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DEVELOPMENT TOWARDS ACHIEVING HEALTH /REPRODUCTIVE HEALTH FOR ALL AND MILLENIUM DEVELOPMENT GOALS: A CRITICAL APPRAISAL FOR STRENGTHENING ACTION PROGRAMMES (Part I)

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ABSTRACT

This comprehensive presentation is divided into two parts- Part I and Part II. In Part I, the efforts made for health development and health maintenance in India since Independence to recent years have been systematically reviewed. Achievements made so far as well as shortfalls in achieving Health For All (HFA) and Reproductive Health For All (RHFA) goals through general health care and RCH-I & II, and NRHM programmes are discussed. The gaps and deficiencies, and future challenges are also indicated.

In Part II, the Millennium Development Goals (MDGs) have been described and current situation in India has been reviewed. Various barriers to progress towards achieving HFA, FHFA and MDGs have been identified, and appropriate remedial measures suggested. Steps to be undertaken for strengthening affective implementation of various action programmes have also been described. Overall concluding remarks and relevant references are also added.

Key Words: health development and Health Maintenance, Health for all and Reproductive health for all, national Rural Health Mission.

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INTRODUCTION

Efforts for health development and health maintenance in India date back to the ancient period. At one time Ayurveda flourished, but later on it detoriated due to neglect and lack of support.

In modern time, the basis for health development and maintenance through primary health care (PH Care) approach was laid by recommendations and guidance of the Bhore Committee, and later on by many other committees. Planned overall development in the country through 5-year plans started from 1951 onwards.

In more recent years, World Health Organization (WHO) has been providing lead and guidance to Member countries. It had set the goal of achieving Health For All (HFA) by 2000 through PH Care at Alma Ata in 1978. It reviewed and assessed the progress and constraints etc. at the International Conference at Riga in 1988. Subsequently, at ICPD (Cairo, 1994) the goal of achieving reproductive Health For All (RHFA) by 2015 was set. India is a signatory to all these declarations. As a result of all these, lots of inputs have been made for the development of health care delivery and manpower. Significant improvement has occurred in overall health status in the country, although not upto the desired level. Furthermore, a great deal of disparities and inequity exist in different population groups. Rural areas and urban poor have been neglected.

To rectify all these deficiencies, India has embarked on two very ambitious and gigantic ventures, namely RCH-II and National Rural Health Mission (NRHM).

In view of all these mentioned above, it was thought appropriate to make a critical appraisal of the prevailing conditions, existing barriers to progress, strength and weaknesses of the current activities and of the proposed plans of action. Based on the findings corrective measures have been suggested, and the expected challenges have been indicated.

HISTORICAL PERSPECTIVE

The experience and concern in health development and primary health care in India date back to the Vedic period. In the Indus-Valley Civilization as far back as 3000 B.C., one finds evidence of well-developed environmental sanitation programmes such as underground drains, public baths in the cities etc. 'Arogya' or 'health' was given high priority in daily life and this concept of health included

physical, mental, social and spiritual well being. This cherished value regarding health is also enshrined in an ancient Sanskrit verse, `Sarve Santu Niramayaha', which means `Let all be free from disease/let all be healthy', and which was often used to express good wishes.

The life style was conducive to health promotion and in the advocated daily activities of life called `Dina Charya' the following essentials of health care were emphasized: health education, personal hygiene and habits, exercise, dietary practice, food, sanitation, environmental sanitation, code of conduct and self-discipline, civic and spiritual values, treatment of minor ailments and injuries etc. In Ayurveda i.e. the `Science of Life', one finds even in 1400 B.C. emphasis on health promotion and health education.

Unfortunately, for various reasons and particularly because of the onslaught of series of foreign aggressions and regimes, the great era was lost to darkness. Ayurveda not only failed to develop, but in fact, it languished because of want of adequate state patronage and recognition.

During the middle of the 18th century, the British Government in India established medical services which were primarily meant for the benefit of the British nationals, armed forces and a few privileged civil servants. But the vast majority of the native populations were denied access to the western medicine; indigenous systems of medicine were totally neglected and allowed to languish.

Basis for Primary Health (PH) Care in India in Modern Time

India gained independence in August 1947 after a long colonial rule. The basis for organization of health services in India through the primary health care approach in modern time, was laid by the recommendations and guidance provided by the `Health Survey and Development Committee' (Bhore Committee) in 1946. The Community Development Programme was launched in October 1952 as the first integrated all-round rural development programme. It was proposed to establish one Primary Health Centre (PHC) for each community development block (CDB). At that time, the operational responsibilities of the PHC were to cover medical care, control of communicable diseases, maternal and child health (MCH), nutrition, health education, school health, environmental sanitation and the collection of vital statistics. Each PHC had three Sub-centres, being looked after by a trained midwife for providing MCH services.

Subsequently, over the past five decades the health services organization and infrastructure have undergone extensive changes and expansion in stages following review by a number of expert committees. Progressive changes have been introduced into the programme over the nine/ten Five-Year Plan periods. The first Five-Year Plan (1951-56) initiated a process of all-round balanced development to ensure a steady improvement in the living standard over a period of time. New programmes for the control of communicable diseases such as malaria, filaria, tuberculosis, leprosy etc. were instituted. National Family Planning Programme (FPP) was initiated in 1952 with the object of reducing birth rate to stabilize population at a level consistent with requirements of national economy. The main aim of FPP was for health and welfare of the family. Family limitation or spacing of child birth is necessary and desirable to secure better health of the mother and better care and upbringing of children.

Subsequent 5-Year Plans provided policy framework and funding for developing nationwide health care infrastructure and manpower, and supply of consumables to deliver the services. During the 4th Plan (1969-1974), Family Planning Programme was put on war-footing; target-oriented programme implementation was introduced. In 1971, Medical Termination of Pregnancy (MTP) Act was passed in the Parliament as a maternal health measure, and a back-up for contraceptive failure. This enabled women to have safe abortion services.

During the 5th Plan, Expanded Programme of Immunization (EPI) was introduced in 1978 with the object of reducing mortality and morbidity due to diphtheria, tetanus, neonatal tetanus, whooping cough, poliomyelitis, and tuberculosis in children and pregnant mothers.

During the 6th and 7th Plans (1980-1990), several special schemes were introduced-

1. All India Hospital Post-Partum Programme (AIHPPP) at sub-district level.
2. Child Survival & Safe Motherhood (CSSM) Programme.
3. Urban Family Welfare Centres for vulnerable slum population and urban poor.
4. Universal Immunization Programme (UIP).

With integrated CSSM, UIP, and intensified MCH activity, particularly in states with high MMR, efforts were made to provide integrated ante-natal, intra-natal and post-natal care for strengthening women and child health care.

During the 8th and 9th Plan Periods (1992-2002), several important events took place. Following promulgation of Panchayati Raj and Nagar Palika Act (1992) the process of democratic decentralization was set in. During the 9th Plan (1997-2002), the GOI implemented the recommendations of the Population Sub-committee (1993) of NDC (National Development Council) as listed below:

1. Decentralized area-specific planning based on needs assessment.
2. Emphasis on improved access and quality of services to women and children
3. Providing special assistance to poorly performing States/Districts, and creation of district level data bases on quality and coverage of services and impact indicators for monitoring the programme.

During the 10th Plan (2002-2007), strong emphasis has been put on human development; and for family welfare the following targets have been indicated:

a) Reduction of decadal (2001-2011) rate of population growth to 16.2%
b) Reduction of maternal mortality ratio (MMR) to 2 per 1000 live births by 2007 and to 1 by 2012.
c) Reduction of infant mortality rate (IMR) to 45 per 1000 live births by 2007, and to 28 by 2012.

There are marked differences between states with regard to various Reproductive Health (RH) Care parameters and RH parameters. The identified eight States (Bihar, Jharkhand, Uttar Pradesh, Uttaranchal, Rajasthan, Orissa, Madhya Pradesh and Chattisgarh), which are lagging behind in terms of the above indicators would need to pay more attention towards provision of efficient and effective family welfare services. Govt. of India has formed an "Empowered Action Group (EAG) in the Ministry of Health and Family Welfare from March 2001 with the object of strengthening various programmes in these States".

CONCEPT OF 'HEALTH FOR ALL (HFA) BY 2000 A.D.'

Since 1975, the WHO had been developing the concept of achieving health for all by 2000 A.D. In the 30th World Health Assembly in 1977, it was decided that the main social goal of the governments and of the WHO should be the attainment by all the people of the world by the year 2000, a level of health that will permit them to work productively and to participate actively in the social life of their community. This is popularly known as `Health for All (HFA) by 2000 A.D.'

In the International Conference on Primary Health Care, jointly organized by the WHO and UNICEF in Alma Ata, U.S.S.R. in 1978, this concept of HFA by 2000 A.D. was endorsed and it was further stated that primary health care would be the key to attaining this target. The Alma Ata Declaration and subsequent WHO communications clearly stated the basic principles and strategies for HFA development, and defined the concept and characteristics of health and primary health care. These also spelt out the minimum essential components of primary health care and the supportive activities needed for their successful implementation.

Primary Health Care had been defined as an "essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination". It had been further stated that at least the following should be included in Primary Health Care.

1. Education of the people concerning prevailing health problems and methods of preventing and controlling them.
2. Promotion of food supply and proper nutrition.
3. Adequate supply of safe water and basic sanitation.
4. Maternal and child health care and family planning.
5. Immunization against the major infectious diseases.
6. Prevention and control of locally endemic diseases.
7. Appropriate treatment of common diseases and injuries.
8. Provision of essential drugs.

The WHO had also suggested that the following supportive activities should be undertaken for the success of Primary Health Care:

a) Involvement of people and community participation;
b) Intra-sectoral and inter-sectoral collaboration;
c) Development of effective referral support;
d) Development and mobilization of financial resources;
e) Involvement of managerial processes;
f) Health manpower development;
g) Medical and health system research, including development of innovative approaches; and
h) Development and application of appropriate technology for health care.

Primary health care is the first level of contact of the individuals, the family and the community with the national health system bringing health care as close as possible to where people live and work. It constitutes the first element of the process of continuing health care, and this should get full support from the rest of the health system.

Primary health care has to become a part of socio-economic development, and it demands coordinated efforts of all sectors such as agriculture, animal husbandry, food industry, education, housing, public works, communication and others. It would require individual and community self-reliance and participation and should be sustained by an integrated, functional and mutually supportive referral system. The Government of India was signatory to the Alma Ata Declaration and had also signed the South East Asian Health Charter with the WHO for achieving the goal of Health for All (HFA) by 2000 AD. In order to achieve this goal of HFA through Primary Health Care approach, it was necessary that all the categories of personnel working in the field of health and other related organizations became knowledgeable about the newer developments and acquire competence for doing their job effectively.

To achieve the objectives of Health for All various programmes in the field of health and family welfare had been undertaken by the Govt. of India. These included expanded maternal and child health care and family planning programmes; immunization against major infectious diseases; national programmes for eradication of endemic diseases such as malaria, tuberculosis, leprosy, filaria, goitre and blindness. Later on, to provide emphasis and thrust, some special programmes such as Child Survival and Safe Motherhood (CSSM) were initiated, and Family Welfare Programme was strengthened and large scale immunization of children was carried out under Universal Immunization Programme (UIP). Programmes were also organized for control of diarrhoeal diseases and acute respiratory infections (ARI) among children. For meeting these needs there has been extensive expansion of health services infrastructure.

As a result of all these significant improvement has occurred in various health parameters, although these are not upto the desired/targeted levels.

ALMA-ATA REAFFIRMED AT RIGA (1988)

At the mid-point in time between the historic Alma-Ata Conference in 1978 and the year 2000, a meeting was convened by the WHO to review the progress and the problems encountered in the pursuit of this goal. The meeting was held in March

1988 at Riga, USSR and was attended by experts from all WHO regions as well as the representatives of UNICEF, UNDP and non-governmental organizations.

Experiences of the Member States in health development over the preceding ten years had made it quite clear that the concept and principles of Health For All (HFA) had provided the world with moral, political, social and technical guidance that enabled the countries to effectively deal with the ill health of their population and also to various extents with the problem of inequity. The potential importance of political actions had also been demonstrated. These amply affirmed the validity of the concept and strategies of WHO's goal of HFA.

However, it was further noted that despite the widespread progress, the gains were not uniform within and between the countries. All had recognized that sustained and continuous fight against ill-health and for ensuring equity had to be maintained as a permanent goal of all nations upto the end of century and beyond.

It was recognized that in many less developed countries, the infant, child and maternal mortality rates/ratios would still continue to persist at high levels by the turn of the century. It was further realized that many of the serious health problems had still remained untouched by developmental efforts. For overcoming these problems there was a need for more vigorous application of current approaches, also application of new approaches, new research, new mechanisms, new partnerships and new resources. Special attention and emphasis would be required for overcoming problems that continue to resist solution. For meeting these challenges there was an urgent need for intensifying "Social and Political Actions."

REPRODUCTIVE HEALTH FOR ALL (RHFA) BY 2015

At the International Conference on Population and Development (ICPD), Cairo (1994) the goal of achieving Reproductive Health For All by 2015 was set. Reproductive health (RH) is a major and crucial component of general health. The importance of various components of reproductive health (RH) had been gaining increasing but fragmented attention in different countries over the years, and an integrated comprehensive concept of RH has emerged and gradually evolved only in recent years.

Definition of Reproductive Health (RH)

As defined by the WHO and adopted in the Programme of Action of the International Conference on Population and Development (ICPD) at Cairo in 1994, "Reproductive health is a state of complete physical, mental and social well being and not merely the absence of disease or infirmity in all the matters relating to the reproductive system and its functions and processes. Reproductive health, therefore, implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so. Implicit in this last condition are the rights of men and women to be informed of and to have access to safe, effective, affordable and acceptable methods of family planning of their choice for regulation of fertility which are not against the law, and the right of access to appropriate health care services that will enable women to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant."

W.H.O. Definition Needs Further Elaboration

Maternal health denotes status of health of women during pregnancy and child birth. It is directly related to the state of women's health, which in turn is related to the status of women in the family and the community at large and their development. Both women's health and maternal health are largely influenced by the status of their health during infancy, childhood and adolescent period. Children and adolescents of today would develop into adults of tomorrow, entering into reproductive phase of life. Maternal health is also closely related to child survival. The fear of or actual death of the child produces a desire for a large number of children and early death of the child curtails the period of lactation thus hastening exposure to pregnancy.

High fertility reduces child survival and the direct correlation of higher infant mortality rate with higher fertility is well known. Thus high fertility and high maternal mortality and morbidity are linked with high infant and child mortality creating a vicious circle. Child survival is very important, but that is not enough. Survival alone is no guarantee for fulfillment of physical and mental potentials with which they are born. Child needs integrated development throughout. Subsequently, the adolescent period, which denotes the transition between childhood and adulthood, is also very important. At this time, the adolescents face the problems of growing up and the foundation for human sexuality is laid. Human sexuality comprises the knowledge, beliefs, attitudes, values and behaviours of individuals regarding sex. An integrated care and

development of the adolescents and youths is a most crucial component for their balanced development leading to rational sexuality, responsible parenthood and useful citizenship. Therefore, a comprehensive concept of reproductive health should encompass all these aspects mentioned above and its care needs an integrated approach.

Components of Reproductive Health and Reproductive Health Care

The different components of comprehensive reproductive health care are encompassed within the following nine areas:

- Women's health, safe motherhood (including safe and humane management of unwanted pregnancy and abortion), and women's development.
- Child survival, child health and child development.
- Adolescence, sexuality development, adolescence education and adolescent's health care.
- Effective family planning ensuring free reproductive choice, gender equality and greater male participation.
- Prevention and scientific management of infertility and other reproductive disorders.
- Prevention, detection and management of reproductive tract infections, sexually transmitted diseases (STDs) including HIV/AIDS and the cancer of the reproductive system.
- Sexual Health.
- Prevention and detection and management of genetic and genetico-environmental disorders.
- Reproductive health care of elderly persons.

It is to be noted that the problems encountered in each of the above mentioned components are very much interrelated and inter-twined. Therefore, their remedial measures would need an integrated approach.

Scope and Importance of Reproductive Health

Reproductive health forms a major and crucial part of general health; and it provides a sound base for human development. It involves very intimate and highly valued aspects of life and affects everybody at all phases of life. It is affected by other aspects of health, particularly the status of health during infancy, childhood and

adolescence as well as by lifestyle and the environment. It also affects other aspects of health beyond the reproductive years, both in women and men. Reproductive health also includes sexual health which leads to the enhancement of life and personal relations, and is not just counseling and care related to reproduction and sexually transmitted diseases (STDs). It is to be noted that RH has also trans-generational implications. By virtue of its comprehensive and holistic nature reproductive health is considered to be the key to a brighter future (WHO, 1992).

