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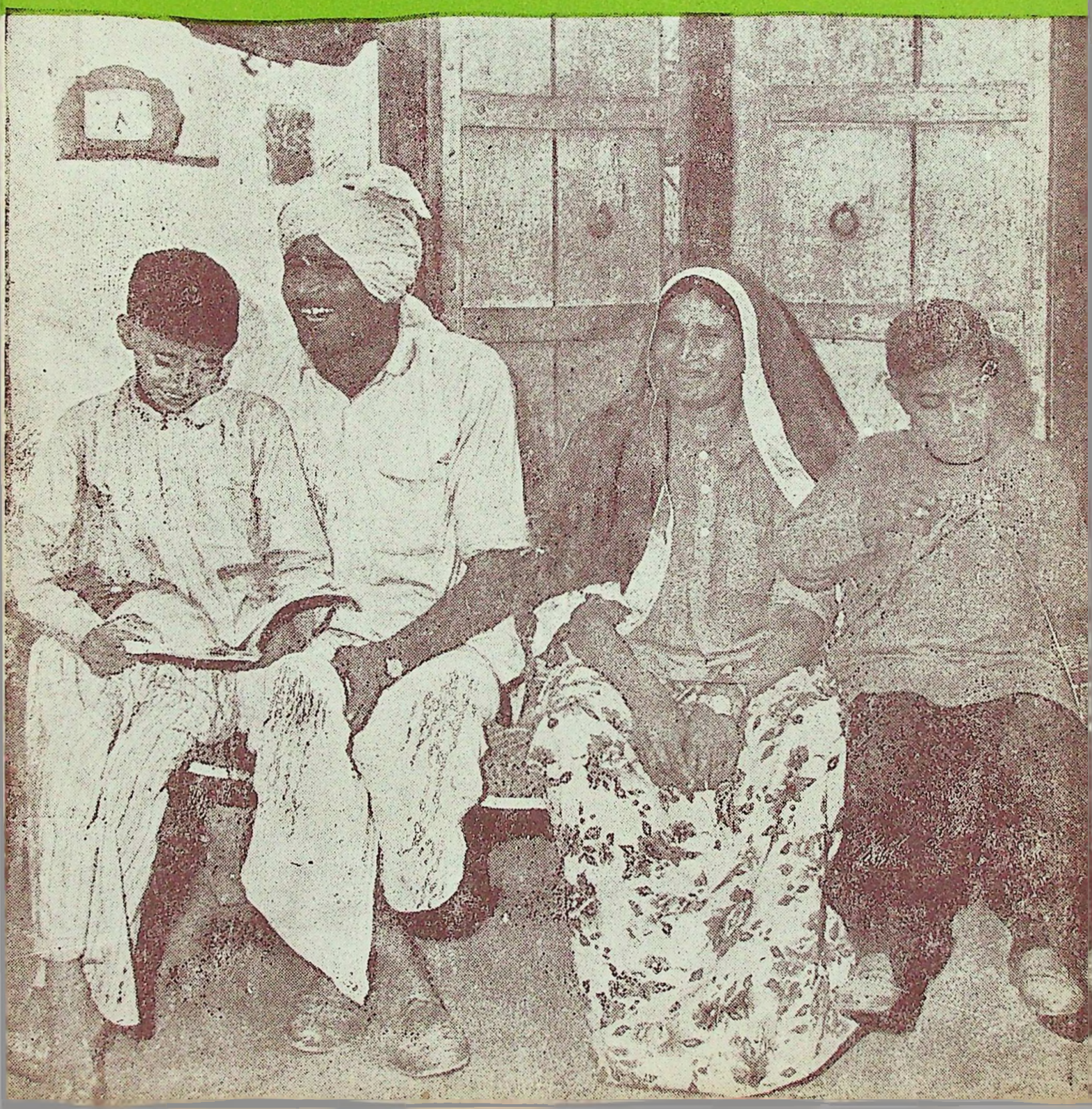

swasth hind

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Readers Write

The article, '*The Other Side of Smack– Addiction*' (May-1987) was a very educative one for tackling the most dread disease spreading amongst the youngsters. Swasth Hind deals with various medico-social problems not only of the youth but also of the grown-ups in an easy-to-understand non-medical language.

—J. R. Laroiya
President
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Articles on health topics are invited for publication in this Journal.

State Health Directorates are requested to send in reports of their activities for publication.

The opinions expressed by the contributors are not necessarily those of the Government of India.

SWASTH HIND reserves the right to edit the articles sent for publication.

ASM

POPULATION MANAGEMENT —Search for New Strategy

J. R. D. TATA

A reduction in the birth rate is an essential pre-condition for our achieving the ultimate objective of health and welfare for all and freeing the country from the crippling economic pressures of an ever-rising population.

A few weeks ago, the world's population passed the five billion mark and is still growing at the terrifying rate of about a billion every twelve years, or over 80 million a year. It took us only thirty-four years after Independence to double our population from about 350 million to 700 million. At 780 million today, it is still growing at the rate of about 15 million a year, and will probably reach a billion by the turn of the century. As a result, we have had, during the past forty years, to divert nearly two-thirds of our annual GNP growth to the needs of the 440 million people we have added to our numbers.

With our birth rate still hovering around 33 per thousand and our death rate at 12, should we be surprised that all demographic predictions show that, without a dramatic reduction in our birth rate, we shall not reach the kind of stable population achieved by the rich countries of the world until towards the end of the next century, and our people will continue, for most of it, to be amongst the poorest in the world?

Those who like myself have for for so long been so deeply conscious of our population problem cannot but lament the fact that even after the passage of forty years of Independence and although our country was the first in the world to adopt family planning as a state policy, so little progress has been made in reducing our population growth rate while so much of our energies and time has been, and is still being, spent on secondary or minor issues.....I pay tribute to those Members of Parliament who, by forming the Indian Association of Parliamentarians on Population and Development led by Shri Sat Paul Mital, have shown that they ..... have realised the gravity of the problem and intend to play an active and sustained role in its ultimate solution.

To begin with, it is worth noting that, contrary to the belief of many people in our country that our population problem is an age-old one, and consequently not amenable to modern scientific solutions except over many centuries, it actually is a very recent one. For it dates back only to the past fifty or sixty years in the course of which the discovery and application of new drugs and forms of treatment and health care brought a dramatic decline in the death rate, while the birth rate remained more or less constant. If the same population problem trend did not occur in the West it was because the birth rate was already relatively low, education was universal and the economic benefits of small families helped by rapid economic growth and the unrestricted availability of contraceptive pills and other devices were already well appreciated.

Unfortunately, in India, because of poverty, ignorance and illiteracy, combined with deeply ingrained social customs, the realisation of the benefits of smaller families has only recently begun to dawn on the masses of our people, and the birth rate has remained high.

Speed of population explosion

The suddenness and speed of the population explosion took the country by surprise, including the Central and State Governments which not only lacked experience to deal with the grave socio-economic pro-

WHO gives Intra-uterine Devices Clean Bill of Health

Intra-uterine devices (IUDs), now used by more than 60 million women around the world, are "probably the most effective and reliable reversible method of fertility regulation available to women", according to the World Health Organisation (WHO).

The experts emphasized that they were referring to the currently avai- experts from both developing and developed countries who were convened to look into the mechanisms of action, safety and efficacy of the devices. The group's report has just been published—*WHO Technical Report No.* 753.

