISTRIBUTION OF LACTATING MOTHERS

Age Group	SC, BC	Others	Total
< 18 years	2 (2)	0 (-)	2 (1)
18-25 years	41 (32)	12 (32)	53 (32)
25-35 years	82 (64)	23 (62)	105 (64)
> 35 years'	3 (2)	2 (5)	5 (3)
Total	128 (100)	37 (99)*	165 (100)

Figures in brackets indicate percentages.

*Due to rounding off.

Source and Frequency of Ante-natal Care: 6 (4%) of those who received ante-natal care did so from an untrained Dai, 53 (38%) from a trained Dai, 39 (28%) from an ANM/MPW(F). 34 (24%) from Medical Officer of a government health centre and the remaining 10 (7%) from other sources such as private practitioners, nurses and nursing homes. Hence, the trained Dai is observed to be the most preferred source of ante-natal care, followed by the ANM and the Medical Officer of the government health centre (Table 9).

76 (55%) had 1-3 ante-natal visits, 40 (29%) had 4-5 and 23 (16%) had 6 or more visits. The number of ANC visits are therefore observed to be generally less than satisfactory, with more than half of the women having had only 1-3.

Receipt of Tetanus Immunisation: Complete TT coverage (2 doses/booster) in the last pregnancy was equally high (88%) in both caste groups (Table 10).

TABLE 9
TABLES RECEIPT OF ANTE-NATAL CARE

Person From Whom Received ANC		Number of ANC Visits	
Untrained Dai	6(4)	1-3	76 (55)
Trained Dai	53 (38)	4-5	40 (29)
ANM/MPW (F)	39 (28)	-/>6	23 (16)
LHV/HAF	-		
Medical Officer	34 (24)		
Others	10(7)		
Total Received	139 (101)* (90)		139 (100)
Not Received	16 (10)		
Total Lactating Mothers Surveyed	155 (100)		

Figures in brackets indicate percentages.
*Due to rounding off.

TABLE 10
DISTRIBUTION OF LACTATING. MOTHERS ACCORDING TO RECEIPT OF TETANUS TOXOID DURING LAST PREGNANCY

Caste	TT Not Received	TT Received			Total Lactating Women Seen
		INCOMPLETE 1st Dose only	COMPLETE 2nd Dose/Booster	Total Received	
SC, BC	9 (7)	5(4)	107 (96)	112 (100) (93)	121 (100)
Others	4 (12)	0(-)	30 (100)	30 (100) (88)	34 (100)
All	13 (8)	5(4)	137 (96)	142 (100) (92)	155 (100)

Figures in brackets indicate percentages.

Unimmunised/Incomplete vs. Complete (Castewise): Yates' corrected $X^2 = 0.374$, $df = 1$, $p = 0.786$.

Receipt of Supplementary Food: Only 5 (3%) of the lactating mothers interviewed had received supplementary food from the Anganwadi regularly, 28 (18%) received irregularly, while 79 per cent of the lactating mothers received no supplementary food at all.

Receipt of Iron-Folic Tablets: 29 (19%) had received Iron and Folic tablets regularly (i.e., full quota of 100 tablets*) while 69 (44%) had received irregularly. Hence, 37 per cent of the lactating mothers received no haematinics.

Intra-natal Care: 14 (9%) of the lactating women had been delivered by an untrained Dai, 84 (54%) by a trained Dai, 18 (12%) by an ANM/MPW(F). 2 (1%) by an LHV/HAF. 23 (15%) by a medical officer of a Government health centre, and the remaining 14 (9%) by other professionals like private doctors/nurses. Hence, the trained Dai is observed to be the most preferred source of maternity assistance in this Block (Table 11).

TABLE 11
SOURCE (PERSON AND PLACE) OF DELIVERY SERVICES

Person From Whom Received		Place At Which Received	
Untrained Dai	14(9)	Government Hospital	4(2)
Trained Dai	84 (54)	Private Hospital	23 (15)
ANM/MPW (F)	18 (12)	Sub-centre	1 (1)
LHV/HAF	2(1)	PHC	Nil
Medical Officer	23 (15)	At Home	127 (82)
Others	14(9)		
Total	155 (100)		155 (100)

Figures in brackets indicate percentages.

Four (2%) had delivered in a Government hospital, 23 (15%) at a private hospital, 1 (1%) at a sub-centre and 127 (82%) at home. Hence, home deliveries are observed to be the choice for more than three-quarters of the women.

Breastfeeding Practices: The child of 1 out of the 155 lactating mothers interviewed had died within 6 hours of birth. Of the remaining 154, 12 (8%) started breastfeeding within 6 hours of birth, 40 (26%) between 6-24 hours, 50 (32%)

between 24-48 hours and 52 (34%) more than 48 hours after birth of the baby. Hence, only one-third of the mothers were observed to have started breastfeeding within 24 hours.

Post-natal Care: In 96 per cent of the lactating women, post-natal care was provided within 10 days. The trained Dai (57%), followed by the medical officer (15%) and the untrained Dai (10%) provided most of the post-natal care. The LHVs and ANMs provided post-natal care to less than 10 per cent cases (Table 12).

TABLE 12
SOURCE AND TIME OF RECEIPT OF POST-NATAL CARE

Provider	When Received		Total
	0-10 Days	10-40 Days	
Untrained Dai	15 (94)	1 (6)	16 (10) (100)
Trained Dai	85 (95)	4 (4)	89 (57) (99)*
ANM/MPW(F)	12 (92)	1 (8)	13 (8) (100)
LHV/HAF	2	-	2(1)
Medical Officer	23	-	23 (15)
Others	12	-	12 (8)
Total	149 (96)	6 (4)	155 (99)* (100)

Figures in brackets indicate percentages.

*Due to rounding off.

Contraceptive Practices of the Lactating Mothers: Only 26 out of the 155 lactating mothers (17%) adopted contraception. Castewise, acceptance was lower (14%) in the SO, BO as compared to the other caste (26%). The most preferred contraceptive method in the SO, BC lactating women was condoms (35%) followed by the IUCD (24%), whereas in the other caste lactating women the most preferred contraceptive method was the IUCD (56%) followed by condoms (33%). Hence, though acceptance of contraception amongst the lactating women is low,

the IUCD and the condom are observed to be the most preferred methods (Table 13).

TABLE 13
ADOPTION OF CONTRACEPTION BY
LACTATING WOMEN

Method	SC, BC Caste	Other Caste	All
Sterilisation (self/husband)	5(29)	-	5(19)
IUCD	4(24)	5 (56)	9 (35)
Condoms	6 (35)	3 (33)	9 (35)
Oral Contraceptives	2(12)	1 (11)	3(11)
Sub-total (adopted contraception)	17 (14) (100)	9 (26) (100)	26 (17) (100)
Not adopted contraception	104 (86)	25 (74)	129 (83)
Total lactating women interviewed	121 (100)	34 (100)	155 (100)

Figures in brackets indicate percentages.

SUMMARY AND CONCLUSIONS

Its demographic profile justifies Dehlon Block being targeted for services under the ICDS Scheme, as compared to 33.29 per cent being the reported proportion of scheduled caste in Ludhiana District (rural) population as per the 1981 census³, the population of Dehlon Block is mostly scheduled caste (61%) which, together with the backward caste (7%), shows that 69 per cent of the population of the Block is composed of the socio-economically underprivileged. Nearly half of the heads of families are labourers.