Obviously, all the above components of reproductive health care may not be organized overnight, but these can be developed in an incremental fashion. Depending on the urgency of the prevailing problems and the availability of resources, some of these components would need priority attention and emphasis. Apparently, the RCH-I (Reproductive and Child Health) programme in the country has followed somewhat similar approach. It has not addressed various other components of reproductive health listed above. Nevertheless, the minimum essential requirements may be spelt out, but it would also be important to outline the comprehensive programme. Then depending upon the local needs, demands and resources, these can be adapted and developed appropriately, keeping the higher goals in view for the future.

Reproductive & Child Health (RCH-I) (1997-2005) in India

In the RCH-I project in India, which has just been completed the following components of Reproductive Health Care were being covered.

1. Maternal health services including ante-natal, intra-natal and post-natal care.
2. New-born care and child health services including prevention and management of acute respiratory infection (ARI), diarrhoeal diseases, malnutrition, malaria and vaccine preventable diseases.
3. Adolescent health care.
4. Contraception; prevention and management of unwanted pregnancy, and safe abortion services.
5. Prevention and management of sexually transmitted diseases (STDs), HIV/AIDS and reproductive tract infections (RTIs).
6. Care for gynecological morbidity, and investigation and management on infertility; and screening for cancer of reproductive organs.
7. Nutritional services are also provided to vulnerable groups.

RCH Phase-I was introduced in the country in 1997 with the object of safe motherhood, child health and addressing other reproductive health issues, as mentioned earlier. There was a major shift in approach in national family welfare program, which was earlier target oriented, to focus on more broader reproductive health needs identified by local communities. However, success was limited, and unevenly and inequitably distributed across the States. Some of the identified critical weaknesses were:

1) The so-called paradigm shift in the program was not backed up with active promotional efforts or activities.
2) Decentralized community-based program would need a strong decentralized planning and implementation process.
3) Being wholly Centrally controlled, the States found it difficult to suitably tailor the project to meet their felt needs.
4) There were multiple partners, who were supporting independent projects rather than a cohesive national program.
5) There was limited involvement of private sector in the delivery of RCH services.

RCH Phase-II (2005-2010)

Keeping the above weaknesses in view the second phase of the programme has been suitably molded to include the following approaches:

1) Evolving a shared vision, and there would one common programme covering the entire family welfare sector.
2) Focus would be on especially improving the use of RCH services by the poorest and under-served populations; these would contribute to national and international goals.
3) For program planning and implementation, a “bottom-up” approach would replace the current `top-down’ approach, and this would provide greater flexibility to the States to use the allocated funds.
4) To enhance participation of private sector for improving the outreach of RCH services, innovative approaches such as social marketing, social franchising and contracting would be encouraged.

Thus, the RCH-II programme with a longer term vision, will be an integrated, focused and participatory programme aiming to meet the unmet demands of target population. For achieving longer term goals of reducing maternal and infant mortality, specific outputs of the programme would include:

a) Increased use of contraceptives by eligible couples;
b) Reduced unmet need for birth spacing;
c) Increased use of skilled care during child birth;
d) Improved post-natal and new born care;
e) Better access to emergency obstetric services, and care of sick children;
f) Improved coverage of childhood immunization.

RCH-II program would be a critical component of the National Rural Health Mission (NRHM) initiated by Government of India in January 2005.

National Rural Health Mission (NRHM)

The NRHM (2005-12) is intended to provide effective health care to rural population throughout the country with special focus on 18 states, which have weak public health-indicators and/or weak infrastructure. These 18 states are Arunachal Pradesh, Assam, Bihar, Chattisgarh, Himachal Pradesh, Jharkhand, Jammu & Kashmir, Manipur, Mizoram, Meghalaya, Madhya Pradesh, Nagaland, Orissa, Rajasthan, Sikkim, Tripura, Uttaranchal and Uttar Pradesh.

NRHM Goals

1. Reduction of infant mortality rate (IMR) and maternal mortality ratio (MMR).
2. Universal access to public health services particularly for women's and child health, immunization and provision of safe water, sanitation & hygiene and nutrition.
3. Prevention and control of communicable and non-communicable diseases, and locally endemic diseases.
4. Access to integrated comprehensive primary health care including effective referral support.
5. Population stabilization, gender equity and demographic balance.
6. Revitalization of local health traditions, and mainstreaming of AYUSH.

For achieving these goals, Various Strategies, Plan of Actions including its different components, Institutional Mechanisms, Technical Supports, Role of State Governments, Special Focus on North-Eastern States, Role of Panchayati Raj Institutions, Role of NGOs, Mainstreaming of AYUSH, Funding Arrangements, Time Frame, Monitoring and Evaluation of Various Programmes etc. have been outlined in detail in the Mission document.

Challenges to be Met

This is gigantic venture; there would be many problems and obstacles. Some of these are highlighted below:

1. Panchayati Raj Institutions (PRIs) are to own, control and manage public health services. Health plan for each village is to be prepared and implemented through Health Committees of the Panchayat. They urgently need training and continuous guidance for effectively carrying out their tasks.
2. Every village/large habitat will have a female Accredited Social Health Activist (ASHA) to be selected by and accountable to Panchayat. She is to provide primary health care and to act as the interface between the community and the public health system and a bridge between the village and the ANM from sub-centre. Their training and systematic continuing education on the job for updating their knowledge and skill and supportive supervision would be a continuous challenging task.
3. Strengthening of existing Subcenters, PHCs and CHCs by providing proper Infrastructure, equipment and trained manpower is urgently needed. In addition, there are short-falls according to population norms as evident from 2001 Census data. These would need not only large amounts of funds, but also trained manpower who should stay at these centres.
4. Promotion of Public-Private Partnership for achieving public health goals.
5. Mainstreaming of AYUSH for revitalization of local health traditions.
6. Re-orienting Health/Medical Education for addressing and supporting rural health issues.

OVERALL ACHIEVEMENTS IN HEALTH & FAMILY WELFARE IN INDIA & CURRENT STATUS

As a result of various programmes undertaken by the Govt. of India in the field of health and family welfare over the years, significant improvement has occurred in various health parameters as may be noted from Table-I, although these are not upto the desired/targeted levels.

The crude birth rate (CBR) has decreased from 41.7 in 1951-61 to 23.8 in 2005-06, and crude death rate (CDR) has decreased from 25 to 7.6 during the same period. Maternal mortality ratio (MMR) has decreased from more than 5 to less than 2, and the infant mortality rate (IMR) has declined from 146 to 58. The couple protection rate (CPR) has increased from 10.4% in 1951-61 to 56% in 2005-06, and total fertility rate

has declined from 6 to 2.7. The life expectancy at birth has increased from 41.3 to more than 64.6 years (2002-03).

Now more deliveries (about 47%) take place at health facilities. More children receive essential vaccines for preventing six vaccines preventable diseases. Small-pox and guinea worm infestations have been eradicated. Polio is on the verge of eradication. Leprosy, kala-azar, filariasis, neonatal tetanus, yaws are expected to be eliminated soon. Severe acute respiratory syndrome (SARS) had been successfully contained.

However, it should be pointed out that there are intra-and inter-state variations, and differences among urban-rural, urban-poor/slum dwellers and across diverse socio-economic groups. There are many groups who are still under-served for various reasons. Population in India has crossed 1 billion in June 2000; 72 percent of people live in about 6,00,000 villages. Obviously, development of health sector in rural areas has great stake in the overall development of the country. Improving the availability, accessibility and utilization of quality basic health and family welfare services in the rural areas are the most important and challenging issues.

TABLE-1
ACHIEVEMENTS IN VARIOUS ASPECTS OF HEALTH AND FAMILY WELFARE
PARAMETERS

Sl. No.	Parameters	YEARS						
		1951-61	1961	1991-94	1998-99	2002/2003	2005-06 SRS/NFHS-3	Goals by 2012
1.	Crude Birth Rate	41.7 in 1951	37.2	28.7 (SRS 1993)	26.4 SRS 1998)	25.4/24.8 (SRS)	21	
2.	Crude Death Rate	25.1 in1951			10.4 (SRS 1998)	8.4 / 8 (SRS)	7.6	
3.	Maternal Mortality Ratio	-	>5/1000 live birth (LB)	4.37/ 1000 LB	4.07/ 1000 LB			1/1000 L.B.

4.	Infant Mortality Rate	146	110	74 (SRS 1993)	72 (SRS 1998)	63 / 60 (SRS)	45	28
5.	Couple Protection Rate (%)	10.4 (1970-71)	22.6	45 (1994)	44 (1999)	50/52	56	>60
6	Total Fertility Rate	6.0	4.5	3.6 (SRS 1993)	3.3 (SRS 1998)	3 (SRS)	2.9/2.7	
7.	Life Expectancy at birth (years)	41.3	50.5	56.6 (1971-81)	62 (1986-91)	64.6 RGI,2000		

Some of the Existing Health Problems Which Need Urgent Attention

1. Unmet contraceptive need- There is great unmet contraceptive need, particularly among young people. As a result, there are high incidences of unplanned pregnancy among both married and unmarried women. Most of them resort to abortion, often under unsafe conditions resulting in high incidences of maternal mortality and morbidity and infant mortality. Those who decide to carry on pregnancy, add to undesirable population growth adversely affecting socio-economic development in the country. There is an urgent need for strengthening overall contraceptive programme as well as emergency contraception in the country.

2. There are other major areas of concern, such as proper maternal and newborn care; balanced growth and development of children, adolescents and youths; promotion of effective family planning ensuring gender equality, at present male participation is very marginal; magnitude of unsafe abortions; high incidences of reproductive tract infections (RTIs) and sexually transmitted diseases (STDs) including HIV/AIDS, which has attained an epidemic proportions; inequities in health care delivery; and improving quality of care. These have been discussed elsewhere.

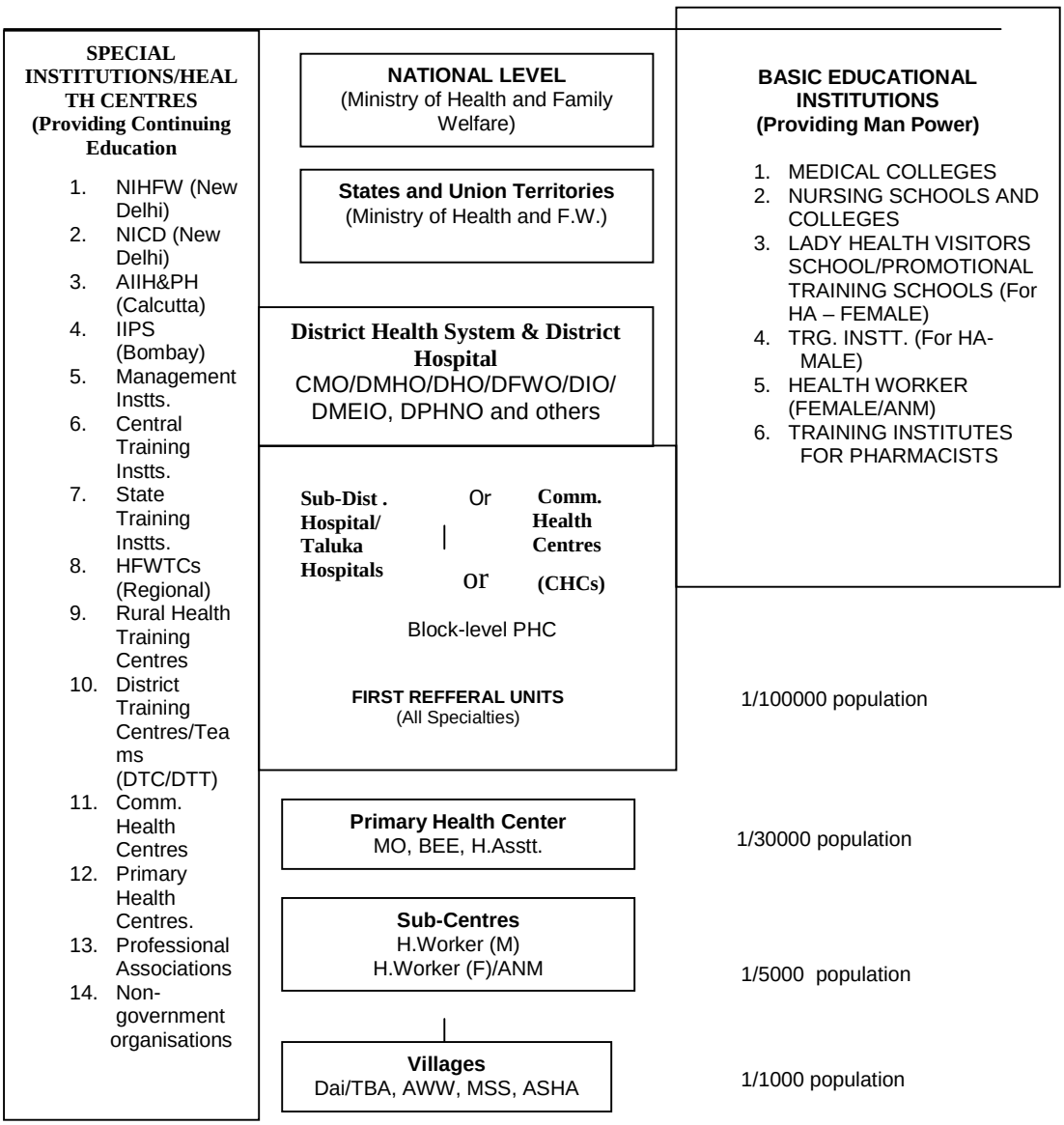
Development of Health Services Infrastructure & Health Care Facilities: Current Status & Future Directions.

Over the past fifty years vast infrastructure have been built for health care delivery and health manpower development in the country, as may be noted from Table 2. At the central column is shown the health care delivery system from the Centre to the village level. In the right side column is shown the list of institutions/centres for manpower production, and in the left side column is shown the list of institutions/centres/organizations which carry out various types of continuing education programmes for updating the knowledge and skills of different categories of health personnel. Since the pharmacists play a role in the delivery of health care and family planning products/devices, their orientation and sensitization in relevant and urgent issues would be important.

The infrastructure and health care facilities in the periphery are described below:

Village Health Post (1/1000 population); Sub-center (1/5000 population); Primary Health Center (PHC- 1/30,000 population); Community Health Center (CHC- 1/100,000 population). As of September 2004, for health care services there are 14,26,555 Sub centers, 23,105 PHCs and 3222 CHCs. According to population norms and as per 2001 Census data, there are short-falls of 21,983 Sub centers, 4,436 PHCs, and 3,392 CHCs. Even in the presently sanctioned/existing centers there are many deficiencies.

TABLE 2
HEALTH CARE SYSTEM AND HEALTH MANPOWER TRAINING SYSTEM IN INDIA



N.B.: In urban slum population would need priority attention in reproductive health care. Available health functionaries in Government and non-government sectors would need reorientation and continuing education.

Facilities at Village level

Available health functionaries are one trained Dai or traditional birth attendant (TBA) and one Angan Wari worker (AWW) employed under ICDS programme. In addition, functionaries of some voluntary agencies may be available, such as Mahila Swasth Sangh (MSS). Now under the recently introduced National Rural Health Mission (NRHM), a new female worker would be ASHA (Accredited Social Health Activist), to be chosen by and accountable to Panchayat.

ASHA would be the key person for convergence of services at grass root level in coordination with other health functionaries. She will be trained to advise the rural community about sanitation, hygiene, nutrition, contraception, immunization etc. She will provide treatment for minor ailments like diarrhea, fever and small injuries, and accompany the patients to health facilities. She will be depot holder for health products like ORS, anti-malaria drugs, delivery kits, oral pills, condoms etc. She will be a catalyst for involving the community in local health planning and increase utilization of existing health services, and be a promoter of positive health practices.

Some experts have pointed out that ASHA scheme appears similar to the erstwhile Village Health Guide (VHG) scheme, which was introduced by the then Govt. in 1978; but it was not successful. The present authorities should learn lessons from that experience and the ground reality, and adopt more practical approaches (Nandan 2005; Sharma 2005).

Facilities at Sub-centre (SC) Level

This is the most peripheral institution and first contact point between the community and health care delivery system. It is manned by one female (ANM) and one male health worker (MHW): one Lady Health Visitor (LHV) located in PHC supervises six SCs.

About 50% SCs do not have their own buildings, and are functioning either from rented or donated buildings. Recent survey shows that SCs at rented buildings are poorly furnished, less equipped and less congenial for working. Supply of water and electricity and toilet facilities are also poor. Furtheremore, about 50% SCs do not have MHWs, and 7% of SCs do not have ANMs. Obviously, there is an urgent need for more Sub-centres well equipped with physical facilities, equipments, located within the village and ensuring availability of staff at Sub-centre village. The other important and challenging task would be to update and maintain the knowledge and skill of SC

staff under the changed circumstances, through well planned continuing education programme and supportive supervision.

Effective linkages of the community with SCs have not yet been developed, although 'Community Needs Assessment' (CNA) approach of RCH-I has been useful to a limited extent. For making up of various short-falls the strategies of NRHM would be:

a) Active involvement of Panchayats (PRI).
b) Inter-sectoral coordination involving women and child development, water supply and sanitation programmes.
c) Strengthening of existing infrastructure, and establishment of new ones.
d) Comprehensive health plan is to be prepared and implemented by the Village Health Committee.

