

HUMAN RESOURCES FOR PUBLIC HEALTH IN INDIA – ISSUES AND CHALLENGES

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ABSTRACT

Availability of adequate number of human resources with suitable skill mix and their appropriate deployment at different levels of health care set-up are essential for providing an effective health care services for the population. Since independence, concerted efforts have been made to address the need for human resources for health in India. However, shortage exists in all categories of human resources at different levels. Ensuring the availability of human resources for health in rural areas and building their capacity in public health are daunting tasks. Future challenges include planning for human resource for public health at State/national level, framing of State specific human resource development and training policy, creation of human resource management information system, reorientation of medical and para-medical education and ensuring proper utilization of the trained manpower and standardization of training. It is also important to link human resource development and training policy to the National Rural Health Mission in achieving its goals.

Key-words: Human Resource, Public Health, Medical Education, Capacity Development

Since Independence, India has developed a vast public health infrastructure, which presently includes 144, 988 Sub-centres, 22, 669 Primary Health Centers (PHCs) and 3,910 Community Health Centres (CHCs), providing services to rural population.¹ Besides, over 7663 sub-divisional and district hospitals and other specialized hospitals are also functioning in the public sector.² The private sector plays a prominent role in the delivery of health care. According to NSSO–60th round, the proportion of population utilizing private health facilities for in-patient care is 58.3 per cent in rural areas and 61.8 per cent in urban areas and for out-patients the proportions are 78 per cent and 81 per cent in rural and urban areas respectively.³ A large number of practitioners of AYUSH (ayurveda, yoga and naturopathy, unani, siddha and homoeopathy) are also working in the country. A huge training infrastructure is also available at national and state levels in both public and private sectors.

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Despite a well-developed and extensive network of public health infrastructure; including institutions for training and research, the health outcome is still behind the set goals. The influence of health care providers on health care provision and use of health care resources has been fully recognised. Availability of adequate number of health personnel with suitable skills and their appropriate deployment at different levels of health care set-up are essential for providing an effective health care services for the people. Globally, human resources absorb a large part of public expenditure in the health. In low and middle-income countries, cost of human resources for health usually amounts to 60 per cent and 80 per cent of the public expenditure, respectively.⁴

Global Scenario

World-wide, out of 59.9 million health workers; 39.5 million (2/3rd) provide health services; and 19.8 million (1/3rd) are management and support workers.⁵ In many countries, including India information on HR is fragmented and difficult to obtain. Information in the private sector is scarce and very difficult to collect. Human Resource for Health is unevenly distributed among the regions, countries, and within countries. WHO (2006) recommends a minimum of 100 nurses and 20 physicians per 100,000 population. Many Sub-Saharan African countries have lesser than 50 nurses and 5 physicians per 100,000 population as against 222 physicians per 100,000 population in OECD countries.⁵ The ratio between nurses and doctors ranges from nearly 8:1 in the African Region to 1.5:1 in the Western Region.⁵ Approximately, there are four nurses per doctor in Canada and the United States of America while it is lesser than one nurse per doctor in Chile, Peru and Mexico. Besides, acute shortage of public health specialists and health care managers have been existing in many countries. With reference to gender, it has been noted that more than 70 per cent of doctors are males and more than 70 per cent of nurses are females. About two-third of the workers are in the public sector and one third is in the private sector. 75 per cent of doctors, 60 per cent of nurses and 58 per cent of other workers live in urban areas while about 50 per cent of the population lives in urban areas. Skill mix and distributional imbalances; the skills of limited yet expensive professionals are not well matched to the local profile of health needs. Even density of human resources for health varies across countries and regions. Density of physicians and nurses in India (per 1000 population) is quite lower as compared to countries like China, Japan, U.K. and U.S.A (Table1).

TABLE 1**DENSITY OF HUMAN RESOURCES FOR HEALTH PER 1000 POPULATION**

Country	Physicians	Nurses	Midwives	Dentists	Pharmacists
China	1.06	1.05	0.03	0.11	0.28
India	0.6	0.8	0.47	0.06	0.56
Japan	1.98	7.79	0.19	0.71	1.21
Sri Lanka	0.55	1.58	0.16	0.06	0.06
Thailand	0.37	2.82	0.01	0.17	0.25
U.K.	2.3	12.12	0.63	1.01	0.51
U.S.A.	2.56	9.37	NA	1.63	0.88

Source: World Health Report, 2006

There has been an active international recruitment leading to cross-border mobility among doctors and nurses (Mode-4 of GATS agreement). According to WHO, 23 per cent of doctors trained in sub-Saharan Africa and 37 per cent of South African doctors are working in the rich countries. Asia supplies over half of all migrating physicians. About 100,000 doctors of Indian origin settled in the USA and UK alone.⁵

Indian Scenario

At the time of independence in India, there were about 50,000 medical graduates and 25,000 nurses in the modern system of medicine to provide health care to the population.⁶ During the Plan periods, concerted efforts were made to address the shortages of human resources for health. However, it is a matter of concern that there are huge gaps in critical health manpower in government institutions that provide health care to the poorer segments of population living in urban slums, remote rural and tribal areas. In keeping with the growth of health infrastructure and expanding scope of the health care services, human resource needs have been increasing. In view of the shortage of medical personnel in less-developed and rural areas, the National Health Policy (2002) suggested to examine the possibility of entrusting some limited public health functions with nurses, paramedics and other personnel from the extended health sector by providing adequate training to them.⁷ The changing scenario of health services and strategies, especially the National Rural Health Mission, has led to an urgent need to develop new competencies and skills among the public health personnel.

The norms for health care infrastructure and manpower were laid down for the first time by the Bhole Committee (1946) and subsequently modified by the Mudaliar

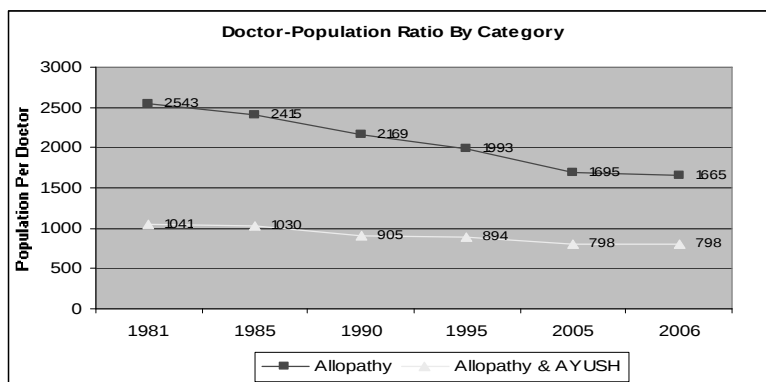
Committee (1961) followed by the Bajaj Committee (1987). The 9th Five-Year Plan had emphasized on health manpower planning taking into consideration, the district specific assessment of available manpower and health care facilities and the demand for health care services. Efforts were made by the Central Bureau of Health Intelligence, Ministry of Health and Family Welfare, to obtain reliable and accurate district-wise data on the number of medical, dental, ISM&H professionals and nursing and para-professionals. However, there has been a very little progress in this effort and in the 10th Plan it was again expected to create a data-base to decentralize district-based health manpower planning to meet the needs. The National Commission on Macro Economics and Health⁸ has also highlighted the requirement of the public health system in terms of both medical and para-medical personnel.

Current Status

Currently, there has been a shortage of all key cadre including doctors, nurses and paramedics, particularly in rural areas. Irregular attendance/absenteeism in rural/remote areas, inadequate system of incentives for postings in difficult areas, lack of opportunities for continuing medical education (CME), skill upgradation, lack of orientation to needs of rural areas, lack of supportive system for career development, non-transparent transfer and posting policy and lack of transparency in career progression are the major issues need policy attention.

The number of registered doctors and population coverage per doctor varies across States. The current rate of production and severe shortfall in the production of specialists are major issues for achieving the health goals in the country. At present, the country has got 6,60,801 allopathic doctors, registered with State Medical Councils (till December, 2005), 7,24,823 AYUSH practitioners (till January, 2006), registered with their respective councils and 78,096 dental surgeons, registered with Dental Council of India (till May, 2006)². It is very clear that there is an acute shortage of dental surgeons in the country as compared to other disciplines. As per the norms of 1 dentist for 4000 population as recommended by the Bhore Committee, the total number of dental surgeons actually required is about 2.82 lakh in 2007, which is four times of the current production. The ratio between allopathic doctor and population was 1 for 1665 persons in the country (60 doctors for 100, 000 population) while in Australia, Canada, the United Kingdom and the United States of America, it was 249.1, 209.5, 166.5 and 548.9 respectively⁸. The combined strength of doctors in allopathic and AYUSH systems make a doctor population ratio of 1:798 in 2006 (Fig.1). The total number of registered doctors (allopathic, AYUSH and dentists) varies considerably across different states.

FIGURE 1



Source: Health Information of India, Various Years and National Health Profile, 2006, MOHFW (GOI).

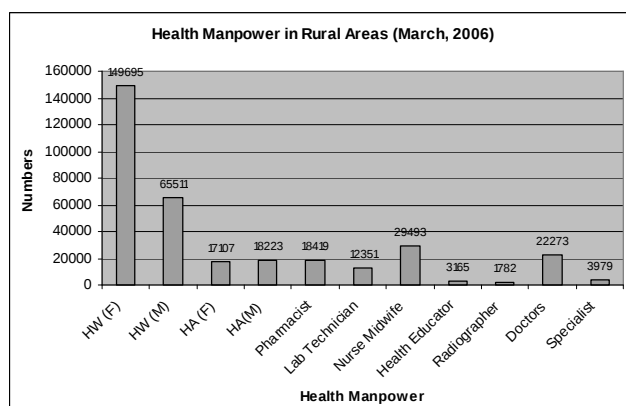
Nurses and Midwives are the key health care providers. As on December 2005, 9,08,962 nurses had registered with Indian Nursing Council in the country (GOI, 2006). The ratio between nurse and population in India was 1:1205 as against 1:100-150 in Europe⁸. Overall, a huge shortage of nurses and midwives exist in India. Also, a vast difference in the availability of nurses in various States has been found. As on 31 December 2006, 5,78,179 pharmacists were registered with the Pharmacy Council of India. The ratio of one pharmacist per 1923 population in India (2006) is quite comparable with developed countries; however, variations across the States are observed.

Health Manpower in Rural Areas

Improvement in health outcomes in rural areas is mainly depends on the availability of trained human resources. The current position of health manpower in rural areas is shown in fig:2. As on today, a significant proportion of positions are lying vacant at various levels; including shortfalls. The major shortfall at sub-centre level is of health worker (male) resulting in overburdening of ANMs. According to a Bulletin on Rural Health Statistics¹ (GOI), 7.5 per cent of PHCs were functioning without a doctor, 38.9 per cent without a lab technician and 17.7 per cent without a pharmacist while in CHCs, 54.5 per cent of the sanctioned posts of specialists were lying vacant as on March, 2006. Shortages of 9413 specialists at CHC level and 18,318 MPW(F)/ANM,

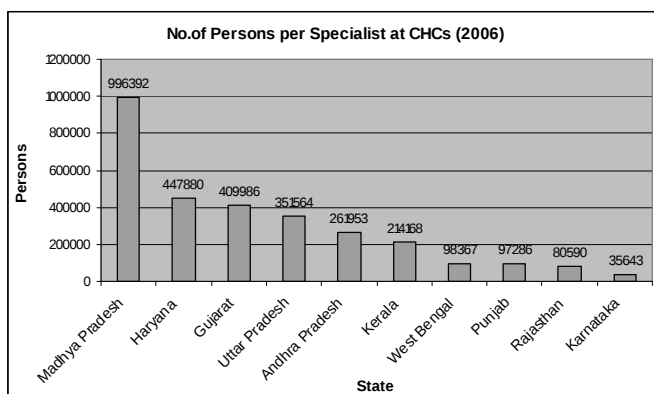
74,721 MPW (M), 5941 Health Assistant (female)/LHV and 7169 Health Assistant (Male) at PHC/Sub-centre levels have been observed. There is a wide variation among states in number of persons served by a specialist in rural areas (Fig.3).

FIGURE 2



Source: Bulletin of Rural Health Statistics (GOI), 2006

FIGURE 3



Source: Bulletin of Rural Health Statistics (GOI), 2006

HRH Strategies under NRHM

Under the NRHM, the government aims to increase the availability and accessibility to health care by providing over four lakh Female Accredited Social Health Activists (ASHAs) in 18 high focus states with poor health indicators and weak public health infrastructure⁹. The formulation of transparent policies for deployment and career development of human resources for health, strengthening capacity for data collection, assessment and review of evidence based planning, monitoring and supervision and technical support to national, state and district health missions for public health management are part of the core strategy of the mission. In order to develop a coordinated approach to the issue of greater public health focus in the country, a task force on public health under the chairmanship of Director General of Health Services, has been constituted by the government under NRHM.

Medical, Nursing and Para-Medical Education

As far as medical education is concerned, at present the country has got 271 medical colleges, of which, 138 are government owned (MCI). The admission capacity in undergraduate colleges is about 31,172 students per year. State-wise distribution of medical colleges in the country clearly reveals the shortages of medical colleges in States like Uttar Pradesh, Rajasthan, Madhya Pradesh, Orissa and Chhattisgarh. Nearly 60 per cent of medical colleges in India are located in six States namely; Andhra Pradesh, Karnataka, Tamil Nadu, Kerala, Maharashtra and Puducherry (Table 2). Acute shortage of teachers in medical colleges has an adverse impact on the quality of education and it is more acute in pre-and para-clinical specialties such as Anatomy, Pharmacology, Forensic Medicine and Community Medicine.