Children's Services

Immunisation: Even though pre-project performance in Ludhiana District showed over-achievement of immunisation targets for BCG, DPT and OPV (Table 1), vaccine coverage in 1-2 years old children was less than the desired 85 per cent for all vaccines, particularly coverage for measles vaccine which was only 54 per cent overall. Coverage by all vaccines was observed to be significantly lower in the underprivileged S.C. and B.C. than in the other caste, indicating that these services are reaching less to the very, ones who require them most. The one case of paralytic polio was observed in a scheduled caste girl. The presence of even one such case is of concern, and is indicative of polio transmission, underscoring

the need to achieve and maintain high levels of OPV coverage to provide levels of herd immunity high enough to break the chain of transmission of polio in this block.

Nutrition: None of the Anganwadis had growth cards for the children, hence growth monitoring was non-existent. The prevalence as well as the severity of malnutrition was significantly higher in the S.C. and B.C. children, indicating the need for priority care to these children. However, only 40 per cent of the children received supplementary food, and even so only 58 per cent of those who received it did so regularly. Receipt of Iron-Folic and Vitamin A was even less, being 6 per cent and 29 per cent respectively, although the pre-project information of Ludhiana District indicates 85.3 per cent and 126.4 per cent target achievement. The under-3 years old children were more under-served as compared to the 3-6 years old in respect of nutritional services. The Anganwadis were all observed to be attended by over-3 years old children. During the survey, on being asked why their under-3 years old child was not attending the Anganwadi, the mothers generally said that the Anganwadi Worker told them to send the child to the Anganwadi when the child is three years old.

Handicap and deficiency diseases of children (night-blindness, nutritional blindness/xerophthalmia and goitre) were not observed to be a problem in this block.

Lactating Mothers

Ante-natal Care: While 90 per cent of the lactating women had received ante-natal care during their pregnancy, nearly one-third had their first ante-natal visit in the third trimester, and more than half of them had only 1-3 visits for antenatal care. Earlier detection of pregnancy is essential for provision of adequate care, and more frequent ANC visits are desirable. Only 4 per cent received ANC from untrained Dai. Complete TT coverage in pregnancy was 88 per cent. Services for tetanus prophylaxis are equally high in both caste-groups, which is very satisfactory. However, services of provision of supplementary food and Iron-Folic tablets was found to be in need of much improvement. This is in spite of the reported pre-project target achievement of 95.9 per cent for tetanus prophylaxis and 85.3 per cent for prophylaxis against nutritional anaemia in Ludhiana District. Efforts are required to ensure complete protection against tetanus, and provision of ante-natal care by a trained person.

Intra-natal Care. Ninety one per cent had been delivered by trained hands, and the preferred place for delivery and source of maternity assistance were, respectively, the home and the trained Dai. Breastfeeding being the universal practise in our culture, however, only 34 per cent started breastfeeding on the day

of birth. Efforts are required to ensure all deliveries are conducted by trained hands, and mothers need to be educated and motivated to put the child to the breast on the day of birth, a practice that is associated with intake of colostrum and a lower prevalence and severity of childhood malnutrition⁴.

Post-natal Care: The birth attendants provided the post-natal care. Hence this too was done mostly by the trained Dai. It is notable that whereas 18 lactating mothers were delivered by ANM/MPW(F) only 12 received post-natal care from this category in the first ten days (Ref. Tables 11-12). It shows that importance of post-natal care needs to be shared to this category.

Family Planning: Acceptance of contraception by the lactating women is very low, but they are amenable to acceptance of spacing methods. It has often been pointed out⁶ that the younger eligible couples who are the so-called "fast producers" and responsible for the high birth rate in the country are not being targeted by the National Family Welfare Programme through its target-oriented and sterilisation-based approach, and that a shift in emphasis favouring spacing methods, targeting the younger couples, is vital if the contraceptive coverage is to effect an appreciable decline in the birth rate.

RECOMMENDATIONS

Maternal and child health services through the ICDS Programme need to be improved, with special emphasis on the female child and the socio-economically weaker S.C. and B.C. population. The programme does not seem to be reaching the under-3 years old children to an appreciable degrees. There is need for increasing immunisation coverages, particularly against measles and polio. More efforts are needed, in all categories of beneficiaries, to provide nutritional supplementation.

The ICDS Programme, under the Department of Women and Child Development of the Ministry of Human Resource Development, depends heavily on the health sector for most of its activities, like immunisation of children and pregnant women, maternity services (ante-natal, intra-natal and post-natal) and health check-up, treatment and referral services. More cooperation and coordination between the personnel of the health department - the ANM, LHV and Medical Officers - and that of the Department of Women and Child Development, i.e. the Anganwadi Workers, Mukhya Sevikas and the Child Development Project Officers (CDPOs), is needed than is so far evident. With both departments working towards the same goal, much improvement can be expected. There is no dearth of manpower: both the ANM and the AWW are required to go home-visiting, and to identify as early as possible children, pregnant women and new births (lactating mothers) for provision of priority care. These two grassroot level workers need to

coordinate their work in a spirit of mutual cooperation. The medical officers of covering SHC have to organise health check-ups, whereas the CDPOs need to improve logistics and supplies management. Coordination can be facilitated by monthly meetings between the personnel of the two concerned departments at Block/District level, which is a requirement under the ICDS Programme.

Lkkjk'k

समेकित बाल विकास सेवा योजना के अंतर्गत तीन वर्षों से चलाई जा रही परियोजना के निष्पादन का मूल्यांकन करने के लिए लुधियाना जिले के देहलान ब्लॉक में एक क्रॉससैक्सनल सैम्पल सर्वेक्षण किया गया था। प्रस्तुत लेख में कार्यक्रम के लाभानुभोगियों अर्थात् 0-6 वर्ष की आयु के बच्चों, गर्भवती महिलाओं और स्तनपान कराने वाली महिलाओं की स्वास्थ्य-स्थिति पर प्रकाश डाला गया है। अनुसूचित जनजाति और पिछड़ी जाति के लोगों के लिए सेवाओं में प्रावधान नहीं रखा गया था। कार्यक्रम के कुशल क्रियान्वयन के में समेकित बाल विकास सेवा योजना और स्वास्थ्य क्षेत्र के मूल विभागों में आपसी तालमेल के अभाव को एक प्रमुख बाधा के रूप में महसूस किया गया था।

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CARING FOR THE ELDERLY: NEW DIMENSION IN INDIA

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ABSTRACT

This paper examines the changing status of the elderly in India. With changes in the traditional practices of supporting the elderly and their rapidly growing numbers, this could become a serious social problem by the first quarter of the next century, particularly so for the families in urban areas. One can only hope that these new directions will come slowly and majority of the elderly would be cared by the family. If this does not happen and majority of people altered their attitude and behaviour toward the elderly, the care of the elderly may have to become a national responsibility. In view of this scenario, there is need that the Government of India may consider sincerely the problem of elderly.

In a historical decision on February 19, 1987, the Supreme Court of India, interpreting Section 125(1) (D), and Section 8 of Indian Penal Code declared that sons and daughters have liability to maintain their father and mother who are unable to maintain themselves. The Court unanimously concurred that this Section of Indian Law was meant to enforce a social obligation children have toward their parents. It directed the judicial magistrate of Kalyan, near Bombay, to dispose of a maintenance application by Kashirao Rajaram Sawai, age 62 who sought Rs.500 per month from his married daughter Vijaya Manohar Arbat, a medical practitioner. A Lower Court had earlier ruled in favour of Mr. Sawai but the daughter had appealed to the Supreme Court. Dismissing the appeal, Supreme Court contended that sons and daughters, whether single or married, have an obligation to maintain their parents if parents are unable to maintain themselves. Establishing another precedent, the Supreme Court ruled that the pronoun "he" used in the Section 125(1)(D) is used for any person whether male or female and therefore Dr. Vijaya Arbat cannot claim exemption on the basis of her "sex" or being a "she". The Chief Justice writing for the Court said, "apart from any law, Indian society has cast a

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duty on the children to maintain their parents if they are not in a position to do so themselves. It is also their duty to look after parents when they become old and infirm".