The experts emphasized that they were referring to the currently available copper- and hormone-releasing IUDs, when properly used. They noted the particular situation in the United States, where two manufacturers discontinued making and marketing IUDs in response to increasing legal costs arising from lawsuits in which pelvic infection and subsequent infertility were claimed to result from IUD use. As a result, governments, family planning agencies, the media and individuals expressed concern about the safety of IUDs in general. It was in response to this concern that the scientific group of experts was convened.

In their report, the experts stated that the decisions to withdraw the Lippes Loop, Copper-7 and TCu-200 IUDs from the American market "were based on commercial and financial considerations rather than on questions of safety".

They considered the IUD to be "an important method of fertility regulation with high continuation rates and significant advantages in convenience of use". They added: "The newer copper-releasing devices are comparable to oral contraception in terms of safety and efficacy, and the use of IUDs in both developed and developing countries should continue to be supported as a reliable and safe method of reversible fertility regulation".

But they reiterated the importance of the careful screening of women who were considering using IUDs to ensure that no contra-indications were overlooked, such as genital cancers, vaginal bleeding of unknown cause, suspected pregnancy or active pelvic infections.

Commenting on the way in which IUDs exert their contraceptive effect, the group of experts concluded, from the evidence presented to them, that the presence of an IUD alters the uterine and tubal environment in such a way as to interfere with the normal function of both sperm and ova. It thus impedes fertilization, rather than preventing implantation of already fertilized ova in the uterus, as was previously thought. This statement may go a long way towards answering certain philosophical or religious concerns as to the mode of action of this method of contraception. ○

blems it caused, but aggravated them by giving them such a low priority as to devote, year after year, only one per cent of Plan outlays to dealing with them.

Thus it is that, as we celebrate the first forty years of our Independence many of us ponder anxiously on what the next hundred years will hold for the billion and a half or so of our people who will be alive by then.

With well over a third of our continuously growing population still below the poverty line, with our agricultural resource base mercilessly eroded by deforestation, soil erosion and pollution; with availability of new land for crops steadily diminishing and existing land holdings relentlessly fragmented, our villages are no longer havens of peace and relative prosperity, and the young increasingly tend to flee from them in order to migrate to overcrowded cities in search of a better life, instead of which they find they have to endure the degradation of slum life, brittle social relations and frequent turmoil. As a result, more than half of the people of Bombay, India's richest city, live in disgraceful hutment colonies and some of them literally on the city pavments! The position in Calcutta is no better except for the fact that the city has more space in which to expand. Shortages of drinking water and power, traffic congestion, overcrowding in hospitals and schools are such that the authorities of our capital cities feel that they are fighting a losing battle.

While there is, thus, much to bemoan, there is no cause for despair. Forty years ago, we did not expect our population to explode in our face, and did not understand or visualise the seriousness of its economic and social consequences, and therefore how to deal with them when they hit us. We do now. We have learnt from our failures and shortcomings as well as from our few successes. We have today the knowledge, the skills and the tools to tackle the obstacles in the way.

We have acquired invaluable experience in planning and administering huge welfare programmes of

great complexity and have made substantial progress towards our objectives. 45 million couples in their reproductive age or 35 per cent of the total have been effectively protected against unwanted births. 76 million births are estimated to have been averted so far and 8 million are being averted every year.

We have a clear demographic goal, namely, the achievement of a net reproduction rate of one, involving a reduced birth rate of 21 per thousand. How soon can we realistically expect to reach that goal? The Planning Commission having, more than once, extended its earlier estimates have now projected the year 2010 or thereabouts as the earliest possible target date.

We have already succeeded in winning a considerable degree of acceptability of smaller family norms amongst women; contraceptive protection methods are estimated to be adopted by about 25 per cent of women of childbearing age; we have marshalled a variety of contraceptive technologies and built up the beginnings of a vast network of medical and para-medical manpower.

With better management and support, the organisation built up over the years of 12,000 primary health centres and 90,000 sub-centres manned by over 40,000 doctors, 185,000 multi-purpose health workers and 390,000 village health guides could dramatically transform the grim situation still facing us.

While there is, therefore, no reason for pessimism, clearly much more must be done, and done more effectively than in the past if our advance towards our goal is to be accelerated. A task of this magnitude and complexity necessarily covers a vast number of different elements and measures to be co-ordinated into a coherent whole. I have neither the knowledge nor the experience, and certainly not the time today, to cover the whole field and shall therefore limit the remainder of my remarks to touching upon four specific measures which, if accorded the necessary emphasis and priority, would, in my view, give a great momentum to our whole programme.

Age of Marriage

There can be no doubt that a reduction in the number of years of married life in a woman's reproductive cycle, would be dramtically reflected in the number of children she is likely to bear. This measure was indeed adopted in 1978 when the legal age of marriage was raised from 15 to 18, but this law has been, from the start, perhaps the most flouted one in our country, and a large proportion of girls are married well before the legal age .....

This is, admittedly, a difficult problem but one which must be faced. Apart from the specific objective of any law, the continued toleration of its violation by Government and public opinion encourages the disregard and violation of other laws and undermines the very concept and framework of a society based on the rule of law. I see no alternative, therefore, to our urging Government to ensure a more vigorous enforcement of this law.

Literacy

My second point concerns the critical importance of female education, and literacy to begin with, as a crucial determinant of fertility amongst women in India. All the statistics prove it. We all know, for instance, that Kerala, with the highest female literacy rate in the country, enjoys also the lowest birth rate, while Rajasthan's appallingly low female literacy rate is accompanied by the highest birth rate in the country, a statistical relationship which is reflected in most of the other States. This should surely suffice to convince the Central and State Governments that concentrating on literacy programmes, particularly amongst girls and young women, would be a most effective instrument in reducing the birth rate, quite apart from its immensely beneficial contribution to the task of eradicating the ignorance, discrimination, injustice and other evils which continue to plague our long-suffering women.

Literacy and primary education programmes are primarily the responsibility of State Governments, and the levels of achievement in each State depend largely on the degree of interest and determination on the part of the respective Governments and on the priority given to education in their allocation of funds. Would it be unfair to suggest that it is the Government, as much as the people of the States lagging behind in the rate of literacy amongst their women who need to be educated and motivated, and that whatever be the reasons given, or the justification claimed for their low literacy rate, in glaring contrast with that of other States, they can no longer be accepted or tolerated. Except for emergency demands that may be made on them in times of floods, drought or other calamities, literacy programmes must be given in every

State the kind of priority which has produced such splendid results in some of them. If a shortage of funds proves to be the main impediment, means must be found, with the intervention of the Central Government, if necessary, to supplement them.

Communication

A major cause of our failure to achieve fuller and quicker results in our family planning and health programmes has lain in a failure of communication, which is at the very heart of any programme aimed at convincing people of the need to change longstanding beliefs and habits. The fact that large sections of our rural population have up to now been largely inaccessible except to their immediate neighbours because of their remote location and lack of communications except radio has been a major impediment to greater progress towards our goal.

The advent of television and the Central Government's wise and imaginative plan rapidly to expand its network to cover most of the country's population will, if effectively used, provide an invaluable means of direct and, literally, visible communication with people in the rural areas, provided, of course, that television sets are installed and their maintenance assured in virtually every large village in the country. This is a superb means of informing, advising, helping, teaching and entertaining people who have in the past been kept isolated, ignorant and largely helpless. To be effective, however, the programmes beamed to them will have to be carefully planned, innovative, credible and in tune with the realities of village life. This programme should be given a high degree of priority.