TABLE 2
STATE-WISE NUMBER OF REQUIRED AND EXISTING MEDICAL COLLEGES
(March, 2008)

Sl. No	States/UTs	Population March 2008 (in '000')*	Medical Colleges Required @ 1 per 50 lakh Population	Existing No. of Medical Colleges (Govt./ Pvt.)	Difference between Existing and Required number	Current population per medical college (in '000')	Total No. of MBBS seats
1	Andhra Pradesh	82180	16	32	+16	2568	4225
2	Karnataka	57399	11	39	+25	1472	4755
3	Tamil Nadu	66396	13	25	+12	2656	2865
4	Kerala	34232	7	18	+11	1902	2100

Sl. No	States/UTs	Population March 2008 (in '000')*	Medical Colleges Required @ 1 per 50 lakh Population	Existing No. of Medical Colleges (Govt./ Pvt.)	Difference between Existing and Required number	Current population per medical college (in '000')	Total No. of MBBS seats
5	Maharashtra	106894	21	40	+19	2672	4560
6	Puducherry	1074	0 (1)	8	+7	134	975
7	Bihar	93823	18	8	-10	11728	510
8	Madhya Pradesh	69279	13	9	-4	7698	1120
9	Rajasthan	64641	13	8	-5	8080	850
10	Uttar Pradesh	190891	37	16	-21	11931	1712
11	West Bengal	87869	17	9	-8	9763	1105

Note: *Projected population by Registrar General of India. Number of existing medical colleges and number of MBBS seats are taken from MCI website.

Problems like procedural delays in appointment of faculty, low pay scale structure and lack of uniform standards of medical education, at both graduate and post-graduate levels, hamper the quality of education. The content of teaching/training also varies from state to state; and between government and private institutions. National and state level guidelines are not available for teachers and as a result they are not exposed to recent changes in policies and programmes. The quality of research in medical colleges is poor and research findings do not feed training. The problem in the government owned institutions has become more severe as the private institutions pay more for the medical doctors. Of course, the candidates opting for public health and para-clinical subjects are gradually declining as compared to potentially lucrative clinical and diagnostic specialties.

At present, the country has got 461 AYUSH colleges with admission capacity of 25,555 students² with disparity in the availability of AYUSH colleges in different States, for example, Maharashtra has got as high as 107 AYUSH colleges while Himachal Pradesh has got only two. The country has in all 240 BDS colleges with admission capacity of 18,180 (2006-07), with regional imbalance in the establishment of dental colleges, among major states, maximum in Karnataka (43) and minimum in West Bengal².

As on March 2006 there were 1,312 institutions available for training of General Nursing Midwives in India, with an admission capacity of 50,628². The quality of Nurses training is affected by a number of constraints such as lack of teachers, infrastructure and non-adherence to the Indian Nursing Council teacher student norm,

budget, etc. With globalization and growth of private health sector, the country needs more nurses.

The Pharmacy Council of India regulates the education and training of pharmacists under the provision of Pharmacy Act. The training of these categories has been unregulated and many centres for training these personnel have opened up all over India, with permission of State Governments. As on March 2006, a total number of 336 ANM/MPW (female) schools with an admission capacity of 13,000 and 42 promotional training schools for LHV/Health assistant (female) with an admission capacity of 2,600 and 56 training centers for training of health worker (male) were established.²

Capacity Building – Major Issues

Lack of need based training to different categories of staff, absence of a well defined HRD policy, apathetic attitude towards training, inadequate training infrastructure and training skills, absence of pre-service and induction training and duplication of efforts by different agencies without much integration are some of the major challenges for capacity building. Other problems like unwillingness of doctors to serve in rural areas, charisma of post-graduation and private practice, incorrect/incomplete/inconsistent data and lack of appropriate system for validation of data also pose a challenge for capacity building. Apart from these, many non-training issues like lack of mechanism for follow-up after training, mismatch between training and job profile and lack of system for monitoring performance related to training are also to be given adequate attention for capacity building.

Proposed Solutions

A shortage of all categories of health personnel in the public health system has been well recognized in the country and this needs to be tackled on priority basis. In order to ensure the availability of health professionals in rural areas on a regular basis, the country still has to train a large number of health professionals to meet the health care needs of the growing population and increasing disease burden. Posting of doctors with adequate incentives, both monetary as well as non-monetary benefits, such as improved infrastructure facilities of health care institutions, suitable accommodation, preferential school admissions for their children, increase in the age of retirement from 60 to 65 years, permission for private practice/pay clinics/evening clinics, posting spouses at same place etc. are certain important issues to be considered.¹⁰ Besides, decentralisation of recruitment to the district level, contractual

appointments/engaging honorary consultants, posting of junior/senior residents at PHCs/CHCs may complement the HRH. Certificate Courses for MBBS graduates in the areas of Pediatrics, O & G, Anesthesia and Radiology should be introduced. B.Sc (Health Sciences) courses may be initiated for addressing the requirements of rural areas and urban slums. Efforts should be made to establish new medical and dental colleges in the underserved areas. Public-private partnership could go a long way strategically to bridge this gap.

In order to equip medical graduates with the skill, training should be in a decentralized setting for them outside a tertiary hospital, in close proximity with public health and social environment for providing broad-based community health care. There is also a need to introduce training technology in the curriculum. Research component of the post-graduate training programmes needs due representation of the rural areas. Community medicine teaching should also focus on topics like equity and gender, behaviour change communication, counselling, biomedical waste and infection prevention, hospital management information systems, research methodology with collection/compilation/analysis and utilization of data and integrated teaching of National Programmes. In view of the high rate of attrition of academicians, there is a need to make teaching in professional colleges more attractive. It is time to deliberate on the need to enhance the salary structure of doctors as well as their incentives. Another way could be to use the honorary consultant system so that the selected leading private practitioners and retired teachers can be inducted to maintain academic workforce. Implementation of CME Programmes, computer networking of medical colleges, promotion of IT-based e-health, tele-consultancy, tele-radiology and tele-pathology are necessary.

In order to meet the increasing demand for nursing personnel, there is an immediate need for opening new B.Sc. and MSc. Nursing colleges as per the policy of Government of India. There is a need for training more M.Sc. (Nursing) personnel to solve the problems of shortage of nursing tutors. Additional skills to nurses should be provided in the form of certificate course of short duration. Continuing professional development through e-training should also be encouraged. In-service nursing personnel should be encouraged to undertake higher studies like M.Sc./Ph.D.

Capacity development of programme managers should be taken up in the areas of micro-planning, communication, interaction with the environment and community monitoring, financial management and leadership skills. Policy makers also need capacity building in the areas of strategic management, policy analysis and research, policy formulation and implementation, resources mobilization and

monitoring of programmes. It is also important to develop practical skills of in-service personnel in communication, motivation, provision of quality care and ability to transfer skills to others, data analysis and report writing.

Every effort should be made to promote the inherent strength of AYUSH systems for addressing the contemporary health needs of the population. Integration of AYUSH systems with primary health care, public health, preventive and promotive health care is required. Reputed AYUSH institutions in the country should be supported to design and offer new courses on socially relevant subjects like AYUSH and public health, preventive cardiology, etc.

The public health challenges for communicable diseases, emerging infectious diseases and the growing burden of chronic diseases need a strong national policies to support public health. Capacity development for health research, policy development and analysis, programme development and evaluation, health care financing, etc. are equally important. Disciplines like health administration, health information technology, health marketing, health economics, community health management, hospital management, etc. need to be encouraged. Training and orientation of all medical and para-medical personnel on the public health issues will also go a long way in the management of diseases and epidemics. New courses of three years duration may be introduced for addressing the increasing need of human resources for public health. Diploma in public health management for in-service personnel should also be introduced.

Development of standard policies regarding recruitment, training, career development plan, transfers, performance appraisal and supportive supervision are the need of the day. Qualifications and eligibility criteria for different cadres of health personnel need to be reviewed in relation to their job requirements. Thus, a comprehensive center/state specific human resource development policy for health system needs to be developed in the 11th plan. An effective human resource management information system is also essential for projecting the future manpower requirements for India.

CONCLUSION

The task of ensuring the availability of human resources for health in rural areas and building their capacity for public health is a real challenge. The overall shortage of human resources are aggravated by skewed distribution within the country, even within the states, movement of personnel from rural to urban areas and

from public sectors to private sectors. The solution for meeting the challenges in human resources for health include strategic planning for human resource for public health at state/national level. State specific human resource development and training policy, reorientation of medical and paramedical education, ensuring proper utilization of the trained manpower and standardization of trainings, effective human resource management information systems are also important. It is also essential to link HRH to the NRHM in addressing human resource issues.

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COMPREHENSIVE HEALTH CARE INCLUDING SEXUAL AND REPRODUCTIVE HEALTH OF ADOLESCENTS AND YOUTHS IS OF VITAL IMPORTANCE TO THE NATION

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ABSTRACT

The terms adolescent (age 10-19), youth (age 15-24) and young people (age 10-24) have been defined. During adolescence i.e. transitions between childhood to adulthood, rapid changes occur in physical, functional, sexual, emotional and psycho-social aspects, which need proper attention and care. There is development of human sexuality which comprises the knowledge, beliefs, attitudes, values and behaviour of individuals regarding sex. Human sexuality is an integral part of human personality and it helps in achieving and maintaining physical and mental health. In this presentation, various problems associated with growing-up of adolescents and the effects of various cultural practices, gender disparity and environment on them have been discussed.

Various dimensions of sexual and reproductive health of adolescents and youths in the world, India and South Asia have been reviewed. The urgent needs, objectives and scope of coverage for adolescent education and counselling have been highlighted; combined interventions from different areas such as health, education and life-skill development would be important. Young people should be provided with supportive environment within their families, schools and communities. Health care for adolescents and youths should cover general health, disorders of reproductive systems and sexual and behavioural problems. For operationalisation of comprehensive health care programmes, the importance of multi-sectoral and multi-disciplinary partnerships, consideration of key issues and provision of adolescents- /youth- friendly services have been stressed.

Key-words: Adolescents, Human Sexuality, Comprehensive Health

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The importance of various components of reproductive health (RH) had been gaining increasing attention in different countries over the years, but an integrated comprehensive concept of RH has emerged only in recent years. Reproductive health is central to general health and is affected by other aspects of health, particularly the status of health during infancy, childhood and adolescence, lifestyle, nutrition and environment. Most of the components of RH are very much interrelated and intertwined. Maternal health is directly related to the state of women's health, which in turn is related to the status and development of women. 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. Children as well as the adolescents need integrated development throughout (Roy 1996; 1997).

Most UN agencies such as WHO, UNICEF, UNFPA and ICPD (Cairo) give high priority to adolescent health. It is of paramount importance that a proper environment is created in which adolescents can realize their full potential and grow to healthy and responsible adulthood.

Sexual health has always been closely linked with reproductive health, particularly since the International Conference on Population and Development (ICPD) in 1994, which defined reproductive health (RH) incorporating sexual health (SH) as one of its components. Until recently, SH was generally understood to be an integral part of RH, and was dealt with as such in health programmes. However, the emergence of pandemic of HIV infection, increasing rates of STIs, and growing recognition of the importance of gender violence and sexual dysfunction in public health, have highlighted the need to focus more explicitly on issues related to sexuality and their effects on general health and well being. Thus, sexual health is rather being a component, this should be seen as a necessary underlying condition for reproductive health, being relevant throughout the life span (WHO 2004).

The field of sexual health encompasses a range of issues, including:

- a) Reproductive tract infections (RTIs) including HIV and STIs;
- b) Unintended pregnancy and unsafe abortion;
- c) Infertility;
- d) Sexual well-being (including sexual satisfaction, pleasure and dysfunction);
- e) Violence related to gender and sexuality; and
- f) Other relevant issues.

Adolescent Health

Adolescence

The term adolescence is derived from the Latin word 'adolescere' which literally means 'to grow to maturity'. This is a transition between childhood and adulthood; it begins with pubescence that precedes sexual maturity. Puberty is defined as a period of transformation from a stage of reproductive immaturity to a stage of full reproductive competence, and when the individual changes from asexual to a sexual being. This encompasses a number of physical, physiological, emotional and psychological changes. The age of onset of puberty varies from individual to individual; the girls on an average reach puberty earlier than the boys. The geographic, ethnic and genetic factors interact with socio-economic status, health, nutrition and emotional levels to determine the age of onset of puberty for any single individual. The duration of adolescence varies greatly; it may start at 9 years and end in 18 years of age in some, and it may start at 14 and end in 25 years in another. Everybody grows up in a different way and at different rates. According to the WHO, the adolescence period is from 10 to 19 years. A youth is defined as a person aged between 15-24 years, and young people encompasses both age groups i.e. age 10-24 years. Currently, more than 50 per cent of world population is under 25 years.

While considering adulthood, certain sociological aspects also have to be taken into consideration, besides the biological aspects. To determine as to when the society considers a person to be adult and mature to carry out socio-legal obligations, there may be different indicators such as the age of voting rights, age for entitlement of holding and selling property, and the legal age of marriage.

