

REORIENTATION OF MEDICAL EDUCATION FOR FUTURE

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ABSTRACT

The roles and responsibilities of medical profession for the promotion of health and family welfare programmes in the country at different levels in different settings have been considered in this presentation. In equipping the medical profession adequately for meeting the challenges of HFA, the author analyses the medical educational system, particularly basic medical education keeping in view the priority areas in relation to achieving national goals, additional inputs required for filling up of the gaps through organisation of post-basic specialised courses, and continuing education including in-service training. Besides, the article highlights the close collaboration between medical colleges, health services organisation and its manpower planning unit and other in-service training institutions.

There have been spectacular developments in recent years in the medical care technologies based on advances in basic sciences, and these have placed powerful tools in the hands of medical profession for relieving the sufferings and prolonging human life. The examples are: development of antibiotics, anti-cancer chemotherapies, open heart surgery, organ transplantation, whole body scanners and linear accelerators. In addition, modern developments in molecular and cell biology, bio-technology and genetic engineering have brought further promise of making a profound impact on health conditions throughout the world. It is a great irony that despite these advances in science and technology the health conditions of the majority of the people in the developing countries including India are highly unsatisfactory and are cause of deep concern. No doubt that there are scarcity of resources and other sequelae of the 'syndrome of underdevelopment'. But one major cause of this is that the health care has largely been oriented towards treatment of diseases, with great neglect of preventive and promotive measures. Medical education has generally followed this pattern, with the result of excessive desire for specialisation and super-specialisation.

Although the potential for application of advances of biomedical sciences is the same across the world, the practice of health can be vastly different between countries and even within a given country, being closely linked to the socioeconomic and cultural factors. The health care system has to comprehend the close interaction between the man with his genetic background and endowment, and the

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environmental conditions including economic development, socio-cultural practices and available technology which largely determine their acquired behavioural styles.

The educational system, in general, has to be needbased, and this is much more applicable in the case of medical education system. Therefore, for any consideration of the reorientation of the medical educational system for future, one needs to consider what are the current needs and what would be the future needs for medical and health care services in the country. In the field of health and family welfare the country has set two major goals - (a) to achieve Health for All (HFA) by 2000 AD through primary health care approach; and (b) to achieve a net reproduction rate (NRR) of unity by the year 2000 with the object of population stabilization. A critical appraisal of the current state of developments in these fields indicate that the country may need some longer period for achieving these goals. In other words, for the next two decades the goals would remain the same as stated above.

For achieving HFA by 2000 AD one needs to consider the basic principles and strategies of HFA, the actions needed for their implementation, the eight essential elements of primary health care and the supportive activities needed for their successful implementation. For effectively containing the population growth, mainly two types of approaches would be required - (a) to create a favourable atmosphere for promoting adoption of small family, norm and for ready acceptance and continued effective practice of contraception; and (b) to make available to the prospective users a variety of suitable methods of contraception. For proper understanding of various dimensions of the pertinent issues a brief mention of these would be helpful.

BASIC PRINCIPLES AND STRATEGIES FOR HFA

1. The HFA is to be attained in a spirit of social justice and as an integral part of social and economic development of the community.
2. An acceptable level of health cannot be attained through the health sector alone, but it would require the coordinated efforts of the health sector and relevant activities of other social and economic development sectors. Therefore, for achieving the ultimate social goals the strategies of the health and other developmental sectors should be mutually supportive.
3. There is a great need for a strong political will at all levels for promotion of health and health development must be considered as a positive investment for socio-economic development.
4. There should be an equitable distribution of health resources, and preferential allocation of resources to those in greatest social need.
5. HFA development is based on self-determination and self-reliance of the

individual and the community. Active community participation, encouraging the people to assume greater responsibility for their own health, would be crucial for success.

6. Social orientation of different categories of health workers to serve the people properly would be important. They should also be properly reoriented to HFA principles and strategies and should receive adequate technical training.
7. The emphasis should be on preventive and promotive aspects of health well integrated with curative, rehabilitative and environmental measures.
8. The primary health care would be the key to the success of HFA, and for attaining the desired level of health, every individual must have access to primary health care and through it to all levels of comprehensive health system.
9. Appropriate technology needs to be developed and applied through well defined health programmes integrated into a country-wide health system.

ESSENTIAL COMPONENTS OF PRIMARY HEALTH CARE

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

For achieving success in HFA development, atleast eight essential components of primary health care need to be properly implemented. For this the cooperation and support of other social and economic development sectors, such as education, social and women's welfare, food and agriculture, animal husbandary, water resources, housing, rural development, energy, environmental protection, industry, communication, etc. would be vital.

In the Alma Ata Declaration, it is stated that atleast the following components should be included in primary health care:

1. Education of the people about prevailing health problems and methods of preventing and controlling them.
2. Promotion of food supply and proper nutrition.
3. Adequate supply of safe water and basic sanitation.
4. Maternal and child health care and family planning.
5. Immunization against major infectious diseases.

6. Prevention and control of locally endemic diseases.
7. Appropriate treatment of common diseases and injuries.
8. Provision of essential drugs.

SUPPORTIVE ACTIVITIES NEEDED FOR SUCCESSFUL IMPLEMENTATION OF HFA THROUGH PRIMARY HEALTH CARE,

A number of supportive activities essential for successful implementation of primary health care are enumerated below:

1. Community involvement and participation
2. Intra- and inter-sectoral coordination
3. Development of effective referral support
4. Development and mobilization of resources
5. Involvement of managerial processes
6. Health manpower development
7. Medical and Health Services Research including innovative approaches
8. Development and application of appropriate technology

MEANS FOR PROMOTION OF SMALL FAMILY NORM

For creating favourable atmosphere for promotion of small family norm, and acceptance and continued practice of effective contraception, the following means may be adopted:

1. **Information, Communication, Education and Motivation:** Education and motivation of the people normally proceeds through the phases of orientation and sensitization, education motivation and practice. The goals of the family planning (FP) workers are to:

1. supply necessary information for orientation, education and motivation;
- ii. assist the client to evaluate contraceptive information and services and to make an informed choice and decision about these; and
- iii. encourage them for continued contraceptive practice.

2. **Education and Training of Providers of Family Planning Services.** The health personnel should be properly trained with a view to strengthen their knowledge and skill and to develop proper attitude in adequately educating and motivating the prospective users, selection of cases and other technical aspects of contraceptive including their follow-up management and continuous counselling.

3. *Preparation of Service Agency.* Service agency should be properly geared for providing quality services at the door-steps of the people.

4. *Other Measures for Promoting Small Family Norm*

- a. Improvement of maternal and child health care, to reduce infant mortality rate and ensure child survival.
- b. Enforcement of universal primary education and prevention of drop-outs.
- c. Incorporation of population education and family life education at all levels.
- d. Enforcement of the law on minimum age of marriage through proper education. It needs to be ensured that the girls do not get married before the age of 18 or 19 years and do not get the first child birth before the age of 20 years, the optimal reproductive age being between 20-30 years.
- e. *Raising the status of women* - Recognising the fact that the women are important instruments for social change, promoting women's education and raising their social status would be an important step.

DELIVERY OF CONTRACEPTIVES TO THE PROSPECTIVE USERS

A variety of effective contraceptives for the female as well as male are currently available. The effective delivery of contraceptive services at the door-steps of the people would be an important measure for promoting contraceptive practices. The channels through which the contraceptives are to be made available to the people may be considered under three main groups:

- a. Through health services infrastructure and health functionaries;
- b. Through private agencies and non-governmental organizations including voluntary organizations; and
- c. Through commercial channels.

CURRENT STATUS OF HEALTH CARE

Since independence during the past 3½ decades impressive progress has been achieved in health care delivery services in the country. Smallpox has been eradicated, plague has also been almost eliminated. Malaria, Kala-azar and cholera have largely been brought under control. Considerable progress has been made in the programmes for the control of Tuberculosis, Leprosy, Blindness etc. The overall mortality rate has been reduced from 27.4 (1951) to 11.8 (1985). The Infant Mortality Rate decreased from 146 (1951) to 95 (1985). Life expectancy at birth has increased from 32.1 (1951) to 54.4 (1980). Over this period there has been a

phenomenal growth in the number of hospitals, dispensaries and educational training institutions for various categories of .medical professionals, para-professionals, technicians and health personnel. Health infrastructure has also been expanded with the object of taking the health care services to where the people live and work. The number of sub-centres, which are the peripheral - most governmental facilities for the delivery of health care, has been increased and it is planned to have one sub-centre per 5000 population in the plain and one per 3000 population in difficult terrains. At the inter-face between the people in the village and the multipurpose health workers at the sub-centres, two voluntary workers *i.e.* the health guide and the trained dai are to provide primary contact care and to help in the maintenance of health through preventive and promotive measures. Six such sub-centres are to be covered by one primary health centre (PHC) which would be established at the rate of one per 30,000 population. The Medical Officer and other intermediate level health supervisors are to function from these primary health centres. Above four PHCs there would be one Community Health Centre (CHC) manned by general Specialists and the CHC would provide the first fevel referral support to the primary health care. In case of needs the secondary referral support would be provided by the district level hospitals and the tertiary care would be provided by the medical colleges and other specialised hospitals.

In the health policy document (1983), the goals to be achieved in various health indicators and related parameters in a phased manner have been specified. Although substantial improvement has occurred in these indicators and parameters since independence, we have yet to go a long way. The country has adopted the policy, and framed the strategy for HFA, and various health and family welfare programmes are being organised. A critical appraisal of the status shows great gaps between the policies, strategies and programmes on one hand, and the actions taken and the achievements thereof on the other. Therefore, there is an urgent need for narrowing these gaps in order to achieve the goals. People at different levels working in the field of health and other fields related to health development are to be properly oriented and sensitized so as to bring out an emotional commitment for promotion of these goals. These critical mass of people are to play a leadership role in bringing out the necessary change.