In this context, I would like to congratulate those, including Doordarshan, for the brief but telling message conveyed to viewers after the televised Hindi news almost every night which, directly or indirectly, brings home the need of family planning as a means of ensuring the family's, and more especially the child's, health and happiness.

Incentives

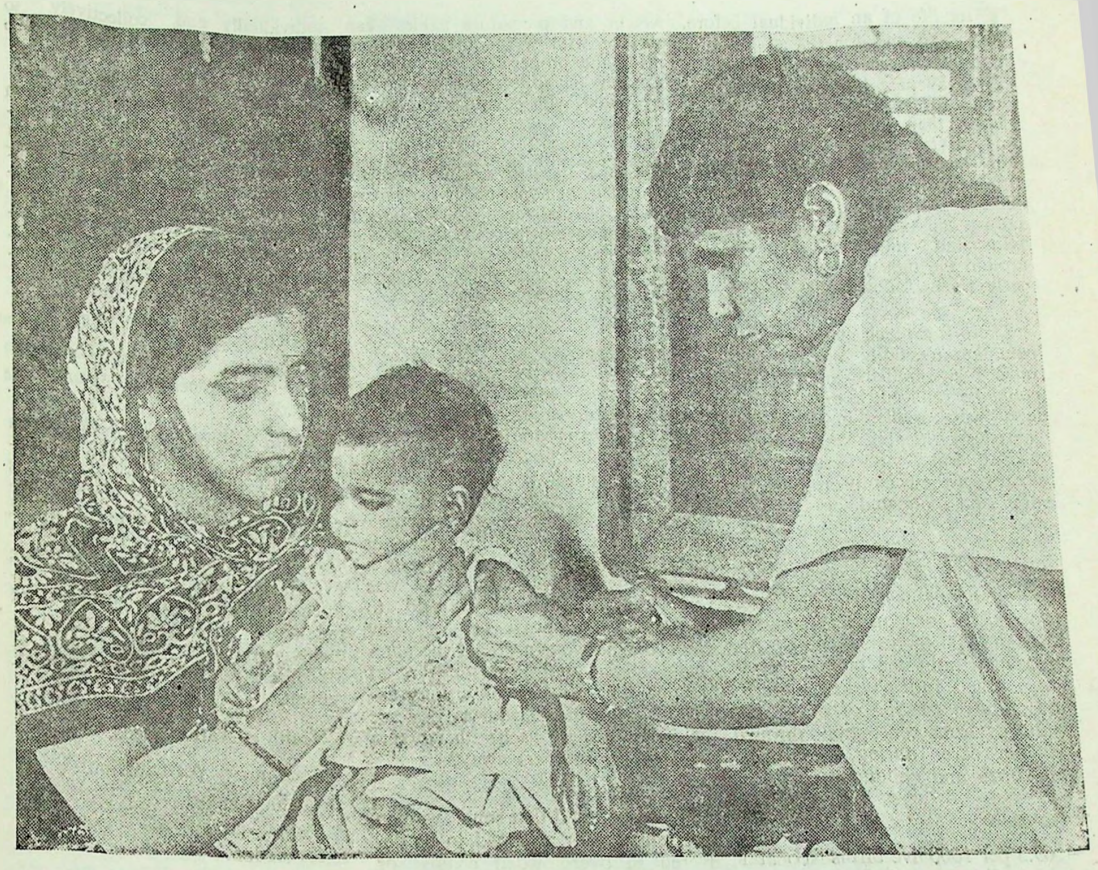
The fourth point I would urge to be considered and discussed today is the potentially powerful role of monetary incentives and, to a lesser extent, disincentives, as a means of inducing people to adopt small family norms and contraceptive protection throughout a woman's years of fertility. It is an unfortunate, but perhaps inevitable, fact that, in a country such as ours in which most of the people are not only poor but largely uneducated even small monetary or equivalent incentives can be potent means of motivating people. A pitifully small reward of Rs. 200 per sterilisation has been fairly widely adopted in India for some years and, say to say, has had some effect in inducing men and women to submit to contraceptive surgery.

In 1981 the capital cost to the nation of providing the basic requirements of every additional citizen throughout his or her life and of that of their progeny over two generations, was of the order of Rs. 42,000 in the then current rupees, a figure which would be nearer Rs. 80,000 today. An expenditure on incentives and rewards of up to Rs. 5,000 per birth saved by sterilisation or otherwise would, I believed, produce spectacular results and prove to be a highly viable investment for the nation.

Such monetary incentives could take other forms, such as for instance presenting to every young newly married woman a bond which would provide her, at the end of twenty years, a sum of, say Rs. 50,000, provided she had not given birth to more than two children. Other incentives could take the form of preferential allocations of jobs and housing to the parents.

If my remarks have, up to now, been aimed exclusively at means of achieving a reduction of our birth rate, it is not that I am unaware of the many other facets of the population problem. It is because I believe that a reduction in the birth rate is an essential precondition of our achieving the ultimate objective of health and welfare for all and freeing the country from the crippling economic pressures of an ever rising population.

As we stand on the threshold of the twenty-first century, the basic issue is whether, as a free and richly endowed people, we achieve bare survival or the vigorous growth which alone can assure to our people the happiness and prosperity for which they have yearned for so long.—*From Keynote Address delivered at the National Seminar on Population Management: Search for New Strategy on* 29 *August,* 1987, *New Delhi.*



NEO-NATAL CARE
—Role of Health Education

PARAS NATH GARG

There is much evidence to indicate that mortality and morbidity for mothers and children could be reduced, if existing knowledge were applied in a more diligent and vertical manner and if medical and midwifery personnel were more efficiently trained, oriented and motivated.

THE life of an individual before, during and for the first month after birth, occupies less than year of an average life-span but is so hazardous as to account for more deaths than the next thirty years, and survival with crippling sequelae may determine the whole future of the individual. Thus increasing attention is focused on the need to reduce the very high rates of mortality and morbidity that occur around the time of birth and in the early weeks following it.

There is a much evidence to indicate that mortality and morbidity rates for mothers and children could be reduced, if existing knowledge were applied in a more diligent and critical manner and if medical and midwifery personnel were more efficiently trained, oriented and motivated.

Neonatal care starts before conception

Neonatal care starts even before conception or pre-marital age, through postponement of first pregnancy until the mother herself has reached full physical maturity and through spacing of birth. It continues from conception, through suitable care during pregnancy, child birth and childhood.

Magnitude

= 69.3 per 1000 live births Neonatal Mortality Rate 1980.

= 60-80% deliveries conducted by Traditional Birth Attendants (TBA).

= 10-15% deliveries conducted by only *TRAINED* TBAs.

= 24.73% Female literacy in India 1981.

= A number of socio-cultural factors are associated from pre-marital age to neonatal care.

The important mortality causes include neonatal tetanus, birth trauma, birth asphyxia, prematurity and respiratory problems. Neonatal tetanus is totally preventable by immunizing the mother in pregnancy. Birth trauma and birth asphyxia can be prevented by proper obstetric care and simple resuscitative measures like suction and bag and mask ventilation. Many low birth weight and premature babies can survive with warm, clean environment and proper feeding. A large number of stillbirth can also be prevented with regular antenatal check-up.