Human Sexuality

Human sexuality comprises the knowledge, beliefs, attitudes, values and behaviour of individuals regarding sex. Its various dimensions include the anatomical, physiological, biochemical and psychological basis of sexual responses; individual identity, orientation, role and personality; and their thoughts, feelings and relationship. The expression of sexuality is influenced by ethical, spiritual, cultural and moral concerns, and the social milieu.

Human sexuality is an integral part of human personality and it influences thoughts, feelings, actions, and interactions, and contributes to the energy that motivates people to find love, contact, warmth and intimacy and thereby, achieve and

maintain mental and physical health. The foundations of a healthy and fulfilling sexuality are established during childhood and adolescent period. The ability of young people and adults, both male and females, to maintain general health is directly affected by human sexuality and the relationship between the sexes. This process can be helped and strengthened by making information and education about sexuality available to young people, and the health worker and community should provide such information and services in order to promote and maintain healthy sexuality throughout life.

Problems of Growing-up

Adolescent period (age 10-19 years) is a period of rapid development; young people acquire new capacities and are faced with new situations. They create new opportunities for progress and also face risks to health and well-being. Growth is accelerated and the difference in the rate of growth between boys and girls are accentuated.

Adolescence is also a time of mental and psychological adjustments; the main change is the development of an integrated and internalised sense of identity. This is also a time to explore new interests and influences which can mould their thinking, ideas and action.

Adolescent behaviour could range from sexual relationship to alcohol, tobacco and substance abuse. Young people may be tempted to emulate their role model in TV or in cinema, often with disastrous consequences. Peer pressure may lead to risk-taking behaviour. Inadequate access to services and lack of supportive environment may affect their health and development. Support and understanding of the family during this phase is crucial in enabling them to meet these challenges.

The adolescent period is marked by rapid physical, emotional and psychological changes which influence the social environment, and are in turn influenced by it. The process of growing up and the consequent development resulting from physiological changes make it necessary for them to build self-image, to redesign behavioural patterns with parents, peer groups and the members of the opposite sex, to examine prevailing values and norms, and to establish individual identities and one's place in society. The suddenness of these changes coupled with the non-availability of authentic sources of acquiring knowledge for understanding and appreciating these changes, results in anxieties which can cause confusion and unrest among adolescents, at times promoting deviant behaviour in them.

Effects of Cultural Practices, Gender Disparity and Environment

Research on underlying factors that contribute to development of these problems reveal that they are inter-related. Poverty, violence against adolescents, sexual exploitations of adolescent girls, family conflict and school drop-outs are often associated with substance abuse and adolescent pregnancies. Gender bias against girls, malnutrition and forced prostitution are other problems, which affect the development of adolescent girls.

Negative community norms and environment, such as smoking by elders, problem behaviour of peers, low sense of family or community attachment, inadequate laws for controlling drug abuse and crime often lead to development of deviant behaviours. However, positive environments can protect negative influences. These are family cohesion and harmony, sense of belonging and caring; involvement and achievement in schools, improved socio-economic status of the family; employment opportunities for young people; contribution of community and civic organization and adequate schooling ensure economic security.

Because of the sexual development and associated changes, adolescents are often bewildered by strong sexual urges. These problems get further aggravated by the fact that the period of abstinence or 'sexual unemployment' is increased as the age of onset of puberty has been advanced as a result of better nutrition and urbanization, and on the other hand the legal age of marriage is increased; thus the gap is widened. The social environment provides constant sexual stimulation but the rigidity of social morals may create conflicts leading to anxiety, sexual frustrations, deviant sexual behaviour, promiscuity, casual sexual relations, unwanted pregnancy, teenage motherhood and increases in sex crimes and STDs. The situation can be further complicated by the sex related myths and misconceptions that are prevalent among teenagers (WHO 2000). These misperceptions and myths may be carried over to adulthood creating problems which have serious implications.

The transitional period of adolescence is beset with several other problems such as abuse of various types (alcohol, drugs), STDs and wrong attitudes towards sex. The spread of STDs and infection with the human immunodeficiency virus (HIV) - the causative agent of the acquired immunodeficiency syndrome (AIDS) in different parts of the world is becoming pandemic and its primary victims are people in the reproductive age group. This is attributed to ignorance, multiple sex partners, lack of sex related hygiene and deviant sex behaviour, failure to use various methods of contraception and delay in seeking treatment. Since education is the only effective

prevention against HIV infection, there is an urgent need for imparting appropriate education at this sensitive phase of life.

The majority of young people desire and seek authentic information on sex related matters. They need an understanding of their anatomy and physiology, and of the emotional and psychological changes that occur during the adolescent period. Unfortunately, such information is rarely received from parents, teachers and health professionals, but get it from their peers, media or other unauthentic sources and is often incorrect or inadequate. Young people today seek guidance, but they do not know where to get it from. Their present attitude will determine their further growth and their usefulness as members of society (Muley et al., 1994).

Sexual and Reproductive Health of Adolescents and Youths

Global Situation

Adolescents and youths constitute about 50 per cent of global population i.e. more than two billion people. Nearly 10 per cent of global disease burden, disability-adjusted life years (DALY) is borne by people aged 10-15 years. In addition, many events and behaviours that are established during adolescence can lead to health problems later in life. Example, smoking habits and drinking alcohol are often started in adolescence; their health effects appear much later.

While age at marriage is rising in virtually every country, age at first sexual intercourse is falling. Thus, a large proportion of adolescents are engaging in premarital sexual activity. This activity is often not planned, and many young people do not use contraceptives, or use less effective traditional methods. Generally, males are more likely to consider premarital sexual activity to be acceptable than are females; and both females and males consider premarital sex to be more acceptable for males than for females. This sexual 'double standard' and constraints are imposed on women's sexual behaviour. Fears of losing their partner, incurring his anger, or jeopardizing the relationship inhibit young females from choosing the time of sexual activity or negotiating contraceptive use (WHO 2000).

About 14 million adolescents give birth each year, and it is estimated that 1/3 to 2/3 of these births are unplanned. Many of them resort to abortion, often under unsafe conditions. Adolescent pregnancies and childbirth carry higher risks for both the mother and newborn; maternal mortality ratio in this age group is twice that of

women in their twenties. More girls in the age group 15-19 years die from pregnancy-related causes than from any other cause.

Other important consequences of unprotected intercourse include STIs. Of an estimated 340 million cases of curable STIs occurring annually in the world, at least 1/3rd are in people under age 25. In addition, half of all new HIV infections occur among 15-24 years old people, accounting for about 2.5 million new infections a year.

Despite the burden of sexual and reproductive ill-health among adolescents, there are many reasons for optimism:

1. Levels of education among boys and girls are rising in almost every country; educated people are better able to take care of their own health and that of the family.
2. Use of contraceptives by adolescent is increasing and that should reduce unplanned pregnancy; it should also reduce rates of STIs.
3. Declining levels in early marriage should have positive influence on maternal and newborn health, provided young people have access to appropriate RH services.

Programmes encouraging the above trends will have immediate impact, and will have beneficial effects in their future lives as adults with their roles as husbands, wives and parents. Behaviours learnt as adolescents have lasting implications in individual and public health.

A number of elements have been found to be key to successful programmes throughout the world:

- a) Adolescents themselves should participate in programme planning and design.
- b) Health problems have to be addressed in a comprehensive manner; many problems they face or experience have common roots and determinants.
- c) Programmes should combine interventions from different areas such as health education and life-skills development; building links with existing services will avoid duplication and increase cost effectiveness.
- d) Young people should be provided with more supportive environments within their families, schools and communities.

It is to be noted that these recommendations would need strong programme management and great skill of service providers to meet the needs of adolescents respecting cultural diversity.

Situation in India and South Asia

In many parts of India, early marriage for girls is a religious and social imperative. Although legal age for marriage for girls is 18 years, cultural practices often force parents to marry their daughters at a younger age. Adolescent marriage rate in rural areas is significantly higher (46 per cent) compared to urban areas (22 per cent). Compared to adult women, child bearing during adolescence poses greater health risks to both mother and newborn. Fertility during this period contributes to maternal morbidity and mortality, high incidence of low birth babies and neo-natal mortality and morbidity. Country-wide information on adolescents' sexual behaviour in India is not available. However, from small-scale studies it is evident that sexual activity begins at relatively early age. In one study in 1995, it was found that only 38 per cent of young men and 63 per cent of young women disapproved of premarital sexual relationships (Jejeebhoy 1998).

In the next few paragraphs, relevant findings from the recently published (2007) National Family Health Survey (NFHS-3: 2005-06) in India are highlighted.

Current School Attendance - Among primary –school age children (6-10 years), only 83 per cent attend school (88 per cent in urban and 81 per cent in rural areas). In 11-14 years age group only 75 per cent attend school, and in age group of 15-17 years only 41 per cent attend. No gender disparity is noted in 6-10 years age group. In older age groups (11-14 and 15-17 years), very little gender inequity is noted in urban areas, but it is pronounced in rural areas (more boys than girls) and it increases with age.

Attitude Towards Family Life Education in School- Virtually all Indian adults agree that school children should be taught moral values; most adults also think that children should learn about changes in their own bodies. Fewer adults think children should learn about puberty-related changes in the opposite sex.

About 49 per cent of women think that girls should learn about contraception, compared to 65 per cent men. About 42 per cent of women and 65 per cent men think that contraception should be a part of boys' school education.

Most men and women believe that information on HIV/AIDS should be part of school curriculum. More than 60 per cent of men, compared to less than 50 per cent of women, say that both boys and girls should be taught sex and sexual behaviour in school.

Age at First Marriage: The median age of first marriage among women is 17.2 years and among men 23.4 years. About 46 per cent of women got married before the legal minimum age of marriage of 18 years, and 27 per cent of men got married before the minimum legal age of 21 years.

Teenage Pregnancy: Among young women (age 15-19 years), 16 per cent have already begun childbearing. Majority of women in India marry during their teens.

In addition to the problems faced by adolescents elsewhere, young people in South Asia are confronted by cultural constraints. For example, young women are generally disadvantaged by gender disparity in terms of food intake, access to education and health care, and growth pattern. The disparities are noted soon after birth and by adolescence many girls are grossly underweight. Unlike elsewhere in the world, women in South Asia (except in Sri Lanka) have higher mortality rate than many, particularly in 15-19 and 20-24 age groups. This may be due to poor reproductive health of young women in these countries.

Adolescents in South Asia do not have the possibility of making real choices about their sexual and reproductive lives such as a) when and whom to marry, b) whether and when to have children and how many to have, and c) whether to use contraceptives. Girls tend to marry very young-about 2/3rd of girls in most South Asian countries marry before 18 years and many before 15 years (against the law).

Nevertheless, age of marriage is increasing, and with migration and urbanization give more opportunities for premarital sex. In South Asian societies it is considered immoral and particularly in girls it is strongly condemned. In addition, there are associated problems of (a) unwanted pregnancy and (b) STIs.

While Reproductive Health (RH) is undoubtedly important, programmes need a wider perspective that considers adolescents' broader emotional and physical needs as well. According to the new focus of WHO (2004), as mentioned earlier, the field of sexual health encompasses a range of other issues which need to be properly addressed. For example, risk-taking behaviour and employment in hazardous industries place young people at risks to physical injury. Adolescent health programme

should also consider high rate of substance abuse, violence especially sexual violence, and trafficking of children and adolescents for commercial sex work. Programme should focus not only on counselling services, contraception, nutrition and rehabilitation of abused or exploited, but also factors such as life-skill, protection from abuse and vocational guidance.

Reproductive Health Programmes in South Asian region often started with the object of checking population growth, and thus focused on fertility reduction. However, application of such programmes to adolescents raises questions having implications for individual health and also how society as a whole, would regard sexual and reproductive health.

There is a general reluctance to address these issues openly, and notions of adolescent sexuality and their need for sex education still generate intense debate. However, there is considerable evidence that when sexuality is openly discussed and when young people learn about their body and their emotions, they are better able to cope with sexual maturation.

Many countries have now started to provide sexual and reproductive information to young people, though often in response to concerns about HIV/AIDS, rather than unwanted pregnancy and unsafe abortion. If such information is to reach the adolescents/young people and then to make appropriate decisions about their health, it has to be tailored to their specific needs, understanding and motivation. It should also be placed in the context of adolescents' broader needs for education, employment, emotional support and safety. Therefore, the programme might focus not only on counselling services, contraception and nutrition, but also on life-skills, protection from abuse and vocational guidance. Thus, adolescents can be helped to achieve their potential to become knowledgeable, confident, responsible and caring adults.

Finally, programmes need to involve adolescents themselves and other stakeholders at every stage - from conceptualisation to programme design, implementation and evaluation. SRH being a sensitive issue, programme organizers must consult community leaders, religious groups, parents and teachers in order to ensure acceptability and effectiveness of their interventions. Parents have a considerable role to play in assuring that their children lead healthy sexual and reproductive lives. Efforts are also needed to be directed at parents in order to empower them to overcome inhibitions or reluctance in assuming this role (WHO 2000).

Use of Contraception by Adolescents in Asia

In analysing the behaviour, it is important to understand the context. In Asian culture, male and female sex/gender roles typically create an imbalance in negotiating positions. Generally girls do not have the same educational and employment opportunities as boys, and they face the family and societal pressures for early marriage and child bearing (this is the norm in Bangladesh, India and Nepal). Finally, there is evidence that an increasing proportion of unmarried adolescents are sexually active.