The above case decided in India represents the modernisation trends underway in urban India where a growing number of Indians are developing values contrary to the traditions and customs emanating from the extended family system and kinship network obligations. Some social scientists will like to compare the new trend of abandoning parents to fend for themselves in their old age to "the process of Westernisation", and a severe distortion of Indian values. The evidence is growing that in a country like India, with a declining mortality, increased longevity, growing desire for consumerism, materialism, and self-centered ness, the increasing burden of the elderly parents is being given up by certain segments of the population. In absence of any universal social security programmes for the elderly in the country, the obligation has always fallen upon the family members to care for the elderly. Though majority of people would make an effort to support their elderly in the best possible ways, a disturbing trend similar to that found in the West, may be gaining ground with the modernisation processes at work, as the case of Mr. Sawai against his daughter demonstrates.

The goal of this paper is to examine the changing status of the elderly in India based upon the field work done in India in the fall of 1993. However, one must keep in mind that India is culturally complex, highly stratified, and with strong regional variations in its social institutions within the country. Yet, a well trained sociologist/anthropologist can make broad generalisations based on observations and case studies. The dichotomy issues presented here are very real and require attention of the policy makers dealing with the issues of elderly. The case studies were done in Ghaziabad, UP and Pinjore, Haryana. However, similar observations can be made in any part of India not only among the Hindu families but also among the Muslims, Christians and Sikhs and other cultural and religious groups.

There is a growing concern that India would need a national policy toward the elderly. A few States have begun to talk about it, but there is no national goal or plan or action.

CASE OF EXTENDED FAMILY

There is considerable evidence that aged in India are highly regarded and revered for a variety of religious and cultural norms. From published reports one could find that most older people still live in a family setting, with their children or with other close relatives inspite of organisational and structural changes Indian traditional family may have experienced. (Vatuk 1982: 84-91, Goldstein *et al.*, 1983). However, it is not self-evident from the data available from various parts of

the country that elderly's material and affective needs are fully being met, or that they actually receive the kind of obedience, respect and loving care that is commonly associated with the extended family. There are studies which have reported elderly being neglected and mistreated by their own family members when they continue to live with their children (Harlan 1964, Raj and Prasad 1971; Goldstein, *et al.*, 1982, Vatuk 1980). Yet there is also evidence that elderly are revered, worshiped and paid utmost attention, particularly in social strata of upper -upper, upper middle, and middle classes where there is financial as well emotional security within the family system.

CULTURAL PERSPECTIVE AND SOCIAL INTERACTION

Aged in India have been highly regarded since the earliest times of Indian history. Teachings of Hinduism strongly emphasise the concept of filial piety along with a moral responsibility to take care of one's parents in old age. Hindus are expected to venerate and worship their ancestors ritualistically. A period of "shradhs" among Hindus is set aside each year to engage in such rituals to perpetuate the memory and remembrance of the deceased parents. If one worships their ancestors, they are blessed and prosper in their chosen profession or business.

The family and kinship ties in India are intense, emotional and socially obligatory. There is deep respect for age and honorific titles such as *bapu, aapa, ji hazur, abba, bajuarg, mata, dad/, chachi* and many other titles are used everyday in addressing the elderly. A frail and elderly person is given hand in public places to cross the street or walking up a staircase. People willingly give up their seats for the elderly in buses, railway compartments and other modes of transportation. If one refuses to do so, the public brings guilt and shame upon the person. Such kind of behaviour interaction in everyday life has great relevance for the position and reverence accorded to the aged in India.

Traditionally an Indian family in rural areas consists of more than three generations sharing economic activities and living under the same roof. The patriarch of such a joint family has the absolute authority and makes all the major decisions, from choosing a bride for an unmarried son to permitting another son to enter a profession of his choice. Sons when they get married bring their wives to this joint household. The matriarch does not have similar authority; nonetheless, she exercises a great control over the matters of hearth and home. All daughters-in-law are expected to pay homage as well as be obedient to her. Any violation of such family norms could result in humiliation, disrespect, or denouncing of the daughter-in-law. The patriarch seldom interferes in the affairs of the women in the household and segregated sex roles are maintained between sexes.

Even today both in the urban and rural areas majority of the families are

managed by a patriarch. If and when a joint family grows very large or the patriarch dies, the family will divide itself among several households headed by each brother. The surviving parent could choose to live alone, as some do; but majority of them choose to move with one of their favourite sons. These brothers start their new joint families and the process of formation and fission continues. Seldom does one think or plan setting up a conjugal household in the typical Western sense.

In a joint family everyone is not hard working or successful in their endeavours. By the efforts of those who are energetic and able, the older parents as well as less capable kin are supported with a sense of moral obligation, religious duty and filial piety. By doing so one is able to perform both the Dharma and Karma expected of all Hindus transgressing a cycle of births and rebirths in this world. Reluctance to take over such obligations or perform them according to the social norms could result in invisible, unexpected and sometime heart wrenching consequences such as severe illness, birth of a handicap child, injury to one's self, destruction of a valuable possession, or severe mental anguish. There are overwhelming cultural compulsions if one does not take care of elderly parents or kin.

SIZE OF ELDERLY POPULATION AND THEIR GROWTH

In India people in Government service are retired at age 58 and those working for themselves in business or agriculture begin to consider themselves old between ages of 55-60. Unlike West, where social security is in place, and where men at age 65 and women at 62, begin to receive social security, India has no fixed age for being elderly. In Indian circumstances when a relatively older person ceases to make productive contribution and becomes dependent upon others for support and maintenance, he is considered elderly. By a social yardstick, a person is elderly somewhere between the age of 55 and 60. Demographers in India assume people over 60 as elderly.

Aging can occur in two ways, again at the base and apex of a population pyramid. The former is the result of decline in fertility and latter the result of higher mortality in older age groups (Kertzer, 1982). Prior to 1950s, aging in India was neither at the base nor at the apex as expectation of life was lesser than 45 and mortality in higher age groups was evenly distributed. Since 1950s elderly has been one of the fastest growing segments of population. During the first Census period 1951-61, elderly population grew by 22.4 percent, during 1961-71 by 32.3 per cent, during 1971-81 by 30.0 per cent and during 1981-91 by 28.4 per cent. According to the Expert Committee on Population, the increase for 1991-2001 is expected to be at 38.5 per cent (NSS, Round 40, 1985). Since 1961, elderly population has increased at a faster rate than the general population; and with

further decline in fertility and mortality, the elderly population is expected to increase at twice the rate of general population. In developed nations the elderly population constitutes 8-12 per cent of the total population whereas in developing countries elderly population constitutes 40 per cent of their total population. This measures the demographic dependency of the elderly and India is about to join the ranks of developed countries. The dependency of the elderly is estimated to go up to 12.6 per cent in the year 2001 from 10.5 which existed in 1961 (Tafwar, 1986). In term of numbers, India would have 100 million elderly by the year 2001 which is 4 times the total population of Canada and equal to total population of Bangladesh. These numbers are extremely alarming, if the process of modernisation creates a value system where the elderly would have to fend for themselves and the extended family or conjugal family does not feel the moral responsibility for their elderly.

Expectation of life for elderly, age 60, has been continuously increasing. In 1961, 60 year old males expected to live another 11.8 years and females another 13 years. By the year 2001, males age 60 are expected to live additional 15.2 years and females additional 16.4 years (Tarwar, 1986). These are the years when elderly are most dependent and in need of financial, social, emotional, and health care support. With 40 per cent of the Indian households living below poverty, 35 per cent at the marginal level and only 25 per cent at comfortable level, one has to wonder, if the traditional forms of familial support, filial piety, and deference to old age would continue to exist as India enters into 21st century as a modern society. Who would then take the responsibility of the elderly? With 100+ million people over age 60 in the year 2001, with needs for income, health care, shelter and subsistence, who is going to provide for them? There is already growing evidence that government would have to begin to take responsibilities for the elderly under a social contract where those who are unable to support themselves would have to be supported by the government under a "social welfare" programme.