Most of the deliveries continue to take place at home under the supervision of relatives and *Untrained* TBAs who are ignorant of asceptic technique. Umbilical dressing is applied under unhygienic conditions by untrained attendants.

A Challenge

Antenatal attendances are good but the number of deliveries in the health units is strikingly lower than the antenatal figures seen in the clinics. What happens to the others, where do they deliver and who conducts the deliveries? Most of these cases are termed self delivery or delivery assisted by a relative or a neighbour, because delivery was imminent, while a few are said to be "conducted by a TBA". Why then do the women attend the antenatal clinic only to delivery at home? Why do they call an untrained TBA and not a trained TBA or Midwife? Do we as health workers frighten the mothers away?

We have found that some women feel reluctant or ashamed to be delivered in overcrowded rooms or places, houses which may not be very clean. They feel that a midwife who in most cases lives in a better house would not understand their situation. They would rather be delivered by one who lives among them and understands what their problems are. This is a *Challenge.*

Health Education for Neonatal care

It is realized today that science and technology can contribute to the improvement of health standards *only,* if the people themselves become full partners of the health care providers in safeguarding and promoting health.

Health education in primary health care aims to foster activities that encourage people to:—*WANT* to be healthy+KNOW—how to stay healthy. Do what they can do individually and collectively to maintain health, and SEEK help when needed.

Health education is the concern of all the health providers irrespective of their position in the health care system. This is a team work and aims at bringing people together from various levels for establishing better co-operation and co-ordination for the common cause. Health workers should remember:—

Health education — By whom = Every one
To whom = Every one
Where = Everywhere

Health education breaks down the barriers of ignorance, prejudices, misconceptions and dangerous traditional practices among the community and target group about the maternal and child health (MCH) care and provides learning experience which favourably influence the knowledge, attitude and practices. It acts as a strong cementing force for the acceptance of MCH services through active involvement.

Health education needs.

* Community participation
* Media support
* Technical expertise and desire for action.

Community participation is the key to the success of health programme. In neonatal care programme, the active participation of the following sector is essential:

WHY — T—
W = Women
H = Traditional Health Practitioners
Y = Younger generation
T = Traditional Birth Attendants.

Women are predominantly non-formal health care providers, in their capacity as mothers, grandmothers, wives, daughters and members of Mahila association in the community. A much cited proverb still holds true:—

"Teach a mother to be healthy She will teach the rest of mankind".

The role of grandmothers in preparation of daughters to be a successful wife and mother for complete "*Motherhood*" cannot be overemphasized. This part is now decreasing and is a challenge to health care providers.

Traditional Health Practitioners (THP)

Organized health services in India provide only 10% of the medical care, another 10% is provided by qualified physician and the balance is split between home medical care and indigenous practitioners.

The folk health system, includes a veriety of health roles in rural setup, it must be involved and encouraged. This system has deep roots in the local culture. The folk practitioners know their clients and their problems personally. They understand why people do what they do. The formal health system is, however, completely alienated from the local culture. It must be remembered that "mere identification and involvement of traditional health practitioners (Folk Health system) in health education on M.C.H. care is not enough. More important problem is to orient them, and sustain their interest in the assigned responsibilities".

Today's young people are the healthiest age group and are better educated than ever before. The potential of youth, if it is to be properly tapped, requires understanding and support. Youth is very special time with special challenges. Young people's participation in community activities—particularly in P.H.C. is a KEY—pre-requisite for H.F.A. by the year 2000 AD.

Traditional birth attendants

"*Four Indians out of five come into the world between the hands of the Traditional Birth Attendants*".

The TBA's role is a good example of community participation in MCH care and backbone of the programme. TBAs are continue to deliver 60-80 per cent of newborn, specially in rural areas. TBAs play a maximum educational role in neonatal care that starts even before conception to childbirth. Proper selection of TBAs, acceptable to the community, their time to time orientation, training and active involvement in MCH care is essential.

Many low birth-weight and premature babies can survive with warm, clean environment and proper feeding

Media support

Media plays an extremely useful role in bringing home to the people the fundamental ingredients of health education. The selection of media according to the target group (*i.e.* socio-cultural background) is most essential. The mass media channels of communication, such as radio, T.V., films, slides and print media like pamphlets, folders etc. should be used in a coordinated way for producing the necessary impact. Overdependence on mass media should however be avoided. Mass media can bring to the people basic information. For maximum result information must be picked up by the network of personalized health communication channels by can the health workers themselves. This can be done by visits to homes and communities, on the one hand and by meeting people in clinics, dispensaries, hospital, individually and collectively and develop new ways of thinking, acting and behaviour on the other hand.

The most important of all requirements is the desire of action, technical expertise towards the health care providers.

Health care providers should appreciate the power they wield through health education. Health education is a very potent approach that can influence people to the ex-

tent that unfelt needs, become felt needs and felt needs become demands with political, social and cultural undertones. In their new roles, health care providers should ensure that there is a constant flow of information from the people to the decision makers.

Contents of health education in *neonatal care.*

The contents of health education can be devided into *Three* major heads.

(A) Complete preparation for *Motherhood* as *global condition.*

* Pre-marital, antenatal, natal, and postnatal period.
* Psycho-prophylactic preparation for child birth.
* Role of grandmothers or elderly in preparation of daughters for their role as wife and mother.
* Social encouragement among community.

(B) *Neonatal Care*

* Resuscitation
* Cord care
* Breast feeding
* Prevention of infection
* Maintenance of body temperature.
* Early detection of congenital disorders.

Dangerous traditional practices

* Delaying the first feeding 2/3 days after delivery.
* Fasting after delivery.
* Stopping of feeding to the child during illness.
* Late introduction of supplements, (at the age of 9-10 months).

Annaprasan-Ceremony

* Cutting of umblical cord through unhygienic and unsterilized instrument by TBA and relatives.
* Kissing of new-born baby by relatives.
* Deliveries in dark, ill-ventilated and cleaned by using cow or buffalo dung.
* Using ash, oil in cord in place of suitable powder.

Health Education Target Group

The following target groups are basically concerned with the educational and motivational responsibilities. Orientation and reorientation of these groups in neonatal care is the basic role of health care providers.

* Parents, grandmothers.
* TBA, THP, Health guides and Multi-purpose Workers.
* Balwadi and Anganwadi workers.
* Mahila and youth club members.
* Community leaders including village health committee members and opinion leaders.

Health Education Opportunities

Health care providers have ample opportunities of health education in the following areas. Message is the heart of the communication. Hence, message must be prepared and media or channel of communication used which are appropriate for the specific target groups according to their sociocultural level.

* Marriage counselling.
* Hospital clinics such as antenatal, postnatal, neonatal, under five years and hospital wards.
* Home environment during regular home visits.
* Day care centres and creches and women working fields, *i.e.*, agriculture and industry.
* Special health camps in the community level such as diagnostic and treatment camps, eye camp, family planning orientation camp.
* Balwadi and *Anganwadi* centres during health checkup of mothers and children and distribution of medicine and nutritional packets in I.C.D.S. project areas.
* Adult education centres.