However, successful implementation of all these strategies would be a great challenge.

Facilities at PHC level

PHC is the first contact point between the rural community and the Medical Officer (MO). It is manned by one M.O. and 14 other staff including one Block Extension Educator (BEE), two Health Assistants (HAs), Health workers and other supporting staff. It has one Outpatients' department (OPD) and 4-6 Indoor beds; it serves as a referral unit for six SCs. It is intended to provide curative, preventive, promotive health care and family welfare services.

There have been serious criticisms for deficits and malfunctioning of PHCs. About 700 PHCs are without any M.O.; in many others, doctors are not available at PHCs because of lack of basic amenities and no incentives to work in rural areas. As a result, people are deprived of basic curative services, emergency care and referral services. Furthermore, in the absence of any supportive supervision by the M.O., the quality of overall health care by the peripheral staff at PHC, SC and below is severely hampered. The doctors themselves would need continuing education for updating their knowledge and skill.

In the RCH-II project there is a plan to operationalize 50% of PHCs in the first instance to provide 24 hrs. delivery services and new-born care, to increase

institutional delivery. This would need the services of two doctors at PHC; one suggestion is that a AYUSH trained doctor may be placed at PHC: These would also need strengthening of physical infrastructure such as building, equipment, residential quarters, water supply, electricity, telephone, transport facilities etc. These would need huge funds and involve complicated issues, and it would be very challenging to evolve implementable programmes.

Facilities at CHC level

The CHCs have been established as First Referral Units by upgrading some Sub-district or Taluka Hospitals and some block level PHCs, to provide specialist care and indoor facilities to rural people. It is manned by four specialists – a surgeon, a physician, a gynecologist and a pediatrician, supported by 21 paramedical and other supporting staff. It has 30 Indoor beds with one OT, X-ray facilities, a labour room and laboratory facilities. It is to serve as a Referral Centre for four PHCs.

The major default and criticism are that CHCs are not providing specialist services for which these are established. There are only few CHCs with all four specialists; the vacancy position is about 40-50%. With no position of Anaesthetist, surgical intervention has not been possible. There is an acute shortage of Anaesthetists in the country. Under RCH-I programme, efforts made to hire the services of Anaesthetists by payment of Rs.1000/- per case, has not been successful. In view of these problems, a new post of an Anaesthetist at CHCs has been created under NRHM programmes.

To achieve the goals of reducing maternal mortality ratio (MMR), infant and neonatal mortality rates (IMR & NMR)), serious efforts are to be made for providing 24 hours institutional delivery services and neonatal care at PHCs and CHCs. Under RCH-II programme, it is proposed to provide such facilities at each CHC. CHCs should provide emergency obstetric care, for which services of specialist and blood storage facilities would also be required. For lack of specialists, indoor beds in many CHCs are currently lying vacant. To overcome this problem many short-term and long-term strategies have been suggested. With strengthening of CHCs, adequate facilities for referral from SCs and PHCs would also be required.

As per NRHM plan the functioning of CHCs is to be brought to the level of Indian Public Health Standard (IPHS), the details of which are being worked out by one of the Task Groups of NRHM. Subsequently, IPH Standards for PHCs and SCs are also to

be worked out. To meet IPH Standards, not only the existing SCs, PHCs and CHCs are to be strengthened, to improve coverage new centres are also to be established. This will not only require huge amount of money, successful implementation of the programme would be a gigantic task with great challenges.

Facilities at District Level (1/200,000 population)

District health organization will have two components i.e., district health organization and district hospital. These need to be appropriately strengthened to cater to the needs of the expanding rural health and reproductive health care programmes on a decentralized basis. Not only the planning, implementation and monitoring of these programmes and the training of peripheral level health personnel will be carried out at the district level, but in addition, all the referral services from the periphery i.e. PHCs, CHCs/Taluka hospitals, will be attended to at the district level. The primary contact care will be provided by the health functionaries at the village level and by the multi-purpose workers at the Sub-centre level. The cases needing further help will be dealt with at the PHC, and those needing referral support by the specialists would be referred to the CHC. The secondary and tertiary referral support will be provided at the district hospitals and medical colleges/specialized hospitals respectively.

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Priority Needs at District Levels

The peripheral health workers, who are directly concerned with providing primary health care to the community, do not get chances for updating their knowledge and skills and they work almost in isolation. Obviously, they have a priority need for continuing education on a regular basis. It is noted from the above that district level of national health system along with the intermediate level health personnel is responsible for providing supervision and support to the community level health workers. Several World Health Assemblies have recognized the crucial role of the district level of national health systems in ensuring universal access to primary care, and the need for maximum self-reliance in district health systems. The emphasis on strengthening of district health personnel is justified, as the need to decentralize development activities to district levels has been stressed. These levels are near enough to the communities to respond sensitively to their practical problems and needs, and they are equally near to the central administrative level to translate government policies to practice. This is also in line with the policy of the Government

of India for decentralization of Planning and Implementation of various programmes to the district level.

(The remaining materials of this presentation are included in Part-II, which will appear in the next issue of this Journal).

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KNOWLEDGE, PERCEPTIONS AND SOURCES OF INFORMATION FOR TRIBALS ABOUT COMMON DISEASES PREVAILING IN MANDLA DISTRICT OF M. P.

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ABSTRACT

The study was conducted in Mandla, one of the tribal dominated Districts of Madhya Pradesh, in 2005. In this study an attempt was made to (i) study the knowledge of tribals about various common diseases prevailing in Mandla District; (ii) identify the sources of information for tribals about various common diseases; and (iii) understand the beliefs and perceptions of tribals about the health care delivery system operating in the district.

The findings reveal that, (i) the tribals have knowledge about malaria and diarrhoea as compared to other diseases viz.; STD/RTI, anaemia, worm infestation, tuberculosis and leprosy;(ii) the major source of information for tribals in the study area has been the health functionaries followed by the relatives;and (iii) the tribals tend to believe in traditional healers as compared to allopathic doctors

Key Words: Knowledge, Perceptions, Information, Common diseases

Primitive, geographically isolated, shy and socially, educationally and economically backwardness are the traits that distinguish Scheduled Tribes of our country from other communities. Tribal communities live in about 15 per cent of the country's areas in various ecological and geo-climatic conditions ranging from plaints to forests, hills and inaccessible areas. Tribal groups are at different stages of social, economic and educational development. While some tribal communities have adopted a mainstream way of life at one end of the spectrum, there are Primitive Tribal Groups (PTGs), at the other, who are characterized by (i) a pre-agriculture level of technology; (ii) a stagnant or declining population (iii) extremely low literacy; and (iv) a subsistence level of economy.

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The President of India by his special power declared some indigenous groups in various pockets of our country as Scheduled Tribes on January 26,1950 under Article 342 of the Constitution of India. A list of 427 tribes; including 75 primitive tribes, has been identified in the country[1]. The population of tribes in the World is more than 150 million, while in India their population is around 90 million. It means that more than half 60, per cent, of World's tribals are citizens of India[2]. According to 2001 Census, the population of Scheduled Tribes in the country is 8.43 crores, which is 8.2 per cent of the total population of the country. The population of Scheduled Tribes has been on the increase since 1961[3]. Therefore, promotion of all round development of tribals inhabiting the length and breadth of our country has received priority attention of the government. There are numerous government policies, for example National Health Policy 1983[4] and National Population Policy 2000[5] ensuring the welfare and well being of tribals. The Governments at Central and State levels have made sustained efforts to provide opportunity to these communities for their economic development by eradicating poverty and health problems and developing communication for removal of isolation of their habitats. There are States with sizeable tribal population and having areas of large tribal concentration in the country of which Madhya Pradesh is one of them where the study has been conducted with the following objectives. (i) *to study the knowledge of tribals about various common diseases prevailing in Mandla District ; (ii) to find out the sources of information for tribals about various common diseases; and (iii) to understand the beliefs and perceptions of tribals about the health care delivery system operating in the district.*

MATERIAL AND METHODS

The study was conducted in Mandla, one of the tribal dominated Districts of Madhya Pradesh, in 2005. Mandla district is situated in south-eastern part of Makal Hilly range of Madhya Pradesh in central India. Out of 16 developmental blocks of Mandla, seven have been transferred to the newly formed Dindauri district. Now, Mandla District consists of only nine blocks viz. Mandla, Nainpur, Bichhiya, Mawai, Ghughari, Mohogaon, Narainganj, Bijaydandi and Niwas.

Considering the criteria of density of tribal population, the three tribal dominated blocks namely, Bichhiya, Mohogaon and Narainganj were selected. From each of the blocks, three tribal dominated villages were selected. The list of blocks and villages from each block is given in Table 1.

TABLE 1

LIST OF BLOCKS AND VILLAGES

Blocks	**Villages**
Bichhiya:	Jagnathar, Khatola and Manjipur
Mohogaon:	Saliwada Rayat, Chougaon and Jeena
Narjainganj:	Mangal Ganj, Chirai Dongari and Sahjani

From each of the villages, 20 respondents (male and female in equal proportion) were selected as sample respondents. In all, the study had 180 respondents. Data were analysed using SPSS package.

FINDINGS AND DISCUSSION

(i) Knowledge of Tribals about Common Diseases Prevailing in the Study Area

Tribals suffer from many chronic diseases in general and water-borne disease in particular. This is mainly due to poor drinking water supply. Even when it is available in plenty, it is mostly dirty and contaminated.

The tribal people suffer from almost all the communicable diseases. The ICMR has broadly classified the diseases into six categories viz. (i) Communicable diseases/infectious diseases, for example malaria, tuberculosis etc; (ii) Gastro-intestinal disorders, for example, diarrhoeal diseases, dysentery, etc.;(iii) Parasitic infections (iv) Acute respiratory infections; (v) In-breeding resulting in genetic disorders, for example, sickle cell anaemia and G-6PD deficiency (glucose – 6 phosphate dehydrogenise) are two most commonly prevalent genetic disorders; and (vi) High maternal/infant mortality (including Neo-natal component) due to marked lack of health/RCH services.

Diarrhoea, Malaria, STD/ RTI, Anaemia, Worm infestation, Tuberculosis and Leprosy were found common among the tribals in the study area. Table 2 gives information regarding knowledge of tribals about various diseases prevailing in Mandla district.

TABLE 2

KNOWLEDGE OF TRIBALS ABOUT COMMON DISEASES

Diseases	Causes			Treatment			Prevention			Curable		
	CR	WR	DK	CR	WR	DK	CR	WR	DK	CR	WR	DK
Diarrhoea	55 (30.60	118 (65.5)	7 (3.9)	29 (16.1)	116 (64.4)	35 (19.4)	67 (37.2)	75 (41.7)	38 (21.2)	84 (46.7)	63 (35)	33 (18.3)
Malaria	97 (53.9)	9 (5)	74 (41.1)	102 (56.7)	3 (1.7)	75 (41.7)	102 (56.7)	2 (1.1)	76 (42.2)	117 (65)	3 (1.7)	60 (33.4)
STD/RTI	43 (23.9)	133 (73.9)	4 (2.2)	42 (23.3)	91 (50.6)	47 (26.1)	40 (22.2)	92 (51.2)	48 (26.7)	18 (10)	108 (60)	54 (30)
Anaemia	12 (6.7)	7 (3.9)	161 (89.5)	20 (11.1)	106 (58.9)	54 (30)	16 (8.9)	2 (1.1)	162 (90)	22 (12.2)	2 (1.1)	156 (86.7)
Worm Infestation	29 (16.1)	149 (82.8)	2 (1.1)	15 (8.3)	16 (8.9)	149 (82.8)	24 (13.3)	1 (0.6)	155 (86.1)	32 (17.8)	2 (1.1)	146 (81.1)
T.B.	27 (15)	6 (3.3)	147 (81.6)	54 (30)	4 (2.2)	122 (67.8)	68 (37.8)	7 (3.9)	105 (58.3)	88 (48.9)	7 (3.9)	85 (47.2)
Leprosy	6 (3.3)	11 (6.1)	163 (90.6)	17 (9.4)	5 (2.8)	158 (87.8)	-	-	-	47 (26.1)	87 (48.4)	46 (25.6)

(Figures in parentheses indicate percentage)

(C.R. – Correct response, W.R. – Wrong response, and D.K. – Don't know)

Diarrhoea

Lack of potable water supply, poor environmental conditions, lack of personal hygiene and housing the domestic animals inside their living room are responsible for causing diarrhoea among tribals in Mandla. Data given in Table 2 reflect that only one third of the tribal community members had correct information regarding the causes of diarrhoea while one sixth of them had knowledge about its treatment. Roughly 37.2 per cent of the respondents had knowledge about how to prevent diarrhoea. A little less than half (46.7%) of the respondents knew that diarrhoea can be cured.

Malaria

Malaria was a number one killer disease during fifties which has staged a come back, the parasite being resistant to drugs and the mosquito to the insecticide, there being rampant degradation of the environment and callousness of the human beings to the health aspect. Worse has been the increase in falciparum variety whose prevalence was rather low, presently taking a heavy toll of human life, more in the tribal pockets. It is a serious problem in North-Eastern states, particularly in Assam which reports maximum cases.

Table 2 shows that more than half of the tribals (53.9%) had correct knowledge about causes of malaria and 56.7 per cent each had knowledge about its treatment as well as prevention. Around 65 per cent of the respondents were of the view that Malaria can be cured. By and large, the tribal community had better knowledge about Malaria as compared to diarrhoea.

Malaria is a major health problem in the tribal districts of Orissa, Jharkhand, Madhya Pradesh and Chhattisgarh[6]. It is estimated by National Antimalaria Programme (Government of India) that Orissa contributes nearly 40 per cent of falciparum cases of the country and 50 per cent of the deaths. It was observed by Sharma et al. (2001) that malaria is one of the major diseases affecting the tribals to a great extent. In a study by Das, et. al. (1989) in Koraput, Orissa among tribal area, it was found that malaria is a major cause of morbidity followed by helminthiasis and malnutrition.

STD/ RTI

Caused by a wide variety of bacteria, viral, protozoal and fungal agents which are mostly transmitted through sexual contact. Unhygienic conditions, inadequate washing facilities and most important, the lifestyle of the individual play an important role in transmission of disease. Among some tribals, the free lifestyle intercourse with outsiders is helping in transmission of disease in some tribal pockets. Higher prevalence has been observed among Andamaneese, Todas of Nilgiri, Khasis of Jaunsar Bawars, Kondhs of Orissa and some tribal pockets in Madhya Pradesh and Rajasthan.

Data presented in Table 2 reveal that just a little less than one fourth (23.9%) had correct knowledge about the causes of STD/ RTI and 23.3 per cent had correct knowledge about treatment. Data further reveal that 22.2 per cent of the respondents felt that STD/ RTI can be prevented and only 10 per cent stated that it can be cured.

The studies of Malvi (1980)[9], Vyas N.N (1980)[10] and Vyas (1980)[11] report high incidence of STD's among tribals of Rajasthan. In regions M.K where mines and industrial units are located and tribals work as labour, there is high interaction between tribal women and non-tribals in the high risk areas including truck drivers along National Highway No. 8.

Anaemia

Nutritional anaemia is a disease syndrome caused by malnutrition. Iron deficiency anaemia is a major nutritional problem in India and in many other developing countries. The incidence of anaemia is higher among women and young children, varying between 60 and 70 per cent. Recent survey indicated that in rural India anaemia is much more widespread than hitherto believed, even among men.

Iron deficiency anaemia can arise due to inadequate intake of dietary iron or due to excessive losses of iron from the body. Women loose a considerable amount of iron especially during menstruation. Some of the factors leading to anaemia are malaria and hookworm infestation. In addition mothers who have given birth to children at close intervals also become anaemic due to the additional demands of the rapid pregnancies and the loss of blood in each delivery.

Data presented in Table 2 reveal that fairly a good number of people have no knowledge about causes, treatment, prevention and cure of anaemia. Just about less than ten per cent of the people had some information about causes and prevention of anaemia. This is, in fact, a very serious situation and needs to be addressed immediately by the health workers in Mandla district of Madhya Pradesh.

Worm Infestation

Hookworm infection is still seen in warm, moist climates in tropical and subtropical regions. More than 200 million people are estimated to be infected in India.[12] All ages and both sexes are susceptible to infection. In endemic areas, the higher incidence is found in the age group of 15 to 25 years. Studies indicated that malnutrition is a predisposing factor; the chronic disabling disease does not occur in the otherwise healthy individual who is well-nourished and whose iron intake is adequate.

Hookworms (infective larva) enter the body, usually feet by penetrating the skin. Ancylostoma may also be acquired by the oral route by direct ingestion of infective larvae via contaminated fruits and vegetables. Hookworm infection exerts a significant and harmful effect on various aspects of economy and quality of life of a community.