The following two case studies vividly indicate the dichotomous nature of taking care of the elderly.

I. CASE STUDY OF MR. LAI

Mr. Lai is an elderly patriarch having a small successful business in a town of 60,000 in Haryana. He has a joint family of 5 sons, 5 daughters-in-law, 11 grand children and his wife. The oldest son is the Chief Engineer In government owned electricity board and lives with his wife and 2 children in a town 50 miles away. His other 4 sons and their wives and 9 grand children live under one roof, has a common hearth, and actively operate Lai's business which has grown by 100 per cent in the last 5 years. The whole family lead a satisfying and comfortable life

with Lai and his wife Savitri enjoying the status of a retiree. Lai spends part of his day playing chess and Savitri spends part of her day visiting friends of her own age. They live a middle-class comfortable life with a recently purchased Maruti as a family car. Lai and Savitri are always guiding how things ought to run in their household to their sons and daughters-in-law. It was clear to this researcher that everything patriarch and matriarch suggest or counsel is not acted upon by every member. Each son and daughter-in-law has a bedroom of their own where parents and children have their own beds to sleep.

There have been occasional disagreements between sons and between daughters-in-law and fights among grand children. Lai and Savitri, with their astuteness and experience, have been able to resolve those, but not to the satisfaction of everyone. However, the decision made by them have been carried out in good faith. As long as patriarch is alive, is Karta of the household, his word is considered final and no one has challenged him so far.

The four daughters-in-law to whom I spoke separately have expressed a desire to live separately in an independent house of their own. The family has purchased land for such houses and two houses are under construction right now. On their completion, two of the four sons would establish nuclear households. The first to establish their own nuclear household are the two youngest rather than oldest sons. Oldest son feels a strong obligation to live with his father and mother and his wife feels likewise. The second son feels the same way, but his wife does not. At the moment they cannot afford to build a third independent house for his family.

The grand children are well dressed and attended to by their parents and spoiled by grand parents. All of them are schooling and parents emphasise a strong need for good quality education even though none of the sons, except the one who is Chief Engineer, went beyond 2 years of college. Sons themselves do not see doing anything other than continuing and expanding family business of selling weaved baskets made out of bamboo and roller pins made out of marble. In the five years since sons took over the business from patriarch, it has grown in volume by 100 per cent

Second of the four sons has an entrepreneurial mind and he spoke to me of wanting to start an industry in consumer products. He spoke of manufacturing washing powder, or soap, or cigarettes as possibilities. Other three sons felt that they already have more than enough to do. The family overall appears to be in a blissful sense of harmony, cooperation, getting along with each other, and showing reverence to their father and mother and mutual respect for brothers and sisters-in-law. There is a distinct hierarchical structure with everyone occupying a designated role and a status commensurate with birth order. Daughters-in-law

show a great affection for their mother-in-law Savitri and she appeared to be just, equitable, fair and compassionate toward all her daughters-in-law. She expressed a much greater affection for Mina - her eldest daughter-in-law who lives 50 miles away. She has a B.Sc. degree, is highly articulate, and respected by everyone else as the eldest daughter-in-law in the family. Raj, her husband, and she with her two children comes once every two week to visit family on the weekend.

How long this blissful arrangement would continue is hard to predict. As long as Lai and Savitri are alive, all brothers would continue to have a cooperative attitude and a joint family. However, somewhere in the near future, the fission of this family may take place, only to be replaced by a new formation of five joint-families, separate yet together to continue the Indian tradition. Savitri told me that if she survives her husband or her husband survives her, they would want to live in the household they are living now with their eldest son, if everyone decide to move to their own conjugal household. They feel most comfortable in the house where they have lived the past 45 years and most comfortable with the 2nd oldest son and his wife to whom they feel closer than anyone else.

II. CASE STUDY OF RAM JI

Ramji is close to celebrating his 80th birthday. He is blind, suffering from diabetes and failing kidneys, yet, he prefers to live by himself and manage his life. He moved to India in 1947 from what is now Pakistan after India was partitioned. He had worked for the Railways in undivided India and was able to get a position in Railways in divided India. He made his home in Ghaziabad, U.P., a satellite town to New Delhi. He had three sons and one daughter when he moved from Pakistan and all of them lived in the household set up by his wife and him in Ghaziabad. Prem {the oldest son} was quick to get an apprenticeship in a railway workshop in Ghaziabad at age 18. He has worked for railways all his life, and retired in 1987 at age 58. He lived with his parents for three years after marrying and then moved into accommodation provided by railways in their staff quarters. After retirement, he lives in his home, which he built. Two of his married sons with their wives and one unmarried daughter live in the household. Two daughters have married and moved away. Hari (the second son), and Om (the third son) of Ramji live in Ghaziabad. They married women of their choosing which did not fit well with Ramji. Further, inspite of best efforts of the father to put them into railway apprenticeship programme or to support them for college education, past high school, both sons did not listen to their father. Father had the best interest of his children all his life, but they neither listened to their father nor mother. They have relationship of avoidance with each other even though they live only two blocks away from their father. Because Ramji did not approve the women Hari and Om married, these women have disdain for Ramji. Each has two children and they do visit grand father occasionally, but visits with sons and daughters-in-law are almost

non-existence. Oldest son Prem and his wife have a good relationship with father and they are willing to help when help is needed. But Ramji is too proud a man to take help from anybody including his oldest son.

Ramji's wife who took care of him died 6 years ago. Since then Ramji's eldest daughter Gita has visited her blind father once every month and stayed several days to take care of the needs of her father. The three brothers are suspicious of Gita - as they assume that Gita is coming to control "old man's" wealth which consists of only a family house plus the pension he gets from the railways. Sons are not aware of what other assets Ramji has and Ramji would not tell anyone about anything. The eldest son Prem and his wife who often visit Ramji and help him frequently are also becoming suspicious of Gita's frequent visits to Ghaziabad. They think that she ought to pay more attention to her family than her father. They disagreed with me that daughter may have more affection for her old and disabled father than sons. But Ramji feels very comfortable with his daughter being around, and is more often willing to go to the doctors, take his medication, and eat meals cooked by his daughter. These he misses when Gita is gone away to her family. He does not feel the same affection and desire to have cooked meals from his daughters-in-law who live only blocks away.

Ramji has a meagre income of Rs.600 from his pension. His house is paid for and that amount seems sufficient to meet his day-to-day needs. However, his financial needs are greater than the income and Gita has been helping him. His three sons told me that with their limited incomes and family responsibilities, they cannot afford to help their father. Helping father would mean less food on their table or less things for their family. They consider their father "a cranky old man" who does not trust anybody, does not need any economic help, and refuses to accept two daughters-in-law his two sons married. He is not destitute, but he is not rich either. He needs help, but he also refuses help. Even though it was a blissful joint family in 1950s - it looks totally splintered in 1993 - when all members live within walking distance of each other. Ramji at 80 years is frail, close to dying, and in poor health. He, unlike Lai, is very unhappy and counting his days toward death which he thinks is closeby.

Both case studies described above, that of Lai's family and of Ramji's family are from North India, from towns similar in size and socio-cultural environment. In case of Lai we see a traditional family highly devoted to Indian values and tradition and maintaining a joint extended family system under a patriarch. In urban India among the business community and the upper and upper-middle class households there is strong emphasis on tradition. Collectively they are able to further individual and group interests by collectivism enshrined in the traditional Hindu family. We find an example of this in the case study of Mr. Lai even though family is urban bound, fairly educated and "modern". The same

collectivism did not exist in Ramji's family.