Analysis showed large gap in knowledge about contraceptives and use among 15-19 years old married adolescents. In India, almost all married adolescents know about contraception; but fewer than 10 per cent reported using contraceptives.

Data on discontinuation rates among adolescents are scarce. Further, failure rates among adolescents are higher in all countries. Thus, a large proportion of births to adolescents are unplanned; this shows huge unmet need for contraception in this group. Data on contraception use by unmarried adolescents are grossly inadequate. A better understanding of reasons for discontinuing contraceptive could provide important information for design of services to adolescents. Finally, a better understanding of the circumstances surrounding sexual initiation and decision for practicing contraception would allow more user friendly programmes to be designed.

Adolescence Education and Counselling

Need and Objectives

It is quite evident from the above that we have a great stake in preparing adolescents for the responsibilities of rational sexual behaviour, marriage, family life and good citizenship. This underscores the importance and urgency of 'adolescence education' for every growing individual (UNESCO, 1991; Muley et al., 1994). In the process of growing up, sexual development constitutes a major component. Therefore, sex education is the core of adolescence education, which has to focus on the problems and issues related to the process of growing up and development of proper sexuality. It should not only address students in schools and colleges but also out of school youths.

The overall objectives and scope of coverage of adolescence education for boys and girls would be similar and complementary to each other (UNESCO, 1991; Muley et al.,1994). For boys, the objectives of adolescence education would be to: (a) provide adolescents authentic information and understanding regarding the process of growing up so as to enable them to cope with their problems; (b) prepare young people to lead a normal, safe, responsible and healthy sexual life, and to appreciate the need and importance of preventing unwanted pregnancy; (c) promote among males, a responsible and respectable behaviour towards the female sex, thus helping to build a stronger foundation for gender equity; (d) inculcate in them an understanding that happy married life is based on mutual love, affection, sharing and caring; (e) help them to understand the requirements for responsible family life and parenthood; and (f) to create awareness among the target group, and to help them in shaping their values and attitudes.

Scope of Coverage

Adolescence education has to encompass the biological, psychological, social, cultural and even moral dimensions of human sexuality. It should incorporate information on: (a) physical and physiological aspects; (b) social aspects; (c) sex/gender roles; (d) STDs including HIV/AIDS; and (e) drug abuses.

Physical and physiological aspects: should include the knowledge of anatomy and physiology of the reproductive system; physical, emotional and psychological changes during puberty; conception, pregnancy and childbirth; and the need to avoid unwanted pregnancies. They should be made aware of sex related health and hygiene; and also the nutritional needs and other requirements of the mother and the child during pregnancy and after childbirth.

Social aspects: pertain to emotional maturity, establishment of adolescent identity in relation to parents and peer groups, emergence of heterosexual interest, emancipation from home control, interaction with traditional values and norms and development of interest in general principles of human conduct and interpersonal relationship. The sex-related myths and misconceptions prevalent among the young also should be addressed.

Sex/gender roles: Include masculinity and femininity in different cultures, stereotypes and role expectations, the contributions of society, and respect for the opposite sex. Adolescents need to appreciate the sex role, stereotypes, contributions of different

cultures in accentuating them and need to examine the implications of these stereotypes affecting their lives.

Sexually transmitted diseases (STDs) and HIV/AIDS: With the widespread prevalence of STDs, it has become very important to include information on various aspects of STDs as a major component of adolescence education. With the pandemic spread of HIV/AIDS and the growing realization of the role of education as a sole preventive measure, it becomes imperative to incorporate information on the cause and consequences of HIV/AIDS in adolescence education programmes. The societal attitude towards persons infected with HIV should also be addressed.

Drug abuse: The increasing incidence of drug abuse, particularly among the young, has become a matter of serious concern. Drug abuse not only affects the general health and the process of growth, but is also a potential source of HIV infection and deviant sexual behaviour leading to the risk of infection with HIV and STDs. Adolescence education should include information on various types of drug abuse and their consequences, different methods of treatment and the role of the family and the community in the treatment and the rehabilitation of addicts.

Health Care of Adolescents and Youths

General Health Care

In most health care programmes, there are provisions for infant and child health as well as for pregnant mothers, but no specific health care facility for adolescent boys and girls.

Rapid growth of adolescents demands extra nutrition. During this period, more than 20 per cent of total growth in stature and formation of up to 50 per cent of adult bone mass are achieved. The adolescent girls need additional intake of iron up to 50 per cent to compensate for physiological blood loss; in its absence anaemia is common. Anaemia may also be a problem for the boys due to rapid growth and development of muscle mass. The nutritional status of the adolescent girls before pregnancy has important impact on the course and outcome of pregnancy. Deficient nutrition has adverse effects and risks to the mother and the newborn. Foundations for adequate growth and development are laid during childhood and adolescence. Research studies in India are highlighting the possibility that under-nutrition in childhood might be one of the predisposing factors for over-nutrition and obesity and higher risk of non-communicable disease (NCD) in adult life. However, prevalence of

over-nutrition in India except among urban high income group is still relatively low. Effective nutrition and health education targeted to school children should be able to prevent over-nutrition rates in children. Adolescents and adults should have balanced diet with just adequate energy intake. In addition, physical exercise has to become a part of daily routine to promote muscle and bone health, and prevention of adiposity in all groups (Ramachandran P, 2007).

General health care will comprise prevention and control of nutritional disorders particularly of the adolescent girls and other ill-health including RTIs, STDs. These can be provided to the adolescents through primary health care approach. In addition, there are disorders and problems which would need special attention by specialists; these would require proper referral support.

Coping with stress in a changing world is an uphill task. Majorities of the children are unable to get any help. Others are condemned within the family or in the social context. It has been noted that most of the juvenile delinquents belonged to either very poor or very rich families. Generally, the children from middle class homes are better off as the families in this segment are mostly stable. Children from extreme economic classes are neglected and are more susceptible to psycho-social disorders. In very rich families, the mothers may be very much busy or preoccupied with professional work and/or socialization, and cannot give any attention to their children. Such children, though provided with all material comforts, may end up with psychological problems due to the lack of attention by the family members. This may lead to Attention Deficit Hyperactivity Disorder (ADHD), which may be manifested by nervousness, poor in studies, defiant behaviour, aggression and conduct problems. There is an increasing prevalence of ADHD, and they need the help of clinical psychologists and psychiatrists. There is no such provision in our school health programme or in health care delivery system.

Disorders of Reproductive System

Disorders of the reproductive system may relate to developmental defects and/or functional derangements and may include various clinical disorders as stated below. All of these would need special investigations and management (Styne and Grumbach 1992; Jaffe 1991; Grumbach et al., 2003).

- A. Disorders of puberty in male and female:
- Delayed puberty and sexual infanticism
 - Sexual precocity

- Micro-orchia
 - Disorders of sexual differentiation
- B. Disorders of sexual development:
- Gonadal dysgenesis (Turner's syndrome)
 - Klinefelter's syndrome
 - Male pseudohermaphroditism
 - Female pseudohermaphroditism
 - True hermaphroditism
- C. Sex related problems

Sex related problems may be divided into two groups: (a) developmental problems; and (b) psycho-social problems (Muley et al., 1994).

(a) Developmental Problems:

Developmental problems in male adolescents include concerns regarding the size and the development of genital organs, nocturnal emissions, masturbation etc. In case of females, their concerns may include lack of breast development, menstrual irregularities and appearance of acne and hirsutism.

(b) Psychological Problems:

Psychological problems in male adolescents include concerns about the health aspects of premarital sex, teenage pregnancy and abortion, STDs, smoking, drugs and alcohol, disinterest in education, etc.

The way in which young people's feelings and expressions are handled by parents, teachers and doctors has an immense impact upon their adult lives. Most of the problems arise because of ignorance about their sexuality and their sexual responsibilities. The remedy rests with providing sex education and proper counselling. For every day simple problems, counselling may be undertaken by teachers, parents and other concerned individuals, provided they have the knowledge, aptitude and patience. When an adolescent approaches a counsellor with a problem, the latter should be able to reduce the anxiety and permit the person to release emotion freely and comfortably in a situation where he does not feel that a judgment is being delivered.

The need of the hour is to have a system of holistic education incorporating the biological, psychological and social variables into the academic curriculum of a developing child.

While a holistic approach to adolescent health and development is advocated, a functionally integrated approach involving different sectors and disciplines would be most important. The Health Ministry has to take a leading role. They must encourage multi-sectoral partnership and ensure organizing need-based programmes addressing the problems of the youth.

Psychopathology and Behavioural Problems in Adolescents

As mentioned earlier, adolescence is the waypoint between childhood and adulthood when unprecedented anatomical and physiological changes occur with their attendant physical, emotional and social demands for change and adjustments.

Early adolescence is a period when children become more independent and start to mature sexually. In middle adolescence there is a further development of an independent identity, experiments with sexual behaviour, development of intellectual capacities of reason and abstraction, and acquisition of values and morals. Late adolescence is mostly about separation from the family for education and work and a lookout for a potential mate. Evidently, adolescence is a trying and testing period and how an individual copes is determined by both the constitution of the person and his/her environment. (The classic *nature-nurture* paradigm).

The main problems encountered in adolescents are:

- Identity Problems
- Life-style Patterns and Behaviour Problems
- Emotional Problems
- Problems of Self-image

Identity Problems

The natural corollary to independence is a sense of identity, which is at the crux of adolescence. It is the time to step out of the family's shadow and find a place in

one's peer group. It is also a time when one has to think and plan for long-term goals regarding career and committed relationships outside one's family.

Individual temperament, and shared values and goals mostly determine the kind of peer group one lands up in. The influence of the peer group is immense, and many adolescents imbibe values and inculcate behaviours which may be radically different from their families of origin.

Life-style Patterns and Behaviour Problems

The values and behaviour patterns constitute a 'life-style'. The most important life-style issues which have the potential to cause mental, physical and social problems and which may continue to early adulthood, are:

- Sexual orientation and behaviour
- Recreational habits
- Alcohol and other substance abuse

Most homosexuals discover their sexual orientation in their adolescence. It is highly distressing as they are ridiculed by their peers. They seek people of the same orientation and are then labelled as such. This affects their careers and personal lives adversely, and many ultimately develop major depression and indulge in substance abuse.

Experimenting with sex, many adolescents test the limits of their new found independence by highly risky behaviour. The facets of these have been discussed elsewhere in this paper, so elaboration is not needed.

Majority of the adolescents indulge in recreational activities in peer groups. Some of these can be highly dangerous like gambling, bike racing on municipal roads etc. The high levels of energy of youth needs to be channelized into productive activities like competitive sports.

Among other recreational activities, alcohol and substance abuse cause the greatest long-term harm. The other substances commonly abused are tobacco, cannabis, cocaine and opiates. Apart from the harm to the body and mind, substance abuse is associated with law-breaking and disruptive behaviours (Farrel and Taylor 1994).

Emotional Problems

Adolescents are frequently moody, confused and rebellious, which are manifestations of the emotional turmoil they undergo. Although most get over them in due course, many fall victim to unresolved emotional conflicts. Emotional disorders of relevance are: a) mood disorders and b) anxiety disorders.

Amongst the mood disorders, major depressive disorder is the commonest, affecting 2 per cent to 10 per cent of the adolescents. Suicide is the third leading cause of death among adolescents in the U.S. Recent press reports of teenage suicide in India show that the situation is similar here. Episodes of major depression are usually precipitated by academic disappointments, break-up of romantic relationships and arguments with the family members. Lack of awareness and reticence to seek medical help lead to complications like suicide attempts and social stigmatisation. As many as 10 per cent to 15 per cent of depressed teenagers may also exhibit manic symptoms and thus fall under the rubric of bipolar disorder, treatment and prognosis of which are very different from unipolar depression. It is important to note that one-third of the teenagers with clinical depression have a parent with history of mood disorder (Harrington 1994).

Anxiety disorders are relatively rare in adolescents with the prevalence rate of 1 per cent to 2 per cent in the said population (APA 1994). However, at least three types of anxiety disorders have their usual age of onset in the teen years. These are:

- Panic disorder
- Social phobia
- Obsessive-compulsive disorder

If these ailments are not picked up early and treatment initiated in the earnest, they tend to continue into adulthood and prevent the adolescents from reaching their full potential.

Problems of Self-image

Teenagers are naturally very conscious about how they appear. The prevalent peer norms and the 'ideal' image that the media projects all add up to the pressure to look good. Girls are usually more weight conscious than boys, but general attractiveness to the opposite gender is a prime concern for both the sexes of this age group. Two disorders are fairly common:

- Eating disorders – Anorexia/Bulimia Nervosa
- Body Dysmorphic Disorder

The eating disorders are seen mostly in females. Among them anorexia nervosa is rarer (prevalence of about 0.5 per cent to 1 per cent), and is found mostly in industrialized nations. Bulimia nervosa is the commoner ailment with 1 per cent to 3 per cent of late adolescent girls being affected by it (Halmi 1985). In this condition the person eats large amounts of high calorie food in binges which the individual cannot control. This is followed by great guilt and concern about putting on weight. To compensate, the individual induces vomiting, misuses laxatives, diuretics or enemas, indulges in prolonged fasting or excessive exercise. Co-morbid conditions seen in these persons are mood and anxiety disorders, substance abuse or dependence, and impulsive behaviour. Bulimia nervosa lasts for many years, and the course may be chronic or intermittent. It is usually associated with borderline personality disorder in adult life.