Data presented in Table 2 show that a large number of respondents, around 80 to 85 per cent had wrong notion about worm infestation and its

treatment, prevention and cure. Only about 10-15 per cent of the respondents had correct knowledge about worm infestation.

Tuberculosis

Tuberculosis is transmitted through droplet infection. It is considered as a barometer of social welfare. Hence, social factors like poverty, poor housing conditions, overcrowding, illiteracy, inadequate nutrition, etc. are responsible for propagation and perpetuation of the disease. Prevalence, naturally is high in almost all tribal segments of the population, being higher in Madhya Pradesh, Maharashtra, Rajasthan, Tripura and Orissa.

Only 15 per cent of the respondents had correct knowledge about how tuberculosis is caused. However, the treatment for tuberculosis was known to 30 per cent of the respondents in the study area. Regarding prevention of tuberculosis, data given in Table 2 suggest that 37.8 per cent of respondents had correct knowledge about prevention while 48.9 per cent had correct knowledge about the cure. By and large, majority of the respondents had no knowledge about tuberculosis in Mandla district of Madhya Pradesh.

Leprosy

A major public health problem in this country. Like tuberculosis, it is also a social disease and the social factors responsible in the transmission of tuberculosis are also similar to leprosy though the agent factor is different. The distribution pattern is almost same as that of tuberculosis and malaria.

The knowledge of respondents about leprosy in the study area is very poor. Only 3 per cent had correct knowledge about leprosy in terms of its causation while slightly better knowledge about its treatment was observed in about 10 per cent of the respondents. However, 26.1 per cent had correct knowledge about its cure (Table 2).

(ii) Sources of Information for Tribals about common diseases prevailing in the Study Area

The respondents were asked to indicate the sources of information regarding various common diseases prevailing in the study area. Responses given by the sample population are given in Table 3.

TABLE 3

SOURCES OF INFORMATION FOR TRIBALS ABOUT COMMON DISEASES PREVAITING IN THE STUDY AREA

Sources	Radio	T.V.	Newspaper	Health Personnel	Relatives	Any Other Source
Diarrhoea Yes	21 (11.7)	11 (6.1)	6 (3.3)	69 (38.3)	48 (26.7)	2 (1.1)
No	159 (88.4)	169 (93.9)	174 (96.7)	111 (61.7)	132 (73.3)	178 (98.9)
Malaria Yes	22 (12.2)	10 (5.6)	9 (5)	82 (45.6)	55 (30.6)	2 (1.1)
No	158 (87.8)	170 (94.5)	171 (95)	98 (54.5)	125 (69.4)	178 (98.9)
STD/RTI Yes	13 (7.2)	7 (3.9)	6 (3.3)	32 (17.8)	27 (15)	2 (1.1)
No	167 (92.8)	173 (96.2)	174 (96.7)	148 (82.3)	153 (85)	178 (98.9)
Anaemia Yes	6 (3.3)	4 (2.2)	3 (1.7)	17 (9.4)	9 (5)	1 (0.6)
No	174 (96.7)	176 (97.8)	177 (98.4)	163 (90.6)	171 (95)	179 (99.4)
Worm Infestation Yes	9 (5)	5 (2.8)	4 (2.2)	15 (8.3)	5 (2.8)	2 (1.1)
No	171 (95)	175 (97.3)	176 (97.8)	165 (91.7)	175 (97.3)	178 (98.9)
T.B. Yes	16 (8.9)	7 (3.9)	5 (2.8)	51 (28.3)	40 (22.2)	4 (2.2)
No	164 (91.2)	173 (96.1)	175 (97.3)	129 (71.7)	140 (77.8)	176 (97.8)
Leprosy Yes	9 (5)	4 (2.2)	3 (1.7)	29 (16.1)	30 (16.7)	2 (1.1)
No	171 (95)	176 (97.8)	177 (98.3)	151 (83.9)	150 (83.3)	178 (98.9)

(Figures in parentheses indicate percentage)

Diarrhoea

The major sources of information for the tribals regarding diarrhoea are the health functionaries (38.3%) followed closely by the relatives (26.7%) (Table 5). It means about 65 per cent of the respondents in the study area depend upon interpersonal communication for getting information regarding diarrhoea[13]. The role of electronic media like television and radio and print media like newspapers, magazines, pamphlets and folders is very limited. Only about 21.1 per cent of the respondents stated that television, radio and print media can act as sources of information for them for getting information about diarrhoea. Even within the media, the radio seems to be a little more common as compared to the other mass media such as television, newspapers, etc.

Malaria

Information furnished in Table 5 reveals that the trend observed in diarrhoea has also been seen in case of malaria, i.e. health functionaries (45.6%) and relatives (30.6%). However, for 22.8 per cent of the people in the study area, mass media like radio, television and newspapers serve as sources of information.

STD/RTI

In regard to STDs and RTIs, data presented in Table 5 highlight that the knowledge itself seems to be very shallow among the respondents. However, the responses show that the health functionaries (17.8%) as well as the relatives (15%) have a very small but almost equal role to play in giving information about STDs and RTIs. Even the mass media like radio, television and newspapers seem to be the sources of information for the tribals about STD/RTI for about only 14.4 per cent.

Anaemia

As far as anaemia is concerned, the tribal people seem to have a very little knowledge about its causation and treatment, Table 2. Even here the major source of information for the people is health functionaries (9.4%). The role of family and relatives account for only 5 per cent and mass media account for 7.2 per cent (Table 3).

Worm Infestation

A meagre 8.3 per cent of the respondents have received the information from health functionaries and 2.8 per cent from relatives. Whereas, mass media altogether were the sources of information for about only 10 per cent of tribals.

Tuberculosis

Tribals seem to be better educated about tuberculosis as compared to anaemia, STD/RTI or worm infestation. The major source of information again is the health functionaries (28.3%) and relatives (22.2%)[13]. The mass media acted as the source of information for about 15.6 per cent of tribals with radio (8.9%) again leading the way (Table 3).

Leprosy

The knowledge about leprosy also seems to be lagging. However, here also the same trend is seen, relatives (16.7%), health functionaries (16.1%) and mass media (9%) for giving information regarding leprosy.

(iii) Perception of Tribals about Health Care Delivery System

An attempt was made in the study to find out whether the tribals utilize the government health care services or not and if at all they utilise such services, what have been their impressions about the same can be seen in Table 4.

TABLE 4
PERCEPTION OF TRIBALS ABOUT GOVERNMENT HEALTH CARE SERVICES

Sl. No.	Impressions	Yes	No
1	Suffered from any illness	126 (70)	54 (30)
2	Get proper treatment from government functionaries	104 (57.8)	76 (42.2)
3	Satisfied with services provided by government functionaries	94 (52.2)	86 (47.8)
4	Believe in traditional healer for treatment	129 (71.7)	51 (28.3)

(Figures in parentheses indicate percentage)

Table 4 reveals that 94 (52.2%) out of 180 respondents were satisfied with the services provided by the government health care functionaries and 104 (57.8%) respondents informed that they get treatment from government functionaries. However, 129 (71.7%) respondents believed in traditional healers for treatment. It seems more number of tribal population believes in locally available medicines as compared to modern system of medicines. This is in agreement with Bhasin (2002) who says that self or home treatment is usually the first step for the tribals in medical care, consisting of primarily herbs, barks of trees, flowers, roots, leaves, seeds, etc. which are commonly known[14]. Some grow wild in the area, some are cultivated in home gardens and others are bought from the market for treatment.

It has been often noticed that in many interior parts of tribal belts, the tribals are reluctant to come forward for medical treatment because they have got their own system of diagnosis and cure. It is a popular belief among tribals, especially those inhabiting in far flung interior and isolated areas, that disease and hostile spirits, ghosts of the dead or the breach of some taboo causes misfortune. It leads to the logical conclusion that what is caused spiritually should be cured spiritually and that is why the tribals of interior areas prefer their own doctors, sorcerers, shamans etc. Medical personnel are contacted as a last resort. *Dhebar commission (1961).*[15]

TABLE 5
BELIEF IN TRADITIONAL HEALERS FOR TREATMENT

Sl. No.	Belief in Traditional Healers for Treatment	Number
1	Jhad-Phook	21 (11.7)
2	Jantra-Mantra/Uupri Hawa	50 (27.8)
3	Herbal medicine	3 (1.7)
4	Locally and easily available/Any time	10 (5.6)
5	Nazar Utarna/Pani ke Chhinte Dena/Dhuni Dena	9 (5.0)
6	Sometime effective, less expenditure	10 (5.7)
7	From very beginning people used to go there	11 (6.2)
8	Others	8 (4.4)

(Figures in parentheses indicate percentage)

Faith in traditional systems of medicine by the tribal community in the study area is not a big surprise. They have inherited the system from their forefathers and it has gone deep into their value system. Introduction of modern system of medicine will naturally have clash with their traditional

system of medicine. Even they believe that falling sick is a natural process and it will cure on its own. In view of this, the traditional healers have upper hands in treating the patients in tribal areas. The tribals more specifically believe in *Jantr-Mantr/Uupri Hawa* (27.8%) followed by Jhad-Phook (11.7%). They believe in these medicines because they are not very expensive and available locally. Moreover, they have established more faith in these traditional healers as compared to allopathic doctors[13, 15,16].

CONCLUSION

It is very clear that the knowledge of the tribal community in the far-flung areas of the country, Mandla district of Madhya Pradesh, is still meagre and leaves a lot to be desired. Data indicate two extremes within these diseases also, on the one hand the tribal community members have better knowledge about malaria and diarrhoea where the level of information is much better as compared to other diseases like tuberculosis, leprosy, worm infestation and anaemia/sickle cell. To bring about desirable changes in the knowledge of tribal community members about various diseases, an extensive IEC activities may have to be undertaken together with a well-built support services. The major source of information for the tribals in the study area has been the health functionaries followed closely by the relatives. The print media have not been very effective in transmitting the information as the tribal population is mostly illiterate.

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Trends and Forecasting the Estimation of Different Contraceptive Needs in the Districts of Rajasthan

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ABSTRACT

This Research paper made an attempt to find out the trends and forecasting the estimation of different contraceptive needs in different districts of Rajasthan. The secondary data were used for the study; the result showed that some districts of Rajasthan have a significant increment in accepting the family planning methods. Three methods of spacing i.e. Intrauterine Device (IUD), Condom Contraceptives (CC) and Oral Pills (OP) Performance are forecasted up to the year 2010-11 by using the method of least square. Forecasted values for different methods of family planning may be useful for government and social workers while formulating family planning policies. This also helps in finding users trend of different family planning methods and actions can be taken accordingly. It is also useful for manufacturers for inventory purpose of all family planning accessories in advance.

Key Words: *Forecasting, family planning methods, acceptors, regression equations, coefficient of determination, variable.*

Population problem has been a matter of concern in many countries particularly less developed and developing countries. The response of these to the problem has, however, varied from country to country, state to state and district to district, in accordance with its perception of the gravity of the problem that may be its social, economic and political priorities[1].

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Another study also showed that the female infants and mortality during infancy of first and second birth order is not favourable to low level of fertility in a tribal community. There is a sure preference for sons over daughters.[2] The higher growth of population has decreased the per capita productivity and Income which resulted in wide spread poverty, inadequate diet, low level of health, higher proportion of illiterate population, house less family and over crowded social amenities. The unplanned growth of population is mainly responsible for shortage of foodstuffs, potable water, houses, education, medical and transport facilities. In rural areas the pressure of population is increasing on the agricultural resources. Hence, the availability of food has decreased both in rural areas as well as in urban centers. As a result of which there are under nutrition, mall nutrition and other associated problem in the state. The population problem, if not tackled in an organized way, can be serious epidemic and its effects will be dangerous[2].

The population aspects have a unique role to perform in analyzing the problem and devising suitable measure to reduce the birth rate and ensure better health and standard of living[3]. This requires definite changes in the attitudes of the people for accepting the small family planning norm by using different family planning methods. Several studies have also been conducted to assess the attitudes of the people towards accepting the family planning programmes.[4] A number of studies in India have revealed that a majority of couples desire 3 to 4 children. The ultimate aim of family planning programme is to assess the growth of population through reduction in fertility.[4]

India was the first nation in the world to adopt family planning as a government programme in 1951.[4] Rajasthan is the largest state in the country and it was maintained its record of registering one of the highest population growth rate in the country. There are 32 districts in Rajasthan and have different rates of acceptance of different family planning methods. A statistical analysis of performance of various family planning methods in different districts of Rajasthan was given and the districts were classified on the basis of their performance.[5] Forecasting is the prediction of future events. In the field of family planning forecasting means what will be the number of acceptors of different family planning methods for a given period of time.

In other words, forecasting occurs when the person responsible for supplies in an outlet determines the quantity of contraceptive to order and submit a requisition that means a demand and supply will have equilibrium for a given period of time. It is fact that demand and supply in the forecasting system involves the quantities needed, stored, transported and supply. Serious problem arises when the forecast for supplies are accurate but the facilities for moving or storing them are inadequate. These forecasting values of acceptance of different methods will certainly help in advance to obtain funds to pay for contraceptives. More precise forecasting can be achieved by

collecting, processing and analyzing through a statistical method by using relevant data of acceptance of different family planning methods.

MATERIAL AND METHODS

In this paper, three spacing methods of family planning namely; IUD, CC, and OP are discussed. To evaluate these, separate equations for IUD, CC, and OP, the secondary data have been collected from Department of Directorate of Economics and Statistics, Government of Rajasthan, Jaipur, from the year 1990-91 to 2005-066. On the basis of these data, a simple forecasting method i.e. method of least square is applied and obtained 32 linear regression equations in which years are the independent variables (x) and total number of acceptors are the dependent variables (y). From these 32 regression equations, the forecasting values of the three different family planning methods for the period from 2006-07 to 2010-11 is predicted.

FINDINGS AND DISCUSSION

Statistical Analysis for IUD: In this section, linear regression equation for each district is obtained by taking 'y' as a dependent variable namely; number of IUD acceptors and 'x' as dependent variable; i.e., different years. A general linear regression equation is written as y=a+bx Where 'a' and 'b' are called intercept and regression coefficient of the linear regression equation. By taking the different values of dependent variable 'x', the values of number of acceptors for the years 2006, 2007, 2008, 2009, 2010 and 2011 are obtained. Corresponding to each regression equation the value of coefficient of determination R^2 is also calculated. The value of R^2 of Hanumangarh districts is the highest among all the 32 districts, which indicates that, in Hanumangarh district there was a consistent increment over the years. It is also observed that most of the districts have a linear regression equation of the form y=a+bx in which 'a' and 'b' are positive, which indicates that in all the districts the linear relationship between number of acceptors over the years have positive increasing trend. It is fact that value of R^2 and regression coefficient i.e. 'b' is the highest of Hanumangarh district which shows that the Hanumangarh district is the most significant district among all the districts. Out of 32 districts, only four districts namely; Baran, Dausa, Ganganagar and Sawai Madhopur have decreasing trend in which regression coefficient has negative values. A linear regression equation for Rajasthan state is also calculated and observed that the trend of performance of IUD acceptors is increasing with a high value of coefficient of determination R^2 (0.8526).