In case of Ramji we have an Indian family which has taken on a conjugal structure where there seems to be no room for Ramji as a patriarch. Each son has gone into a different profession and all sons with their wives feel no strong obligations to their old and infirm father. Part of the reason may be economical as all the three sons have only living income with hardly any surplus available for the father. Part of reason may be social where strong ties to the family were never established after the migration from Pakistan. Other factors may be the domineering and obsessive personality of Ramji who does not want to be dependent upon anyone inspite of his handicaps and illness. Often, his only married daughter Gita has come from her husband's home 500 miles away to spend months with her father and take care of him. She has shown devotion and commitment to her father in his old age. Whether it is for his money or a genuine affection of the daughter was hard to establish.

We also have the case of Mr. Sawai vs. Dr. Arbat where the Court has directed daughter to pay maintenance for her father. We could also watch on video highly celebrated life-cycle of Chachaji by Ved Mehta an American journalist but of Indian origin. In this documentary Chachaji over 70 years old, living in cramped quarters in New Delhi and scrounging his living by doing errands and finding his kin showing a benign neglect toward him in his old age. The evidence is growing of the Indian traditional family structure under stress, and if majority of people altered their attitudes and behaviour toward the elderly, the care of the elderly may have to become a national responsibility.

CONCLUSIONS

Elderly in India has been and continues to be regarded and venerated in most segments of the society. The reverence and respect accorded to them is because of a long established Hindu tradition and support from the Indian scriptures. Taking care of one's parents in old age is considered to be the most important virtues that a person may possess. They still hold property rights, act as patriarchs, are considered an infinite source of wisdom, and serving them improves one's *Karma* and *Dharma*.

We are also aware that industrialisation, urbanisation, and modernisation cause a decline in the status of the elderly (Cowgill and Holmes, 1974). This process has been going on in the West and has begun in India. However, India still is a country of villages with 76 per cent of the population living in 550,000 villages in traditional family arrangements. The other 24 per cent living in urban areas appears to live in two worlds simultaneously; the traditional, static, religious oriented, caste bound, and family centered world; and the new Westernised,

individualistic, self-centered, hedonistic, and stressful. In the urban environment one could find the case of Mr. Lai, the traditionalist and case of Mr. Ramji, Dr. Arbat, and Chachaji, the modernist.

We can expect slowly but steadily modernisation having its impact on both urban and rural areas, and the status of the elderly undergoing structural changes over the next century. The extended family system has and continues to provide a functional division of labour thereby making elderly useful to the family. Hierarchical relations assure the elderly a reasonable level of respect and self-dignity in majority of situations and circumstances. Yet, the respect for the older order may be declining and prescribed roles for each stage not either believed or adhered to. Hindu social order which has provided both the stability and continuity to the Indian civilisation for thousands of years is undergoing an intense scrutiny. With its genius for synthesis and a very strong ability to accommodate, one can only hope that even with new directions, majority of the elderly would be cared for by the family.

Lkkjk'k

प्रस्तुत लेख में, भारत में वृद्धों की बदलती हुई परिस्थितियों पर प्रकाश डालने का प्रयास किया गया है। वृद्धावस्था में वृद्ध व्यक्तियों का सहारा देने के पारम्परिक तरीकों में आ रहा बदलाव और वृद्ध व्यक्तियों की संख्या में हो रही वृद्धि अगली शताब्दी के पहले 25 वर्षों तक पहुंचते-पहुंचते एक गंभीर समस्या का रूप धारण कर सकती है, विशेष कर शहरी क्षेत्र के परिवारों में यह समस्या और जटिल हो सकती है। ऐसी स्थिति में केवल यही आशा की जा सकती है कि धीरे-धीरे समाज में इस दिशा में कोई सकारात्मक परिवर्तन आए और वृद्ध व्यक्तियों की उनके परिवारों द्वारा देखभाल की जा सके। यदि ऐसा नहीं होता तो वृद्धों के प्रति अधिकांश लोगों का आचार-व्यवहार बदल सकता है, जिससे वृद्धों की देखभाल की समस्या एक राष्ट्रीय बोझ बन सकती है। इस स्थिति को ध्यान में रखते हुए यह आवश्यक है कि भारत सरकार द्वारा वृद्धों की समस्याओं पर सहानुभूति पूर्वक विचार किया जाए।

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CORRELATES OF MATERNAL AND CHILD IMMUNIZATION: A CROSS-COUNTRY ANALYSIS

N. Audinarayana*

ABSTRACT

Immunization of pregnant women and children under one year age is one of the best indicators of maternal and child health. In this paper an attempt is made to examine whether some of the socioeconomic, ecological, communication and health indicators have any influence on the immunization status of the mothers as well as children under one year age. The indicators include female literacy rate, per capita GNP, percentage living in urban areas, number of radio and TV sets per lakh population, percentage of births attended by trained health personnel, percentage of population access to health services and percentage of pregnant women immunized with TT2 and percentage of one year old children fully immunized with BCG, DPT, Polio and Measles.

Health of the children has to be protected as they are the most precious possession of parents, future of mankind and asset of a nation. Therefore, the maternal and child health services have been designed in each of the countries of the world with the objectives: (i) to decrease infant and early childhood mortality; and (it) to decrease maternal mortality. For this purpose, immunization of pregnant women and children (infants) has been recognised as one of the most powerful and cost-effective weapons against the six deadly diseases viz., diphtheria, pertussis, tetanus (commonly called as DPT), tuberculosis, measles and poliomyelitis.

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In recognition of the importance of immunization and also in view of the successful global eradication of smallpox, the World Health Assembly has recommended to provide a comprehensive range of immunization protection to infants and young children and thereby established the Expanded Programme on Immunization (EPI) in May, 1974. The importance of EPI as an essential component of maternal and child health and primary health care has been further emphasized in a resolution (WHA, 31.53) adopted in May, 1978 and in the Declaration of Alma Ata in September, 1978. In 1982, the World Health Assembly passed a resolution giving high priority to the implementation of EPI through a Five-point Action Programme to achieve the goal of providing immunization to all children of the world by 1990 (Ko Ko, 1986; WHO, 1985)¹⁻². As a result of this many countries have undertaken acceleration of EPI programme during 1984-1986 (UNICEF, 1987)³. The immunization coverage of children at Global level has reached between 62-71 per cent (Measles 62%, DPT & OPV 67% each and BCG 73%) whereas for the TT2 given to pregnant women it is only around 26 per cent. Further, these percentages of immunization coverage vary significantly between industrialized and developing regions (Table 1, Sokhey, 1990)⁴. These variations in the immunization coverage rates across the countries may be due to various existing socio-economic, communication and health facilities in the respective countries.

TABLE 1
ESTIMATED IMMUNIZATION COVERAGE IN THE WHO REGIONS

Region	Per cent Coverage				
	TT2	BCG	DPT	OPV	MEL
African	23	60	45	45	46
American*	34	71	59	82	63
Eastern Med.	34	76	71	71	66
European	0	76	84	86	74
SE Region	49	66	64	57	51
W. Pacific	4	93	89	90	88
Global	26	71	67	67	62

Note: *Excludes USA and Canada

Data is based on information available as on December 1989.