Body dysmorphic disorder is seen in both the genders of adolescents. In this case the person is pre-occupied with an imagined or exaggerated defect in his/her appearance. The concern is pervasive and highly distressing, and takes up most of the person's time. As a result normal functioning is affected (Philips 1991). Excessive grooming in front of the mirror is seen in most of them. Major areas of concern are the size and shape of the penis or the breasts, the nose, thighs and hips. These people repeatedly seek surgical interventions but are rarely satisfied with the results.

How to Operationalise Comprehensive Health Care and Development Programmes

For achieving these goals it would be very important to have a clear understanding of various problems encountered during childhood and adolescence which have adverse consequences in later part of life; as well as the key issues involved in the development of health of adolescents and youths.

1. Problems Originating in Childhood which Affect Adolescent Health

1. Malnutrition during infancy and early childhood can cause health problems throughout the reproductive years and beyond. It may result in stunted growth, anaemia in pregnancy, iodine deficiency and vitamin A deficiency blindness.

2. Young people who survive repeated attacks of diarrhoea and respiratory disorders fail to attain full adult growth. Girls who do not achieve their full growth potential are at a greater risk of having low birth weight infants.

3. Differential access to food and care in infancy and childhood, child marriage, sexual abuse by adults or child prostitution can seriously affect the physical, mental and social well being of adolescents.

II. Problems Originating in Adolescence with Lifelong Health Consequences

1. The use of tobacco, alcohol, other drugs and harmful substances may pose a special threat to the health of young people.

2. Alcohol and drug may also impair judgment and increase the risk-taking behaviour of young people; for example, dangerous driving, unprotected sexual relations, accidental injury or violence.

3. The often lower status of women and their relative lack of physical, social and economic power make them more vulnerable among others to (i) physical violence, (ii) economically coerced sex, (iii) sexual harassment, (iv) abuse at workplace, and (v) forced prostitution. These can be severely detrimental to their physical and mental health.

4. Unprotected sexual relations can often cause STDs, some of which may have serious or fatal consequences during adulthood or in later life. Unprotected sex is the most common cause of unplanned pregnancy, often leading to unsafe abortion with grave consequences.

5. Many of the adolescent or young girls may experience menstrual irregularity and develop signs of hyperandrogenism such as acne, hirsutism, polycystic ovaries with or without insulin resistance (IR). Some develop dark pigmentation on the back of neck, axilla and other pressure points (Acanthosis Nigricans- AN), which is an indicator of IR. If these are not treated properly, they may develop in later years infertility, early onset of diabetes and cardio-vascular complications.

III. Key Issues in Development of Health Care of Adolescents and Youths

Adolescence is a crossroad in the development of life. Failure to meet the needs of young people can lead to self-destructive behaviours and behaviours harmful

to others. A relevant response to their needs - equipping them with the knowledge, skills, values, support and opportunities for self-advancements in an equitable manner for both sexes- can set the stage for their healthy development and growth to responsible adulthood making a positive contribution to the society. Some of the key issues on adolescents' and youths' health are:

- a) How to promote a greater understanding of young people's health needs among policy-makers and health care administrators?
- b) How to build positive and healthy relationships between young persons and other members of the society including family members, school teachers and community workers leading to positive actions within existing cultural context?
- c) How to provide knowledge, skill and education to young people and to handle cultural sensitivity on empowering adolescents by providing information and services on sexuality, safe sex and other RH issues? How to help them to cope with peer pressures and media explosion, which often promote values contradictory to existing social norms?
- d) How best young persons themselves be involved in designing youth-friendly RH and SH programmes with primary health care approach with appropriate referral support system?
- e) Service provider, wherever available, are often not equipped or trained to deal with adolescent development and lack inter-personal skills. What kind of training and orientation would be needed to enable health workers to provide adolescent/youth-friendly and effective services?
- f) What would be the feasible indicators for monitoring adolescent health status as well as monitoring adolescent health services?
- g) What are the Operational Research needs and priorities for action programmes?

Need for Development of Adolescent/Youth-Friendly Health Care Services

In many parts of the world, adolescents are reluctant to go to health centres and seek help for a variety of reasons. If and when they go to a health centre for help, they are more often than not likely to leave discontented and unhappy with the way in which they were treated, and determined not to go back, if they can help it. There is a growing recognition among clinicians and public health workers of the pressing need to overcome the many existing barriers that hinder the provision and utilization of health services to adolescents and youths, and to transform the image of health centres from prevailing one of depressing and forbidding places that are best avoided,

to an image of welcoming user-friendly setting and adolescent-friendly health centre (Chandra Mouli, 2001; WHO 2003).

Elements of Adolescent-friendly Health Centre

A. Community support: Well informed of its existence acknowledges its value, supportive of its work; adolescents' participation; well informed about available services and their utilization; active participation; adolescent-friendly policies; guarantees confidentiality, do not require parental consent, does not withhold provision of services and products.

B. Adolescent-friendly procedures: Easy registration and retrieval procedures, short waiting time, 'dropins' with prior appointment possible, linkages to other health and social service providers, not expensive and flexible about payment.

C. Adolescent-friendly staff: Technically competent, interested and concerned, understanding and considerate, easy to relate to and trust-worthy, able and willing to devote adequate time, can be contacted at repeat visits.

D. Adolescent-friendly environment: No stigma, appealing milieu, good facilities, convenient working hours, convenient location, information and education material available; privacy in examination/consultation/waiting rooms, and in the entrance and exits.

These elements need to be considered for all within the population groups-male and female adolescents, older and younger adolescents, physically handicapped adolescents and so on.

CONCLUSION

Adolescent health care including sexual and reproductive health (SRH) is a crucial component of RH care programme. Different components of RH including maternal health, infant and child health, adolescent health, women's health etc. is very much inter-related and inter-twined. Problems during infancy and childhood such as severe anaemia and repeated infections can have serious consequences in adolescence and later periods. During adolescence i.e. the period of growth between childhood to adulthood, lots of physical, sexual, emotional, and psychological changes occur. Adolescents do not know the significance of these changes and various problems arise, which if not corrected would lead to adverse consequences.

Adolescence is a cross road in the development of life. Failure to meet the needs of young people may lead to self-destructive behaviour and behaviours harmful to others. Proper response to their needs-equipping them with knowledge, skills, values and support and providing opportunities for self-advancement in an equitable manner for both sexes, can set the stage for their healthy development and growth to responsible adulthood making a positive contribution to the society.

In this paper, a critical appraisal has been made to identify problems in different aspects and phases of development, and appropriate remedial measures have been suggested. Comprehensive health care will comprise various preventive and promotive measures as well as some curative and rehabilitative care programmes. This can be achieved through Primary Health Care approach with proper referral support by different specialized services. A coordinated development in different disciplines and sectors would be most important. The Health Ministry has to take a leading role; and they must encourage multi-sectoral partnership and ensure organizing need-based programmes addressing the problems of adolescents and youths.

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DIFFERENTIALS OF NUTRITIONAL STATUS IN SCHOOL-AGE CHILDREN AND THE ASSOCIATED FACTORS

Kumkum Kumari*

ABSTRACT

In the present paper an attempt has been made to trace the most influential factors which explain the variation in forms of growth retardation in school-age children and to estimate the prevalence rate of malnutrition within different income groups.

It was observed that in families with more number of children less attention was paid for the fulfilment of nutritional requirement of the children. On the other hand, families with single child had the highest percentage of normal children (44.4%) and with an increase in the family size, a significant decrease in the percentage of normal children, lowest being 8.82 per cent in a family with six children, was observed. The severity (grade III malnutrition) increased with an increase in the number of children in the family. The effect of type of family on the nutritional status of the child was decided using Gomez's classification. The normal children in nuclear families and joint families were 24.40 per cent and 23.47 per cent respectively, while the children suffering from malnutrition grade II in these two kinds of families were 30.36 per cent and 32.14 per cent respectively. A significant difference was found in the nutritional status when compared to the educational status of the mother. In case of illiterate, primary educated and undergraduate mothers, the percentage of grade III and II malnutrition showed higher incidence. But in contrast, malnutrition was almost nil in families where mothers possessed technical or post-graduate qualification.

Key words: Nutritional status, NCHS standards, Malnutrition, Associated Factors.

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Physical measurements like body weight, height, circumferences of arm and calf, fat fold at triceps of children have been extensively used to define health and nutritional status of communities. Based on the age, body weight and height, a number of indices and classifications have been suggested, important among them are those proposed by Gomez et al (1956) which is based on weight-for-age and more recently by Waterlow (1977) using height-for-age and weight-for-height parameters.

The studies have shown that there was growth retardation in all children due to malnutrition and it was more pronounced in female children. Other factors for retardation in growth can be family size, education of parents, parent's income and other socio-economic indicators. There is paucity of studies on school-age children showing correlation between various factors and variation in grades of severe or mild form of malnutrition.

In the present paper, an attempt has been made to trace the most influential factors which explain the variation in forms of growth retardation in school-age children and to estimate the prevalence rate of malnutrition within different income groups.

MATERIALS AND METHOD

The present study was carried out to assess the nutritional status and prevalence of diseases in school going children. The study sample comprised 700 children of different age groups ranging from 6 to 11 years drawn from different schools of Patna.

Demographic indicators such as age of children, type of family, educational status and income status were ranked and compared against nutritional status of children in the study. Level of malnutrition was assessed to know the nutritional status of the family.

Malnutrition was assessed using height of children. These were then compared with the data available at the NCHS (National Centre for Health Statistics) Standards using the median or 50th percentile of the weight-for-height. Children were classified according to the degree of malnutrition using Gomez Standard of classification (Weight-for-age) ≤ 60 per cent severe malnutrition, 61-75 per cent moderate malnutrition, 76-90 per cent mild malnutrition >90 per cent normal and Waterlow's classification (height-for-age) is categorized as follows:

<85 per cent	=	Severe malnutrition
85 - 90 per cent	=	Moderate malnutrition
90 - 95 per cent	=	Marginal malnutrition
> 95 per cent	=	Normal

FINDINGS AND DISCUSSION

TABLE 1
NUTRITIONAL STATUS VS. TOTAL NUMBER OF CHILDREN IN THE FAMILY

No. of Children in the family	Normal		Grade I Malnutrition		Grade II Malnutrition		Grade III Malnutrition		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
1	4	44.44	2	22.22	2	22.22	1	11.11	9	100
2	15	21.13	23	32.39	25	35.21	8	11.27	71	100
3	36	27.48	47	35.88	42	32.06	6	4.58	131	100
4	44	26.03	61	36.09	49	28.99	15	8.88	169	100
5	42	25.61	62	37.80	47	28.66	13	7.93	164	100
6	6	8.82	30	44.11	21	30.88	11	16.18	68	100
7	10	18.87	19	35.85	21	39.62	3	5.66	53	100
Above 7	12	34.29	11	31.43	9	25.71	3	8.57	35	100

Significant at 5 per cent level, d.f.=21

The number of children in the family and their nutritional status was examined using Gomez's classification (Table 1).

It was observed that in families with more number of children, less attention was paid for the fulfilment of nutritional requirement of the children. On the other hand, families with single child had the highest percentage of normal children (44.4%) and with an increase in the family size, a significant decrease in the percentage of normal children, lowest being 8.82 per cent in a family with six children, was observed. The severity (grade III malnutrition) increased with an increase in the number of children in the family.

Abidoye and Randle (1991) reinforced the fact that large sized families had more malnourished children as compared to the children living in smaller families.

TABLE 2
NUTRITIONAL STATUS VS. TYPE OF FAMILY

Type of Family	Normal		Grade I (Malnutrition)		Grade II (Malnutrition)		Grade III (Malnutrition)		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Nuclear Family	123	24.40	184	36.50	153	30.36	44	8.73	504	100
Joint Family	46	23.47	71	36.22	63	32.14	16	8.16	196	100

Significant at 5 per cent level, d.f.=3

The effect of type of family on the nutritional status of the child was decided using Gomez's classification. The normal children in nuclear families and joint families were 24.40 per cent and 23.47 per cent respectively, while the children suffering from malnutrition grade II in these two kinds of families were 30.36 per cent and 32.14 per cent respectively, Table 2.

When we tried to find out the effect of type of family on the nutritional status of the children using Gomez's classification, we arrived at a unique finding that not much of an effect of family type in determining the nutritional status of the children was found. Therefore, this is in contradiction to the general belief that children in joint families are less cared or not cared for their nutrition as compared to the children in the nuclear families. This fact may be attributed to the lack of awareness of nutrition among parent and guardians.

Chi-square test for independent attributes was carried out for the type of family versus nutritional status of children ($\chi^2=0.2530$, $P=0.9689$) but no significant association was found.