TABLE 1: FORECASTING OF IUD USERS

Name of District	Model	R2	Forecasted values				
			2006-07	2007-08	2008-09	2009-10	2010-11
Ajmer	y = 42.887x + 7527.2	0.0555	8256	8299	8342	8385	8428
Alwar	y = 43.96x + 7229.2	0.0455	7977	8020	8064	8108	8152
Banswara	y = 394.75x + 5334.4	0.5929	12045	12440	12835	13229	13624
Baran	y = -146.11x + 5895.1	0.3713	3411	3265	3119	2973	2827
Barmer	y = 206.77x + 4195.1	0.369	7710	7917	8124	8331	8537
Bharatpur	y = 131.49x + 3986.9	0.3091	6222	6354	6485	6617	6748
Bhilwara	y = 591.29x + 6176.9	0.7003	16229	16820	17411	18003	18594
Bikaner	y = 336.65x + 2994.3	0.6255	8717	9054	9391	9727	10064
Bundi	y = 145.57x + 2711.7	0.3673	5186	5332	5478	5623	5769
Chittorgarh	y = 370.08x + 6165.3	0.5543	12457	12827	13197	13567	13937
Churu	y = 377.01x + 2523.6	0.8097	8933	9310	9687	10064	10441
Dausa	y = -131.66x + 4916.1	0.4556	2678	2546	2415	2283	2151
Dholpur	y = 23.746x + 2694	0.0107	3098	3121	3145	3169	3193
Dungarpur	y = 264.56x + 4657.4	0.4956	9155	9419	9684	9949	10213
Ganganagar	y = -37.444x + 9593.2	0.0114	8957	8957	8882	8844	8807
Hanumangarh	y = 2318.6x + 2628.5	0.967	42045	44363	46682	49001	51319
Jaipur	y = 27.649x + 8736.2	0.0198	9206	9234	9262	9289	9317
Jaisalmer	y = 117x + 1014.6	0.8392	3004	3121	3238	3355	3472
Jalore	y = 458.34x + 3677.1	0.8884	11469	11927	12386	12844	13302
Jhalawar	y = 50.084x + 5050.6	0.0914	5902	5952	6002	6052	6102
Jhunjhunu	y = 550.79x + 2012.5	0.7587	11376	11927	12478	13028	13579
Jodhpur	y = 518.67x + 4942.4	0.9303	13760	14278	14797	15316	15834
Karauli	y = 843.97x + 2946.9	0.8511	17294	18138	18982	19826	20670
Kota	y = 113.9x + 5658.6	0.0811	7595	7709	7823	7937	8051
Nagaur	y = 378.77x + 8500.9	0.509	14940	15319	15698	16076	16455
Pali	y = 379.09x + 7549.7	0.4216	13994	14373	14752	15132	15511
Rajsamand	y = 164.03x + 7001.1	0.261	9790	9954	10118	10282	10446
S.Madhopur	y = -39.678x + 6561.5	0.0124	5887	5847	5808	5768	5728
Sikar	y = 178.29x + 6242	0.254	9273	9451	9630	9808	9986
Sirohi	y = 415.77x + 1941	0.7452	9009	9425	9841	10256	10672
Tonk	y = 132.55x + 4059.8	0.2309	6313	6446	6578	6711	6843
Udaipur	y = 302.09x + 8586.7	0.2864	13722	14024	14326	14629	14931
Rajasthan	y = 9636.8x + 126217	0.8526	290043	299679	309316	318953	328590

Statistical analysis for CC: In this section, linear regression equation for each district is obtained by taking y as a dependent variable namely no. of CC acceptors and x is dependent variable i.e. different years. A general linear regression equation is written as y=a+bx. where a and b are called intercept and regression coefficient of the linear regression equation by taking the different values of dependent variable X, the values of no. of acceptors for the years 2006, 2007, 2008, 2009, 2010 and 2011 are obtained. Corresponding to each regression equation the value of coefficient of determination R^2 is also calculated. The value of R^2 of Dausa districts is the highest among all the 32 districts which indicates that in Dausa district, there was a consistent increment over the years. It is also observed that the except the districts Barmer, Bhilwara, Chittorgarh, Dholpur, Jaisalmer, Sirohi and Tonk. All other districts has a linear regression equation

of the form y=a+bx. in which a and b are positive, which indicates that in these districts the linear relationship between no. of acceptors over the years have positive increasing trend. It is fact that value of R^2 is the highest of Dausa district but the regression coefficient i.e. b is the maximum for Hanumangarh district which shows that the Hanumangarh district is the most significant district among all the districts. A linear regression equation for Rajasthan state is also calculated and observed that the trend of performance of CC acceptors is increasing with a high value of coefficient of determination R^2 (0.9546)

TABLE 2: FORECASTING OF CC USERS

Name of District	Model	R2	Forecasted values				
			2006-07	2007-08	2008-09	2009-10	2010-11
Ajmer	y = 2936.7x + 5202.7	0.8653	55127	58063	61000	63937	66873
Alwar	y = 3421.1x + 14140	0.9284	72299	75720	79141	82562	85983
Banswara	y = 2953.6x + 5981.1	0.7771	56192	59146	62100	65053	68007
Baran	y = 2869.6x + 15477	0.8217	64260	67130	69999	72869	75739
Barmer	y = 5372.3x - 8491.8	0.9219	82837	88210	93582	98954	104327
Bharatpur	y = 1363.1x + 11694	0.8514	34867	36230	37593	38956	40319
Bhilwara	y = 4647.4x - 1487.5	0.9525	77518	82166	86813	91461	96108
Bikaner	y = 1363.1x + 11694	0.8514	34867	36230	37593	38956	40319
Bundi	y = 2496.4x + 1147.2	0.6057	43586	46082	48579	51075	53572
Chittorgarh	y = 4721.2x - 679.3	0.9392	79581	84302	89024	93745	98466
Churu	y = 2464.2x + 1812.9	0.7157	43704	46169	48633	51097	53561
Dausa	y = 6493.9x + 9316.8	0.9955	119713	126207	132701	139195	145689
Dholpur	y = 2762x - 1333.5	0.9035	45621	48383	51145	53907	56669
Dungarpur	y = 2643.8x + 3724.9	0.898	48670	51313	53957	56601	59245
Ganganagar	y = 1368x + 11320	0.544	34576	35944	37312	38680	40048
Hanumangarh	y = 8986.9x + 8990.1	0.8711	161767	170754	179741	188728	197715
Jaipur	y = 1681.2x + 20132	0.5293	48712	50394	52075	53756	55437
Jaisalmer	y = 996.12x - 636.93	0.631	16297	17293	18289	19285	20282
Jalore	y = 3472.4x + 20.5	0.9465	59051	62524	65996	69469	72941
Jhalawar	y = 3513.4x + 575.68	0.9374	60303	63817	67330	70844	74357
Jhunjhunu	y = 1920.1x + 15442	0.7131	48084	50004	51924	53844	55764
Jodhpur	y = 3008.5x + 8691.2	0.9213	59836	62844	65853	68861	71870
Karauli	y = 3896.2x + 29083	0.8341	95318	99215	103111	107007	110903
Kota	y = 2112.2x + 6349.7	0.6824	42257	44369	46482	48594	50706
Nagaur	y = 1858.2x + 15281	0.4934	46870	48729	50587	52445	54303
Pali	y = 1443.3x + 10371	0.7899	34907	36350	37794	39237	40680
Rajsamand	y = 731.69x + 29540	0.0858	41979	42710	43442	44174	44905
S.Madhopur	y = 2044x + 12260	0.7665	47008	49052	51096	53140	55184
Sikar	y = 1628.7x + 13886	0.6747	41574	43203	44831	46460	48089
Sirohi	y = 3300.7x - 1989.4	0.904	54123	57423	60724	64025	67325
Tonk	y = 3332.4x - 2191.9	0.8994	54459	57791	61124	64456	67789
Udaipur	y = 3082.3x + 17562	0.7254	69961	73043	76126	79208	82290
Rajasthan	y = 91397x + 73401	0.9546	1627150	1718547	1809944	1901341	1992738

Statistical Analysis for OP: In this section, linear regression equation for each district is obtained by taking 'y' as a dependent variable namely number of OP acceptors and 'x' is dependent variable i.e. different years. A general linear regression equation is written as y=a+bx, where 'a' and 'b' are called intercept and regression coefficient of the linear regression equation. By taking the different values of dependent variable 'X', the values of number of acceptors for the years 2006, 2007, 2008, 2009, 2010 and 2011 are obtained. Corresponding to each regression equation the value of coefficient of determination R^2 is also obtained. The value of R^2 of Dausa district is the highest among all the 32 districts, which indicates that in Dausa district, there was a consistent increment over the years. It is also observed that the six districts i.e. Baran, Dausa, Hanumangarh, Jhunjunu, Karauli and Rajsamand have a linear regression equation of the form y=a+bx in which a and b are positive, it means that in these districts the linear relationship between number of acceptors over the years have positive increasing trend. It is fact that value of R^2 is the highest of Dausa district but the regression coefficient i.e. 'b' is the maximum for Hanumangarh district which shows that the Hanumangarh district is the most significant district among all the districts. It is also very interesting to note that except the above mentioned districts, the value of intercept i.e. 'a' is negative for all districts which indicates in these districts the OP method was not popular at initial stage of family planning programme and has been popularized at later years. A linear regression equation for Rajasthan state is also calculated and observed that the trend of performance of OP acceptors is increasing with a high value of coefficient of determination R^2 (0.9461), but negative value of intercept means that in Rajasthan state also OP method was not popular at initial stage of family planning programme and has been popularized at later years.

TABLE 3: FORECASTING OF OP USERS

Name of District	Model	R2	Forecasted values				
			2006-07	2007-08	2008-09	2009-10	2010-11
Ajmer	y = 2710.2x - 8560.9	0.7606	37513	40223	42933	45643	48353
Alwar	y = 1561.4x - 1144	0.9419	25400	26961	28523	30084	31645
Banswara	y = 2130x - 4176.7	0.9257	32033	34163	36293	38423	40553
Baran	y = 1453.4x + 6862.2	0.8222	31570	33023	34477	35930	37384
Barmer	y = 2942.1x - 8834.5	0.9202	41181	44123	47065	50008	52950
Bharatpur	y = 864.45x - 410.93	0.8868	14285	15149	16014	16878	17743
Bhilwara	y = 2798.3x - 6210.4	0.9546	41361	44159	46957	49756	52554
Bikaner	y = 2305x - 8398.1	0.6626	30787	33092	35397	37702	40007
Bundi	y = 1100.6x - 1747.2	0.7203	16963	18064	19164	20265	21365
Chittorgarh	y = 2979.8x - 7512.1	0.9496	43145	46124	49104	52084	55064
Churu	y = 1983.2x - 5397.7	0.8305	28317	30300	32283	34266	36250
Dausa	y = 2514x + 4224.3	0.9861	46962	49476	51990	54504	57018
Dholpur	y = 1003.1x - 1427.4	0.9166	15625	16628	17632	18635	19638
Dungarpur	y = 1941.2x - 3791.1	0.9214	29209	31151	33092	35033	36974
Ganganagar	y = 922.95x - 498.53	0.8672	15192	16115	17038	17960	18883

Hanumangarh	y = 4505.3x + 3156.1	0.9175	79746	84252	88757	93262	97767
Jaipur	y = 1775.7x - 2074.2	0.7799	28113	29888	31664	33440	35216
Jaisalmer	y = 724.55x - 2437.7	0.6997	9880	10604	11329	12053	12778
Jalore	y = 2341x - 5598.3	0.8734	34199	36540	38881	41222	43563
Jhalawar	y = 960.9x - 420.42	0.6043	15915	16876	17837	18798	19758
Jhunjhunu	y = 826.9x + 1151.5	0.805	15209	16036	16863	17690	18516
Jodhpur	y = 2764.6x - 7484.2	0.9245	39514	42279	45043	47808	50572
Karauli	y = 980.29x + 16129	0.695	32794	33774	34755	35735	36715
Kota	y = 1439.4x - 2782	0.7064	21688	23127	24567	26006	27445
Nagaur	y = 1747.8x - 1444.6	0.9253	28268	30016	31764	33511	35259
Pali	y = 1539.4x - 1176.7	0.8728	24993	26533	28072	29611	31151
Rajsamand	y = 1634.3x + 18310	0.2457	46093	47727	49362	50996	52630
S.Madhopur	y = 1371.1x - 748.03	0.911	22561	23932	25303	26674	28045
Sikar	y = 1105.2x - 536.58	0.8752	18252	19357	20462	21567	22673
Sirohi	y = 2104x - 6190.1	0.937	29578	31682	33786	35890	37994
Tonk	y = 1324.3x - 2924.7	0.9324	19588	20913	22237	23561	24886
Udaipur	y = 2414.6x - 3304.4	0.9277	37744	40158	42573	44988	47402
Rajasthan	y = 55972x - 131738	0.9461	819786	875758	931730	987702	1043674

CONCLUSION

It is fact that, as per 2001 census the population growth rate of Rajasthan has 28.41per cent and in the context of population it is 8th rank amongst all the states and UT's of India. It is also fact that Rajasthan is a backward State in which 76.61 per cent population live in rural areas and approximately 39 per cent of population belongs to SC, ST and Muslims. It is also fact that literacy rate in these areas is very low especially in female population. For the awareness of these methods, the female literacy should be high. Even though the low female literacy rate and other social and economic backwardness of the state, the performance of Rajasthan in accepting the method of spacing has an increasing trend.

Hanumangarh district performed significantly in all the three methods of family planning, Dausa also performed significantly in accepting CC and OP methods. Initially, IUD was popular among the methods of spacing and CC and OP were not so popular, but regression equation showed that now a days CC and OP's have an increasing trend and acceptors are increasing day by day whereas in some districts the rate of acceptance of IUD is decreasing.

TABLE 4: YEAR-WISE (1990-91 TO 2005-06) and DISTRICT-WISE (32 DISTRICTS) TOTAL IUD INSERTIONS

District	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
Ajmer	9480	7673	7619	6741	6993	6783	7504	7196	7912	7607	8684	8991	8828	8983	8143	7130
Alwar	8060	6107	8800	8423	6056	6819	6444	6351	9067	7765	8361	7945	7767	8547	7868	7265
Banswara	5846	5360	5585	5561	6755	5598	9616	11704	10652	10849	10153	9778	11648	11112	9331	9489
Baran	-	-	-	-	-	-	-	-	-	-	5911	5951	4929	4974	5218	5319
Barmer	5814	4736	4562	4550	4203	3133	7438	6684	7940	5804	5891	5329	5693	5977	8409	9079
Bharatpur	6156	4822	4359	4026	5120	2687	4000	4473	4801	4405	5125	6173	6238	6508	5962	6819
Bhilwara	9319	6263	8048	6886	6119	7499	12758	14584	12820	12596	12253	11728	12671	13957	15371	16374
Bikaner	4655	4796	3947	4116	2360	2728	4912	5812	6161	7416	8263	8642	7130	7684	6358	8713
Bundi	3884	3964	4076	2955	2430	3817	2482	2440	3239	4106	4429	4230	4394	4504	6861	5373
Chittorgarh	7388	5680	6848	5976	5915	8320	11134	12616	10564	10195	11802	9346	9342	10247	10985	12618
Churu	3691	4088	3998	3084	3000	3767	3995	5740	7241	7176	7973	6907	6979	7521	7859	8632
Dausa	-	-	-	-	-	-	-	-	-	-	5123	4386	4188	4611	4189	4235
Dholpur	3532	2441	2502	2552	3282	2940	3429	3414	2637	2552	1975	2355	1966	2219	2043	6494
Dungarpur	4294	4766	4959	4700	5351	5225	7791	8159	7958	10214	9096	8307	7200	7972	7046	7461
Ganganagar	11163	11514	11463	10238	6978	7625	8165	8299	8479	7275	7941	7532	9405	9904	11456	10961
Hanumangarh	-	-	-	-	-	-	-	-	-	-	5792	6038	9367	12776	13814	16675
Jaipur	10948	8932	9515	8344	7067	8656	8055	8587	8337	8899	8722	9674	9322	8584	9370	10527
Jaisalmer	1391	1226	1237	1649	1431	1436	1990	2181	2100	2191	2163	2036	2441	2646	2537	3491
Jalore	4890	4473	5618	5593	6540	4724	6745	6131	6756	9393	9398	9623	9567	9740	10549	11427
Jhalawar	5862	5613	6192	5569	5079	4156	4568	5354	5191	4407	5429	4996	5648	5864	6340	7353
Jhunjhunu	4551	2509	5619	438	4856	6977	5075	5768	7173	7941	7029	7401	8123	10627	11112	11909
Jodhpur	5514	6390	7494	7978	6569	6813	7454	9773	9308	9761	10729	11283	11559	12247	13129	13617
Karauli	-	-	-	-	-	-	-	-	-	-	4504	4292	4404	6894	7055	8256
Kota	11342	4196	4714	4754	7023	5505	5345	5974	6005	5976	5614	7297	7690	8068	6725	9800
Nagaur	7317	11315	10936	10486	5918	13481	9329	10958	12717	14226	13146	13215	11833	13821	13873	14957
Pali	9264	6044	8424	8527	7519	8087	13229	13871	14203	13080	10617	9218	10235	11554	13057	15423
Rajsamand	-	-	-	-	-	-	-	-	-	-	7012	6770	8091	8321	7702	7555
S. Madhopur	5753	5857	7026	6818	5216	7450	10372	7483	5513	4232	3804	4405	4701	6503	6126	8328
Sikar	6541	6287	7897	6267	5549	5979	5231	10328	9143	10141	10172	8568	7342	7538	8670	8467
Sirohi	4187	3000	3632	4004	3447	2778	3456	4691	5565	4145	8698	7615	6563	7636	8505	9678
Tonk	5751	4287	4927	4231	4564	5102	4320	4330	4610	5135	5253	5401	4895	5450	4929	9799
Udaipur	14262	11244	7460	6621	7274	7775	9933	11161	10581	12240	14635	13611	12077	12790	14665	12143