Source: Sokhey, 1990

Very few attempts (mostly empirical in nature) have been made to find out which of these factors are highly associated with the immunization coverage across the countries. From these studies, it is evident that the adoption/practice of immunization of pregnant women and children is positively and significantly correlated with the educational status and income of the mothers/parents (Kaur and Narwal, 1988; Srivastava and Saksena, 1988, Cutts et al., 1990; Viswanathan and Rohed, 1990)^M. This is mainly because of the inter-link (correlation) between education and income with awareness and knowledge of all types of vaccination and also motivation of the people (Roy, et al., 1988)⁹. Government health staff (Doctors, Auxiliary Nurse Midwives, para-medical personnel and dais) seem to be the most mentioned sources of information on immunization closely followed by friends, relatives and others and radio/TV (Viswanathan and Rohed, 1990; Kekre, et al., 1988; Joshi, et al., 1988; Gulati, et al., 1990)^{8,10,18}. Likewise, access to health services and the delivery of immunization services have also played a significant role in influencing the coverage of immunization, since most of the vaccines are available mostly through Government programmes. Besides these, the coverage of immunization is also found to be higher in urban areas as compared to rural areas (Gulati, et al., 1990; Bhardwaj, et al., 1990)²¹³.

All the studies mentioned in the earlier lines looked into the influence of individual (micro level) characteristics on the various types of immunization. But coverage of immunization because of diffusion could depend mostly upon the societal or aggregate (macro) level factors such as overall level of literacy in society, the level of income, availability of communication infrastructure and access to health services. In the light of these circumstances this paper focussed on the following aspects: (i) to find out the major socio-economic, communication, and health correlates of maternal and child immunization coverage across the countries; and (ii) to examine the magnitude of direct and indirect effects of these variables on the percentage of various types of immunization.

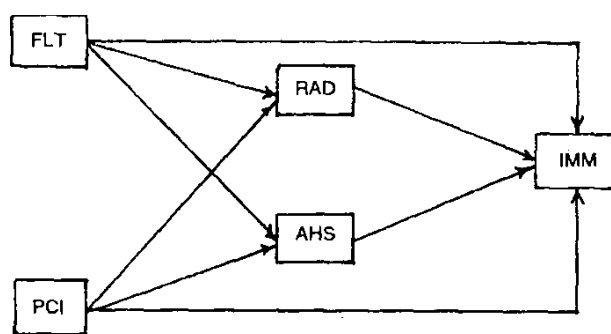
It is envisaged here that the level of literacy in a population would be conducive to higher acceptability of immunization, because it could create greater awareness and knowledge of all types of immunization and create a demand for health services. Higher income would make it easier to provide better health services and would bring services within the means of population and thus encourage the population to procure the health services. On the other hand, communication would disseminate knowledge and utilization of health services including immunization and create an interest in the minds of population to act upon it.

Access to health services would lead to higher coverage of immunization since the immunization services would be available within easy reach of population. Further, both communication and access to health services are

expected to be influenced by the level of literacy and income and presumably other factors such as government policies and external aid. Thus, literacy and income are hypothesised to have an indirect effect on immunization through their effect on access to health services and communication. Further, they may also have direct effect. All these proposed relationships are shown in Fig. 1.

Fig. 1

PATH DIAGRAM LINKING THE EXPLANATORY VARIABLES TO MATERNAL AND CHILD IMMUNIZATION (IMM)



Note: IMM = TT2/BCG/DPT/OPV/MEA.

MATERIALS AND METHOD

Data for the present paper are collected mainly from 'The State of the World's Children, 1991', an UNICEF publication (UNICEF, 1991)¹⁴ and 'World Development Report, 1991' a World Bank publication (World Bank)¹⁵. However, for a number of countries, data on one or more variables are not available. Therefore, only 50 countries, both less developed and more developed, for which data for all variables (selected for this paper) have been included in this analysis. Data for all the immunization indicators relate to a time point of 1988-89 and for the rest of the variables very nearest to it i.e., around 1985-88.

The following variables have been selected and used in the analysis;

Dependent Variables:

TT2 = Per cent of pregnant women immunized with Tetanus

BCG = Per cent of infant immunized with BCG

DPT =	Per cent of infants fully immunized with DPT
OPV =	Per cent of infants fully immunized with Polio
MEL =	Per cent of infants immunized with Measles

Explanatory Variable :

FLT	Per cent of adult females (15+ years) literate
PCI	Per capita GNP in UN dollars
RAD	No. of Radio sets per 1000 population
AHS	Per cent of population with access to health services
PUR	Per cent of population living in urban areas
BHS	Per cent of births attended by trained health worker.

Of the six explanatory variables, two variables viz., PUR and BHS have been not included in regression and path analysis, since these variables are highly correlated with PCI and AHS, respectively. For analyzing the data first correlation matrix has been calculated for all the variables under consideration (Table 2). Secondly, multiple regression analysis has been carried out with each of the dependent variables by the four explanatory variables (FLT, PCI, RAD and AHS) and the same results are presented in Table 3. To achieve the second objective, path analysis has been used based on the path model (Fig. 1). The path coefficients are estimated from the following regression equations (Table 4).

$$TT2/BCG/DPT/OPV/MEA = f\{FLT, PCI, RAD, AHS\}$$

$$RAD = f\{FLT, PCI\} \text{ and}$$

$$AHS = f\{FLT, PCI\}$$

ANALYSIS AND DISCUSSION

The correlation analysis results (Table 2) suggest that all the explanatory variables under consideration are significantly and positively correlated with each of the indicators of child immunization. However, in the case of maternal TT2 coverage, all the variables have shown insignificant relationship (except AHS at 5 per cent level). Another surprising fact noticed here is that the variables RAD and PUR have exhibited a negative relationship with maternal immunization, but again insignificant.

TABLE 2
CORRELATION MATRIX FOR ALL THE SELECTED
VARIABLES

	BCG	DPT	OPV	MEL	TT2	FLT	RAD	PUR	AHS	BHS	PCI
BCG	1.000										
DPT	0.747	1.000									
OPV	0.692	0.973	1.000								
MEL	0.802	0.859	0.842	1.000							
TT2	0.514	0.513	0.464	0.451	1.000						
FLT	0.361	0.580	0.638	0.474	0.054	1.000					
RAD	0.324	0.324	0.370	0.431	-0.169	0.514	1.000				
PUR	0.230	0.376	0.454	0.401	-0.122	0.450	0.598	1.000			
AHS	0.608	0.766	0.778	0.726	0.270	0.593	0.404	0.397	1.000		
BHS	0.415	0.501	0.482	0.496	0.110	0.531	0.372	0.465	0.564	1.000	
PCI	0.337	0.520	0.527	0.468	0.159	0.284	0.427	0.661	0.533	0.435	1.00

Based on the regression analysis (Table 3), it is clear that the four variables representing socio-economic conditions (FLT and PCI), communication (RAD) and health (AHS) together explained only 18 per cent of the variation in maternal immunization coverage. Another noticeable aspect is that the communication (RAD) indicator has shown a moderately significant negative effect on maternal immunization. While the influence of PCI and AHS on TT2 is in the expected direction, only AHS has shown significant influence (at 10 per cent level). All these results clearly indicate that the selected variables have not explained adequately for the variations in the coverage of Tetanus to pregnant women across the countries of the world.

TABLE 3
SUMMARY RESULTS OF REGRESSION
ANALYSIS

Explanatory variables	TT2	BCG	DPT	OPV	MEL	RAD	AHS
	Standard Regression Coefficients						
FLT	-.004	-.047	.254**	.319***	.012	.427***	.480***
PCI	.129	-.018	.202*	.197*	.072	.306***	.396***
RAD	.364**	.113	-.117	-.087	.142	-	-
AHS	.351*	.600***	.556***	.519***	.623***	-	--
R ²	.18	.38	.64	.68	.55	.35	.50

Note: *, ** and *** indicate that the matrix regression coefficient is significant at 10 per cent, 5 per cent and 1 per cent levels respectively.
-- implies that the variable is not included in the regression analysis.