TABLE 3 (A)
NUTRITIONAL STATUS VS. EDUCATION OF FATHER

Nutritional Status	Normal		Grade I (Malnutrition)		Grade II (Malnutrition)		Grade III (Malnutrition)		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Uneducated	3	1.78	9	3.53	5	2.31	7	11.67	24	3.43
Primary	-	-	3	1.18	1	0.46	-	-	4	0.57
Middle	9	5.33	29	11.37	21	9.72	7	11.67	66	9.43

Nutritional Status	Normal		Grade I (Malnutrition)		Grade II (Malnutrition)		Grade III (Malnutrition)		Total	
Matric	34	20.12	67	26.27	78	36.11	11	18.33	190	27.14
Graduate	88	52.07	104	40.78	88	40.74	25	41.67	305	43.57
Post-Graduate	28	16.57	36	14.12	21	9.72	10	16.67	95	13.57
Technical and Professional	7	4.14	7	2.75	2	0.93	-	-	16	2.29
Total	169	100	255	100	216	100	60	100	700	100

TABLE 3 (B)
NUTRITIONAL STATUS VS. EDUCATION OF MOTHER

Nutritional Status	Normal		Grade I (Malnutrition)		Grade II (Malnutrition)		Grade III (Malnutrition)		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Uneducated	21	12.42	59	23.13	55	25.5	20	33.4	155	23.14
Primary	4	2.4	2	0.8	4	1.9	-	-	10	1.43
Middle	35	20.7	67	26.3	70	32.4	9	15.0	181	25.86
Matric	58	34.3	66	25.9	56	25.9	21	35.0	201	28.71
Graduate	45	26.6	51	20.0	31	14.4	10	16.7	137	19.57
Post-Graduate	4	2.4	10	3.9	-	-	-	-	14	2
Technical and Professional	2	1.2	-	-	-	-	-	-	2	.29
Total	169	100	255	100	216	100	60	100	700	100

Significant at 5 per cent level, d.f.=18

The nutritional status of the child with respect to education of the father and the mother was analysed on the basis of Gomez's classification (Table 3 A & B). On the whole, the results supported the fact that educated parents look after their children better. This can be seen in case of fathers who were graduates and mothers were educated. Data show that the maximum number of normal children was found in this category. Children of illiterate, primary educated or under-graduate mothers suffered from severe malnutrition (Grade II and Grade III category). On the contrary, the percentage of under-nourished children were almost nil in case of post-graduate mothers or those parents who have professional qualifications.

In this study, a significant difference was found in the nutritional status when compared to the educational status of the mother. In case of illiterate, primary educated and undergraduate mothers, the percentage of grade III and II malnutrition

showed higher incidence. But in contrast malnutrition was almost nil in families where mothers possessed technical or post-graduate qualification. In such families, the percentages of grade I malnutrition and normal children were higher. Therefore, sound educational status was a vital factor in maintaining the nutritional status of the family.

The present findings were in conformity with those reported by Abidoye and Randle (1991) that the level of education of mothers was found to be significantly associated with nutritional status of the children ($P < 0.05$) in the Command school, parents of 31 children were highly educated and out of them only eight children were malnourished while in Fazil-I-Omar school, where 24 children had illiterate mothers, out of them 20 were malnourished.

Chi-square test was applied to find out the effect of education of parents on the nutritional status of the child. A clear association was inferred between the education of parents and the nutritional status of the child. Value of χ^2 and p being 48.5679 and 0.0006 and 53.2330 and 0.0001 for fathers and mothers respectively. Thus, it can be concluded that children of educated parents who are obviously aware of the nutritional requirements of the children are seldom under-nourished.

TABLE 4
NUTRITIONAL STATUS VS. DIFFERENT INCOME GROUPS

Group	Low Income Group (I)				Middle Income Group (II)				High Income Group (III)				Total (I + II + III)			
	Male		Female		Male		Female		Male		Female		Male		Female	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Malnutrition																
Grade III	9	5.06	16	17.39	6	3.61	18	17.31	4	4	7	11.67	19	4.28	41	16.02
Grade II	66	37.07	27	29.35	50	30.12	33	31.73	31	31	9	15	147	33.11	69	26.95
Grade I	65	36.52	29	31.52	64	38.55	39	37.5	34	34	24	40	163	36.71	92	35.94
Normal	38	21.35	20	21.74	46	27.71	14	13.46	31	31	20	33.33	115	25.90	54	21.09
Total	178	100	92	100	166	100	104	100	100	100	60	100	444	100	256	100

Significant at 5 per cent level, d.f.=6

Using Gomez's classification this study was carried out using income group as the basic measurement to assess the nutritional status of male and female children of a family. This is evident from the fact that middle income group children particularly female children were having the least normal nutritional status (13.46%) which is the

lowest among all income groups and severe malnutrition in female children in middle income group (17.31%) which is very close to those of female children of low income group. The disparity among the malnourished male and female children could be explained on the basis of the fact that the families with lower economic status demonstrated a gender bias catering more to the nutritional requirements of the male children in comparison to the female. In case of HIG, the socio-economic affluence was the deciding factor for maintaining the nutritional requirements of both male and female children, thus, the cases of malnourished children were least in this category (Table 4).

The results showed that the higher the economic status, the lower the percentage of malnutrition and vice-versa. It was also observed that the nutritional status of the female children were markedly poor in comparison to the male children in the middle income group which may have certain social prejudices regarding the girl child.

The above result showed that in high income group, cases of malnutrition were less due to the nutritional care and grade III malnutrition was quite low, about four and 11.67 per cent in male and female children respectively while this figure in low income group, grade III malnutrition was 5.06 per cent for male children and 17.39 per cent for female children. However, it has to be noted here that the grade III malnutrition in middle income group female children was 17.31 per cent which is very close to the LIG female children.

Chi-square test was applied to find out the effect of socio-economic status of parents on the nutritional status of the child. Value of χ^2 being 4.831, $p = > 0.50$ and 13.118, $p = < 0.05$ for male and female children respectively. No association was found between nutritional status of male children and their parent's income. On the contrary, the female children who showed association between the parent's income and their nutritional status. These female children had a higher degree of malnutrition if they have come from low income group parents and vice-versa. Similar results have been reported by Rao, et al (1994). The result showed that there was a massive variation in prevalence rates of under-nutrition between low and high socio-economic groups. Normal children were more in well-to-do families than in those with poor socio-economic status.

TABLE 5 (A)
NUTRITIONAL STATUS VS. AGE OF THE MALE CHILDREN

Age in Years	Normal		Grade I Malnutrition		Grade II Malnutrition		Grade III Malnutrition		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
6	1	33.33	2	66.66	-	-	-	-	3	0.68
7	5	38.46	4	30.74	3	23.08	1	7.69	13	2.93
8	10	25.64	18	46.75	8	20.51	3	7.69	39	8.78
9	18	26.47	20	29.41	24	35.29	6	8.82	68	15.32
10	41	25.63	56	35	59	36.88	4	2.5	160	36.04
11	40	24.84	63	39.13	53	32.92	5	3.11	161	36.26

TABLE 5 (B)
NUTRITIONAL STATUS VS. AGE OF THE FEMALE CHILDREN

Age in Years	Normal		Grade I Malnutrition		Grade II Malnutrition		Grade III Malnutrition		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
6	-	-	1	33.33	1	33.33	1	33.33	3	1.17
7	2	22.22	3	33.33	3	33.33	1	11.11	9	3.52
8	6	26.08	9	39.13	5	21.74	3	13.04	23	8.98
9	12	28.57	17	40.48	8	19.05	5	11.90	42	16.41
10	14	18.92	25	33.78	16	21.62	19	25.68	74	28.91
11	20	19.04	36	34.29	37	35.24	12	11.43	105	41.02

Data in Table 5 (A) provide the nutritional status of male children with respect to their age. Based on the sample of 161 male children, grade I or moderate malnutrition was prominent at the age of 11, on the other hand the marginal malnutrition was more prevalent at the age of 10 years. The grade III malnutrition was the highest at the age of nine years.

In Table 5 (B) nutritional status of female children is given according to their age. The grade I malnutrition was again more prominent at the age of nine years in the female children. The grade II malnutrition was the highest at the age of 11 years. The grade III malnutrition was more noticeable at the age of 10. The female children had comparatively lower nutritional status than male children. The normal nutritional status was found to be 19.04 per cent in females and 24.84 per cent in males of 11 years of age.

The comparative view and inference from these two tables reveal some interesting observations. The female children were found to be more malnourished than male children. The severe malnutrition was significantly higher in females as compared to male children of all age groups. It can be concluded that normal nutritional status was on higher side in the male children. The above analysis can be attributed to the gender bias in Indian society in general and Bihar in particular.

CONCLUSION

In this study, a sample of 700 children of 6–11 years of age was taken from different schools of Patna. Out of them, 256 were girls and 444 boys. The factors influencing nutritional status such as family size, education and socio-economic status were studied using Gomez's classification. There was not much of an effect of family type in determining the nutritional status of children. Again when educational status was taken into consideration, the obvious result was that better educated parents were having better nourished children and had a standard level of nutrition and also cases of malnourishment were less. The interesting observation in this study was that the income group classification had no significant effect on nutrition in male children but in the female children, it was found significant. Only one-fourth of the boys and one-fifth of the girls were found to have normal nutritional status. Conversely, three-fourth of the boys and four-fifth of the girls were undernourished. Thus, gender was an important determinant of nutritional status of children. There was no conclusive evidence of relationship between the age of children and their nutritional status.

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A STUDY OF UTILIZATION OF COMMUNICATION CHANNELS AND INFORMATION SEEKING BEHAVIOUR BY THE TRIBALS FOR IMPROVING THEIR HEALTH CARE PRACTICES

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ABSTRACT

The findings of the study revealed that (i) tribals tend to believe in interpersonal communication as compared to other modes of communication; (ii) availability of electronic media viz. radio and television with the tribals is limited, however, their accessibility to these media is somewhat better; (iii) IPC followed by traditional media is the choice of combination of channels preferred by the tribals; and (iv) tribals prefer to watch television or listen to radio only in the evening hours but information seeking behaviour among them from various sources is casual.

Key words: Interpersonal Communication, Radio, Television, Newspapers, Traditional Media.

Tribals are known to be the autochthonous people of the land. Tribals are often referred to 'adivasi', 'vanvasi', 'pahari', 'adimjati', 'anusuchit janjati', etc., the last one being the constitutional name. India has the second largest tribal population in the world, the first being Africa. A list of 427 tribes; including 75 primitive tribes, has been identified in the country¹. The population of tribes in the world is more than 150 million, while their population in India is around 90 million. It means that more than half, 60 per cent, of world's tribals are citizens of India². 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 1961³.

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Tribals are geographically isolated, shy, socially, educationally and economically backward. Also, they live in huts and unhygienic environment in addition to ignorance and traditional myths. At the same time, they differ considerably from one another in terms of race, language, culture, beliefs, etc. However, there are certain similarities among the tribal groups and they can be classified into three major categories viz. (i) isolated, untouched or unaffected by the development process, remote forest dwellers (self-sustained and forest base); (ii) they maintain their own identity, forest dwelling scheduled but now as forest resources are eroded, they are living in deforest conditions, do not have access to land or forest based resources; and (iii) they come in close social contact with 'non-tribals' living in substratum of developing civilization around them.

In tribal areas, dialect changes after every five miles. Hindi is officially recognized national language, a medium of official communication, but still there are a large number of people who don't know official languages of state and nation. They have their own dialect. People of civilized world understand some of these languages but still there are some groups (e.g. Jarawa of Andaman Island) whose languages are not understood by us, such languages have no script too. In the modern era of communication, the tribals in India as well as abroad tend to believe in their own modes of exchange of information among themselves and they need to be brought on par with others.

In order to streamline and bring the tribal groups to the mainstream of health care delivery system, the Government of India has made several attempts and introduced several policies in the past, for example, National Health Policy 1983⁴ and National Population Policy 2000⁵ for ensuring the welfare and well being of tribals. The policies ensured all round development of the tribals inhabiting the length and breadth of our country. Therefore, 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, having areas of large tribal concentration in the country of which Madhya Pradesh is one of them where the study has been conducted.

OBJECTIVES

- (i) To study the utilization of different communication channels by the tribals for getting information on various health and family welfare programmes; and

- (ii) To understand their information seeking behaviour with reference to health care practices.

MATERIALS AND METHOD

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 ranges 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. 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 analyzed using SPSS package.

Definition

- (i) *Accessibility*: In this study it refers to the opportunity the tribals have to watch television, listen to radio and read printed materials.
- (ii) *Possession*: In this study it refers to different communication media, preferably radio, television and newspapers, possessed or owned by the tribals in the study area.
- (iii) *Utilization*: In the study it means the use of different communication media like radio, television, printed materials and traditional modes for getting information on health and family welfare programmes by the tribals.

FINDINGS AND DISCUSSION

Available communication channels in the study area are classified into three kinds viz. (i) Interpersonal Communication; (ii) Mass Communication; and (iii) Traditional Media of Communication. How far these channels are being utilized by the tribals for getting information on health and family welfare is presented in the subsequent pages.

UTILIZATION OF DIFFERENT CHANNELS

(i) Utilization of Interpersonal Communication (IPC)

Interpersonal communication is strong, friendly and persuasive in nature and takes place in close proximity with a purpose to share very delicate and sensitive issues like use of contraceptives, sex related matters, contagious diseases like HIV/AIDS, etc. Interpersonal communication is very effective, though it is not cost effective, as compared to mass communication. Further, often it takes place in an environment which is very conducive so tribals interact with their friends, neighbors and relatives at any time according to their convenience. Hence, interpersonal communication is helpful in taking decisions while mass communication is helpful in creating awareness among people as quick as possible. Of course mass communication is very cost effective.