ROLE AND SCOPE OF MEDICAL PROFESSION

The role and scope of the medical profession for the promotion of health and family welfare programmes in the country would naturally vary with the level at which they would be functioning. These may be considered under the following heads:

- A.As a Practitioner and Family Counsellor
- B.As an Organizer of Health and Family Welfare Services
- C.As a Teacher and Educator
- D.As a Researcher
- E. As a Leader

A. ***As a Practitioners and Family Counsellor:*** All practising physicians must be familiar with the concept, principles and strategies for HFA, the minimum essential elements of primary health care and the supportive activities needed for their successful implementation. They are to integrate the preventive and promotive measures with curative care. They should be knowledgeable about the different methods of fertility regulation and acquire the skills for delivering contraceptive services and providing appropriate counselling. They should educate the people regarding the hazards of unplanned family and the benefits of planned family and about the available methods of contraception.

B. ***As Organizer and Providers of Health and Family Welfare Services:*** The scope and responsibilities as organisers and providers of services would vary depending upon the levels of their functioning. At the level of primary health centre, the medical officer is expected to carry the following functions:

- i. Providing clinical services in regard to various medical problems and family welfare services including counselling.
- ii. Organization of preventive and promotive health activities.
- iii. To act as an educator and trainers of health personnel working under him/her.
- iv. To act as managers and leaders of the health team.

At the level of Community Health Centre (CHC) and district hospitals, the medical officers are to provide first level and second level referral support. For this they are to develop as general specialist in the broad areas of obstetrics and gynaecology, paediatrics, surgery and medicine.

At the level of medical colleges and specialised hospitals, the specialists are to provide super-specialist services as a part of the tertiary care.

C. ***As a Teacher and Educator.*** The physicians are the teachers and educators of the undergraduate and postgraduate medical students and other members of the health team. They are also informal instructors of medical and other professional colleagues and educators of their own patients and their families and the community at large in health matters including family planning and family welfare.

D. ***As a Researcher*** Although varying degrees of development in biomedical research has occurred in the country, the current and future advances would demand further development and use of new technologies for better medical care.

Very scant attention has been given so far to health services/health systems research. The main purpose of health services

research (HSR) is to help to improve the health of the people through improvement of conventional health services and other related services which contribute to health development. HSR is to be directed to better understanding of the health problems, to more rational formulation of policies and strategies, better programme planning, and more effective and efficient use of resources. It is intended for continuous tuning of health policies and practices, to bridge the wide gap between the knowledge and action, and it has to serve as the main tool for developing operational guidelines.

Although the social significance of health and population issues are generally recognised, this field has not attracted required number of investigators. The physicians participation in research particularly in areas related to improvement of health, reduction of morbidity and mortality and regulation of fertility would help in finding answers to many unresolved problems. The physicians should recognise the inter-disciplinary nature of research in the field of health and population where experts from biomedical, social, behavioural and managerial fields would make significant contributions. They should be prepared to work in cooperation with these and other disciplines.

E. As a Manager and a Leader: In order to ensure most effective utilization of the scarce resources - men, material and money, for achieving the pre-determined objectives, the physicians are to acquire managerial skills. Being a good manager alone will not suffice. He/She has to provide leadership in a much more wider context, because of the privileged position in the society the physician has considerable scope for providing leadership in the areas relevant to health development and population change. He/She should be able to provide leadership in the planning, organization, management and evaluation of the policies, strategies and programmes for health and family welfare under the following categories:

- i. Leadership in the community
- ii. Leadership in a health team
- iii. Leadership in organised health services
- i. Leadership at international level.

ROLES AND RESPONSIBILITIES OF MEDICAL EDUCATIONAL SYSTEM

As mentioned earlier, the medical education has to be geared to meet the current and anticipated future needs for medical and health care in the country. The envisaged roles and scope of medical profession for the promotion of health and family welfare programmes in the country at different levels and in different settings have also been considered. Obviously, all aspects cannot be covered during graduate medical education. The Medical Council of India (MCI) has stated that since the medical graduates have a wide choice of career opportunity, medical curriculum cannot be oriented towards providing specific types of doctors. For undertaking responsibilities of a service situation which are of varied types, it would be essential to provide adequate preservice or inservice training tailored to the needs of

services required. Nevertheless, even during basic medical education appropriate orientation and sensitisation should be possible so as to build more solid foundation enabling the physicians to take diverse types of responsibilities later on. The medical educational system has to address itself to decide how much could be covered during basic medical education keeping in view the priority areas in relation to the National Health Policy and the set national goals for achieving HFA and NRR of unity by the year 2000.

A. **Basic Professional Education.** One of the severe lacunae in medical education has been that the overall objectives and specific learning objectives have neither been clearly defined nor been communicated to the teachers or the students. The broad goals of graduate medical education in the field of health and particularly in primary health care and family welfare have to be clearly defined.

The broad goals need to be translated into learning objectives that would specify the required performance by the students leading to specific learning outcome or terminal behaviour. The learning objectives should be realistic, achievable, quantifiable and subject to a similar interpretation by different observers. Based on these learning objectives appropriate curriculum is to be developed.

The content of the curriculum and the way the information is presented are most important for trainees' acquisition in a course, and ultimately in the application of their skill in serving the beneficiaries. The curriculum must be relevant to the expected role of the medical personnel, and appropriate to local problems related to primary health care including maternal and child health and family planning, as well as to the socio-economic and cultural setting of the people. Therefore, development and use of curriculum plays a very significant role in the effectiveness of any teaching/training programme.

The quality and effectiveness of training often suffer from lack of professional skill of teachers, and lack of teaching/learning materials, teaching and educational aids etc. It is generally found that poor teachers/trainers would have negative effect on training programme. Training courses are less effective when teachers lack experience, skill and teaching abilities in the form of lesson planning, curriculum development, using new teaching/learning methodologies and field experience, and when there is lack in their knowledge and technical expertise in primary health care, MCH and family planning. Furthermore, for proper implementation of the multi-disciplinary teaching/training programmes in a medical college, proper cooperation and effective coordination among different disciplines are of utmost importance. Continuous monitoring is also essential.

B. **Post-Basic Specialized Courses:** For filling the gaps between the coverage by graduate medical education and the requirements of the medical profession for playing the roles of an organizer of health and family welfare services, a teacher and educator, a researcher and/or a manager and leader, appropriate

post-basic specialized courses may be organized by the medical colleges. These could be in the form of certificate, diploma and degree courses. Priorities may be given to the following areas: (a) Primary health care; (b) Public health; (c) Health education; and (d) MCH/Reproductive Health Care. For all these, need-based curricula are to be developed and appropriate teaching/learning opportunities are to be provided

C. Continuing Education Including In-service Training: It has been the experience that in most of the situations the basic training of health personnel including medical officers does not equip them adequately for the type of work which is expected of them in the community. Therefore, there is a crucial need for providing continuing education based on actual problems and needs of the community that would equip the workers to perform more competently in their current and future jobs with the object of increasing the efficiency of the individuals as well as the organisation. An important factor for achieving the goals set for primary health care including MCH&FP would be the ability of the individuals and of the organization to recognise and respond to the changes in advancing technology, new social policies and expectations and in the programmes for better services. There is a great need for developing a proper attitude for continuous learning, as the concept of life long education is being increasingly accepted as an indispensable supplement to basic education. The responsibility of acquiring/providing competency-based continuing education should be shared by the health care system, educational institutions, the individuals and the professional bodies. This responsibility can be shared by the medical colleges and other in-service training institutions.

The objectives of basic as well as in-service training are to help the trainee in acquiring knowledge and in developing appropriate skills and attitudes. The latter two are developed through systematic 'learning by doing' and through continued practice under supportive supervision and guidance. For planning, organization and implementation of such a comprehensive medical educational programme, there should be close collaboration between Medical Colleges, Health Services Organization and its Health Manpower Planning and Management Unit and other in-service training institutions.

CONCLUSION

The medical education has to be geared to meet the contemporary and anticipated future needs for medical and health care in the country. For any consideration of the reorientation of the medical educational system for the future, one needs to keep in view the two major goals set by the country *i.e.* (a) to achieve health for all (HFA) through primary health care approach; and (b) to achieve net reproduction unity by the year 2000 AD. For proper understanding for various dimensions of the pertinent issues, one needs to consider the basic principles and strategies for HFA, the essential components of primary health care, the supportive activities needed for successful implementation of primary health care, the means for promotion of small family norm and effective delivery of contraceptive services.

In the light of the above, the envisaged roles and scope of medical profession for the promotion of health and family welfare programmes in the country at different levels and in different setting have been considered in this presentation. In equipping the medical profession adequately for meeting these challenges, the medical educational system has to address itself to decide how much could be covered during basic medical education keeping in view the priority areas in relation to achieving national goals, and what additional inputs would be required for filling the gaps through organisation of post-basic specialised courses, and through continuing education including in-service training.

For planning, organisation and implementation of such comprehensive medical educational programme, there should be close collaboration between medical colleges, health services organisation and its manpower planning unit and other in-service training institutions.

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प्रस्तुत लेख में, देश में विभिन्न स्तरों पर तथा विभिन्न परिस्थितियों के संदर्भ में स्वास्थ्य एवं परिवार कल्याण कार्यक्रमों के विकास की दिशा में चिकित्सकीय व्यवसाय की भूमिका तथा दायित्वों पर चर्चा की गई है। सभी को स्वास्थ्य सुविधाएं प्रदान करने संबंधी चुनौतियों को पूरा करने की दिशा में, चिकित्सकीय व्यवसाय को पर्याप्त रूप से साधनसम्पन्न करने के संदर्भ में लेखक ने इस लेख में चिकित्सा-शिक्षा प्रणाली का विश्लेषण किया है, विशेष रूप से राष्ट्रीय लक्ष्यों के अनुरूप रखे गए प्राथमिकता वाले क्षेत्रों के संदर्भ में तथा प्राथमिकोत्तर विशिष्ट प्रशिक्षण पाठ्यक्रमों, सेवाकालीन प्रशिक्षण सहित सतत् शिक्षा कार्यक्रमों के आयोजन के माध्यम से अपेक्षित स्रोतों की कमी को पूरा करने के लिए आधारभूत चिकित्सा पद्धति के संदर्भ में विश्लेषण किया है। इसके अतिरिक्त मेडिकल कालेजों, स्वास्थ्य सेवा संगठनों तथा इन संगठनों की जनशक्ति योजना यूनिटों और अन्य सेवाकालीन प्रशिक्षण संस्थानों के मध्य निकटवर्ती सहयोग जैसे पक्षों पर भी इस लेख में प्रकाश डाला गया है।

A PROSPECTIVE STUDY OF LAPAROSCOPIC ACCEPTORS IN A RURAL AREA OF ALLAHABAD

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ABSTRACT

A total of 1,173 women who underwent laparoscopic sterilizations in the Chaka and Jasra blocks of Allahabad district between 1982 and 1983 were studied from the day of the operation and then followed up quarterly for a period of one year. Information on their socio-demographic set up, contraceptive behaviour, pre to post operative health status and subsequent morbidity pattern was recorded. Conclusions reached were that laparoscopic sterilization was popular in the rural areas and younger women were adopting the measure; however, the average parity continued to be between three and five. Contraceptive acceptance prior to sterilizations was very low. The major complaints reported were abdominal pain, backache, menstrual problem, leucorrhoea and weakness.