In the case of BCG, DPT, Polio and Measles immunization to infants, the four explanatory variables under consideration together have explained 38,64,68 and 55 per cent variation respectively. Another fascinating fact noticed here is that the per cent of population with access to health services (AHS) has invariably played a greater role in influencing all types of child immunization coverage. Next to this factor female literacy closely followed by per capita income (FLT and PCI) have also exhibited moderate positive influence on DPT and Polio. However, it is surprising to note that both of these factors do not have a significant effect on Measles and BCG coverage across the countries. The effect of the communication variables (RAD) on DPT and Polio immunization is in the negative direction, whereas this effect is in the expected direction on BCG and Measles. This shows

TABLE 4
DECOMPOSITION OF THE EFFECTS OF FLT, PCI, RAD, AND AHS ON IMMUNIZATION

Type of effects	Effect of		Effect of		Effect of		Effect of		Effect of	
	FLT	PCI	FLT	PCI	FLT	PCI	FLT	PCI	FLT	PCI
	on TT2		on BCG		on DPT		on OPV		on MEL	
Total	.054	.159	.361	.337	.580	.520	.638	.527	.474	.468
Through:	-.155	.111	.048	.034	-.050	-.036	-.037	-.027	.061	.043
RAD	.168	.139	.288	.238	.267	.220	.249	.206	.299	.247
AHS										
Sub-Total	.013	.028	.336	.272	.217	.184	.212	.179	.360	.290
Direct	.004	.129	-.047	-.018	.254	.202	.319	.197	.012	.072
Residual"	.045	.002	.072	.089	.109	.134	.107	.151	.102	.106

Note: a. Residual effect = Total effect- (Sub-total of effects through RAD and HAS + Direct effect).

the overall weak and unclear influence of communication variable on the various types of vaccination (immunization).

Based on the decomposition results of path analysis (Table 4) it is clear that in general, the direct effect of female literacy on various indicators of child immunization is high and only through the health services (AHS) variable. The direct effect of female literacy on DPT and Polio is also large (and positive). On the contrary, its (FLT) direct effect on BCG and Measles immunization is very small. In the case of TT2, the effect of FLT through RAD is negative and through AHS positive, the result that the overall effect is negligible. This is principally because of the negative effect of indigenous communication variable (RAD) on TT2.

In the case of income (PCI) too the total effect is higher on DPT and Polio followed by Measles and BCG, but similar effect is less on maternal immunization. Further, it has shown a large indirect effect through AHS on child immunization. Its direct effect is noticeable only on DPT and Polio, as in the case of similar effect of FLT. Income's effect through RAD on all types of immunization is quite negligible as noticed in the case of the effect of female literacy. Interestingly, the direct effect of income on maternal immunization is considerably large. Further, FLT and PCI have moderate effects on indicators of child immunization.

CONCLUSIONS

On the basis of the results discussed in the preceding lines, it is clear that the relative importance of the variable 'access of health services by local means of transport in no more than one hour' (AHS) in increasing the coverage of maternal and child immunization is extraordinary. Of course, female literacy and income do exhibit large direct as well as indirect (through the AHS) effects on DPT and Polio, which need sustained motivation because repeated doses (3 doses) to be taken. Unexpectedly, female literacy's direct effect on TT2, BCG, and Measles is very small, which needs further investigation. Likewise, the influence and path of communication (RAD) variable on maternal and child immunization is not clear. Under these circumstances, it may be concluded that increasing the accessibility of health services on the one hand and improvements in female literacy and income on the other hand will certainly lead to universalisation of maternal and child immunization and thereby reduce maternal and infant and child mortality.

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गर्भवती महिलाओं और एक वर्ष से कम आयु वाले शिशुओं को इम्यूनाइजेशन देना (टीकाकरण करना) मातृ एवं शिशु स्वास्थ्य स्थिति का आंकलन करने के लिए एक सर्वोत्तम संकेतक है। प्रस्तुत लेख में यह पता लगाने का प्रयास किया गया है कि गर्भवती महिलाओं और एक वर्ष से कम आयु के बच्चों के प्रतिरक्षण स्तर पर सामाजिक-आर्थिक, पारिस्थितिक संचार और स्वास्थ्य संबंधी संकेतकों का क्या कोई प्रभाव पड़ता है। इनमें निम्नलिखित संकेतकों को शामिल किया गया है: महिला साक्षरता दर प्रतिव्यक्ति सकल राष्ट्रीय उत्पादन, शहरी क्षेत्रों में रहने वालों का प्रतिशत प्रति एक लाख जनसंख्या पर रेडियो और टेलीविजन सेटों की संख्या प्रशिक्षित स्वास्थ्य कर्मियों द्वारा कराए जाने वाले प्रसव केसों का प्रतिशत स्वास्थ्य संबंधी सेवाओं का लाभ उठा पाने वाले लोगों का प्रतिशत इम्यूनाइज्ड गर्भवती महिलाओं का प्रतिशत और बीसीजी, डीटीपी, पोलियो और खसरे आदि के टीकों से इम्यूनाइज्ड एक वर्ष से कम आयु के बच्चों का प्रतिशत।

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PREVALENCE OF DEFICIENCY DISEASES AMONG SCHOOL CHILDREN

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ABSTRACT

An attempt has been made in this study to investigate the prevalence of deficiency diseases among school children of 6-9 years of Panipat city. Total 584 children were selected randomly from different schools of Panipat city comprising 278 boys and 306 girls. Thirty nine per cent of total children showed the signs of Bitot's spots. Twenty six per cent of children exhibited lack of lustre in their hair. Thinness and sparseness of hair was observed in twenty four per cent of total children. A few children showed signs of easy pluckability of hair. Seven per cent of children showed naso-labial seborrhoea and naso labial dyssebacea. Ten per cent of children showed angular stomatitis. Angular scars and cheilosis were observed in nine per cent of school children. A few children showed signs of scarlet raw and magenta tongue. Glossitis was observed in eight per cent of school children. Thirteen per cent of children showed pallagrous dermatosis. Fifteen per cent of children were suffering from spongy bleeding gums. Six per cent of children showed signs of ecchymoses. Sixteen per cent of children showed xerosis of skin. Koitontchia was observed in eleven per cent of school children. Twenty four per cent of school children showed signs of pale conjunctiva. Thus the study indicated high prevalence of various deficiency diseases in school children.

School children form an important vulnerable segment of population and constitute about 20 per cent of total population of India. School age is a dynamic period of growth and development as children undergo physical, mental, emotional and social changes during this stage. Malnutrition, in its various forms, is a very depressing health problem of today, affecting over half of the world's population. Malnutrition leads not only to stunting of physical growth but also to suboptimal intellectual development

In India, 30 per cent of the school age children have moderate to severe malnutrition. Major nutrition problems reported to be are PEM, vitamin A deficiency

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and iron deficiency anaemia^{1,2,3}. Dietary inadequacies have been considered as predominant etiological factors in the causation of all deficiency diseases⁴. Growth and nutritional status of pre-school and school going children are profoundly influenced by the diet consumed by them. Therefore, the school children, in their existing nutritional conditions are in great need of health promotion, health appraisal and health restoration. To overcome the health problems and initiate any programmes for improvement in their health status it becomes necessary to have exact information about the prevalence of deficiency diseases among school children so that appropriate preventive steps are taken. Incidence of deficiency diseases varies from place to place depending upon the local dietary and social factors. Keeping all these points in mind, the present investigation has been planned to assess the prevalence of deficiency diseases in children of Panipat city of Haryana.

RESULTS AND DISCUSSION

The presence of deficiency signs among school children of 6-9 years are presented in the subsequent paragraphs.