TABLE 1
USE OF INTERPERSONAL COMMUNICATION AND REASONS FOR OPTING IT
BY TRIBALS

	Response	Easy to Access	Cheaper	Time to Listen	Others
Yes	113 (62.8)	135 (75)	71 (39.4)	19 (10.6)	5 (2.8)
No	49 (27.2)	45 (25)	109 (60.6)	161 (89.4)	175 (97.2)
Can't Say	18 (10)	-	-	-	-

(Figures in parentheses indicate percentage)

Table 1 shows that 113 out of 180 respondents depended upon interpersonal communication for getting information on health and family welfare programmes. This confirms the fact that even in the modern era of communication, tribals tend to believe in interpersonal communication as they have a limited access to mass media which are also formal and one-way. This confirms the observation that when the access to mass media by the rural people is limited and their education levels are low, interpersonal communication becomes more effective⁶.

While talking to the tribal groups, it was observed that they had very valid reasons to opt a particular medium in the study area. Any method can be more effective if it is easily accessible, cheaper and does not consume more time (Table 1). In this context, the respondents opined that 'easy access to a particular medium' makes them to opt a particular method as compared to other reasons. According to

the respondents, at any time in case of need, they share their personal problems with their friends/relatives and health functionaries. Hence, accessibility was the major factor for opting a particular medium. It has been observed in a typical tribal setting that when an individual falls sick, it is the group of villagers who decide on whether the patient is to be shifted to the hospital or not or what kind of treatment is to be given whether by local traditional healer or by allopathic doctor. Hence, personal relation among them and interpersonal communication among them have always been crucial.

Preference for Various Channels and Percolation of Message

TABLE 2
PREFERENCE FOR VARIOUS CHANNELS BY TRIBALS AND PERCOLATION OF MESSAGES AMONG THEM

IPC	131 (72.8)
Radio	18 (10)
Television	7 (3.9)
Print Media	10 (5.6)
Traditional Methods	14 (7.8)
Fairs/Festivals/Melas	56 (31.1)
Meeting Friends/Neighbours/ Relatives in Weekly Markets	131 (72.2)
Marriage	4 (2.2)

(Figures in parentheses indicate percentage)

As we have seen in previous table, the findings presented in Table 2 confirm that the respondents believe in interpersonal communication (72.8%) as compared to radio (10%), television (3.9%), print media (5.6%) and traditional media (7.8%). This is probably due to the fact that as they live in an inaccessible areas since their birth, they have no other means of communication except talking to their friends, neighbours, relatives and health workers and therefore, they prefer IPC as number one choice. Also, the other possible reason could be that IPC is direct, face-to-face and has immediate feedback as compared to mass communication. IPC was observed as number one choice for the respondents in a study conducted in Pali district of Rajasthan⁷.

With reference to the percolation of messages, the IPC stood first 72.2 per cent (meeting friends, neighbours and relatives in weekly markets) followed by

fairs/festivals/Melas (31.1%) (Table 2). Because, these occasions do give them an opportunity to discuss matters of their personal interest in whom they have confidence. It has also been seen that weekly market serves as a common platform for tribals where members of a particular family wait for other members, for example, daughter, son, son-in-laws, etc. or their other relatives from nearby villages. This gives them an opportunity to sort out their personal problems, including their health, whenever they have.

(ii) Utilization of Mass Media and Traditional Media

Possession of Communication Media by the Tribals and Their Access

Tribals have been living in isolation for centuries. Modern media of communications have no meaning to them because whether they are in a position to afford or use them for getting any information.

TABLE 3
MEDIA POSSESSED BY THE RESPONDENTS AND THEIR ACCESSIBILITY TO MEDIA

	Radio	Television	Print Media	Traditional Media
Media Possessed				
Yes	63 (35)	23 (12.8)	7 (3.9)	-
No	117 (65)	157 (87.2)	173 (96.1)	-
Access to Media				
Yes	97 (53.9)	56 (31.1)	18 (10)	38 (21.1)
No	83 (46.1)	124 (68.9)	162 (90)	142 (78.9)

(Figures in parentheses indicate percentage)

Data given in Table 3 reflect that most of the people in the study area do not have mass media like radio, television and newspapers in their houses. However, some people have radio (35%), television (12.8%) and newspapers/print materials (3.9%). In this situation, to reach them with messages on health care through these media will be of no use. The non-availability of mass media with the tribals could be

attributed to their extreme poverty. Also, this confirms the observation that imbalance in the spread of communication infrastructure, elitist and often alien character of software⁸, therefore, to some extent, they believe in traditional media of communication (21.1%) which is close to the observation made in a study conducted in Gwalior district of Madhya Pradesh⁹.

However, though the availability is limited, accessibility is somewhat better. For example, availability of radio is only 35 per cent but its access by the tribals is 53.9 per cent. This is because as per the reply given by the respondents that even if a person is not having a radio in his house, he has privilege to listen to radio in his either friend's house or neighbour's house. Similarly, the availability of television is only 12.8 per cent (Table 3) but its accessibility by tribals is 31.1 per cent. In case of print media, the trend is the same, the accessibility is little more than availability.

Combination of Media

A communication strategy applicable in one situation may not be applicable in another situation. Similarly, what a single medium effective in one place may not be effective in another place. Therefore, an attempt was made to see what is the best combination of media preferred by the tribals for giving messages to them.

TABLE 4
CHOICE OF COMBINATIONS OF MULTI-MEDIA PREFERRED BY TRIBALS

Sl. No.	Choice of Combinations	Preference
1	IPC followed by T.V.	25 (13.9)
2	IPC followed by Radio	53 (29.4)
3	IPC followed by Traditional Media	62 (34.4)
4	IPC+Radio+T.V.+Traditional Media	23 (12.8)
5	Don't Know	17 (9.4)
	Total	180 (100)

(Figures in parentheses indicate percentage)

Realizing the importance of IPC in tribal localities, it was supplemented by different mass media like television and radio. As the traditional media still hold good in tribal area, it was also included as one of the choices for combination of media for effective communication to the tribals (Table 4). Because mass media alone are generally inadequate in changing human behaviour. For effective health communication, they should be used in combination with other methods. The power of

mass media in creating a political will in favour of health, raising the health consciousness of people, setting norms, delivering technical messages, popularizing health knowledge and fostering community involvement are well recognized¹⁰. Table 4 reveals the unpopularity of television and radio among the tribals. Among the various combinations of media tried, IPC followed by traditional media stood first (34.4%). This is in contrast to “the direct effect of mass media, backed by IPC, on the audiences exposed apart, their spread effect on those outside their reach has indeed been remarkable”⁸. However, in the study location, when we are designing an effective communication strategy for tribals our focus should be on interpersonal communication and traditional media rather than modern media like radio and television. The traditional folk media are personal forms of communication of entertainment. These forms of art are a part of the way of life of the community and provide acceptable means of bringing development issues into the community on its own. They are themes-carriers by nature, not simply as vehicles of communication but as games of recreating and sharing a common world of emotions, ideas and dreams¹¹. Because of these reasons, the tribals in the study area may have preferred traditional media as one of the combinations of media along with interpersonal communication.

(iii) Utilization of Printed Materials

Illiteracy is a prominent issue among tribals. Hence, reaching them with health care messages through printed materials will be of no use. However, an attempt was made to see how far the printed materials are popular in the tribal localities.

Printed Materials

Though the literacy level of the respondents was low, a few of them expressed to have read some printed materials in the study area.

TABLE 5
KINDS OF PRINTED MATERIALS READ BY THE RESPONDENTS

Sl. No.	Material	Yes	No
1	Newspapers	22 (12.2)	158 (87.8)
2	Magazines	11 (6.1)	169 (93.9)
3	Posters/Charts	15 (8.3)	165 (91.7)
4	Pamphlets/Folders	7 (3.9)	173 (96.1)

(Figures in parentheses indicate percentage)

Among the printed materials, newspaper (12.2%) has been referred to as one of the materials read by the respondents (Table 5). Of course, this is also not an encouraging picture. The other materials like magazines, posters/charts and pamphlets/folders have not been read/seen by most of the respondents probably due to their non-availability as well as their illiteracy.

TABLE 6
OTHER PRINTED MATERIALS SEEN BY THE TRIBALS

Sl. No.	Sources	Yes	No
1	Posters	104 (57.8)	76 (42.2)
2	Banners	55 (30.6)	125 (69.4)
3	Hoardings	10 (5.6)	170 (94.4)
4	Billboards	9 (5)	171 (95)

(Figures in parentheses indicate percentage)

In spite of high illiteracy in the tribal area, tribals still consider posters (57.8%) as one of the sources for getting information on health and family welfare, (Table 6). This is in agreement with the findings of a study conducted in four EAG States namely Rajasthan, Uttaranchal, Bihar and Orissa¹². The other sources like banners accounted for 30.6 per cent and hoardings and billboards have been ranked very low, 5.6 per cent and 5.0 per cent, respectively. The findings suggest that to educate the tribal people we may use posters as one of the potential sources of information.

INFORMATION SEEKING BEHAVIOUR

Opinion of the Tribals about Health Programmes on Different Media

Availability of the communication media with the tribals and their accessibility to the media are not so interesting, reported in Table 3. Even then, the respondents in the study area have some understanding about various programmes put up by different media (Table 7).

TABLE 7
AWARENESS AND OPINION OF THE TRIBALS ABOUT PROGRAMMES GIVEN
BY VARIOUS MEDIA

Sl. No.	Queries	Response	
		Yes	No
1	Awareness of the Programmes Broadcast by radio and telecast by television regularly	37 (20.6)	143 (79.4)
2	Time of Broadcast/Telecast suitable to you	34 (18.9)	146 (81.1)
3	Satisfaction with Frequency of programmes	35 (19.4)	145 (80.5)
4	Understandability of language	36 (20)	144 (80)
5	Understandability of messages	37 (20.6)	143 (79.4)
6	Reading of Printed Materials	32 (17.8)	148 (82.2)

(Figures in parentheses indicate percentage)

The awareness of various programmes put up by radio as well as by television on health and family welfare among the respondents is very poor (20.6%). Again as far as the time of broadcast/telecast is concerned, around 81.1 per cent said that the time is not suitable to them. This supports the fact that tribals tend to believe in interpersonal communication and traditional media of communication. Similarly, around 80.5 per cent said the frequency of the programmes given by radio as well as by television is poor. As far as the understandability of language and messages is concerned, around 80.00 per cent of the respondents were not comfortable. This gives an understanding that National Population Policy (2000) lays emphasis on right direction of communicating messages in a local dialect⁵. As we have seen in previous table, the availability of printed material with tribals was very less and reading habit among them was also very poor. The reason for this kind of affair is the poverty and illiteracy among tribals. Now, it is very clear what kind of roles radio as well as television should play to change the mindset of the people towards various health care programmes (Table 7).

Watching television, listening to radio and reading printed materials are casual in nature among tribals in Mandla district.

TABLE 8
FREQUENCY OF WATCHING TELEVISION, LISTENING TO RADIO AND READING
PRINTED MATERIALS FOR GETTING INFORMATION

Sl. No.	Frequency	Listening to Radio	Watching T.V.	Printed Material
1	Everyday	44 (24.4)	19 (10.6)	5 (2.8)
2	Weekly	12 (6.7)	4 (2.2)	12 (6.7)
3	Fortnightly	1 (0.6)	1 (0.6)	4 (2.2)
4	Monthly	1 (0.6)	- -	1 (0.6)
5	Occasionally	27 (15)	17 (9.4)	14 (7.8)
6	Not at all	95 (52.8)	139 (77.2)	144 (80)
	Total	180 (100)	180 (100)	180 (100)

(Figures in parentheses indicate percentage)

The respondents were asked to give information regarding the frequency of viewing television, listening to radio and reading printed materials on health and family welfare programmes, Table 8. Data reflect that information seeking behaviour among the tribals is not a common practice. According to them, they are pre-occupied with their normal routine activities either in the home or in the farm. Also, they said they do not have any time to think of all these activities as they have their own priorities for earning some money for their normal life. However, according to Table 8, only 44 out of 180 respondents listen to radio, 19 out of 180 watch television and five out of 180 read printed materials in general. This adds to the problems of non-availability of media as well as the time with the tribals, besides illiteracy. It can also be seen further from Table 8 that 95 out of 180, 139 out of 180 and 144 out of 180 respondents stated that they not at all listen to radio, watch television and read printed materials, respectively. The media are only occasionally used by them for getting information on health and family welfare, radio (15%), television (9.4%) and printed material (7.8%). Like availability of radio, here also people tend to listen to radio as compared to watching television and reading printed material.

Preference for Time

Though tribals are busy with their own activities every day, an attempt was made to see whether they will be able to devote some time to the media, if so, what will be their suitable time?

TABLE 9
APPROPRIATE TIME FOR WATCHING TELEVISION OR LISTENING TO RADIO
BY TRIBALS

Sl. No.	Time	Number
1	0700 hrs.	4 (2.2)
2	0800 hrs.	3 (1.7)
3	0900 hrs.	1 (0.6)
4	1300 hrs.	1 (0.6)
5	1400 hrs.	1 (0.6)
6	1800 hrs.	12 (6.7)
7	1900 hrs.	11 (6.1)
8	2000 hrs.	2 (1.1)
9	2100 hrs.	1 (0.6) 2 (1.1)
10	No Time	144 (80)
		180 (100)

(Figures in parentheses indicate percentage)

It is very clear from Table 9 that around 80 per cent of the people quoted that they have 'no time either to watch television or listen to radio'. This is probably due to the fact that they may not have either radio or television or they may not have any interest in the programmes put up by radio or television. It means only 20 per cent of the respondents have the habit of watching television or listening to radio in the study area. Intensive efforts may have to be made by the district level authorities to motivate the people to watch or hear the programmes put up by television and radio.