Ever since its inception, a few years ago, the method of laparoscopic sterilization for females has become very popular and the number of acceptors is increasing day by day. The prime reason for its wide acceptance is the absence of major surgery in the procedure and a brief period of convalescence. These factors facilitate women from all walks of life, and especially those from the lower socio-economic strata who can "ill afford" to spend many days away from their work, besides the ones with "operation fright"; to accept it readily. The aim of this study was to note the impact of this method on the demographic variables, the nature of the post-operative complaints and the association between the two groups of data in a rural setting, so that more and more women can accept this method without fear.

MATERIAL AND METHOD

A total of 1,173 women who underwent laparoscopic sterilizations in the Chaka and Jasra blocks of Allahabad district between 1982-83 were interviewed. The social and demographic variables, pre-operative health status, contraceptive behaviour, and the post-operative condition till the women were discharged, were

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noted on a preceded schedule. With the help of the workers who had motivated these women for sterilization were then followed up for a period of one year. Any complaint made by the women during this period was attended to by the staff of PHCs of Chaka and Jasra.

OBSERVATIONS

In the family planning camps organised at the PHCs of Chaka and Jasra, 1,173 women adopted laparoscopic sterilization. Majority of the operations were "interval sterilization", only 211 were performed post-partum and another 43 had Medical Termination of Pregnancy which was done simultaneously. The women were admitted and operated on the same day. Next morning they were discharged with the advice to come for follow-up after a week, irrespective of any complaints.

Socio-Demographic Profile: Majority of the women as shown in Table 1 were in the age group of 26-30 years (57.8%). The mean age being 29.6 years. None was below 20 years or above 41 years of age. Only 9.6 per cent were observed to be in the age group of 20-25 years. Most of the women had two male children by the age of 25 years and three by the time they were 30 years old.

Nature of the Family: About 68 per cent of the cases of laparoscopic sterilization were from joint families as compared to 31.6 per cent from nuclear families. Nature of the family and other following observations have been depicted in Table 2.

Interval between Marriage and Operation: It is evident from the Table 3 that only 7 per cent of the women had opted for sterilization within 5-9 years of marriage. The majority 53.4 per cent had been married from 10-14 years followed by those (38.2%) who had led a marital life of 15-19 years before sterilization.

Religion and Caste: Hindus constituted 97 per cent of the total and the remaining 3 per cent were Muslims. Upper caste Hindus were more 41 per cent compared to 21 per cent from the schedule caste.

Literacy Status: The women were illiterate except the 2 per cent who had education upto the primary level. When the literacy status of the husbands was considered, it was observed that 53.5 per cent were illiterate and of the rest 41.6 per cent had education upto primary level.

Occupational Status: The women were housewives mostly, and 23.7 per cent worked as labourers. The occupation of the husbands was agriculture in 40.8 per cent followed by the labourers in (36%), the rest were in business or service.

Per Capita Income: Majority of the women (67.2%) came from families with per capita income of Rs.100 a month or less. Only 11.8 per cent were living in families with per capita income per month of over Rs.200.

TABLE 1
AGE DISTRIBUTION OF ACCEPTORS

Age in years	Number	Percentage
-20	2	0.17
21-25	111	9.46
26-30	679	57.89
31-35	355	30.26
36-40	25	2.13
41 -45	1	0.09
Total	1173	100.00

TABLE 2
DISTRIBUTION OF ACCEPTORS ACCORDING TO THE NUMBER
OF CHILDREN AND MALE CHILDREN

No. of living children	No. of acceptors	Percentage	No. with male children	Percentage
None	Zero	Zero	92	7.84
One	Zero	Zero	142	12.12
Two	69	5.89	414	35.29
Three	261	22.25	339	28.90
Four	344	29.34	129	10.99
Five	256	21.80	38	3.24
Six	137	11.68	15	1.28
Seven	106	9.04	4	0.34
Total	1173	100.00	1173	100.00

TABLE 3
ACCEPTANCE OF LAPAROSCOPY IN RELATION TO SOCIAL
CORRELATES

Social Correlate	No. of Acceptors	Percentage
Type	371	31.62
Unitary	802	68.37
Joint		
Duration of married life (in years)		
0- 4	Nil	Nil
5- 9	82	6.99
10-14	626	53.37
15-19	447	38.10
20-24	18	1.54
Religion and Caste		
Hindu Upper Caste	478	40.75
Hindu Lower Caste	657	56.01
Muslims	38	3.24
<i>Literacy Status</i>	<i>No. of husbands of the acceptors percentage</i>	
Illiterate	628	53.54
Primary	488	41.60
Middle and above	57	4.86
<i>Occupation</i>		
Business	145	12.36
Agriculture	478	40.75
Labourer	422	35.98
Service	128	10.91
<i>Per Capita Income</i>		
-100	789	67.26
101-200	246	20.97
201 +	138	11.77

Children and Acceptance of Sterilization: It may be observed from Table 2 that the acceptance of sterilization at one child was zero, at two it was 5.8 per cent increasing to 22.3 per cent with three children. However, the maximum number of women 29.3 per cent had four living children and the rest between five to ten. The average number of children per couple was 4.4. When only male children were considered, it was observed that only 7.8 per cent had undergone the operation without any male issue. Majority of 35.3 per cent had two sons and 12.1 per cent at least had one male issue.

Contraception Prior to Sterilization: Out of the total 1,173 women, 82 per cent agreed that they had some knowledge of the contraceptive methods, however, only 48.5 per cent admitted past use of any. Condom had been popularly used by 43 per cent and only 5.8 per cent had an IUD inserted and removed. The rest had opted directly for sterilization.

Pre-operative Health Status of Acceptance: Haemoglobin level of 9-10 gm per cent was present in 28 per cent of the women. Twenty three women had mild cervical erosion. Women with any type of complications were asked to get the sterilization done at the hospital in the city.

Acceptors and Post-Operative Complaints: The major immediate postoperative complaints were nausea and vomiting in 6 per cent and pain in abdomen in 17 per cent. There were no instance of injury to any of the abdominal viscera nor any mortality. Fever and bleeding was noted in 2-5 per cent of the women as shown in Table 4. At one week-stitch wound abscess was noted in five cases. Fever and bleeding was present in 2-3 per cent. Other symptoms present in majority were backache, weakness and pelvic abdominal pain. At six weeks, the new symptoms to appear were menstrual problems as dysmenorrhoea, menorrhagia, or scanty menses in 15 per cent and leucorrhoea in 19 per cent of the women (Fig. 1). Burning in micturition had increased from two cases at one week to 13 cases at six weeks.

TABLE 4
SHOWING ASSOCIATION OF THE PRESENCE OR ABSENCE OF COMPLAINTS IN ACCEPTORS WITH OTHER VARIABLES

Variable	χ^2	df	P value
1.Literacy status (husband)	31.27	3	.001
2.Caste	5.11	3	.05
3 Age	5.05	2	.05
4. Occupation	9.27	3	.05
5. Parity	1.668	2	.05
6. Past Contraceptive Use	0.51	2	.05

The patients were examined and 49 women were diagnosed and treated for pelvic infection. At third month there had been a decrease in the number of women reported most of the symptoms except for leucorrhoea as its percentage increased to 17 per cent (Fig. 1). No cases with burning in micturition were reported in the sixth month. The rest of the symptoms were nearly the same except for a marginal decrease in the number of women reporting them. Pregnancy was diagnosed in five of the operated women (Fig. 1). At the ninth and the twelfth month follow up, the cases of sterilization failure rose to 7 or 0.59 per cent. The chief complaints remained as weakness or menstrual problems in 14 per cent and abdominal pain, leucorrhoea and backache in 4-8 per cent of the women. The number of lost to follow up were 182 at the end of the year and the cause of their absence was mainly change in the address. No significant pathology could be detected in many women presenting some of the complaints and they were given symptomatic treatment.

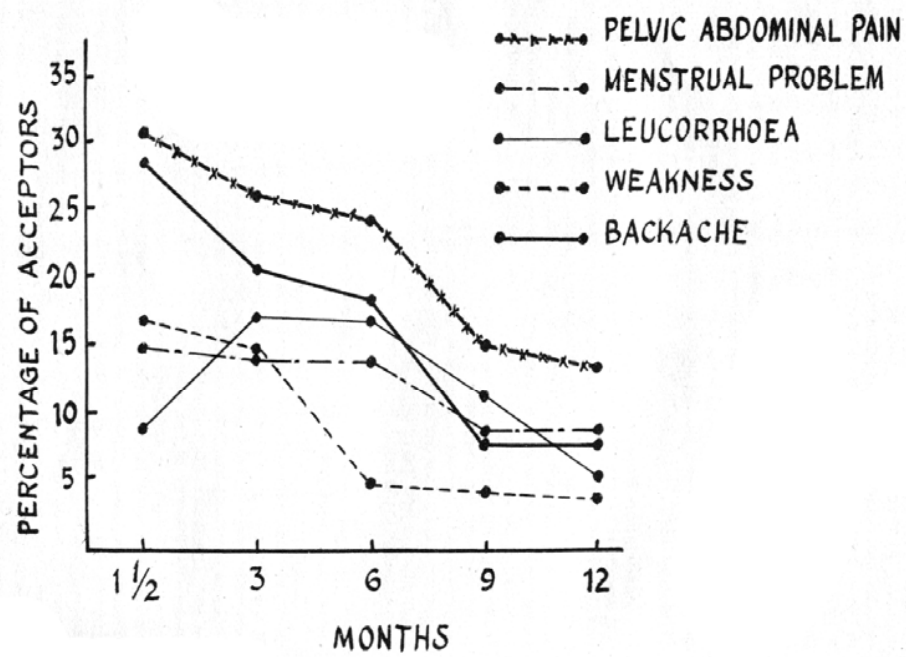
Association Between Socio-Demographic Status and Complaints.