Principal of Health Education in Neonatal Care

* General principles of health education, *i.e.*, felt health needs, community participation and motivation etc.
* Communication principles *i.e.* selection and preparation of media and messages according to sociocultural and economic level of target group.
* Learning is a reciprocal process.
* Parents be regarded as partners.
* Parents must feel that new ideas come from them.
* Parents should not be blamed for the child condition.
* Parents need moral support.
* Parents have several expectations
* Last but not least—learning by doing.

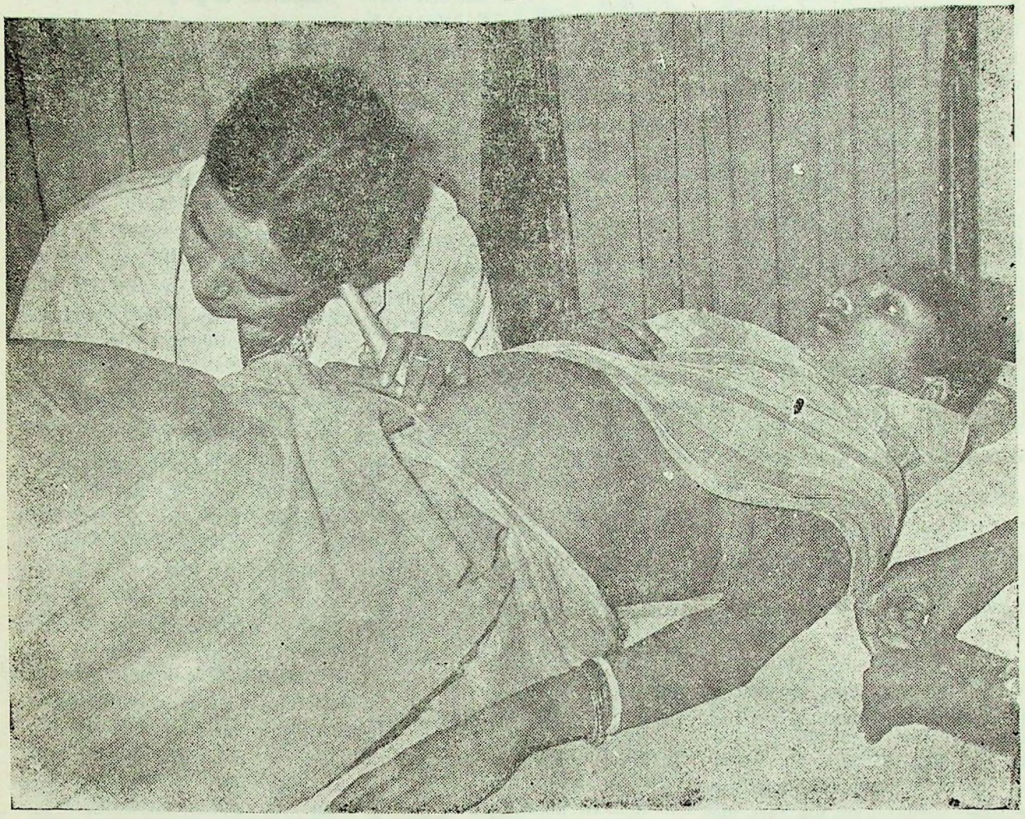
Recommendations

* Orientation of doctors, MPW's, CHG's, TBA's, THP's, Trained Dais, Balwadi workers.
* Motivation of doctors towards health education.
* Integration of health education in educational curriculum at every level, including adult education.
* Payments of delivery incentive to *Dais* after neonatal care.
* Neonatal and infant care workshop should also be organized at PHC level, where MPW's, Traditional health practitioners, CHGs and Dais be involved.
* Hospital health education should be strengthened.
* Possession of vaccination certificate—a pre-requisite for school admission.
* Discharge hospital ticket must have clear and specific contents of health education to be followed at home level. ○

Community involvement

Primary health care requires and promotes maximum community and individual self-reliance and participation in the planning, organization, operation and control of primary health care, making fullest use of local, national and other available resources; and to this end develops through appropriate education the ability of communities to participate.

—Declaration of Alma-Ata: Article VII. item 5



PREGNANCY WASTAGE
—Magnitude, Causes and Prevention

Dr G. V. S. Murthy, Dr V. P. Reddaiah, Dr S. K. Kapoor

Pregnancy wastage is now emerging as a major cause of maternal illness, as compared to a few decades ago.... Its importance stems from the fact that planned parenthood necessitates assurance of the safety and survival of a wanted and planned pregnancy.

THE attainment of optimum and ideal standards of maternal health is a major objective of the health services of all countries in the world. As the world slowly inches towards 2000 A.D., the common causes of maternal ill health like anaemia, postpartum haemmorhage (bleeding), infection, and birth injuries, are slowly diminishing in frequency, due to the rapidly improving care during pregnancy, at childbirth, and during the post natal period. In contrast, pregnancy wastage is now emerging as a major cause of maternal illness, as compared to a few decades ago.

What is pregnancy wastage?

Pregnancy wastage is synonymous with the terms 'foetal wastage' or 'foetal death'. The World Health Organization (W.H.O.) has recommended the term 'foetal death' to describe any outcome of pregnancy, other than live births. Thus, pregnancy wastage includes spontaneous abortion, induced abortion, and stillbirths.

The importance of pregnancy wastage stems from the fact that planned parenthood necessitates assurance of the safety and survival of a wanted and planned pregnancy. Thus high levels of pregnancy wastage would have a deleterious effect on the national family welfare programmes.

Abortions

The word, abortion, is derived from the Latin word '*Aboriri*' which means, to detach from its proper site[1]. Abortion is generally understood as the termination of a pregnancy before the foetus has attained 'viability'. Viability refers to the stage at which the foetus can survive outside the womb. However, the interpretation of the exact period as to when the foetus becomes viable is still controversial. W.H.O. has decided on 20 weeks (5 months pregnancy) as the cut-off point. For international comparisons, the conventional cut-off point of 28 weeks (7 months pregnancy), is still followed.

Spontaneous abortions

Loss of the foetus before 28 weeks of pregnancy is conventionally accepted as a spontaneous abortion (An abortion which occurs by itself, without any action being sought to 'end' the pregnancy). However, in recent times, the cut-off point has been taken as 20 weeks. This has been done due to the fact that in many countries a 20 week pregnancy has been found to be viable. Loss of the foetus before 20 weeks is called an early abortion, while loss occurring between 20 to 28 weeks, is termed a late abortion[2].

Induced abortions

The use of abortion to regulate human fertility, has been in existence since the dawn of human history. An induced abortion is termed as the deliberate termination of a pregnancy, before the 28th week though under law in India pregnancies can only be terminated up to 20 weeks. Prior to the advent of liberal views on the termination of pregnancy, induced abortion was mostly resorted to, for the termination of illegitimate pregnancies.

Stillbirths

A child born dead after 28 weeks of pregnancy is termed as a stillbirth[2]. It is also defined as the complete expulsion or extraction from its mother, of a product of conception, after 28 weeks of pregnancy, which after such separation does not show any evidence of life.

Magnitude of pregnancy wastage

The presently available data suggests that an overall ratio of 15-20 spontaneous abortions per 100 pregnancies may be a reasonable estimate[3]. This, however, represents clinically recognised pregnancies which in India usually occurs late in the first trimester. But some women may conceive and abort so early in pregnancy, that the pregnancy and its subsequent abortion may not be perceived by the woman. Such early embryonic loss is thought to be seen in more than 60% of the conceptions[4].