TABLE 5: YEAR-WISE (1990-91 TO 2005-06) and DISTRICT-WISE (32 DISTRICTS) TOTAL CC USERS

District	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
Ajmer	17713	15681	12334	17145	15976	19685	28414	26344	23882	28690	34962	36243	38560	52271	51589	63146
Alwar	15787	16496	25373	29390	26944	31315	44238	45486	52089	51289	52046	51267	57283	59864	72147	60507
Banswara	6880	11513	12968	20015	16891	18523	22894	39128	46653	40665	34921	31725	51400	51416	33813	57978
Baran	-	-	-	-	-	-	-	-	-	-	19998	18448	24296	29709	26499	34172
Barmer	6424	8913	14652	15244	14198	15291	24043	25083	32239	34143	45106	54881	67798	76562	81375	78815
Bharatpur	14818	14530	15485	16834	19792	14136	20463	25347	29099	25963	25171	23932	27053	29875	33238	36753
Bhilwara	9741	13947	13040	18518	16402	17905	25897	34633	39819	41437	46133	52913	67555	70382	65885	74034
Bikaner	7078	7821	7762	10776	7687	5118	9344	20748	31106	9607	6445	50401	66192	65717	73252	53920
Bundi	6353	7266	8426	9620	7748	9379	36134	26632	26106	25487	3053	26063	43895	38689	31660	51348
Chittorgarh	13798	15166	15788	17339	18116	15887	26643	30803	47167	44578	49516	56934	57795	64930	75737	81017
Churu	10785	11251	9870	15039	14967	15181	16905	21125	20851	12174	21304	18219	33091	39640	50571	53160
Dausa	-	-	-	-	-	-	-	-	-	-	17020	21332	28374	34675	42139	48733
Dholpur	5166	4685	5515	6892	8362	9887	17033	29246	28958	28836	30302	31465	25412	36977	39271	46291
Dungarpur	6904	10289	11318	13047	14425	15129	27164	23529	30051	32772	40370	34774	31046	34252	41225	52862
Ganganagar	10222	20459	17650	25987	23690	7628	17929	20581	16905	20675	26284	25539	23842	30287	36580	42900
Hanumangarh	-	-	-	-	-	-	-	-	-	-	26039	25036	28185	41817	50866	70723
Jaipur	25865	22607	23049	43360	27423	23672	27279	35214	32496	34231	32413	23067	44998	47585	51651	55841
Jaisalmer	2985	3672	4577	4056	2964	1744	2392	4536	7338	5605	11667	10449	13914	21982	17879	9521
Jalore	7981	8900	10224	14125	19045	17913	18441	23386	32805	36253	41812	37653	42467	43837	53406	64331
Jhalawar	6037	8835	8780	11121	12242	16596	26208	34946	34943	38481	49169	44946	44485	48074	49574	52596
Jhunjhunu	21399	19607	19461	22255	19789	20944	29061	40792	32313	41140	43674	27824	30978	44310	43893	50763
Jodhpur	12072	15855	18617	21227	13877	27321	30394	35369	42593	44168	36669	41345	43236	54592	55785	55093
Karauli	-	-	-	-	-	-	-	-	-	-	32358	33924	46432	45287	45255	53062
Kota	14082	8253	8108	13546	16916	15291	30551	29258	27031	26891	25742	22675	20254	45475	33871	50917
Nagaur	6645	23513	17128	26561	23478	24411	29445	50948	46933	21043	28207	25599	40111	45614	42305	45271
Pali	9618	16078	14157	19402	17906	22081	17538	13716	23365	30326	23692	24762	29775	35997	30033	33776
Rajsamand	-	-	-	-	-	-	-	-	-	-	29963	28905	30707	35684	39784	27562
S. Madhopur	13787	14942	15037	17542	16379	23794	34753	44621	29711	31369	36602	33842	38649	41820	37136	44159
Sikar	15202	15142	16106	17233	18331	17478	32579	38094	37983	35091	28315	27530	34477	38260	35170	36685
Sirohi	7258	6941	7213	8053	8031	8857	16385	29099	37320	36615	38347	34510	37178	41181	47553	52528
Tonk	6163	10277	10765	12857	12757	15814	20444	16808	22465	21174	30992	32620	43615	51464	51988	57928
Udaipur	26121	27377	21489	30494	27433	40411	35106	32270	48467	54574	66942	29306	64873	61624	66494	67201

TABLE 6: YEAR-WISE (1990-91 TO 2005-06) and DISTRICT-WISE (32 DISTRICTS) TOTAL OP USERS

District	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
Ajmer	2886	2329	1134	2865	3219	4993	7810	9021	9839	15251	16168	18411	19954	27228	33627	56877
Alwar	3571	2274	2265	5384	4597	6088	9476	11614	11340	15467	17728	17296	19142	20904	26102	20792
Banswara	1364	1600	1129	2450	2607	3770	7415	16011	17968	20315	22778	22511	24425	24887	24402	29219
Baran	-	-	-	-	-	-	-	-	-	-	8967	8542	11278	14289	12386	16232
Barmer	1500	1519	1455	3463	3363	3910	5990	10433	14155	15775	22052	26194	33101	37741	39251	38876
Bharatpur	2101	2133	2243	2686	3255	2866	2880	5839	11026	9048	8712	8569	10637	12175	13086	13735
Bhilwara	2378	2148	1041	3160	3472	4869	10488	18282	20533	21502	24589	28519	33461	33954	34844	37968
Bikaner	1990	2389	718	2826	1561	867	3037	6717	11721	4885	3088	12452	22839	27478	46131	30418
Bundi	1174	1195	864	1578	1750	2866	11580	9259	8920	10653	1774	7414	13081	14192	15536	19893
Chittorgarh	2621	2406	2614	2714	3506	5024	9582	13608	18704	20801	23905	30508	31739	34850	39130	43344
Churu	1823	2250	1760	2172	2746	7007	7675	7790	10463	5688	11602	12952	21657	24477	30316	32981
Dausa	-	-	-	-	-	-	-	-	-	-	7325	9118	11200	13612	17432	19452
Dholpur	842	718	467	1312	2016	2241	5778	9892	9506	9400	10573	10860	11092	12742	12595	13550
Dungarpur	1218	1654	1124	2103	2379	4213	9199	13555	16598	17859	20831	20124	16730	20332	25414	30008
Ganganagar	2583	2915	1273	4258	5722	3754	4477	5853	5525	7048	8075	9743	10236	13272	15423	17388
Hanumangarh	-	-	-	-	-	-	-	-	-	-	10564	11619	12459	21750	24856	32301
Jaipur	4336	3679	3101	7692	4823	4962	5373	14037	12461	17077	13711	8760	20683	29575	31612	26428
Jaisalmer	494	667	729	846	818	454	690	2268	4180	3482	4616	3933	4520	7517	8345	15977
Jalore	1536	1663	1750	2419	3445	3739	6307	9757	14933	22884	30346	18049	22910	23937	29529	35602
Jhalawar	2037	1882	721	1850	2202	2743	6190	9809	10177	11909	15336	12704	13585	1476.2	14758	16577
Jhunjhunu	2436	2603	3408	4705	2829	4721	6242	11059	10868	11699	12403	7203	9762	11681	14006	15258
Jodhpur	2606	2520	2151	3839	2615	4793	7362	11526	14893	18040	20490	23993	27559	33493	37709	42654
Karauli	-	-	-	-	-	-	-	-	-	-	18239	16891	19582	19564	19607	23475
Kota	3269	1322	1686	2159	3332	4509	6022	6414	6505	7274	11533	15080	22733	28062	10828	20515
Nagaur	2452	3212	2014	5335	3781	6908	8244	17694	17359	16637	18344	18825	18669	24742	22925	27444
Pali	2998	2520	1745	3728	3915	4938	7993	11741	13112	20178	18522	16100	22279	22460	18006	20300
Rajsamand	-	-	-	-	-	-	-	-	-	-	18669	19648	20846	34546	28292	22183
S. Madhopur	2147	2474	2398	2940	3405	4465	10655	15854	11651	13562	15498	14575	16462	18690	18982	20745
Sikar	2350	2356	1848	2858	4043	4880	6245	10156	9890	9981	7780	17152	16296	15355	13640	16891
Sirohi	1176	994	1105	1563	1910	1710	4172	10623	11132	13467	17785	19005	21404	23656	27376	30021
Tonk	1856	1762	1169	2138	2385	3321	5036	6260	7432	7726	11114	12430	15224	17109	17806	20545
Udaipur	4433	4796	2714	5405	5506	8373	9799	11795	17032	24346	26193	23085	31275	34682	33002	33084

TABLE 7: FORECASTING OF IUD USERS

Name of District	Forecasted values				
	2006-07	2007-08	2008-09	2009-10	2010-11
Ajmer	8256	8299	8342	8385	8428
Alwar	7977	8020	8064	8108	8152
Banswara	12045	12440	12835	13229	13624
Baran	3411	3265	3119	2973	2827
Barmer	7710	7917	8124	8331	8537
Bharatpur	6222	6354	6485	6617	6748
Bhilwara	16229	16820	17411	18003	18594
Bikaner	8717	9054	9391	9727	10064
Bundi	5186	5332	5478	5623	5769
Chittorgarh	12457	12827	13197	13567	13937
Churu	8933	9310	9687	10064	10441
Dausa	2678	2546	2415	2283	2151
Dholpur	3098	3121	3145	3169	3193
Dungarpur	9155	9419	9684	9949	10213
Ganganagar	8957	8957	8882	8844	8807
Hanumangarh	42045	44363	46682	49001	51319
Jaipur	9206	9234	9262	9289	9317
Jaisalmer	3004	3121	3238	3355	3472
Jalore	11469	11927	12386	12844	13302
Jhalawar	5902	5952	6002	6052	6102
Jhunjhunu	11376	11927	12478	13028	13579
Jodhpur	13760	14278	14797	15316	15834
Karauli	17294	18138	18982	19826	20670
Kota	7595	7709	7823	7937	8051
Nagaur	14940	15319	15698	16076	16455
Pali	13994	14373	14752	15132	15511
Rajsamand	9790	9954	10118	10282	10446
S.Madhopur	5887	5847	5808	5768	5728
Sikar	9273	9451	9630	9808	9986
Sirohi	9009	9425	9841	10256	10672
Tonk	6313	6446	6578	6711	6843
Udaipur	13722	14024	14326	14629	14931
Rajasthan	290043	299679	309316	318953	328590

TABLE 8: FORECASTING OF CC USERS

Name of District	Forecasted values				
	2006-07	2007-08	2008-09	2009-10	2010-11
Ajmer	55127	58063	61000	63937	66873
Alwar	72299	75720	79141	82562	85983
Banswara	56192	59146	62100	65053	68007
Baran	64260	67130	69999	72869	75739
Barmer	82837	88210	93582	98954	104327
Bharatpur	34867	36230	37593	38956	40319
Bhilwara	77518	82166	86813	91461	96108
Bikaner	34867	36230	37593	38956	40319
Bundi	43586	46082	48579	51075	53572
Chittorgarh	79581	84302	89024	93745	98466
Churu	43704	46169	48633	51097	53561
Dausa	119713	126207	132701	139195	145689
Dholpur	45621	48383	51145	53907	56669
Dungarpur	48670	51313	53957	56601	59245
Ganganagar	34576	35944	37312	38680	40048
Hanumangarh	161767	170754	179741	188728	197715
Jaipur	48712	50394	52075	53756	55437
Jaisalmer	16297	17293	18289	19285	20282
Jalore	59051	62524	65996	69469	72941
Jhalawar	60303	63817	67330	70844	74357
Jhunjhunu	48084	50004	51924	53844	55764
Jodhpur	59836	62844	65853	68861	71870
Karauli	95318	99215	103111	107007	110903
Kota	42257	44369	46482	48594	50706
Nagaur	46870	48729	50587	52445	54303
Pali	34907	36350	37794	39237	40680
Rajsamand	41979	42710	43442	44174	44905
S.Madhopur	47008	49052	51096	53140	55184
Sikar	41574	43203	44831	46460	48089
Sirohi	54123	57423	60724	64025	67325
Tonk	54459	57791	61124	64456	67789
Udaipur	69961	73043	76126	79208	82290
Rajasthan	1627150	1718547	1809944	1901341	1992738

TABLE 9: FORECASTING OF OP USERS

Name of District	Forecasted Values				
	2006-07	2007-08	2008-09	2009-10	2010-11
Ajmer	37513	40223	42933	45643	48353
Alwar	25400	26961	28523	30084	31645
Banswara	32033	34163	36293	38423	40553
Baran	31570	33023	34477	35930	37384
Barmer	41181	44123	47065	50008	52950
Bharatpur	14285	15149	16014	16878	17743
Bhilwara	41361	44159	46957	49756	52554
Bikaner	30787	33092	35397	37702	40007
Bundi	16963	18064	19164	20265	21365
Chittorgarh	43145	46124	49104	52084	55064
Churu	28317	30300	32283	34266	36250
Dausa	46962	49476	51990	54504	57018
Dholpur	15625	16628	17632	18635	19638
Dungarpur	29209	31151	33092	35033	36974
Ganganagar	15192	16115	17038	17960	18883
Hanumangarh	79746	84252	88757	93262	97767
Jaipur	28113	29888	31664	33440	35216
Jaisalmer	9880	10604	11329	12053	12778
Jalore	34199	36540	38881	41222	43563
Jhalawar	15915	16876	17837	18798	19758
Jhunjhunu	15209	16036	16863	17690	18516
Jodhpur	39514	42279	45043	47808	50572
Karauli	32794	33774	34755	35735	36715
Kota	21688	23127	24567	26006	27445
Nagaur	28268	30016	31764	33511	35259
Pali	24993	26533	28072	29611	31151
Rajsamand	46093	47727	49362	50996	52630
S.Madhopur	22561	23932	25303	26674	28045
Sikar	18252	19357	20462	21567	22673
Sirohi	29578	31682	33786	35890	37994
Tonk	19588	20913	22237	23561	24886
Udaipur	37744	40158	42573	44988	47402
Rajasthan	819786	875758	931730	987702	1043674

TABLE 10: DISTRICT WISE FEMALE LITERACY RATE 1991 and 2001 IN RAJASTHAN

		Females	Females
		1991 (%)	2001 (%)
1	Ajmer	34.5	48.86
2	Alwar	22.54	43.28
3	Banswara	13.42	28.43
4	Baran	17.22	41.55
5	Barmer	7.68	43.45
6	Bharatpur	19.6	43.56
7	Bhilwara	16.5	33.48
8	Bikaner	27.03	42.03
9	Bundi	16.13	37.79
10	Chittaurgarh	17.15	36.39
11	Churu	17.32	53.35
12	Dausa	14.15	42.32
13	Dhaulpur	15.25	41.84
14	Dungarpur	15.4	31.77
15	Ganganagar	30.07	52.44
16	Hanumangarh	22.22	49.56
17	Jaipur	31.84	55.52
18	Jaisalmer	11.28	32.05
19	Jalor	7.75	27.8
20	Jhalawar	16.18	40.02
21	Jhunjhunu	25.54	59.51
22	Jodhpur	22.58	38.64
23	Karauli	13.01	44.39
24	Kota	37.56	60.43
25	Nagaur	13.29	39.67
26	Pali	16.97	36.48
27	Rajsamand	15.54	37.59
28	Sawai Madhopur	16.07	35.17
29	Sikar	19.88	56.11
30	Sirohi	16.99	37.15
31	Tonk	15.24	32.15
32	Udaipur	20.41	43.26

TABLE 11:STATE-WISE AND UTs –WISE FEMALE LITERACY RATE 1991 and 2001 IN INDIA

		Females 1991 (%)	Females 2001 (%)
1	Andaman & Nicobar Island	N.A.	41.82
2	Andhra Pradesh	52.26	68.08
3	Arunachal Pradesh	50.41	63.55
4	Assam	72.34	76.65
5	Bihar	41.63	60.26
6	Chandigarh	40.47	56.31
7	Chhattisgarh	66.99	75
8	Dadra & Nagar Havelli	20.44	44.34
9	Daman& Diu	24.37	42.98
10	Delhi	21.99	33.57
11	GOA	46.76	61.46
12	Gujarat	29.69	44.24
13	Haryana	54.75	61.92
14	Himachal Pradesh	47.6	59.7
15	Jammu & Kashmir	78.6	86.13
16	Jharkhand	49.65	65.41
17	Karnataka	44.85	60.41
18	Kerala	43.03	56.03
19	Lakshadweep	46.56	60.22
20	Madhya Pradesh	25.52	39.38
21	Maharastra	34.68	50.97
22	Manipur	27.52	52.4
23	Meghalaya	29.35	50.28
24	Mizoram	48.92	58.6
25	Nagaland	59.4	70.37
26	Orissa	26.98	42.99
27	Pondicherry	52.32	67.51
28	Punjab	32.72	51.17
29	Rajasthan	44.34	57.45
30	Sikkim	67.09	75.51
31	Tamil Nadu	72.89	81.56
32	Tripura	86.17	87.86
33	Uttaranchal	51.33	64.55
34	Utter Pradesh	65.63	74.13
35	West Bengal	65.46	75.29

TABLE-12: FEMALE LITERACY RATE 1991 and 2001 IN RAJASTHAN AND INDIA

		Females 1991 (%)	Females 2001 (%)
	Rajasthan	20	44
	India	39.28	54.28

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STUDY OF UNMET NEED FOR FAMILY PLANNING IN A RESETTLEMENT COLONY OF EAST DELHI

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ABSTRACT

The prevalence of unmet need for family planning in an urban resettlement colony of East Delhi and the factors associated with it are investigated in this study, using a sample size of 1051 married females aged 15-49 years who were fecund and sexually active. The findings reveal that (i) Among the subjects, 562 (53.5%) were currently using contraceptives, 130 (12.4%) were pregnant and 359 (34.1%) were not using any contraception; (ii) The overall unmet need for family planning was 25.4 per cent, of which 6.7 per cent was need for spacing and 18.7 per cent was need for limiting the family; (iii) Unmet need was highest among the illiterate group, among women with per capita income of less than Rs.500 per month and women having three or more children; and (iv) It was lower in women who discussed family planning with their husbands compared to those who did not.