The 991 women presented with some complaints at the end of the follow up period of one year were tested for the significance of association between some socio-demographic variables and the presence or absence of the complaints. The chi-square test was applied and no association was found between the age parity, caste, prior contraceptive use and the presence of complaints, ($P > .05$). Association between the occupation of the husband and the number of women presenting with some complaints was significant, ($P < .05$). Majority of the women presenting with the complaints belonged to the labour class and the least number was observed amongst women, with service as the occupation of their husbands. A highly significant association ($P .001$) was observed between the literacy status of the husbands and the number of women with complaints, the number decreased with increase in the educational status of the women's husbands as shown in Table 4.

DISCUSSION

Laparoscopic sterilization occupies an important position in the field of female sterilization technique. The method had gained immense popularity due to absence of any major surgical procedure and short post-operative convalescence. This is evident by the impact observed on the age structure. A light shift in the age of the acceptors towards the lower side of thirty was observed and has been shown in Table 1. This was in contrast to the higher age beyond 30 years as reported in other studies for majority of the women, who underwent tubectomy by the traditional methods. Though the age range has apparently receded, the interval between marriage and acceptance in relation to the number of living children has maintained the same picture as reported by researchers in the past like in Population Report (1981) Sathe & Bichilo (1981) and Bhattacharya & Joshi (1984). Their observations were similar to our present ones, where we found that most of the women, 53.4 per cent, had opted for tubectomy only after 10-14 years of marriage with an average number of 4.4 living children per couple (Table 2 + 3). The presence of a living male child occupies an important position still in the decision process for sterilization as only 8 per cent of the acceptors had taken the vital step without any

Fig.1: FOLLOW UP COMPLAINTS OF ACCEPTORS



son (Table 2). From amongst the rest, 12.1 per cent had only one and majority, 35.3 per cent had two. The rest 45 per cent had three or more. Our findings are in concurrence with those of Joshi *et al*⁷ where they claim that Indian couples hesitate to adopt a permanent measure until they have two live male children. However a point not to be overlooked is that women generally prefer to undergo tubectomy in their late twenties inspite of having nearly two male issues by the age of 25 years as is evident from Table 1. The role of literacy status in the decision making process was not very clear especially amongst the rural couples, because 98 per cent of the women were illiterate and in regard to their husbands literacy the figure was equally distributed amongst the illiterates and literates (Table 3) till middle school level. Similar conclusions had been reached by other workers also like Bhattacharya *et al*², Mouli & Mouli 1981⁹ and Jamshedji *et al*⁶ where they observed a positive role of education in regard to the overall contraceptive behaviour, but the statement did not hold true, when only, one acceptance of a permanent method was considered. Similarly the occupational status of the husbands (Table 3) did not appear to play a positive role, however a welcome observation by us was the presence of 23.7 per cent women labourers amongst the operated ones, giving credence to the fact that the short post-operative convalescence was a boon for the daily wage earners. Joshi *et al*⁷ had observed that urban working women opt for tubectomy much more readily than non-workers, however the nature of their job has not been clarified. Uppal (1973)¹⁶ observed 97 per cent of the acceptors to be housewives.

The use of contraceptive prior to undergoing tubectomy presented a very dismal picture as only 43 per cent couples had used condom and 5.8 per cent women had an IUD inserted, though 82 per cent had knowledge of the various methods. Lack of interest in the temporary devices especially in the rural areas and in persons with low income as in our study, has been reported even in the past by Bhattacharya *et al*², and Desandey (1980)⁵, Mouli *et al*⁹ and Jamshedji *et al*⁶. It appears that the rural couples prefer to have the desired number of offsprings and then, go in for a permanent measure, usually tubectomy, which also has a monetary incentive with it rather than incur the risk of facing the side effects of the reliable temporary devices, as oral pills or IUDs.

The post-operative morbidity pattern revealed 69 per cent with no complaints and the rest 31 per cent with one or more complaints at one week which changed to 82 per cent symptomless women at one year. Beck (1979)¹ had reported 93 per cent complaint free women after laparoscopic sterilization, while Joshi *et al*⁷ and Uppal *loc cit*¹⁶ had observed symptoms free women between 54-60 per cent amongst those who had been operated upon by the traditional method. The immediate postoperative complaints were abdominal pain and backache in majority of the women. Nausea and vomiting was observed in 6 per cent, bleeding in 2 per cent and fever in 2-4 per cent. Our figures for fever and bleeding are slightly more than those reported by Bhathena *et al.* (1985)³ and Rani (1986)¹⁵ where the values stand at .4 to 1.5 per cent, however Cole *et al*⁴ (1979) have reported 3.5 per cent cases of bleeding from studies carried out in six Latin American Countries. Problem with incision was encountered in 1.3 per cent of our women and those of Rani *loc cit*¹⁵ compared to

1.7 per cent and 2.1 per cent stated by Bhathena *loc it.* and Cole *loc c/f.* respectively. Burning in micturition was observed initially in two women but 13 women eventually had the complaint at 6 weeks and no such cases were detected after the third month. During the follow up period of one year, the chief complaints were abdominal pain, menstrual problem, leucorrhoea, backache and weakness. The number of women reporting these complaints gradually decreased with the passage of time (Fig. 1). The only problem of significance at the end of one year were irregular cycles or menorrhagia in 9 per cent of the women, without any obvious pathology. Changes in the menstrual pattern, of the women, compared to their preoperative status has been reported by many workers distributed throughout the world (Pop. Report 1985). The presence or absence of the complaints in an individual women appeared to be influenced by her socio-economic background, and the dominating factors for complaints were observed to be; husband employed as a labourer or in a petty business together with low level of education (Table 4). The repregnancy rate of 59 per cent over a period of one year, observed by us, is well within the range of figures reported in other studies (Pop. Rep. Loc. Cit.). However, efforts should be directed towards preventing these failures, though few, otherwise the rural women may become skeptical about the success of the method.

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इलाहाबाद जिले के चाका तथा जसरा ब्लाक में 1982 तथा 1983 के मध्य जिन 1173 महिलाओं ने लेपरोस्कोपिक नसबन्दी करवाई थी, उनका नसबन्दी आपरेशन के दिन से अध्ययन किया गया था तथा उसके बाद एक वर्ष तक उनकी तिमाही जांच की गई थी। इन महिलाओं की सामाजिक-जनांकिकी स्थिति, गर्भनिरोधकों के प्रयोग के प्रति इनके व्यवहार, आपरेशनपूर्व तथा आपरेशनोत्तर इनकी स्वास्थ्य स्थिति तथा उसके बाद के रूग्णता संबंधी उनकी प्रवृत्ति के बारे में सूचनाएं रिकार्ड की गई थी। इस अध्ययन से जो निष्कर्ष प्राप्त हुए थे, उससे ज्ञात हुआ है कि ग्रामीण क्षेत्रों में लेपरोस्कोपिक नसबन्दी आपरेशन लोकप्रिय हो गया था तथा युवा वर्ग की महिलाएं गर्भनिरोध की इस विधि का प्रयोग कर रही थी, किन्तु इन परिवारों में औसतन जन्म दर तीन से पांच के बीच पाई गई थी। नसबन्दी आपरेशन कराने से पहले इन महिलाओं द्वारा गर्भनिरोधकों का प्रयोग बहुत कम किया जाता था। गर्भनिरोधकों के प्रयोग के बारे में दर्ज की गई शिकायतों में पेट दर्द, कमर दर्द, रजस्राव की समस्या, श्वेतस्राव तथा कमजोरी की आदि जैसी शिकायतें मुख्यतः नोट की गई थी।

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A STUDY OF SOME FACTORS ASSOCIATED WITH DECISION MAKING AMONG MTP ACCEPTORS

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ABSTRACT

This study analyses the various factors associated with decision making for undergoing medical termination of pregnancy (MTP). The study was carried out among 88 women who had either undergone MTP or decided to undergo the procedure at Pune in two hospitals between April and September 1984. Associated factors like age of the acceptors, their social, marital and literacy status, number of living children and reasons for delay in decision making have been discussed.

In order to curb the incidence of illegal abortions by quacks culminating them in high morbidity and mortality, the medical termination of pregnancy was declared legalised in our country since April 1, 1972 when the MTP Act, 1971 came into force.

When a woman wants to terminate an unwanted pregnancy various factors are involved in the decision making. The reasons for such a decision may include pregnancy before marriage or due to rape, incest or adultery or at times for fertility control either to limit family size or for spacing of children. Further, the reasons for fertility control may include her health, family income, unemployment, inadequate housing, interference with her education, training, etc.

To be willing to interrupt her own pregnancy, a woman has to be highly motivated. Further, quicker the decision, better it is for the woman, to prevent the complications of abortion and its associated morbidity and mortality. The factors that can influence the promptness in decision making may be many and complex. Therefore, if these factors are known, MTP cannot only become technically easier but also safer, if done at earlier stages of pregnancy. Keeping these aspects in mind, the present study was undertaken to bring out the factors associated with the time interval between knowledge of pregnancy and decision to undergo medical termination of pregnancy.

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MATERIAL AND METHODS

The study was carried out in Obstetrics and Gynaecology Out-patient Departments of Command Hospital, Pune and Sonawane Maternity Hospital, Pune during April-September 1984. The study population comprised 88 civilian women who had either already undergone MTP or decided to undergo the same.

The information was recorded on a schedule using personal interview technique. After establishing the initial rapport the respondents were interviewed alone. During the interview, husband or relative was not permitted. Attimes, the help of local nurse or lady doctor was sought to bridge the communication gap in a few cases who knew only Marathi. By and large, it can be said that the respondents were frank and cooperative.

FINDINGS AND DISCUSSION

Socio-demographic Characteristics of Respondents

The age distribution of respondents has been shown in Table 1. It is seen from this table that 65.91 per cent of respondents belonged to the age group 20-29 years. Similar findings have been reported by the author of other studies. A few other studies, however, mentioned that although the majority of cases belonged to 20-29 years of age group, but constituted about 55 per cent of total MTP cases. Proportion of teenagers (11 36%) in the present study was higher than that reported by all India figures for MTP cases. Also, in the present study, three teenagers were less than 15 years of age and were not even in the conventional reproductive age group of 15-44 years.