As far as timing is concerned, according to the tribals, evening hours from 6.00 p.m. or 7.00 p.m. seem to be more suitable as compared to the morning hours for watching television or listening to radio programmes⁷. Morning hours are more valuable for them as they are being cultivators or labourers, they are forced to go to the field for work. This is why tribals suggest that morning hours are not suitable for them either to watch television or listen to radio.

CONCLUSION

The study concludes that the availability of electronic media such as radio and television is very limited with the tribals. The study further concludes that the tribals tend to believe in interpersonal communication as well as in traditional media of communication. Therefore, the authors suggest that a combination of interpersonal communication and traditional media may be adopted to deliver health care messages to the tribals in Mandla District of Madhya Pradesh. This is in line with National Population Policy (2000) which also emphasis on communicating clear and focussed health care messages to the people in the remotest corners of the country in local dialects through local artists, singers, folk-dance groups, comedians, actors, drummers, popular film stars, etc.⁵

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EFFECT OF EDUCATIONAL INTERVENTION ON MALE PARTICIPATION IN FAMILY PLANNING IN IRAN

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ABSTRACT

Traditionally, family planning programme has viewed women as the primary clients. Recently, need for male participation in family planning has been highlighted but there are limited efforts to bring the reproductive male population to accept contraceptives. A quasi-experiment has been designed enrolling randomly 268 married men from the health centres in Iran. Data on awareness, beliefs, attitude and co-operation in adopting family planning methods were recorded from men using a pre-tested schedule before and after 14 sessions of educational intervention. Most of the males were aware of at least one contraceptive method but awareness of modern methods was poor (20%) which was increased after intervention (47%). Their willingness to allow their wives to use contraceptive also increased but the improvement was not statistically significant ($p=0.08$). Use of contraceptive remains low in men even after intervention. Family planning education could increase the knowledge of men about modern contraceptives but the use of contraceptives by male may not increase which indicates that behaviour change process may take longer time to have effect.

Key words: Male participation, Contraceptives, Family Planning, Educational intervention.

From historical point of view, a lot of men do not agree with the family planning programmes and consider it as an irrelevant thing for them and therefore they have a little awareness of family planning. There are false beliefs about male contraceptive methods especially in terms of vasectomy and condom, which lead to doubt and non-response.

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There is also another false belief that equates vasectomy with impotency. A lot of men have a little information about immunity and effectiveness of male contraceptive methods and the lack of information has negative effect on the health of women because they become the target of multiple pregnancies, abortions and other consequences.¹

It was found that 31 per cent of men disagree with family planning method thinking that it has side-effects on the health of women. The rate of women's acceptance of contraception was three times higher than men (women 71% and men 23%).² In African countries also the rate of use of contraception by men is low.³ Also, the result of another study carried out in Zambia in 1987 by 'Nevodax' showed that men were not much interested to use condom and vasectomy and believed that family planning methods are just for women.⁴ In Cameron, Malay and Singapore, more than a half of men disagree with the family planning.⁵ About 51 per cent of men had moderate participation and only 23 per cent had high participation in the city of Gazvin.⁶ It has been realized that men need to be educated in order to increase their awareness and participation in family planning. And if their awareness increases, it will result in their active participation in family planning and they will encourage their wives to use new contraceptive methods. The information on men's participation in family planning in Iran is inadequate. The aim of this study is to assess the effect of behaviour change education on men's participation in family planning.

MATERIALS AND METHOD

This is a quasi-experimental study carried out in the year 2004 in the health care centers in Tabriz, Iran. The sample size calculated (with $p=50\%$) was 400 families using the formula $n = Z^2 X(1-p)P/L^2$. A sample of 268 married men was studied because 132 of them showed their unwillingness in participation in the study due to various reasons including illnesses and shortage of time. The subjects were selected randomly by multi-stage cluster sampling. In other words, the city Tabriz, was divided into four clusters and from each cluster two health care centers were selected and from every center 50 married men were selected randomly. In this study a pre-tested schedule was used to collect data. The schedule had 39 items about demographic data, attitude, beliefs, awareness of men and their role in family planning. Initially, this schedule was validated by applying on 20 married men in other than selected clusters. The subjects were explained about the objective of the study and its intervention package. None of the subjects was withdrawn from the study. After obtaining their consent, subjects were asked to assemble in 8-10 numbers to participate in educational classes. Such classes were taken place in 14 sessions and each session

took about 30 minutes duration in a course of 12 weeks. Their doubts and queries were addressed in interaction. The methodology adopted in classes was lectures, accompanied by posters, images and active participation in group-debates. In these classes group debates were given priority. Post intervention information was collected from each subject using the same schedule. The analysis was carried out by using the SPSS computer software package and statistical conclusion was drawn using MacNemar Test for paired proportions.

FINDINGS

In the view point of literacy, from those surveyed 12 per cent of them were illiterate, 16 per cent had primary literacy, 37 per cent had diploma and 35 per cent had university degrees. Occupation-wise, 25 per cent of them were workers, 29.5 per cent were clerks, and the rest had free businesses. 48 per cent of the study subjects had one child, 29 per cent had two children, 12 per cent had three children and rest of them had more than three children. Only 16 per cent of the men considered having one child as ideal, 75 per cent considered two children and the rest considered three children as ideal number of children in the family.

In response to the question, "Do you know any contraceptive method?" The results showed that cent per cent of men before the educational intervention had acquaintance with anyone of the contraceptive methods. But they had little information about new methods-pills, injectable and implants. The level of knowledge about the new contraceptives was increased from 20 per cent to 47 per cent after the intervention. However, this improvement was not significant ($p=0.08$). Similarly, in response to the question, "Do you agree with the male contraception methods?" About 6.4 per cent of them had agreed with usefulness of male contraceptives while this percentage increased to 45.2 per cent after the intervention ($p=0.08$). In response to the question, "Which of the contraceptive method you think is the most reliable?" Before intervention, in their views it was the pill (31.78%), tubectomy and vasectomy. While after the intervention the best methods of contraceptive were tubectomy (32.5%) and vasectomy (14.2%). There was a significant difference in their knowledge gain regarding contraceptive methods (Figure 1). About 36.6 per cent of men were of the opinion that sterilization in women was easier before the intervention which had shifted to sterilization of men (55.2%) as easier method (Figure 2). Men's attitude towards contraceptive programme improved significantly from 4.8 per cent to 83.6 per cent after the intervention ($p<0.05$). None of them believed that men should use contraceptive before the educational intervention after first child but a very few of them changed their attitudes after intervention. However, half of the men were ready to

allow female contraception after having three children. This percentage also increased after intervention ($p=0.04$). Educational programme improved the awareness but contraceptive uses did not improve. It can be perceived that the task of family planning is in the hands of women and men do not have any interest in using contraceptives. The education process of men does not improve significantly the attitude and practices of use of male contraception ($p=0.23$).

Figure 1
Perception of men about the best contraceptives
in terms of safety and effectiveness before and
after intervention

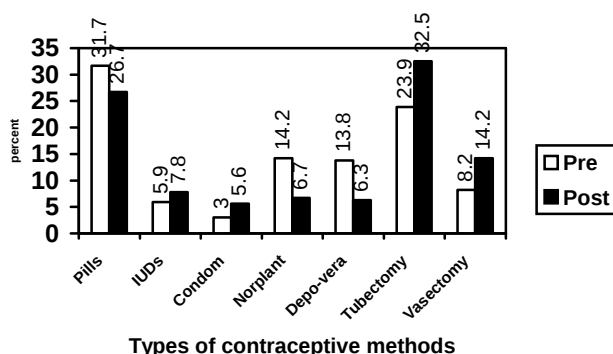
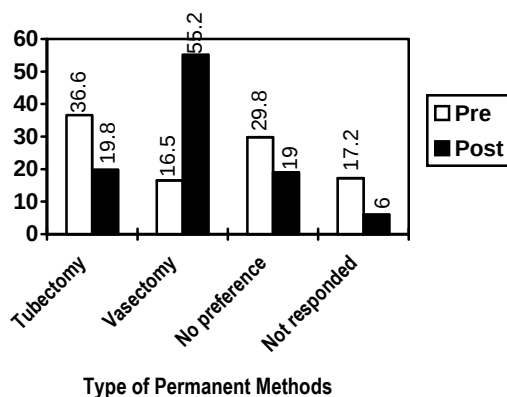
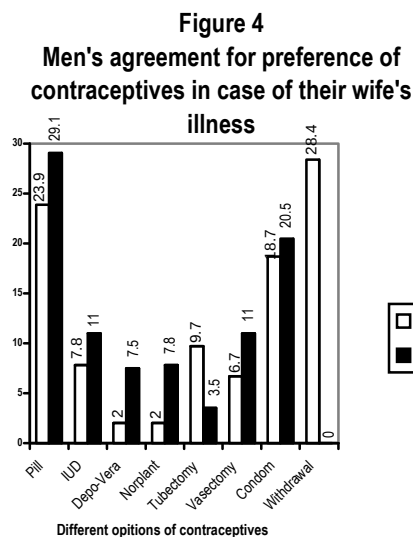
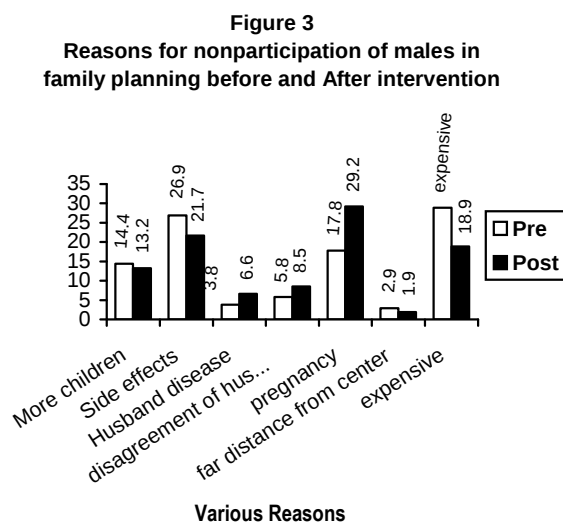


Figure 2
Men's Response to the question "Which permanent method is
easiest?"



Side effects of the contraceptives were the major hurdles in accepting them by the men. Any reason highlighted was “desire to have a male baby” which didn’t improve for female baby even after educational intervention ($p=0.43$) (Figure 3). In response to the question “If you are forced to use male contraception, would you prefer vasectomy?” Men did not show any interest ($p=0.3$). Use of contraceptives by men (25.4 per cent) remains low in case of their wives illness even after intervention (31.5 per cent). Educational intervention was able to persuade men to agree with women’s use of contraception ($p=0.03$) but not to men’s contraception because of agreement for pills, IUDs, Depot and norplant contraceptives. There was not much increase in accepting vasectomy (Figure 4).



DISCUSSION

This study's aim was to verify whether or not we could persuade men to use male contraception by utilizing behaviour change education method. Today the rate of reproductive behaviour in improving family's health and preventing unwanted pregnancies has been proved. So far education specialists have presented several educational methods and to some extent, each of them has made some behaviour changes. Porchaska and colleagues have presented a model that not only describes healthy behaviour changes, but also is able to lead and facilitate behaviour change.⁷ This is based on six stages of behaviour change including the pre-decision phase, decision phase, readiness phase, operation phase, perseverance phase and the phase of continuing the behaviour.

The result of present study showed that awareness about any one of the family planning methods was universal but information about methods such as vasectomy, tubectomy, and norplant was very less (8.7 per cent). In most of the societies men have a decisive role in family planning. But due to the lack of information, adverse beliefs and negative attitude towards unwanted pregnancies do happen. The husbands do not co-operate even in case of their wives illnesses, which lead to unwanted pregnancies. The level of awareness increased significantly in men ($p=0.01$) after 12 sessions of educational programme in the city of "Sarabh".⁸ In another study in Ethiopia it was found that use of male contraceptives particularly modern methods increased after house-to-house educational programme on family planning.⁹ Contrary to this present study, another study showed that increase in awareness among men about modern methods of family planning without any increase in use by them. However, they agreed to support the use of contraceptives by their wives (72.8%) after the intervention. In a study conducted on 1800 men in the city of Shanghai, it was found that educational intervention among men help their wives to reduce probability of abortion and unwanted pregnancies.⁵ Similarly to the present study, in Turkey, Fisek et al⁶ had demonstrated that acceptance of contraceptives among women increased after the education of men and there was no significant improvement in men's attitude towards family planning. However, findings of a study from India showed that family planning education do not change the behaviour in men but for economic reasons men accepted the contraceptives.¹¹

It is concluded that educational intervention on family planning increases the knowledge about modern methods of contraceptives among men but unable to bring any improvement in their practice. Their attitude towards use of family planning methods by their wives improves after the intervention. It is expected that such

behaviour change may take longer time but an improvement in their knowledge and attitude to accept contraceptives by their wives could be taken as initial steps of the behaviour change process. Such education intervention should be incorporated in the services provided by the health center, particularly to promote the participation of men in family planning.

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