Key Words: Unmet need, Family Planning, Contraceptive use, Fecund and sexually active.

A large number of women who are sexually active and would prefer to avoid or delay child bearing but are not using any contraception, are said to have an unmet need for family planning.[1] This concept clearly indicates a gap between a woman's reproductive intention and contraceptive behaviour. If we are able to bridge this gap and bring these women under the umbrella of protected couples, then this would be a great boost to the country's family welfare programme by increasing the couple protection rate and realization of the dream of a stable population.

There are over 35 million such women in India.[2] It is all the more important to reach such women as their reproductive attitude resembles those of contraceptive users[3] and are more likely to become family planning acceptors.

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Important reasons for unmet need include lack of information, unsatisfactory quality of services, opposition from family members etc. The present study was conducted to find out the prevalence of unmet need in an urban resettlement colony of East Delhi and also the factors associated with it. It is important to find out the unmet need level in various sub-groups of the population and the factors associated with the same, as it will be helpful in initiating local need based interventions for dealing with the problem.

MATERIALS AND METHOD

The study was a community based cross-sectional study conducted from August to October, 2005. The study area was the Nand Nagri resettlement colony of East Delhi. The population of this colony is roughly 70000, which is distributed in 5 blocks and 23 sub-blocks, with each sub-block having 500 residential units. Within the colony, 1051 married females in the 15-49 years age group who were fecund and sexually active were randomly selected using systematic random sampling technique and interviewed. Among them the women with unmet need for family planning were identified.

The criteria for identifying unmet need for family planning were all fecund females in the reproductive age group who were married and were not using any contraceptive method and Who did not want any more child or Wanted to postpone the next birth for at least 2 years or Were pregnant or lactating, with the current pregnancy having been unwanted or unplanned.

FINDINGS AND DISCUSSION

Mean age of the 1051 study subjects was 28.80 ± 6.38 years and the range was 19-47 years. Majority of those interviewed were Hindus (95.9%) and 36.1 per cent of the respondents were illiterate. Majority of the respondents were housewives (92.2%). About 2.9 per cent mentioned that their husband was unemployed, while majority of the husbands were semiskilled or skilled workers (41.4%). The mean total family size was 2.28 ± 1.49 and ranged from 0 to 10. While 12 per cent of the subjects had no child and 30.8 per cent had a single child, a large majority of the women (69.2%) had two or more children. The mean family income was Rs.4240 per month and the mean per capita income was Rs.918 per month. The mean age at marriage for the subjects was 18.96 ± 2.51 years while the mean age at cohabitation was 19.09 ± 2.51 years. The mean age at cohabitation for females closely matched the findings of the NFHS II survey for Delhi. 4

Among the total study subjects, 562 (53.5%) were currently using contraceptives, 130 (12.4%) were pregnant and remaining 359 (34.1%) were not using any contraception. Among the users of contraception, condom was more common (33.9%) followed by tubectomy (28.6%) oral pills(20.9%) and intrauterine devices (15.0%). The NFHS II[4] had found that forty-eight percent of currently married women were currently using some method of contraception in India, which means that the level of current contraception use in our study population was more than the national average. It was also more than the finding by Puri et al.[5] Though female sterilization accounts for a large share of current contraception use in India, but it does not dominate contraceptive method use as much in Delhi as in rest of the nation.[4] The finding in our study of a larger share of condoms (33.9%) as the method of contraception employed as compared to female sterilization (28.6%) can be attributed to the massive publicity and promotion given to condom use as part of the HIV/AIDS prevention programme.

Among the non-users, 129 intended to have a child within the next two years, while 230 subjects had an unmet need for family planning. Among those in the unmet need group, 174 did not want any more children and 56 did not want a child for at least two years. Out of 130 pregnant females, 23 (17.7%) reported that their pregnancy was unwanted and 14 (10.8%) reported as unplanned.

Thus the total unmet need for family planning was 25.4 per cent, of which 6.7 per cent wanted to space and 18.7 per cent wanted to limit the family size. (Table1).

TABLE 1

DISTRIBUTION OF THE STUDY POPULATION ACCORDING TO THEIR STATUS OF NEED FOR FAMILY PLANNING

Study subjects	**Number**	**Percentage**
Contraceptive users	562	53.5
Contraceptive non-users		
Non-Pregnant		
Want more children (Intenders)	129	12.3
Do not want more children (Unmet need for limiting)	174	16.6

Do not want children in next 2 years (Unmet need for spacing)	56	5.3
Pregnant		
Intended	93	8.8
Unwanted (unmet need for limiting)	23	2.2
Unplanned (unmet need for spacing)	14	1.3
Total	**1051**	**100.0**

Various studies have shown a considerable extent of unmet need for family planning among currently married females, 16 per cent by NFHS II and 23.1 per cent Ram et al.[6] While overall at the national level the need for spacing and limiting methods is almost equal as found by NFHS, in our study the unmet need was found to be much more for limiting than spacing. This could be ascribed to the fact that women in urban slums generally complete their families at an early age itself, which reflects in that 69.2% of the women in the present study had two or more children. The lower share of sterilization as the method of contraception used among the current study population also translates into a higher unmet need for limiting. While there is an increased acceptance and use of spacing methods, at the same time permanent methods of contraception also need to be promoted and made available especially to those females who have completed their family, to reduce the unmet need for limiting family among them.

The most important reasons reported in the present study for unmet need were lack of knowledge about various contraceptive methods and their availability and fear of side effects which are in agrrement with the findings of Ram et al.[6]

The unmet need for family planning was maximum in the subjects aged 36 years and above, which was mainly a need for limiting children (Table 2). The unmet need for spacing was the highest in the age group of 18-25 years. It can also be seen that as the age increases, the unmet need for spacing methods decreases while the reverse is true for unmet need for limiting the family. This trend was statistically significant.

TABLE 2

AGE-WISE DISTRIBUTION OF THE STUDY POPULATION

Age group (In years)	Unmet needs group						No unmet need		Total	
	Unmet need for limiting		Unmet need for spacing		Total					
	N	%	N	%	N	%	N	%	N	%
18-25	50	12.5	46	11.5	96	24.1	303	75.9	399	100.0
26-30	68	22.0	13	4.2	81	26.2	228	73.8	309	100.0
31-35	32	18.6	4	2.3	36	20.9	136	79.1	172	100.0
36 and above	47	27.5	7	4.1	54	31.6	117	68.4	171	100.0
Total	197	18.7	70	6.7	267	25.4	784	74.6	1051	100.0

(For whole group, X^2=41.9, p< 0.001)

Previous studies have also borne out the fact that while the unmet need for contraception is mostly for spacing among married women of lower age, it becomes mainly a need for limiting methods among older women.[4, 5,7] The importance of this finding is that while determining the family planning methods to be offered to meet the unmet need, policy makers need to keep in mind the age profile of the women.

TABLE 3

DISTRIBUTION OF THE STUDY POPULATION BY SOCIOECONOMIC PROFILE

Education status	Unmet needs group						No unmet need		Total	
	Unmet need for limiting		Unmet need for spacing		Total					
	N	%	N	%	N	%	N	%	N	%
Illiterate	88	23.2	26	6.9	114	30.1	265	69.9	379	100.0
Primary	79	16.9	28	6.0	107	22.9	360	77.1	467	100.0
Secondary & above	30	14.6	16	7.8	46	22.4	159	77.6	205	100.0
Total	197	18.7	70	6.7	267	25.4	784	74.6	1051	100.0
(For whole group, X^2=9.2, p=0.056)										

Per capita income	Unmet needs group		No unmet need		Total	
	N	%	N	%	N	%
Rs 0 to 500	110	32.0%	234	68.0%	344	100.0
Rs 501 to 1000	95	21.5%	347	78.5%	442	100.0
Rs 1001 or more	49	18.5%	216	81.5%	265	100.0

(For whole group, X^2 =, p= < 0.001

Table 3 shows the distribution of the subjects by their educational status. It can be seen that among the illiterate group, 30.1% were having unmet need, while the figure among those with primary education was 22.9% and among those with secondary or higher education was 22.4%. Thus a linear relationship between the education level of the respondents and unmet need for family planning could be seen, as was found by the NFHS survey.[4]

On classifying the subjects by the per capita income per month, it was found that the unmet need was the highest among women with per capita income of less than Rs.500 per month, with 30.8% of them having unmet need. In the group with per capita income of Rs.501 to 1000, 23.8% had an unmet need, while the figure was 21.1% among those having per capita income of more than Rs.1000 per month. The association with per capita income level was found to be statistically significant (p=0.014).

TABLE 4

DISTRIBUTION OF THE STUDY POPULATION BY NUMBER OF LIVING CHILDREN AT PRESENT

Number of living children at present	Unmet needs group						No unmet need		Total	
	Unmet need for limiting		Unmet need for spacing		Total					
	N	%	N	%	N	%	N	%	N	%
0	6	4.8	21	16.7	27	21.4	99	78.6	126	100.0
1	9	4.6	36	18.3	45	22.8	152	77.2	197	100.0
2	60	20.8	13	4.5	73	25.3	216	74.7	289	100.0
3 or more	122	27.9	0	0.0	122	27.9	316	72.1	438	100.0
Total	197	18.8	70	6.7	267	25.4	784	74.6	1051	100.0

(For whole group, X^2=145, p< 0.001)

Table 4 shows that the unmet need was the lowest (21.4%) in the females having no child. It rises steadily as the number of children increases, and is maximum (27.9%) in those females having 3 or more children. Females who are not using any contraception but have none or a single child are likely to still want to have more children while those who have already completed their families and are contraceptive non-users would more likely represent unmet need. Bhattacharya et al[7] had noted a statistically significant trend of unmet need for spacing decreasing and unmet need for limiting rising as the number of living children increased, a trend that was found in the present study too. Interestingly, while the NFHS II had found the unmet need to be 14.1% among those having no child, [4] the figure rose to 21.4% in the present study, being mostly an unmet need for spacing. It means that more and more couples now want to delay the first childbirth too.

TABLE 5

DISTRIBUTION OF THE STUDY POPULATION BY STATUS REGARDING DISCUSSING FAMILY PLANNING WITH HUSBAND

Discuss family planning with husband	Unmet need for family planning		No unmet need		Total	
	Number	%	Number	%	Number	%
Yes	134	23.0	449	77.0	583	100.0
No	130	28.4	328	71.6	458	100.0
No response	03	30.0	07	70.0	10	100.0
Total	267	25.4	784	74.6	1051	100.0

(For whole group, X^2=4, p=0.047)

It can be seen in Table 5 that the level of unmet need was less (23.0%) in those females who had discussed family planning with their husband in the last year, as compared to those who did not do so (28.4%). About 10 (0.95%) females did not respond to the question regarding discussion of family planning methods with their partners and we were not able to extract any particular reason for their non-response. Discussion with their partner about contraception implies that the women have awareness about the methods and are interested in their use. If the females have a say in deciding about family planning, the unmet need among them can be brought down significantly. Acharya and Sureender too had found in their study[8] that use of family planning methods was closely related to the couple having discussed family planning during the last one year.[8]

CONCLUSIONS

The study concludes that about one in every four married females in the age group of 15-49 years was found fecund and sexually active who have unmet need either for spacing or for limiting their family size. This indicates the unmet need for contraception is still quite high in the population especially among sub-groups like resettlement colony dwellers. It points to a need for putting in more efforts to cater to this unmet needs group. While promoting methods for contraception, adequate emphasis should be given to both the spacing methods as well as the limiting methods. The method to be adopted should be in consonance with the specific needs of a couple as per their age profile and family size.

Since the extent of unmet need was found to be higher among married females with lower education level, lower income level, and more number of children, these variables can be used to identify the females for whom special efforts may be made to meet their needs for family planning. Health personnel should underline the importance of inter-spouse communication and encourage a couple to jointly decide on family planning. Efforts are also needed to provide correct and adequate information to the couples as lack of knowledge and fears remain a significant cause of unmet need. Overall, the findings of the present study show that there is still a huge scope for increasing the adoption of family planning measures among couples and bridging this unmet need for family planning can prove to be of great benefit to the nation.

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MICROFINANCE AND ITS CONTRIBUTIONS TO HEALTH CARE ACCESS: A STUDY OF SELF-HELP GROUPS (SHGS) IN KERALA

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ABSTRACT

In the context of emerging global economic momentum countries across the world have been experiencing the appearance of a number of potential financing options for health care both within and outside the health sector. This study looks at the possibility of microfinance as an alternative option for financing health care in Kerala, by focusing on one semi-urban area and one rural area, each from two districts. The study observes that in order to obviate the difficulties (like inability to repay the loans regularly) experienced by the extremely poor among the members of microfinance institutions, it is necessary to make the terms and conditions of savings and borrowings to be poor-friendly than they are at present. Secondly, in order to make microfinance more feasible for meeting emergency health care requirements, setting up of a welfare fund at the SHG level is appreciable. Although income is a key constraint to participation by the poorest of the poor, they are often willing to participate if their contributions are supplemented by a government subsidy and an access to quality. Further, with the number of SHGs throughout Kerala, community financing as well as insurance coverage are not that much widespread. A collective approach with mutual coordination of the government and self-help groups can definitely overcome this inadequacy and limitation. Above all, an inter-sectoral coordination, by keeping microfinance mechanism as the pivot or by incorporating microfinance mechanism can always ensure an easy, appropriate, affordable and effective service delivery at the doorstep of the people.

Keywords: Health care financing, Microfinance, Credit disbursements of SHGs

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One of the objectives of development planning is to reduce the extent of poverty by providing employment opportunities and raising the income levels of the population. [1] Since poverty and ill-health are intertwined, unaffordability is the major factor denying health care access to the vulnerable sections of the society. Affordability can be enhanced only by large scale financing of health care through available means of financing. India also succumbed to cut short public expenditure on health and other social expenditures as a follow up of global economic context. Regarding public spending on health, it has been the expectation that the principal contribution for the funding of public health services will be from the resources of the states, with some supplementary input from central resources. There has been a small boost to the public expenditure on health by central as well as state governments from 1.25 percent of GDP in the early 2000s to 1.39 percent during 2006- 2007 in India.[2]

The National Rural Health Mission (NRHM) envisages 30 percent more allocation by states every year to reach about 7 to 8 percent of total budget allocation to health sector.[3]

Despite all these appreciable trends, in the context of aftermath of global economic momentum, escalation of health care costs and due to the inelastic nature of the fiscal resources of the state[4], the necessity of alternative sources of financing healthcare is inevitable.

In this context, microfinance can be thought of as an option to finance health care. Since microfinance has been accepted globally as a poverty eradication measure and a means of women empowerment, it has certainly been an indirect catalyst for health. But, the direct as well as the indirect impact of microfinance on health has not been explored widely. Moreover, since banks do not give loans for health purposes, newer ideas or arrangements are welcomed to fill the gaps in health care financing. Microfinance can certainly bridge this gap, since it is an easy way-out to tap and pool the local resources in an organized way for better outcome. Nevertheless, the process is not automatic as groups, like individuals, may not consider health care as a priority unless the necessity comes. Using the microfinance arrangements to save for health is a big task. Little is known about its impact on health care financing.