Out of 88 respondents, 76 (86.36%) were married and 8 (9.09%) unmarried. Widows and separated women constituted 3 (3.41%) and 1 (1.14%) of total respondents respectively. Similar findings have been reported.in various other studies. Yet in another study 6.9 per cent of MTP cases were reported of unmarried mothers while according to all India figures for MTP cases, 5.8 per cent were unmarried^{4,5}. However, some workers have reported that unmarried subjects constituted more than 10 per cent of total respondents.

Decision Time and its Associated Factors

Promptness in taking the decision: Distribution of respondents according to time taken for making early/delayed decision about MTP has been shown in Table 2. It is obvious from the table that majority of the respondents (70.45%) were quick in taking an early decision (within a week's time after the confirmation of the pregnancy) to go in for MTP. However, 26 respondents (29.55%) made a delayed decision (decision time of more than one week). Similar findings were also reported in other study in which 65% of respondents made their decision to undergo MTP

TABLE 1
DISTRIBUTION OF RESPONDENTS BY AGE

Age in years	Number	Percentage
10-14	3	3.41
15-19	7	7.95
20-24	30	34.09
25-29	28	31.82
30-34	14	15.91
35-39	5	5.68
40 and above	1	1.14
Total	88	100.00

TABLE 2
DISTRIBUTION OF RESPONDENTS BY DECISION TIME

Decision time (in weeks)	Number	Percentage
-1	62	70.45
-2	13	14.77
-3	3	3.41
-4	5	5.68
-5	1	1.14
-6 and above	4	4.55
Total	88	100.00

immediately on knowing about their pregnancy. However, there was no mention of the time taken by the remaining 32 per cent. On the other hand, as per other study It was found that only 26.4 per cent made decision about MTP within one week.

Decision maker for MTP: Distribution of respondents according to the decision maker has been given in Table 3. From the table it can be noted that in majority of cases (38.64%), the decision was made mutually by the husband and wife. In case of 33 respondents (37.50%), the decision was taken by the husbands only. Only in 13 cases (14.77%), the decision was made by the respondents themselves and this group specifically included widows/separated women. For eight unmarried respondents (9.09%), the decision was made by the parents. However, in other study the husband was found to be the predominant decision maker (in 43.3% cases), followed by husband and wife mutually (in 32.6% cases).

Age of respondents and decision making: The relationship between age of respondents and time taken for decision making has been shown in Table 4. It is evident from the table, that a higher percentage of teenagers (80%), made a delayed decision as compared to other age groups. This difference was found to be statistically significant.

Marital status and decision making: Distribution of respondents according to their marital status and time taken for decision making has been presented in Table 5. It is seen from the table that a higher proportion of 'other than married' woman made a delayed decision as compared to the married ones. This difference is found to be statistically significant. Similar findings have also been reported by other researchers in their studies.

Religion and decision making: Table 6 clearly shows the relationship between religion of the respondents and the time taken for the decision making. It can be observed from the table that a higher percentage of Hindu women made a delayed decision as compared to non-Hindu women. However, this difference was not found to be statistically significant.

Occupation and decision making: The relationship between time taken for decision making and occupation of the respondents has been shown in Table 7. It is obvious that a higher percentage of housewives (34.38%) made a delayed decision as compared to others. This difference was, however, not statistically significant.

Educational status and decision making: The relationship between decision making time and educational status of the respondents has been presented in Table 8. The table shows that a greater proportion of illiterates (46.43%) made a delayed decision as compared to literate individuals (21.67%). This difference was found to be statistically significant.

Social class and decision making: The relationship between decision making

TABLE 3
DISTRIBUTION OF RESPONDENTS BY DECISION MAKER

Decision maker for MTP	Number	Percentage
Husband	33	37.50
Self		14.77
Mutuallyby	13	38.64
husband	34	
and wife		9.09
Parents	8	
Total	88	100.00

TABLE 4
DECISION MAKING ACCORDING TO AGE OF RESPONDENTS

Age in years	Decision Making		Total and Percentage
	Early	Delayed	
10-14	-	3(100.00%)	3(100)
15-19	2(28.57%)	5 (71.43%)	7 (100)
20-24	23(76.67%)	7 (23.33%)	30(100)
25-29	22 (78.57%)	6 (21.43%)	28(100)
30-34	10 (71.43%)	4(28.57%)	14(100)
35-39	4 (80.00%)	1(20.00%)	5(100)
40 and above	1 (100.00%)	-	1(100)
Total	62(70.45%)	26 (29.55%)	88(100)
χ^2 20; df 1; P 0.001			

TABLE 5
DECISION MAKING ACCORDING TO MARITAL STATUS OF
RESPONDENTS

Marital status	Decision Making		Total and Percentage
	Early	Delayed	
Married	58(76.32%)	18 (23.68%)	76(100)
Unmarried	2(25.00%)	6 (75.00%)	8(100)
Widows	1 (33.33%)	2 (67.67%)	3(100)
Separated	1 (100.00%)	-	1 (100)
Total	62 (70.45%)	26 (29.55%)	88(100)

$X^2 = 7.25$; $df = 1$; $p < 0.01$

TABLE 6
DECISION MAKING ACCORDING TO RELIGION OF
RESPONDENTS

Religion	Decision Making		Total and Percentage
	Early	Delayed	
Hindu	50(68.49%)	23(31.51%)	73(100)
Muslim	5(71.43%)	2 (28.57%)	7(100)
Christian	3 (75.00%)	1 (25.00%)	4(100)
Others	4(100.00%)	-	4(100)
Total	62(70.45%)	26(29.55%)	88 (100)

$X^2 = 0.34$; $df = 1$; $p < 0.05$

TABLE 7
DECISION MAKING ACCORDING TO OCCUPATION OF
RESPONDENTS

Occupation	Decision Making		Total and Percentage
	Early	Delayed	
Housewife	42 (65.62%)	22 (34.38%)	64 (100)
Service	11 (91.67%)	1 (8.33%)	12 (100)
Business	3 (100.00%)		3 (100)
Miscellaneous	6 (66.67%)	3 (3.33%)	9 (100)
Total	62 (70.45%)	26 (29.55%)	88 (100)
$X^2 = 2.63;$ $df = 1;$ $p < 0.05$			

TABLE 8
DECISION MAKING ACCORDING TO EDUCATIONAL
STATUS

Educational status	Decision Making		Total and Percentage
	Early	Delayed	
Illiterate	15 (53.57%)	13(46.43%)	28(100)
Literate	47(78.33%)	13(21.67%)	60 (100)
Total	62 (70.45%)	26 (29.55%)	88 (100)
$X^2 = 5.62;$ $df = 1;$ $p < 0.05$			

and social class of the respondents as per Prasad's classification has been shown in Table 9. It is evident from the table that a higher percentage of respondents belonging to social class III and below made a delayed decisions compared to those who were from social class I and II. The difference was found to be statistically significant.

Number of living children and decision making: The relationship between number of living children and decision making time has been depicted in Table 10. It is obvious from the table that a higher percentage of subjects having two or less living children made a delayed decision as compared to those with three or more living children. This difference was found to be statistically significant.

Reasons for delay in decision making: On ascertaining from 26 respondents who made delayed decision for MTP, the reasons for delay were found to be as under:

- Ignorance of MTP facilities	8
- Fear of disclosing pregnancy to parents specially in unmarried subjects	7
- Preoccupation with other pressing household problems	4
- Fear of surgical operation	2
- Uncertainty about continuing the pregnancy	2
- Contemplating marriage with consort	1
- No specific reason	2

A WHO report almost similar reasons for delay in decision making has been reported.

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TABLE 9
DECISION MAKING ACCORDING TO SOCIAL CLASS

Social class	Decision Making		Total and Percentage
	Early	Delayed	
I	14(93.33%)	1(6.67%)	15(100)
II	24(80.00%)	6(20.00%)	30(100)
III	16(53.33%)	14(46.67%)	30(100)
IV	3 (50.00%)	3(50.00%)	6(100)
V	2 (100.00%)	-	2 (100)
Total	59(71.08%)	24(28.92%)	83(100.00%)

$X^2 = 8.54;$ $df = 1;$ $p < 0.005$

TABLE 10
DECISION MAKING AND NUMBER OF LIVING CHILDREN

Number of living children	Decision Making		Total and Percentage
	Early No. Percentage	Delayed No. Percentage	
0	-	2 (100.00%)	2(100)
1	10 (66.67%)	5 (33.33%)	15(100)
2	25(73.52%)	9(26.48%)	34(100)
3	18(85.71%)	3(14.29%)	21.(100)
4	4(80.00%)	1(20.00%)	5(100)
5and above	3 (100.00%)	-	3(100)
Total	60(75.00%)	20(25.00%)	80(100)

$X^2 = 4.69;$ $df= 1;$ $p < 0.05$

महिलाओं के आयु पक्ष, उनकी सामाजिक, वैवाहिक तथा साक्षरता स्थिति, उनके जीवित बच्चों की संख्या तथा चिकित्सकीय गर्भपात कराने के बारे में निर्णय लेने में हुई देरी के कारण आदि जैसे पक्षों पर चर्चा की गई है।

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THE EVALUATION OF SUPPLEMENTARY NUTRITION COMPONENT OF ICDS - A STUDY AT BLOCK BERI, ROHTAK, HARYANA

Ajay Kumar Sood* and V.P. Sood*

ABSTRACT

The evaluation of the effect of supplementary nutrition component, under ICDS Scheme at Block Beri was carried out by the analysis of records of 1980-1987. In 1980, the ICDS Scheme was introduced in the block. The beneficiaries awareness and perception of the component was studied by interviewing 570 beneficiaries, selected at random, throughout the block. The improvement in the nutritional status of the children of the Block, over the years (1980-1987) could not be attributed to the supplementary feeds provided in the block under the ICDS Scheme.