Regarding induced abortions, statistics are not very reliable, as even today, many of them are performed illegally. Estimates range from 30 million to 55 million a year, the world over, or about 40-70 per 1000 women of reproductive age group[5].

Stillbirths have been reported to range from 1-2 per cent of all pregnancies in various studies[2,6,7].

Thus it can be seen that pregnancy wastage is of collosal magnitude and needs priority attention of the health personnel.

Causes of Spontaneous abortions and stillbirths

The ultimate cause of spontaneous abortions and the precise mechanisms leading to it are still unknown. Suspected determinants of the same include genetic, infectious, physical chemical, immunological and emotional factors in addition to certain conditions like maternal and foetal hemoglobinopathies, etc.

1. *Genetic factors.*—Chromosomal abnormalities due to faulty spermatogenesis or faulty maternal gametogenesis have been commonly

incriminated as causes. Other suggested possible causes include delayed ovulation, viruses, radiation and 'ageing' effects of sperm or ova. Developmental defects of the female genital tract could also be responsible. The major types of chromosomal aberrations include autosomal trisomy polyploidy, and monosomy X[3]. However it is thought that early spontaneous abortions is a means of eliminating unfit genotypes, thus ridding the population of off-spring who may develop abnormally[9].

2. *Infectious factors.*—Infections may also cause spontaneous abortions either through foetal infection and death or by initiating uterine contractions. Viral infections known to cause spontaneous abortions, include German measles, cytomegalovirus, smallpox, viral hepatitis, respiratory viruses, and gastro-enteritis. Malaria, toxoplasma, listeria and urinary tract infections are also incriminated[3]. Syphilis, brucellosis and systemic infections are incriminated in stillbirths[8].

3. *Physical and chemical factors.*—Radiation during pregnancy has been strongly incriminated as a cause of pregnancy wastage[3]. Drugs like Thalidomide, goitrogens and folic acid antagonists may also lead to abortions in some cases[3]. In human beings no drug can be considered completely safe during the early pregnancy. Trauma can rarely be proved to be the direct cause of a spontaneous abortion[3].

4. *Immunological factors.*—There is a growing body of evidence to suggest that incompatibility between mother and foetus is an important factor in human foetal loss[8]. As early as in 1961, it was concluded that isoimmunization by foetal antigens is a major factor in the outcome of pregnancies in mothers with type 'O' blood group. This factor may be of more importance in recurrent abortions.

5. *Maternal and foetal hemoglobinopathies.*—These are known to influence the rate of prenatal losses. There is conclusive evidence that a sickle cell crisis, occurring before the 28th week of pregnancy, may precipitate an abortion[3].

6. *Placental anomalies.*—Velamentous insertion of the cord, a single umbilical artery, placenta praevia or hydropic changes in villi are seen more frequently in spontaneous abortions[3]. A causal relationship between placental membrane infections and stillbirths has been reported[10].

7. *Psychosomatic factors.*—The importance of emotional factors in spontaneous abortions has still not been adequately outlined[3]. Physiological stress and emotional stress causing overripe ova through delayed fertilisation or delayed ovulation leading to early spontaneous abortions, has been postulated[3].

8. *Malnutrtion and vitamin deficiencies.*—These two factors have not as yet been conclusively proved to result in spontaneous abortions and stillbirths, though low serum d-tocopherol levels, deficiency of Vitamin E, and low serum folic acid levels have been postulated to lead to spontaneous abortion and stillbirths.

9. *Male determinants.*—Male Mycoplasma urethritis leading to infection of the female cervix, poor sperm quality and lethal factors carried by the spermatazoa, have also been incriminated as causes of foetal wastage[3].

Certain correlates of spontaneous abortions and stillbirths

Foetal wastage has been found to be higher at maternal ages below 20 years, minimal at 20-35 years and increases progressively, thereafter, beyond 35 years of age[11].

There is a significant tendency for foetal wastage to increase with birth order (Order of live births)[11]. The risk of stillbirths is relatively high for first births, decreases at second and third births, increases slightly for fourth births and then increases very sharply for later birth orders, tracing a J-shaped curve[2]. However, an inverse J-shaped curve is found when foetal wastage and parity (the number of live births) are considered. This means that the more the live births, a woman has, the less the chance of foetal wastage[2].

It has also been found that the rate of abortions, decreases consistently, with increasing age at menarche.

A pregnancy occurring too soon or a very long time after the previous pregnancy, is more likely to result in foetal wastage. It has also been thought that women who smoke more than 10 cigarettes per day, tend to have more foetal wastage.

Induced abortions

Most induced abortions are performed because the woman does not wish to carry her pregnancy to term. Only in a small minority it is a threat to a woman's life or health or fear of the child being born deformed or defective, the cause for seeking an induced abortion[3]. The indications for seeking an induced abortion may be medical, eugenic, humanitarian or social in nature[3]. A number of countries have liberalised their legislation and permit abortion on request for

broadly interpreted social indications[5]. The majority of women undergoing induced abortions are aged 20-29 years.

A multi-centric study carried out by the Indian Council of Medical Research, found that the overall incidence of complications (both immediate and delayed) following induced abortions is low. Haemorrhage, cervical and uterine injury were the commonest immediate complications while pelvic infections, urinary tract infections and wound infections were the important delayed complications[12].

However, it should be remembered, that induced abortions should never be promoted as a major means of fertility control, as it can have catastrophic effects on the demographic situation in the country as well as on the woman's health.

Preventive and control strategies

These strategies need to be discussed at two levels—individual effort and organised sector activities.

1. *Individual action.*—Infectious factors leading to foetal wastage could be minimised if prompt medical attention is sought for treating these conditions. Similarly unnecessary exposure to radiation, if avoided, can also be beneficial. The most important preventive measure at individual level is avoiding unnecessary and needless medication in early pregnancy. Self medication should be curtailed and the woman should make it a point to inform the doctor of her menstrual history, whenever need for consultation and medication arises. Drugs like oral anti-diabetic drugs, trimethoprim sulfonamides, metronidazole, meclizine, estrogen-progesterone combinations should be avoided in early pragnancy, when the foetus is in the formative stages. Similarly care about woman's age at pregnancy (too less or too old), child spacing, and habits like smoking should be taken. Induced abortion should not be resorted to as a method of fertility control, except in exceptional circumstances when tested contraceptives can be utilised at an earlier stage.

2. *Governmental action.*—The training of female health workers in regular recording of menstrual histories as well as provision of proper antenatal care services even in the remote areas are essential parts of Governmental action. Regular recording of menstrual histories of married women would help to understand the magnitude of the problem and also in preventing or detecting early wastage which may occur. Emphasis on spacing of pregnancies, maternal nutrition during pregnancy and strict enforcement of the law regarding the age at marriage are other important measures. Special attention paid to young primiparas and elderly grand multiparas would also help in decreasing pregnancy wastage. Efforts should also be directed towards educating women with a history of stillbirth for registering their subsequent pregnancy for institutional delivery as they tend to be at a higher risk of losing the subsequent pregnancy.

The provision of VDRL testing facilities at the primary health centres, would also help in detection and treatment of syphilis, which is an important factor for foetal wastage.

Though the causation of pregnancy wastage is far from clear, these strategies would definitely help in reducing the problem to manageable proportions.