Kerala's health system

The basic objective of a health care system is to meet a country's health needs in the most equitable, and efficient manner, while remaining financially sustainable. While analyzing the share of state in health expenditure in Kerala, it is evident that, there have been ups and downs and it was 1.20 percent as a proportion of state domestic product for the year 2005- 2006. [5, 6] Financing health care from taxation is also said to be of having limited possibility in Kerala. [7] On the other hand, inability of the public sector to meet the hiking demand for health services paved the way for the dominance of the private sector in the state. [8] As a result, the public system is getting alienated from the people as only about 30 to 40% of the people even from the lower income group seek medical help from the government healthcare facilities in Kerala. [9]Household health expenditure in Kerala has increased over five times (517%) during a ten year period of 1987-1996. This increase was significantly higher (768%) among the poorest people than among the richest (254%). High spending by the poor makes them further disadvantaged and marginalized. [9]The 52nd round of national sample survey ranks Kerala as having the highest private health expenditure in terms of medical care among all states in India. Kerala spends an average of Rs. 2548 (2004-05 current prices) per capita per annum.[10]

Regarding the health status, at present the State of Kerala has a mixed trend with some good standards in some areas and on the other hand with problems like high morbidity, growing prevalence of life style diseases and diseases of the elderly, re-emergence of some diseases like malaria, tuberculosis, dengue, respiratory infections and emergence of chikungunya in recent times, low maintenance of health infrastructure, shortage of human resources, and rapidly increasing medical cost. [7] All these are posing additional burdens in terms of resource requirements for health system, accessibility, affordability, cost effectiveness etc. In short, it is evident that fiscal problems, disease burden, global challenges, technology advancement and the dominance of private sector created a situation in which access to health is based on "ability to pay". All these attributed to both upstream and downstream challenges for health equity.[8]

DEMOCRATIC DECENTRALIZATION IN KERALA AND PEOPLE'S PARTICIPATION IN HEALTH

Since health care service has got public good characteristics it is considered suitable for the process of decentralized financing. This along with political decentralization can bring forth improvement in service delivery and access. However, the local government spending of 0.11% is particularly low in a state like Kerala that spends more than 5% of its budget on health and local governments control about 13% of state resources. All these led to a situation in which the

mobilization of local out of pocket health resources took place in an organized manner, for example through Self Help Groups (SHGs).[11]

The ninth plan also made provision to increase the involvement of voluntary, private organizations and SHGs in the provision of health care and ensure intersectoral coordination mainly through local governing bodies or institutions in planning and monitoring of health programs at the local level in order to have more accountability and sustainability**.** [12]

Microfinance vis-à-vis Health in Kerala

Microfinance has become a key strategy for poverty alleviation and empowerment of women in Kerala, right from the middle of 1980s. Though NGOs were the forerunners in this field, the early nineties marked a new era for microfinance programs in the state with the evolution of the Community Development Society (CDS) model women groups in Alappuzha district of the state of Kerala. Through microfinancing option, small groups (20-25) of people already hold the power to finance marriages, housing, education and health care etc. Kudumbasree, a joint venture of government and the National Bank for Agriculture and Rural Development (NABARD) is a landmark in this aspect.[13]

Some of the intervention strategies of Microfinance institutions in health, other than financing include:

Health Education: Neighborhood Groups (NHGs) of Kudumbasree and SHGs act as platform for health education and awareness building, by integrating the activities of governmental, non-governmental and professional agencies.

Environmental Modifications: A comprehensive strategy on environmental modifications like provision of safe water, installation of sanitary latrines, control of mosquitoes etc.

Nutritional Intervention: The nutritional status of the population especially that of children and women can only be improved through an intergraded approach to poverty alleviation.

Specific diseases prevention: In order to provide specific protection in case of diseases which are prevalent in the area, the disease prevention activities like immunization, use of specific nutrients coverage etc. are being undertaken.[14]

Microfinance: Microfinance is a financial service of small quantity (savings, credit, insurance leasing, money transfer, equity transaction etc) provided by financial institutions to the poor to meet their normal financial needs: keeping two conditions; small transaction value and poor customers.[15]

Self Help Groups (SHGs)

The term 'self-help' has been taken to mean that a community takes complete responsibility for a project from planning through implementation, including the provision of all resources. SHGs are small informal associations created for the purpose of enabling members to reap economic benefit out of mutual help, solidarity, and joint responsibility. The group-based approach not only enables the poor to accumulate capital by way of small savings but also helps them to get access to formal credit facilities.[16] Self help is considered as the third option for health care delivery.[17]

OBJECTIVES

Although SHG has attained the proportion of a movement in the state of Kerala, its impact on the society in general and on the poverty is still unknown. More specifically, it is not known whether SHGs move resources closer to or away from health. While SHGs have the potential to break the poverty ill-health nexus, the outcome is not automatic. If they are not adequately guided, they have the potential to even widen the rich-poor divide. Keeping this in mind, the study analyzed the role played by self-help groups in Kerala vis-à-vis health. The overall aim of the study was to enhance the share of health in micro financing in Kerala. This paper analyses the possibility of microfinance as an alternative to finance health care.

METHODOLOGY

The study is based on the analysis of primary data, which are used to understand the credit disbursements of SHGs vis-à-vis health from two districts in the State of Kerala. The study included one rural area and one semi-urban area, which has more characteristics of a typical urban area, in order to find out the rural-urban difference in the working of SHGs with respect to health and also the health seeking behavior of the people. The rural area was selected, because of its importance as the region of the inception of Credit Development Societies (CDS), the premier SHG in Kerala. The semi-urban area was selected because of its proximity to the capital city (with more urban characteristics) of Kerala. The selection of SHGs was random from both the areas. Since, SHGs are more focusing on females; the study concentrated on women SHG groups only. Questionnaires were separately needed for SHG beneficiaries and officials. All the members of the SHGs were interviewed. The SHG 1 and 2 are used for rural area and SHG 3 and 4 are used for semi-urban area respectively.

FINDINGS

Personal income of SHG members

A significant portion of the study subjects are having either zero income or very low level of income (Table 1). This shows the vulnerability of members in SHGs.

TABLE-1

PERSONAL ANNUAL INCOME OF THE SHG WOMEN MEMBERS

SHG	Level of income (Rs.)				
	Nil	**100-5000**	**5000-10000**	**10000-20000**	**20000 -25000**
SHG-1	2	6	8	4	4
SHG-2	4	19	2	0	0
SHG-3	9	15	1	0	0
SHG-4	12	13	0	0	0
Total	25	57	11	4	4

Value of Assets

Nearly 50 per cent are with no assets or with a low level (Table 2).

TABLE 2

VALUE OF ASSETS

SHG	Value of assets (Rs.)					
	Nil	1,000-50,000	50,000-1,00,000	1,00,000–2,00,000	2,00,000–3,00,000	> 3,00,000
SHG-1	0	10	10	3	2	0
SHG-2	2	8	8	5	2	0
SHG-3	2	14	8	1	0	
SHG-4	4	10	9	2	0	0
Total	8	42	35	11	4	0

Enhancement of income for SHG Members

The success of the SHGs in enhancing income appeared to be highly significant. Nearly 30% accepted the enhancement between 26 and 50 per cent. The highest percentage of enhancement was found in rural area (Table).

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TABLE 3

ENHANCEMENT OF INCOME THROUGH SHG ACTIVITIES

SHG	Percentage increase in income		
	0-10	11-25	26-50
SHG-1	0	6	19
SHG-2	2	13	10
SHG-3	14	11	0
SHG-4	14	11	0
Total	30	41	29

Loan disbursements of SHGs

Purpose of current SHG loans: In the category of currently held up loans, the number as well as the percentage of loans for health was significant (9%) in proportion to the loans for other purposes like employment, house, debt etc. Rural area had the largest share for health (7%) (Table 4).

TABLE 4
CURRENT SHG LOANS

SHG	No. of loans currently held						
	Health	Education	Employment	House	Debt	Marriage	Others
SHG-1	2	0	4	0	2	0	0
SHG-2	2	3	5	3	3	1	1
SHG-3	1	2	2	7	0		0
SHG-4	0	5	0	5	8	3	2
Total	5 (9%)	10(16%)	11(18%)	15(25%)	13(21%)	4(8%)	3(5%)

Share of health out of total loans from 2003-2005: During the period 2003-05, 238 loans were disbursed by the 4 SHGs. Out of these, 22 (9.2%) were for health care purpose. And the rural SHGs came out with better figures (16.6% & 7.1%) for health (Table 5).

TABLE 5
SHARE OF HEALTH IN SHG LOANS FROM 2003-2005

SHG	Total no. of loans	No. of medical loans (%)
SHG-1	54	9 (16.6)
SHG-2	56	4 (7.1)
SHG-3	60	5 (8.3)
SHG-4	68	4 (5.9)
Total	238	22 (9.2)

Share of health in the quantum of loan: While the share of health in the number of loans was fairly good at 9.2%, its share in the total amount disbursed was pretty low at 3.6 per cent. Semi-area took the largest amount for health compare to rural area (Table 6).

TABLE 6
QUANTUM OF LOANS DISBURSED

SHG	Amount disbursed (Rs.)	
	Total	Health purpose (%)
SHG-1	4,06,500	17,500 (4.3)
SHG-2	3,95,000	8,000 (2.0)
SHG-3	5,45,500	34,000 (6.2)
SHG-4	7,60,000	17,000 (2.2)
Total	21,07,000	76,500 (3.6)

*Key to get the exact purpose for which the loan was used

Medical expenditure of the SHG Members: The average monthly health care expenditure is found to be high in semi-urban area, compare to rural area. Also, the average monthly expenditure is shown to be high for females compared to males in both the areas (Table7).

TABLE 7

CURRENT MONTHLY HEALTH EXPENDITURE OF THE MEMBERS

	Health expenditure (Rs.)	
SHG	**SHG member**	**Spouse**
SHG-1	4,950	1,950
SHG-2	3,050	3,150
SHG-3	7,200	7,300
SHG-4	11,430	2,700
Average	26,630	15,100

Health Care Utilisation by the SHG Members: A vast majority (77%) of SHG members mixed both government and non-government facilities for seeking health care whereas 23 per cent relied only on government facilities. There is no significant difference in the exclusive access to government health facilities between rural and semi-urban areas (Table 8).

TABLE 8

HEALTH SEEKING OF THE SHG MEMBERS

SHGs	**Both Government and private n (%)**	**Government n (%)**
SHG-1	18 (72.0)	7 (28.0)
SHG-2	21 (84.0)	4 (16.0)
SHG-1	20 (80.0)	5 (20.0)
SHG-2	18 (72.0)	7 (28.0)
Total	77(77.0)	23 (23.0)

DISCUSSION

In the study, the participation of the elderly as well as the below 30 age group is very small; this could be related to lack of autonomy of women, either financially or in decision making. This itself throws light into their low capacity to meet requirements, especially healthcare and also the necessity of an informal financial arrangement like microfinance, to meet their emergencies and other felt needs (since microfinance is a viable strategy to provide easy credits to the poor in an effective way[18])**.** By reviewing the work of BRAC in Bangladesh, one of the premier microfinance organizations, it has been revealed that women's poor health status is mainly due to their inability to pay for the services combined with their lack of awareness and perceived health problems, fear of service charge costs, fear of service provider behaviour and absence of alternative financing strategies. Despite this, empirical evidence has shown women as a group are consistently better in promptness and reliability of repayment.[19]

In the study, there was no significant rural urban difference in the level of education. Discontinuation of education above the level of higher secondary is quite common even among relatively young section of the population, i.e. below 30 years. This could be the aftermath of unaffordability either due to low income or due to higher cost of education. Kerala is a state where the economic depression of the people as well as the government affects every aspect of the life of the people.[20] Spending on education and health is also the direct and indirect aftermath of this economic depression.

The economic profile of the study subjects also shows the need for an informal financial mechanism, without collateral securities and other formalities (the inadequacy of assets limits the assurance of securities). Nearly half are without any personal income or with a very low personal annual income. Low income indicates low repayable capacity, low standard of living, low health status and low health seeking behaviour, especially by women. In this context, it is also essential to point out that, in the State of Kerala more than 40% of the families living below poverty line are headed by females. [9] And this puts additional burden on women; especially making them deprived of health care access. Microfinance fits well into this context, since it is proved to be a viable arrangement to meet emergency requirements and healthcare necessitates more often emergency requirements. As a result, microfinance has been accepted globally as one of the efficient strategies to attain millennium development goals and the beauty of microfinance lies in programs approaching financial sustainability, free of donor support.[21]

The percentage of maximum level of income enhancement via microfinance is found out to be significant. The reduction in interest payment burden via microfinance also found to be significant at 25 percent. A study conducted by Kamarkar also revealed that as the microfinance programme was effectively implemented, the monthly income of the beneficiaries had increased substantially.[18] However, in the present study; the percentage of increase is higher in rural areas, which could be out of more concentration of SHGs in rural areas, more active local participation, and organization of people. More empirically also, microfinance has been proved to be a successful tool for rural transformation and development.

With respect to the monthly health expenditure, the expenditures incurred for health care are shown to be high in semi-urban area and this is more related to the health seeking behaviour of the people. In urban areas people are more health conscious and therefore even for mild illnesses they have the habit of seeking health care. The high proportion of health expenditure by females compared to males can be due to more expenditure on reproductive health, rather than on other common ailments or for improving health status. The available literature highlights the identification of women's health care needs with reproductive health only. [22] In order to prove this viewpoint, Kerala's achievement has been remarkable in terms of reproductive health programs and gender indices. [23]

The share of health was seemed to be significant in the overall credit disbursements of both rural and semi-urban SHGs. The percentage share of health for current loans was nearly 10% and 9% for the rural and urban areas respectively for the period 2003-2005. But the quantum taken for health (3.6%) is very low in proportion to the total amount disbursed for other purposes. This puts a question why people demand fewer amounts for health purposes even if the per capita health expenditure as well as the demand for credits for health is relatively high. Health expenditure could be a major component of people's debts and the large share of credits taken for debts (25%) to a great extent justifies the less amount taken for health purposes. The average monthly per capita health expenditure (Rs 267) justifies this argument. In other words, people are not using SHGs as a financing option for major health care expenditures.

While analyzing the rural and semi-urban difference, rural area came out with better figure for health in the category of currently held up loans as well as for the credit disbursements for the period 2003-2005. But, semi-urban area had taken large amount for health purposes, out of the total amount disbursed by SHGs, compared to rural area. This shows that, demand for credits for health has got priority in semi-urban area too. The largest amount taken for health in semi-urban area is related to the high health expenditure of the people, compared to rural people in the study. This high expenditure is due to factors like high health consciousness of the people, high morbidity due to lifestyle etc. The high amount taken also depends on the level of repayment capacity of the people.

However, the analysis the health seeking behaviour of the people it is clear that, most of the study subjects (78%) used both the government as well as private facilities for health care. The more or less equal use of government facilities by both rural and semi-urban people in the study throws light on keeping away the poor people from government facilities and privileges. This argument is backed up by Kerala's second largest share of private sector in health, among all India states.[8] Further, the obsession of public health services with family planning has discredited the entire public health system in the rural areas.[22] This less use of government facilities could be a reason for the largest share of health in the credit disbursements of SHGs in rural areas.

The system of loan repayment was as per the by-laws of the SHGs and the number of pending loans was limited. The pending loans had the characteristic of high quantum. The share of health out of pending loans was zero, and this too shows that SHGs are not approached for major health care expenditures directly. But the largest amount out of total loans disbursed as well as pending was for debts. The major part of the debts could be used for health care expenditures (high average per capita monthly health expenditure) and on that ground it would be fair to say that health is positioning a major share of SHG loans and the default in the repayment of loans is due to illness and related expenditures.

The saving component as well as the insurance component, in addition to the credits, in the microfinance arrangement also has to be taken in to account to find out its possibilities as a health care financing option. A literature survey based on 45 published and unpublished reports by Preker et.al revealed that community financing schemes are successful in mobilizing resources for health care, providing financial protection for their members against the cost of illness, including the poor.[25]

Experiences of Grameen Bank in Bangladesh and SEWA in India show that microcredit linked health insurance scheme as well as community financing scheme is a most effective way to save the poor from the cost of health care.[19] These NGOs are providing ample evidences for the success of self help approach in health, apart from mobilizing and pooling financial resources. [16] The Grameen Bank Health Program was started in 1994 to adopt disease prevention measures, to arrange for minimum cost treatment, and to build non-profits primary health care system. [19] In Kerala also, like many developing countries, microfinance units are shown to be the viable financial as well as administrative arrangement for community financing and community health insurance. For example as a part of an action research, a community health insurance programme, linked with a self help group was found out to be successful in Wayanad. [26] With respect to community financing, Kudumbasree is taking the lead role in co-coordinating various sections of the people as well as the administrative units.[12]

In short, the analysis of the study variables highlights the relevance of the existence of an informal institutional credit system like microfinance for a number of reasons, but in particular for health care finance and this result is supported by the available international literature as well as the prevailing context in Kerala. The study variables also positively proved the role of microfinance in health care financing in the state of Kerala.

CONCLUSION

Experience around the world says microfinance matters in the context of poverty ill-health nexus because it increases the options and the self-confidence of poor households by meeting emergency requirements, ensuring need based timely credits, making the poor capable of savings. The study also shows the credibility of microfinance vis-à-vis health in a positive manner (the share of health out of the total disbursements of loans is significant and the available literature emphasizes the acceptance of microfinance as a viable and effective arrangement for credit linked health insurance and community financing for health care). It has been postulated that by making policy towards income generation and enhancement, ultimately to eradicate poverty alone can improve the health status through better, timely and easy access of health care. This is possible only by a bottom-up approach through decentralized planning. But, a practical solution to meet this requirement depends on the success of the local governing bodies to mobilize and pool the financial resources through microfinancing institutions. In the context of Kerala, since the state has gone far ahead in the process of decentralization, it would be possible to channelize local resources, through SHGs by people's participation.

The less amount of loans taken for health purposes clears that, people are not considering microfinance as an option for major health care expenditures. So, the process of financing is not that automatic, unless the people realize the necessity as well as the potential of this financing mechanism as an alternative arrangement for health care financing. More support of the local government system to the functioning of the micro finance mechanism in terms of mobilization and management of resources can catch the confidence of the people and thereby to their security. This is more appreciable for community financing and other risk pooling mechanism for catastrophic health care expenditures.

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