The Integrated Child Development Services (ICDS) Scheme, which in a phased manner, is to cover the entire country, is a huge project in terms of resource investment. The provision of supplementary feeds for children, pregnant and lactating women, is one of its major activities and costs about 12.6 lakh per year per block. Under the scheme, supplementary feeds are provided to infants (200 K. cal. and 8-10 gms. proteins per day), children (300 K. cal. and 15 gms. proteins per day), and to pregnant women in the last trimester, lactating women upto six month of lactation (500 K. cal. and 25 gms. proteins per day) 300 days in a year, so as to reduce the widespread malnutrition in the group. The ICDS Scheme with a package of services is expected to do better than the previous supplementary nutrition programmes.

The study, presented the tests for this hypothesis and is based on the data collected from the ICDS block, Beri, Rohtak, Haryana, where the scheme has been operational since 1979-80.

MATERIAL AND METHODS

The block Beri, has a population of 1,20,899 (1986-87), distributed over 32 villages covered by 103, Anganwaris. The Rural Health Training Centre, Dighal, carries out health activities in the block, through its 18 sub-centres, 33 multipurpose health workers, five field supervisors and five medical officers. The Child Development Project Officer (CDPO), stationed at the training centre and supported by five field supervisors, ICDS. The dominant population in the area was of Jats, with agriculture as a primary occupation.

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The performance of the work of the Anganwari was recorded on the monthly progress report and one copy of the compiled report for the block was kept at the headquarter at Dighal. The earliest available records of June 1980 and the latest available records, *i.e.* February 1987, were studied. Data pertaining to beneficiaries of supplementary nutrition and their nutritional status were analysed and compared.

The information regarding the utilisation of the feeds by the beneficiaries was also collected and is stated as under:

Fourty-three Anganwaris were selected at random in the block. In each selected Anganwari, the list of children, pregnant and lactating women receiving the feeds from the Anganwari was prepared. The mothers were interviewed on a semi-structured, open ended, questionnaire schedule. In all 392 mothers whose children received the supplementary feeds, and 178 pregnant lactating women beneficiaries were interviewed and their responses were standardised.

RESULTS

The distribution of the beneficiaries for supplementary nutrition in the block in the year 1980 and 1987 is given in Table 1. The rate of registration of beneficiaries was 53.3 per cent and 63.2 per cent in 1980 and 1987 respectively. However, the percentage of beneficiaries actually receiving supplements was 43.3 per cent in 1980 and 51.1 per cent in 1987 as has been shown in Table 1.

The nutritional status of the children in the block in these two years has been shown in Table 2. Undernutrition among the children of the block decreased from 66.5 per cent in 1980 to 53.3 per cent in 1987.

The different feeds for almost all the children below 12 months of age were being shared; whereas for 12 to 18 months age group child beneficiaries, the sharing was nearly 85 per cent; and for the children 18 to 24 months it was nearly 70 per cent as shown in Table 3.

Nearly three-fourth of the women beneficiaries in the study population of the block shared the feeds received from the Anganwaris with their children.

DISCUSSION

The nutritional status of the children of the block Beri, improved over the period between 1980 and 1987, as well as the severe malnutrition diminished significantly as has been shown in Table 1. The expenditure on the feeds supplements for the block Beri during these seven years was nearly 56.8 lakh. Can the improvement in nutritional status of children be attributed to the ICDS Scheme operational in the block during these years? The evaluation of the data shows that nearly half of the beneficiaries did not receive the supplementary feeds from the Anganwaris. Even those beneficiaries who received the feeds, shared these with other non-

TABLE 1
DISTRIBUTION OF BENEFICIARIES SUPPLEMENTARY
NUTRITION IN 1980* AND 1987 IN ICDS BLOCK BERI, ROHTAK

In the area	Total Number		Beneficiaries Registered at Anganwari Percentage		Actually receiving supplement Percentage	
	1980	1987	1980	1987	1980	1987
1. Pregnant women (in last trimester)	1467	1041	84.7	93.2	51.6	46.9
2. Lactating women (six month)	1652	1901	80.6	100.0	46.4	54.4
3. Children (six months to 3 year excluding grade iii and iv)	6770	7655	38.2	62.7	31.4	40.7
4. Children (3 Year to 5 year excluding grade iii and iv)	7899	8457	59.5	64.2	48.4	39.2
2. Children (Grade iii and iv)	1270	74	82.9	95.9	70.0	74.3
Total	19058	19128	57.3	63.2	43.3	51.1

*Data records as available at the ICDS Headquarters, Dighal.

TABLE 2
DISTRIBUTION OF THE CHILDREN SIX MONTHS TO FIVE
YEARS OF BLOCK BERI IN 1980 AND 1987

Children	Normal	Nutritional Status			
		I	II	III	IV
1980 n= 10543	33.5	26.9	19.1	5.9	5.6
1987 n = 18105	46.7	36.3	16.5	0.45	0.05

TABLE 3
SHARING OF THE FEEDS BY THE CHILD BENEFICIARIES OF
THE BLOCK BERI

Age in Months	Food items distributed at the Anganwari					
	Soyabean	Moong	Khichri	Gram* Ground Nut	Panjiri	Bakli* Wheat
6-12	100.0	100.0	99.5	100.0	100.0	100.0
12-18	92.4	70.8	84.9	95.2	84.9	95.4
18-24	79.6	44.1	52.9	83.0	64.4	82.1

*Given as parched grams.

**Local food preparation prepared by boiling wheat in water and adding 'gur', jaggary.

beneficiaries, and the feeds thus did not act as supplement as has been shown in Table 3. So, these supplementary feeds cannot be attributed to the improvement in nutritional status in the study population. The possible factors leading to better nutritional status could be the general improvement in the socio-economic status of the masses in the area due to developmental activities, better irrigation facilities and employment opportunities over the years.

Most of the studies carried out earlier have compared the nutritional status of beneficiaries in ICDS areas with non-ICDS areas, and have overlooked the fact that the resource investment in terms of money, material and manpower, is different in the two settings and so the results are not comparable. The improved nutritional status of ICDS area over three year period was to the package of services and not to the supplementary feeds'. High rates for under-registration of beneficiaries for supplementary nutrition have been reported in other studies. The other researchers have also correlated improvement in nutritional status of children with the improvement in the socio-economic and literacy level of the communities³. The importance of health education, sanitation and economic status for improvement in nutrition among the children were further emphasised.

The policy of providing the feeds at the Anganwaris needs to be reviewed. The component was expected to attract the beneficiaries and make them available at the Anganwaris for other services, but it appears that the scheme has overshadowed the other important activities and for the masses in general, Anganwaris have become a sort of food distribution centres, where food pilferages continue to occur.

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A STUDY OF ECG UTILISATION AND WORKLOAD IN AIIMS HOSPITAL

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ABSTRACT

There are 816 beds including 65 beds in the paying wards of AIIMS Hospital. ECG workload for OPD and indoor for the last five years was studied to find out the growth and its relationship to inpatients treated during the same period. It is observed that workload has been increasing at the rate of 10 per cent per year and has doubled during the last ten years. The manpower and the machines have remained the same with only little modifications.

There is hardly any department, speciality or a unit in the hospital which has not utilised the ECG one day or the other either for diagnosis or for the management of other type of cases ruling out any cardiac illness. Almost every patient in the cardiology ward and Cardiothoracic and Vascular Surgery (CTVS) ward is sent for ECG. Every case in CCU and post operative CTVS ward required an ECG daily or sometimes twice daily. Every case above certain age is sent for preoperative ECG. The ECG, therefore, has become almost indispensable for certain type of cases.

Contribution of ECG to the diagnosis and treatment of all sorts of patients in clinical as well as epidemiological studies, for men in other space, for sports medicine, and in other fields is well known. Modern medicine would certainly suffer if ECG were to be removed from it. However, the clinical ECG can be no better than the main interpreting the tracing. In the hands of a trained interpreter the ECG, is a wonderful clinical tool, but if it comes in the hands of the untrained one it becomes a dangerous weapon. Careful, methodical training in ECG is a must and be disseminated to all the concerned to support and supplement the clinical study of the patients.

LITERATURE OF REVIEW

ECG provides unique information concerning the heart and ranks high as a test in its clinical evaluation, but it has not been accepted as an outstanding screening for heart diseases. Primarily, it lacks sensitivity. In 1965 multiphasic screening of 5,795 volunteers from Philadelphia area was reported¹. Approximately 20 per cent ECGs were abnormal or on borderline. Despite the lack of sensitivity it is felt that ECG deserves wider application in screening. It processes a reasonable degree of specificity in that 85 per cent to 90 per cent of normal hearts so classified. It is more

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efficient than any other single test for heart disease detection. Screening may be done in connection with employment, with life insurance, before operations and for other defensive reasons, and as part of a routine medical examination where it is considered to be beneficial. ECGs are also recorded for the assessment of severity of disease, besides, diagnosis, for monitoring disease progress both acutely within one hospital admission, and long term perhaps over decades. Most of the hospitals reported a steady increase in volume of ECGs recordings year after year and similar changes are no doubt occurring in domiciliary and health care practice.

Certain misconceptions are sometimes encountered regarding the function served by ECG in the diagnosis of heart disease. These range from the opinion that it is of little value to the belief that the ECG is the final court for deciding the presence or absence of heart disease. Somewhere between these two views lies the truth. The ECG without all the clinical data is rarely of great value. A cardiac study without an ECG is not complete or thorough. Not infrequently, the ECG will indicate the presence of cardiac disease when the entire clinical study is otherwise normal diagnosis³. The ECG does not indicate the prognosis. The cardiac prognosis should be made by the clinician who examines both the ECG and the patient. Remember that patient may have a normal ECG and still have serious cardiac disease. On the other hand, if the tracing is definitely abnormal, the patient has cardiac disease, regardless of all other clinical data. ECG is especially useful in: (a) Determining the cardiac mechanism; (b) Indicating the presence of myocardial change, in particular, myocardial death resulting from coronary occlusion; (c) Indicating the presence of myocardial injury and ischaemia, as in agina pectoris; (d) Showing the effect of drugs, such as digitalis and its derivatives; (e) Showing the presence of right or left ventricular hypertrophy; (f) Presenting evidence of defects in the conduction of impulses in the heart; (g) Indicating myocardial disease of general nature; (h) Establishing an etiologic, anatomic and physiologic cardiac diagnosis and prognosis when considered alongwith the other clinical data; and (i) Aiding in the treatment of cardiac disease.