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Field Trial on Village Level Surveillance of Epidemic-prone Disease and its Evaluation

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A pilot project was undertaken on studies for strengthening of epidemiological surveillance of five important epidemic-prone diseases, *viz.*, diarrhoeal diseases, measles and poliomyelitis among children under five years, viral hepatitis and Japanese B. Encephalitis among all the age-groups. The strengthening of surveillance by the optimal use of the health infrastructure consisted of "lay-reporting system" through well-trained multipurpose workers. The correction factors were determined. These were: 21·96 for diarrhoeal diseases, 1·8 for measles and 17·5 for viral hepatitis.

THE National Institute of Communicable Diseases (NICD, Delhi) had undertaken studies on strengthening of epidemiolgical surveillance of five important epidemic-prone diseases, namely, diarrhoeal diseases, measles and poliomyelities among 0-4 years children; viral hepatitis and Japanese B. encephalitis among all the age groups. The Project was operative for varying period during 1983-86 in the districts of Alwar (Rajasthan), Mysore (Karnataka), East Godawari (Andhra Pradesh). The model envisaged weekly flow of information from the rural community through the Multipurpose Health Workers within the existing health infrastructure and services-system. This channel of surveillance from villages/sub-centres, Primary Health Centre, and the district would lead to early detection of outbreak and an effective containment. The surveillance is also important for the assessment of disease control programme.

The assessment of the surveillance programme was made by conducting cross-sectional sample-survey of these diseases during August-September, 1984. The survey provided valuable information regarding the problem and magnitude of the epidemic-prone diseases in Alwar district. The various 'Correction factors' applicable to the surveillance data were also detected. The findings of the assessment survey are presented in this paper.

Material and methods

1. Taking into consideration the frequency of epidemics in the country, with special reference to these diseases without an effective surveillance programme, the five epidemic-prone diseases selected for the study were diarrhoeal diseases, poliomyelitis, measles, viral hepatitis and Japanese B. encephalitis. The lay-reporting system through well-trained multipurpose worker was introduced at the village level. The programme was within the existing health infrastructure and without disturbing the other programmes being implemented through the multipurpose workers, other paramedicals and primary health centres. The Branches of NICD provided the technical guidance, training and feed-back by publishing quarterly bulletin.

2. The evaluation survey was carried out by cluster sampling technique (1, 2, 3) in Alwar district. 30 clusters were located randomly from a sampling frame of 1574972 population in 1892 villages, in 14 Primary Health Centres in the district. 1981 census population was taken into consideration. Cumulative population frequency was calculated against each village arranged in order as in 1981 census list. Sampling interval was obtained by dividing the cumulative population by 30. The first village was located on the basis of random number equal to or less than the sampling interval. This

was followed by the location of second cluster by adding the sampling interval to the cumulative population of cluster/village number one. The remaining 28 clusters were located by adding the sampling interval successively in the above arranged village list.

The disease-specific age-groups selected for the survey and the reference periods for interview/history are given in Table-II.

The disease-specific sample size was worked out to give the precision estimates of ±10 per cent at 90 per cent probability level as given below:

$$n = \frac{Z^2 \times p \times (1-2)}{L^2} = \frac{(1.65)^2 p\ (1-p)}{(10\%\ of\ p)^2}$$

The assumed P values for diarrhoeal diseases, measles, poliomyelitis, viral hepatitis were 2.4 episodes per child per annum (4), 2/1000 children/ <2 years per year, 17.8/0.1 million 0-4 years per annum (5) and 1/0.1 million per annum.

3. Sample size per cluster was calculated by dividing the total disease-specific sample size by 30. Total and per cluster sample sizes are given for each of the diseases in table II. Villages adjoining the nuclear village were taken for survey till requisite sample size was obtained.

4. The definition of patient, to be used by the para-medical, for the initial detection of case was as follows : diarrhoea—child having three or more loose motions in a day and for infants mothers' judgement was taken as reliable guide, measles—child having fever with rash, poliomyelitis lameness—child with lameness on either of the legs, viral, hepatitis—persons with yellow colouration of eye, Japanese encephalitis—individual with high fever and stupor. In addition local names for the disease and symptoms were used.

5. All the paramedical field workers, supervisors and medical officers were trained thoroughly for the survey. The field, household and other relevant information were recorded in protested proformae. Random cross-checking was done by the epidemiological team. All the cases detected by para-medical in the survey were verified within a week by the medical officers to find out the 'Correction factor' for lay reporting.

6. The recently introduced programme of surveillance promotion in the district was evaluated by comparing the routine surveillance data with the results of the sample-survey. Correction factors were determined for application to the ongoing surveillance data, after adjustments for lay-reporting efficiency and the degree/extent of reporting regularity. Annual estimates of magnitude of these diseases in the district were made.

Table I—Average monthly incidence of epidemic-prone diseases by lay-reporting surveillance in study areas

Diseases	Average monthly incidence rates		
	Mysore	East Godawari	Alwar
Children under 5 years			
Diarrhoea (per 1000)	9·7	7	2·9
Measles (per 1 lakh)	124·8	33·3	8·1
Poliomyelitis (per million)	18·6	7·2	46
All cases			
Jaundice (per million rural)	19	214	8·7

Table-II—Survey of five epidemic-prone diseases in Alwar district

Disease	Age Group	Reference period	Sample size	
			Total	For Cluster
Diarrhoeal Diseases	<5 years	Two weeks	2700	90
Measles	<2 years	Six months	6000	200
Lameness due to Poliomyelitis	5-9 years	Prevalence	8700	290
Viral Hepatitis	All ages	Six months	300000	10000
J. Encephalitis	All ages	Six months	300000	10000

Study Area

Alwar district is situated in north-eastern part of Rajasthan State. Aravali Hills ranges pass through the middle of the district from north to south. The eastern part of the district is green and well irrigated, while the western part is dry and sandy. Total population of the district as per 1981 census was 1.75 million (rural 1574972, urban 181277). Rural population of the district as on 1st June, 1984 has been estimated to be 16.68,711, which is inhabited in 1892 villages. The population density for the district is 211 per *sq.km.*

Average maximum temperature range is 30-32.5°C and average minimum temperature varies from 12.5°C to 15°C. The average annual rainfall is 68.6 cms. The district has 14 primary health centres, 126 sub-centres, 30 rural dispensaries and 26 aid posts. There are six hospitals located in three urban areas.

Results and discussion

Survey: Table-I shows the average monthly incidence rates as detected by 'lay reporting' in three project districts. The weekly data and other analytical details have been presented separately. The case yield was very high by the community level lay-reporting as compared to routine Institutional data. Total population surveyed to evaluate the lay-reporting system, in all the 30 cluster was 311375, constituting 18.5 per cent of estimated rural population as on 1st June, 1984. The surveyed population constituted 47778 households in 150 villages. The average household size was 6.6 persons.