Thirty five per cent of total school children showed presence of night blindness which is one of the first symptoms appearing due to vitamin A deficiency. Greater percentage of boys (38%) than girls (33%) showed signs of night blindness. Nine per cent of total school children showed symptoms of xerosis conjunctiva. Xerosis conjunctiva was present in greater percentage of boys (11 %) than girls (7%). Fourteen per cent of total school children showed the presence of Bitot's spots. Higher percentage of boys (16%) than girls (15%) showed the presence of Bitot's spots. One of the reasons for the deficiency of vitamin A may be poor intake of vegetables and animal foods. It has been reported that 56 per cent of school children from drought affected areas showed signs of vitamin A deficiency⁵. It has also been reported that vitamin A deficiency is a public health problem in underprivileged school age children⁶. Twenty four to 34.8 per cent of school age children suffered from vitamin A deficiency diseases in India⁷.

Twenty six per cent of total school children showed lack of lustre in their hair. Greater percentage of boys (28%) than girls (25%) showed lack of lustre in their hair. Twenty four per cent of total school children showed thinness and sparseness of hair. Greater percentage of boys (26%) than girls (22%) showed thinness and sparseness of hair. Easy pluckability of hair was observed in very few children. These signs indicated that school children were malnourished. This may be due to inadequate intake of protein in their diet. It was reported that 17 per cent of school children were acutely malnourished and 16.8 per cent suffered from chronic malnutrition⁸.

As regards to B-complex deficiency signs, naso labial seborrhoea and naso labial dyssebacea was present in 7 per cent of school children. Greater percentage of girls (8%) than boys (6%) were having naso labial seborrhoea and naso labial dyssebacea. Angular stomatitis due to riboflavin deficiency was observed in 10 per cent of school children. Almost similar percentage of boys and girls of 6-9 years showed signs of angular stomatitis. Angular scars and cheilosis was observed in 9 per cent of total school children. Greater percentage of girls (9%) than boys (8%) showed signs of angular scars and cheilosis. One of the reasons for riboflavin deficiency may be due to poor intake of pulses and cereals. Raw and magenta tongue was observed in very few children. Glossitis was observed in 8 per cent of school children and was higher in girls (9%) than boys (6%). Pellagrous dermatosis was observed in 13 per cent of school children. Greater percentage of boys (15%) than girls (12%) showed signs of pellagrous dermatosis. These differences with regard to thinness of hair, B-complex (ribo flavin) deficiency has also been reported.

Spongy bleeding gums (vitamin C deficiency) was observed in 15 per cent of school children. Twenty six per cent of boys and 14 per cent of girls showed signs of spongy bleeding gums. Ecchymoses was observed in 6 per cent of school children. Prevalence was almost similar in boys and girls. One of the reasons for vitamin C deficiency may be poor intake of citrus fruits. Similarly, prevalence of vitamin C deficiency has been reported in Raj as than and Southern part of India.

Xerosis of skin was observed in 16 per cent of school children. Greater percentage of boys (18%) than girls (14%) showed signs of xerosis of skin. Koilonychia due to iron deficiency was observed in 11 per cent of school children, twelve per cent of boys and 11 per cent of girls showed signs of koilonychia. Pale conjunctiva was observed in 34 per cent of school children. Higher percentage of boys (37%) than girls (31%) showed signs of pale conjunctiva. One of the reasons for iron deficiency may be poor consumption of green leafy vegetables. Similar prevalence of iron deficiency In school children has been reported.

CONCLUSION

Thus the study indicated the high prevalence of deficiency diseases among school children. Inclusion of more foodstuffs especially fruits, vegetables, milk and milk products in daily diet of school children is recommended for improving their nutritional status. Government should design school feeding programme for improving their nutritional status. Nutrition counselling and health education to mothers should be important component of health services which will help to decrease the effect of ignorance and faulty practices.

TABLE 1
PRESENCE OF DEFICIENCY SIGNS AMONG SCHOOL CHILDREN

Signs	Boys (6-9 yrs) (n=278)	Girls (6-9 years) (n=306)	Total (n=584)
Vit A Deficiency Signs			
Night blindness	107(38.4)	103(33.6)	210(35.9)
Xerosis conjunctiva	31(11.1)	23(7.5)	54(9.2)
Bitot's spots	44(15.8)	39(12.7)	83(14.2)
PEM			
Lack of lustre of hair	79(28.4)	76(24.7)	155(26.5)
Thinness and sparseness of hair	73(26.2)	69(22.4)	142(24.3)
Easy pluckability of hair	2(0.7)	6(1.9)	8(1.3)
B-complex Deficiency Signs			
Naso labial seborrhoea	18(6.4)	24(7.3)	42(7.1)
Naso labial dyssebacea	17(6.1)	23(7.5)	40(6.8)
Angular stomatitis	28(9.9)	33(10.7)	61(10.4)
Angular scars	23(8.1)	28(9.1)	51 (8.7)
Cheilosis	23(8.1)	28(9.1)	51(8.7)
Scarlet and raw tongue	1(0.3)	2(0.6)	3(0.5)
Magenta tongue	4(1.4)	3(0.9)	7(1.1)
Glossitis	18(6.4)	27(8.8)	45(7.7)
Pellagrous dermatosis	42(15.0)	36(11.6)	78(13.3)
Vit C Deficiency			
Spongy bleeding gums	45(26.1)	44(14.3)	89(15.2)
Ecchymoses	17(6.0)	19(6.2)	36(6.1)
Essential Fatty Acid Deficiency			
Xerosis of skin	49(17.5)	44(14.3)	93(15.9)
Iron Deficiency			
Koilonychia Pale conjunctiva	33(11.7) 102(36.6)	33(10.7) 94(30.1)	66(11.3) 196(33.5)

Figures in parentheses indicate percentage.

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प्रस्तुत लेख में पानीपत शहर के 6-9 वर्ष की आयु के स्कूली बच्चों में हास रोगों के व्याप्ति स्तर का पता लगाने का एक प्रयास किया गया है। पानीपत शहर के विभिन्न स्कूलों से यादृच्छिक आधार पर 584 बच्चों को अध्ययन के लिए चुना गया था, जिनमें से 278 लड़के तथा 306 लड़कियां थीं। 39 प्रतिशत बच्चों में बिटोट चितियों के लक्षण देखे गए थे। 26 प्रतिशत बच्चों के बालों में चमक का अभाव देखा गया था। 24 प्रतिशत बच्चों के बाल छितरे हुए तथा पतले पड़ गए थे। कुछ बच्चों में बालों के आसानी से टूटने के लक्षण देखे गए थे। सात प्रतिशत बच्चों के नांक तथा होठ में वसा के अभाव और "डिस्बेसिया" के लक्षण देखे गए थे। दस प्रतिशत बच्चों में सूक्ष्मपाक के लक्षण दिखाई दिए थे। नौ प्रतिशत स्कूली बच्चों में कोणीय ब्रण-चिन्ह और ओष्ठ विवरता के चिन्ह देखे गए थे। तेरह प्रतिशत शिशुओं में पैलागारस त्पकरोगके लक्षण दिखाई दिए थे। पन्द्रह प्रतिशत बच्चों के जबड़े स्पंज जैसे देखे गए थे तथा उनसे रक्त स्राव होता था। सोलह प्रतिशत बच्चों के ओष्ठों के कोरों में नीलेपन के लक्षण दिखाई दिए थे। छः प्रतिशत बच्चों में त्वचा रोग के लक्षण देखे गए थे। ग्यारह प्रतिशत स्कूली बच्चों में "दर्वीनख" रोग के लक्षण पाए गये थे। चौबीस प्रतिशत बच्चों के नेत्रों में पीलापन महसूस किया गया था। इस प्रकार इस अध्ययन से पता चलता है कि स्कूली बच्चों में "हास रोग" का व्याप्ति दर काफी उच्च था।

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