No cardiac examination in this sophisticated age can be regarded as complete without an ECG⁴. ECG is a most suitable tool to the general practitioner (GP) provided he appreciates the limitation of the technique and does not hesitate to seek advice when in doubt. Three suggestions were given for recording and reporting of ECG for GP: (i) refer to cardiologist; (ii) have own ECG machine; and (iii) hospital based ECG service⁵. Reports of similar service that had been operating in Exeter for ten years⁶. The ECGs from the patients of GPs recorded over the two years period were compared diagnostically with the sample of ECGs from OPD. The service was found every useful and volume of work has increased with the passing of years also report of an ECGs service for patients referred by GPs by the department of cardiology at Middle Sex Hospital. The majority requests for help in elucidating the cause of the chest pain and in many cases (usually of left chest pain) the ECG was requested for the purpose of reassurance. Analysis of these results showthat such a service is of value, both in the confirmation and assessment of existing heart disease and in the demonstration of unsuspected lesions. Overall incidence of abnormality (36 per cent - 1075) compares favourably with that of 33 per cent in a survey of 500 unselected tracings requested by all departments, except cardiology. Both the groups contained many requests of a routine nature, but the similarity was striking. In another

report analysis of 4,036 ECGs performed for GPs during 1963-67 has been made⁷. In this report 69 per cent of ECG reports were normal, males showing a slightly higher percentage of normality than females. Chest pain and angina accounted for 63 per cent of the reference but only 29 per cent of the former group and 43 per cent of angina group showed ECG abnormality. ECGs have been available on request to GPs for the last 45 years at Christchurch and Princess Margaret Hospitals.

According to another researcher over the past few years, the use of ECG has increased radically in GP and while some use hospital departments, many, especially those in group practice use their own machines and further he opined that the preservation of records was very essential.

The Medical Cardiology Department of the Glasgow Royal Infirmary initiated an ECG service to which outpatients could be directly referred by GPs. Four appointments were given for each morning within 2-3 days of request. Each ECG was reported by consultant cardiologist before the patient was allowed to leave the department. Two hundred ninety six patients were referred in 1966 and 758 in 1967 considerably more male than females (339). Approximately 8 per cent patients failed to attend. Over 100 GPs used the service. Authors of another study felt that ECG is of value to GP in four ways: (a) as an aid in diagnosis; (b) as a therapeutic weapon; (c) as a guide to prognosis; and (d) as a personal stimulus. On the other hand-, a researcher said that ECG is of no use in GP, health centre or college hospital. In 1977, a scientist carried out a study of ECG recordings in emergency during home visits since the battery driven portable ECG instruments had become available. There was no technical difficulty as regards the use of ECG machine. A 12 lead recording was usually obtained within 10-15 minutes. Forty per cent of the ECGs were normal. The ECG taken during home visits lead to a new diagnosis or different management of the patients. ECG supported about 60 per cent of the diagnosis. However, this confirmation was considered to be of little value and did not suggest that a portable ECG instrument should be available during emergency calls for home visits.

MATERIALS AND METHODS

To find out the daily, monthly and annual workload in AIIMS Hospital all the ECG registers were examined in detail alongwith the Institute Annual Reports and the monthly abstracts from medical records. This exercise was carried out to find the workload of the hospital and to analyse any relation it had with the ECG work.

OBSERVATION AND DISCUSSION

OPD

Since its inception, ECG services were available in the OPD. Upto 1964, 16,000

TABLE 1
SHOWING THE OPD ECG LOAD BETWEEN 1975-79

S.No.	Year	Annual ECGs	Average ECGs per month	Average per working day	Percentage growth
1.	1975	7061	588	24	13.2
2.	1976	7826	652	26	10.8
3.	1977	8994	750	30	14.9
4.	1978	10704	892	36	19.0
5.	1979	12508	1042	42	16.8
Total		47093			
Average		9418	785 per year	31	

TABLE 2
**SHOWING ECG WORKLOAD VIZ.-A-VIZ. OPD ATTENDANCE FOR
THE PERIOD 1980-86**

S. No	Year	OPD Attendance	ECGs performed	Average of ECG per month	Average No. of ECG per day	No. of patients attending OPD per ECG
1.	1980	596021	11735	973	39	51
2.	1981	643507	13188	1099	44	49
3.	1982	725105	12878	1073	43	56
4.	1983	801842	5872*	489	20	126*
5.	1984	854793	6382	532	21	134
6.	1985		7102	592	24	
7.	1986	N/A	7771	648	26	-

*Cardiology clinic shifted to C.N. Centre

TABLE 3
**SHOWING THE AVERAGE DAILY ATTENDANCE OF MOPD &
CARDIOLOGY VIZ.-A-VIZ. ECGs PERFORMED**

S.No.	Year	Average No. of Patients attending MOPD	Average No. of Patients attending cardiology clinic	No. of MOPD Patients per ECG	No. of Cardiology Patients per ECG	No. of Combined Medical and Cardiology patients per ECG
1.	1980	243	80	6.3	2	8.3
2.	1981	235	97	5.2	2.2	7.5
3.	1982	278	103	6.5	2.4	8.9
4.	1983	315	Cardiac clinic shifted to CN Centre	13.9	-	-
5.	1984	310		14.8	-	-
6.	1985	380		15.8	-	-
7.	1986	N/A		-	-	-

ECGs were performed and same numbers in another five years. Upto 1974, another 42,000 ECGs had been done in OPD alone. Whereas in 1965 only 2,000 ECGs were carried out with an average of 175 per month and approximately seven per day (excluding holidays) in 1974, 8,000 ECGs were performed *i.e.* four times more with an average of 700 per month and 27 per day which were almost 20 per cent less than 1973 figures (maximum during the 1964-74 decade) of 9,700 per year, 800 per month and 32 per day. Between 1975-79 almost 47,000 ECGs were done with an average of 785 per month and 31 per day and were just 12 per cent more than the previous decade. The details of the ECGs performed between 1975-79 have been given in Table 1. The ECGs performed during the period 1981 -86 are given in Table 2 and 3 along with the OPD attendance.

It may be noticed from the Table 2 and 3 that the number of ECGs performed in 1983 were half of that of 1982 because the Cardiac Clinic shifted to C.N. Centre in February 1983 (the ECGs performed for cardiac clinic were not included in the 1983 figures). It shows that 50 per cent of the ECGs were performed exclusively for cardiac patients. When cardiac patients were included almost every 50th patient has an ECG in the OPD and if cardiac patients were excluded then every 130th patient had an ECG in OPD. It can be said that one per cent of the patients attending an OPD excluding cardiac patients) will require an ECG otherwise two per cent (if cardiac patients were also included). The workload in ECG also goes on increasing proportionately along with the OPD attendance. There was a gradual increase in ECGs performed between 1975 and 1979 but subsequently it was stabilised. For each ECG taken there were 14-16 MOPD patients and 2-3 cardiac patients as shown in Table 3. However, this statement may not be true for other hospitals and under different circumstances. Daily workload since 1979 was examined and analysed, it was observed that workload was more on Mondays, Wednesdays and Fridays (being cardiac clinic days) than any other day and the workload was less on Tuesdays and Saturdays (being half days). The minimum and maximum number of ECGs performed on any day are given as under year wise:

S.No.	Year	Maximum	Day	Minimum	Day
1.	1979	84	Wednesday	2	Thursday
2.	1980	94	Wednesday	3	Saturday
3.	1981	89	Wednesday	7	Saturday
4.	1982	90	Monday	6	Thursday
5.	1983*	36	Monday	5	Tuesday
6.	1984	40	Monday	10	Tuesday
7.	1985	40	Wednesday	10	Saturday
8.	1986	46	Friday	9	Saturday

*Cardiac clinic shifted to C.N. Centre.

Between 1983-86 the workload practically same on all days except that on Tuesday and Saturday, being half days (there being no afternoon clinics), it was marginally less. Further, on examination of the monthly workload for the last five year (1982-86) no monthly or seasonal variations could be found. Pattern of workload

was generally the same during all these years. The only factor effecting the daily variation besides half days were the strikes, electricity breakdown (2-3 times a year) and the breakdown of machines (6-8 times a year).

The ECGs performed during 1985 and 1986 were compared to the OPD attendance and the MOPD patients have been shown in Table 4.

On comparison, the number of patients per ECG performed it was observed that the figures for medicine patients compare favourably for 1985 and 1986 and on an average one ECG was performed for ten new patients visiting the OPD. Contrary to this, there is a marked difference when it was compared with the number of total patients per ECG performed. For 1985 on an average it was 56 (with an average of 46-70) and in 1986 till September it was 50 (with a range of 39-40). It would be safe to expect to perform approximately one ECG for 50-56 new patients visiting the OPD.

In C.N. Centre, 43,479 ECGs were performed upto 31 st October, 1986 which is approximately 4,300 per month and almost 175 per day (excluding holidays). These figures comes to about 45 per cent more than the combined ECG workload of AIIMS Hospital and ECG services (both indoor and outdoor).

INDOOR ECG

Till 1974, 74,000 ECGs had been performed. The workload of ECG for the period 1975-79 shows that almost 79,000 ECGs were done in five years which comes to about 16,000 per year 1,300 per month and an average 43 per day. The ECGs performed increased from 11,600 in 1975 to 20,175 in 1979 *[i.e.* 20 per cent per year except a small drop in 1978).

The workload of ECG during the period 1980 to 1986 has been given in table 5 and has been compared to the hospital admissions during that period.

On examination of Table 5 and hospital statistics from the Institute annual reports it was observed that there had been a gradual increase in the number of patients treated including those of medicine and cardiology (including CTVS) which was the main reason for the increase in the ECGs performed. However, in respect of medicine patients there had been a fall in 1985 but ECG work continued to increase. Annual growth rate of total patients treated varied from 2 per cent to 12.6 per cent and that of ECGs between 3.6 per cent to 12.8 per cent except with a slight fall in 1984. On an average there were 11 per cent medicine patients, 5.2 per cent cardiology and 2.2 per cent CTVS amongst the total patients treated. During 1980-1986, 1,47,000 ECGs were taken (on an average 21,000 per annum, 1,750 per month and 58 per day) which is slightly less than the total ECGs done (1,53,000) till 1979 (20 years period). It shows the tremendous increase in ECG utilisation in this hospital during the past 27 years or so. As per 1986 figures it was noticed that on an average almost 80 ECGs were performed daily (2,400 per month).

Detailed analysis of data for the months of January 1985 and 1986 was carried

TABLE 4
COMPARISON OF ECG WORKLOAD WITH OPD WORKLOAD OF
NEW PATIENTS DURING 1985-86*

S.No.	Month	MOPD Patients	Total OPD patients (Excl.casualty)	ECGs performed	No. of patients per ECG performed Medical	Total
1985						
1.	January	4490	29075	69	7.4	47.7
2.	February	5071	28957	625	8.1	46.3
3.	March	5970	33909	678	8.80	50.0
4.	April	6503	33557	526	12.3	63.8
5.	May	5269	30950	491	10.7	63.0
6.	June	5857	33105	562	10.4	58.9
7.	July	7918	41258	694	11.4	59.5
8.	August	7380	40256	574	12.8	70.1
9.	September	7059	35485	572	12.3	62.0
10.	October	6339	33179	587	10.80	56.5
11.	November	5346	30151	587	9.1	51.4
12.	December	5267	29144	597	8.8	48.8
Grand Total		72469	399025	7102	10.2 (Average)	56.2 (Average)
1986						
13.	January	5748	32759	731	7.9	44.8
14.	February	5381	26451	679	7.9	39.0
15.	March	5994	29216	668	9.0	43.7
16.	April	6522	31200	660	9.9	47.3
17.	May	6405	32140	573	11.2	56.1
18.	June	6587	31482	495	13.3	63.6
19.	July	7533	37259	618	12.2	60.3
20.	August	6515	32002	607	10.7	52.7
21.	September	7152	34755	668	10.7	52.0
Grand Total		57837	287264	5699	10.0 (Average)	50.4 (Average)

TABLE 5
ECGs PERFORMED VIZ-A-VIZ ADMISSIONS DURING 1980-1986

S.No.	Year	Medicine (M)	Cardiology (incl. CTVS) (C&CT)	Total (T)	No. of ECG performed	No. of ECG per patient"		
						M	C&CT	T
1.	1980	3253	1963	28472	20949	6.4	10.7	0.7
2.	1981	3458	2346	32069	22755	6.6	9.7	0.7
3.	1982	3617	2394	33935	24832	6.8	10.4	0.7
4.	1983	3830	2588	34637	25723	6.7	99	0.7
5.	1984	4374	2738	36412	25623	5.6	9.4	0.7
6.	1985	3878	3003	37717	27085	7.0	9.0	0.7
Average		3735	1760					
		(11% of total)	(5.2% of total)	33874	24495	6.5	9.8	0.7

*It does not indicate the No. of ECGs performed for each medicine or cardiology patients but the comparison between total No. of ECGs and the medicine/cardiology patients.

out and has been shown in Table 6. It may be seen from the table 6 that 40 per cent of the ECGs have been performed in the morning shift, 28 per cent in the evening shift and 32 per cent in the night shifts. Maximum ECGs performed in each shift were 51.37 and 34 respectively and on an average 31.32 and 25 *i.e.* the maximum workload for the one technician. There were more males in January 1985 than in January 1986 and it can be said that there were approximately 60 per cent males and 40 per cent females. Similarly, almost 60 per cent were above 40 years and only approximately 5.5 per cent were below ten years. The percentage of age goes on increasing with each age group. Approximately 1 /3 (35 per cent) patients belong to cardiology and 1/6(17 per cent) to medicine which was little more than half of the total patients. In casualty about 19 per cent ECGs were performed. Figures for 1985 and 1986 compare favourably with what has been shown for January 1985 and 1986.

To find out the monthly pattern of ECG load the same was compared for a period 1975-86 and a graphical representation has been given in figure 1 for the period 1981 -86. From the figures it is clear that the ECG work was less during May-June period every year (summer vacations) and there was a slight drop in the month of November. Except for the year 1983 in which the monthly variations in number of ECGs performed is gradual. When the monthly admission pattern was examined it was noticed that the monthly admissions had decreased during the months of June and November every year (including those of medicine and cardiology). Monthly pattern of admissions and ECG for 1985 and 1986 has been shown in figures 02 and 03 and fall in admissions and number of ECGs performed has been clearly noticed during the months of June (more marked) and November/ December (slight). During the months of June and December even the average number of ECGs performed daily is the least as compared to other months of the year. ECG workload pattern for 1985 and 1986 is shown below:

S.No.	Months	Max.	Min.	Average	Max.	Min.	Average
1.	January	103	52	78	93	4	78
2.	February	110	40	76	105	4	82
3.	March	94	48	77	99	48	74
4.	April	93	26	70	100	8	89
5.	May	93	33	67	103	47	73
6.	June	93	45	65	99	4	71
7.	July	89	45	71	107	9	77
8.	August	103	39	75	103	5	81
9.	September	101	49	77	114	49	88
10.	October	105	45	79	106	42	82
11.	November	105	36	78		Yearly average	
12.	December	105	47	71	N/A	79 till	October

TABLE 6
THE DETAILED ANALYSIS OF INDOOR ECGs FOR THE
MONTHS OF JANUARY 1985 AND 1986 (FOR COMPARISON)

S.No.	Item	Total	Range	Average Percentage		Total	Range	Average Percentage		Remarks
1.	Morning shift	957	17-50	30.9	39.7	966	16-51	31.3	39.8	
2	Evening shift	686	10-36	22.1	28.5	696	7-37	22.5	28.6	
3	Night shift	765	12-34	24.7	31.8	767	16-31	24.7	31.6	
4.	Total ECG during month	2408	52-103	77.7	100	2429	54-93	78.4	100	
Sex Variation			/							
5.	Males	1639	33-70	52.9	68	1595	32-67	51.5	65.7	
6.	Females	769	13-37	24.8	32	834	15-35	26.9	34.3	
Age Group										
7.	0-10 year	172	1-9	5.5	7.1	140	1-8	4.5	5.8	
8.	10-20 years	161	2-10	5.2	6.7	152	2-9	4.9	6.3	
9	20-30 years	290	5-15	9.4	12.0	274	4-10	8.8	11.3	
10	30-40 years	228	3-13	7.4	9.5	297	6-14	9.6	12.2	
11.	More than 40 years	1557	31-76	50.2	64.7	1566	37-69	50.5	64.4	
12	Cardiology including CTVS	91C	19-42	29.4	37.8	824	20-36	26.6	33.9	
13	Medicine	388	2-22	12.5	16.1	440	9-19	14.2	18.1	
14	Surgery	211	2-12	6.8	8.8	240	4-12	7.7	9.9	
15.	Private ward	91	1-4	2.9	3.18	116	1-8	3.7	4.8	
16	Casualty	402	6-20	13	16.7	506	6-24	16.3	20.8	
17	Miscellaneous	406	6-28	13.1	16.8	303	3-15	9.8	12.5	

On daily analysis of ECGs for the last three years (1984-86) it has been observed that on Sundays and holidays least number of ECGs were performed most probably because there were no routine admissions and investigations. Otherwise also, no effect was noticed of the days on ECG workload as the ECG workload was found to be more or less evenly spread on other days as well except on strike days. In 1984 the maximum number of ECGs performed on any day were and the minimum number was 30. In 1985 the figures were 110 and 26 and in 1986 (till October) 114 and 42 respectively.

SUMMARY AND CONCLUSION

More than half of the ECGs done in OPD belonged to cardiology patients. One out of 130 new patients attending the OPD was sent for an ECG investigation and one out of ten (new patients only) and 15 (both new and old patients) MOPD patients. In case ECGs for both medical and cardiology patients were done in the same place then one out of every ten (both new and old) MOPD and cardiology patients have been sent for an ECG whereas in case of all other patients attending the hospital are concerned (both new and old) one in 50 have been sent for ECG. In other words, it meant that for each ECG done 14-16 (both old and new) MOPD patients and 2-3 (both old and new) cardiac patients will be there. ECG workload is also dependent upon total number of patients attending the OPD, working hours and the type of patients *i.e.* medical, cardiac or others besides age and sex. Otherwise no monthly or seasonal variations were observed. In case only new OPD patients are considered there were ten MOPD and 50 all types of patients *i.e.* the same as combined medical and cardiology patients for ECG performed and attending the same ECG facilities.

Out of total admissions in the hospital there were 11 per cent medical patients and 5.2 per cent cardiology and 2.2 per cent CTVS patients. On an average 70 per cent of the total patients admitted had an ECG. When relating the total number of ECGs performed to medical and cardiology (including CTVS) patients admitted for each of them seven and ten ECGs respectively were taken (though not necessarily for these patients). Indirectly it can be said that for each patient admitted in the hospital an ECG is taken and thus workload of the ECG can be calculated roughly. Maximum workload was in the morning hours, then night and least at evening. The workload is also related to the number of admissions done daily. On holidays including Sundays, the workload is 40-50 per cent less than other days. There were 2/3 male patients and 1/3 female patients and 11 2 to 2/3 of the patients were above 40 years of age. There were very few patients in the lower age group and the percentage of age goes on increasing with the increasing age. Cardiology accounts for 1/3 ECG load, medicine 1/6 and casualty 1/6. Surgery patients are only 8-10 per cent and private ward 4-5 per cent. The ECG workload is always dependent upon the number of admissions besides other factors. About 2/3 of the ECG workload is due to casualty, medicine and cardiology.

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अखिल भारतीय आयुर्विज्ञान में सशुल्क वार्डों के 96 विस्तारों सहित कुल 819

विस्तारों की व्यवस्था है। संस्थान के बहिरंग तथा अंतरंग रोगी विभागों में प्रदान की जाने वाली ई सी जी सेवा के कार्यभार में गत पांच वर्षों में हुई वृद्धि के साथ इस अवधि में उपचारित रोगियों की संख्या के संबंधों का पता लगाने के लिए अध्ययन किया गया था। अध्ययन के परिणाम स्वरूप देखा गया था। कि प्रतिवर्ष 10 प्रतिशत की दर से कार्यभार में वृद्धि हो रही थी तथा पिछले दस वर्षों में यह कार्यभार दुगना हो गया था। किन्तु जनशक्ति तथा मशीनों की स्थिति थोड़े बहुत परिवर्तन को छोड़कर लगभग पूर्ववत् ही थी।

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