Diarrhoeal Diseases

Table III shows the details of households, children below five years surveyed and cases of diarrhoea detected by paramedicals during the past fortnight. Out of 2708 children surveyed 186 cases of diarrhoea were detected by the field workers, out of these 186 cases, 157 were clinically confirmed by medical officer. Therefore, the incidence rate per 10,000 children of under 5 years per fortnight was 68.7 by lay-reporting and 58 by clinical confirmation. The Lay-reporter 'Correction factor' was thus 0.84. Male and female ratio of cases was 5.8 :4.2. 52 per cent of the cases were below 2 years. Dysentery was diagnosed in 58 per cent of cases and the remaining 42 per cent were that of diarrhoea. The number of diarrhoea cases for the district were estimated to be 19305 ± 1505 (2 S.D.), for two weeks of August 1984. The annual estimates for the district was 501956 cases (*vide* table IV). The number of cases reported by multipurpose workers of the district were 880, for the same period. The data were adjusted for non-reporting/partially reporting units/areas of multipurpose worker. Out of 19305 estimated cases for the district for two weeks 880 cases were detected by the surveillance through paramedicals, giving the 'correction factor' of 21.9.

The survey revealed that the number of episodes of diarrhoea per child of 0-4 years were 1.5. Recent survey of diarrhoeal diseases in eleven centres of India showed that the number of episodes in rural area vary from 1.1 in Hyderabad to 8.5 in rural Manpur (6).

Measles

The reference period for measles was six months. As shown in table III out of 6005 children of under 2 years surveyed 137 (2.3%) cases of measles were paramedically detected and 96 (16 per 1000) clini-

(*Continued on Page 319*)

Table III—Lay-reporting Correction Factors for the diseases studied

Disease	Coverage in Survey			No. of cases		Lay reporting
	No. of Villages	No. of Households	Population	Detected by para-medicals	Confirmed Clinically	Correction Factor
Diarrhoeal diseases	32	2040	13725 (2708 <5 years)	186	157	0·84
Measles	76	9703	73921 (6005 <2 years)	137	96	0·70
Lameness due to Poliomyelitis	97	12114	83505 (10505 5-9 years)	187	137	0·73
Viral Hepatitis	150	47778	311373	297	229	0·82
J. Encephalitis	150	47778	311373	0	0	..

Table IV—Incidence and prevalence rates of epidemic-prone diseases and estimated number of episodes in Alwar district

Disease	Incidence/prevalence rate	Projected episodes for the district during reference period ±2 SD	Annual estimates (*)
Diarrhoeal diseases	58 per 1000 (<5 yrs.) biweekly	19305 ± 1505	501956
Measles	16 per 1000 (<2 yrs.) half-yearly.	3732 ± 293	7464
Poliomyelitis	13 per 1000 (5-9 yrs.) prevalence	2792 ± 235	2792
Viral Hepatitis	73·5 per 0·1 million half-yearly.	1242 ± 82	2484

*Unadjusted.

ORAL HEALTH IN INDIA —Current Status and Strategy for Health Education

DR S. VENKATESH

Oral health and general health are inseparable. Because oral diseases—dental caries, periodontal disease, oral cancer—may be a ma ifestation of or an aggravating factor in some more widespread systemic disorder. Thus, action taken for improving oral health proves very important for safeguarding general health.

ORAL health is concerned with the functional efficiency of not only the teeth and supporting structures but also of the surrounding parts of the oral cavity and of the various structures related to mastication and the maxillo-facial complex (W.H.O., 1970).[20] Oral health and general health are inseparable as oral disease may be a manifestation of or an aggravating factor in some more widespread systemic disorder. Thus, action taken for improving oral health proves very important for safeguarding general health.

There are numerous problems in developing a concept of positive oral health[19] Early symptoms of oral disease often are unnoticed or considered to be of little significance. The chronic, recurrent irreversible, cumulative and prevalent nature of oral diseases have contributed to be wrong belief but oral problems are inevitable and are not preventable. To many persons, teeth are of very low importance so that few attempts are made to preserve or protect them. The relative efficiency and comfort provided by artificial replacements such as dentures also add to the difficulties. Other compounding problems include the undramatic nature of most oral diseases, the association of dental treatment with pain and discomfort and the reluctance to observe simple oral practices related to prevention of oral disorders.

Objectives for 2000

Global objectives for oral health have been established in the context of Health for All by the year 2000, after careful review of available information and considering the time available and the realities of achieving changes in the oral health status of populations.[22]

In 1979, WHO adopted the target for 2000 AD of no more than 3 Decayed, Missing or Filled Teeth at 12 years of age. In collaboration with a special Working Group of International Dental Federation (F.D.I.) four other targets were added in 1981.[26] The targets thus identified are:

Age (in years)	*Target*
5—6	50% should be free of denta caries
12	3 or fewer decayed, missing o filled teeth
18	85% should retain all their teeth
35—44	50% reduction in 1981 levels of edentulousness
65+	25% reduction in 1981 levels of edentulousness

Problems

The three most important oral diseases prevalent in India are: 1. Dental caries, 2. Periodontal diseases and 3. Oral Cancer.

I. Dental Caries : Dental caries or decay destroys the hard tissues of the teeth and may cause pain, infection, disfigurement and other problems. It results from interaction between three factors: bacteria, diet and host susceptibility.[32] Formation of dental plaques is followed by production of acid by the plaque bacteria by fermentation of ingested carbohydrates, especially sugars. This, in turn, leads to localised demineralisation of the enamel surface and if unchecked, results in progressive destruction of the tooth. The damage done to the tooth structure is permanent and irreversible and treatment by doctor/dentist is required.

Magnitude of problem: The problem of dental caries in India has been on the increase during the last four decades both in terms of prevalence and severity (table I). The

prevalence was as low as 37% in the 1940s with 1.5 permanent decayed teeth per child on an average. Presently, the prevalence of dental caries is above 80% with 5 decayed teeth per child on an average at the age of 16 years.

Table I—Magnitude of dental caries

Authors	Place	Age group studied (in yrs)	Prevalence of caries
Shourie (1941)[2]	Madras City	7—20	39·8%
Shourie (1941)[2]	Delhi City	5—17	60·3%
Shourie and Soni (1950)[4]	Bombay City	3—20	71·8%
Kokila Jai (1951)[5]	Gujarat	3—15	68·7%
Vacher (1952)[7]	Amritsar	8—13	51·5%
Shourie (1953)[6]	Bhopal City	5—17	40·3%
Thaper (1953)[9]	Moga	6—20	59·1%
Chawla & Chaudhry (1957)[11]	Lucknow	18—22	55·95%
Dutta (1965)[14]	Calcutta	6—12	48·2%
Miglani *et al* (1970)[19]	Madras	17—32	43·98%
Ramachandran, Rajan and Shanmugam (1970)[18]	Tamil Nadu	1—51 Urban Rural	66·2% 47·8%
Tewari and Chawla (1972)[21]	Chandigarh	6—16	72·35%
Mishra and Shee (1979)[22]	Urban Orissa	5—16	60·41%
Tewari and Chawla (1979)[21]	Chandigarh	6—61	72%
Vora and Mirchandani (1980)[30]	Bombay	5—15	79·62%
Vijayakar and Nayak (1981)[24]	Bombay	15—56	97
Khera (1984)[31]	Rural Punjab	6—16	83·6%
Gauba *et al* (1986)[35]	Rural Ludhiana	7—17	82

Influencing factors

The most important factor in causation of caries is sucrose[28]. Sweets are the children's favourites. Sweets are also considered auspicious and exchanged on celebrations or festive occasions. Shikanjvi drink (made with fresh lemon, sugar and water) is widely drunk in summer as it is considered a health drink.

Cough lozenges also have a deleterious effect on the teeth. A decrease in salivary secretions due to increased intake of tablets, like propranalol and diazepam increases the hazard of caries.

Very low levels of fluoride in drinking water can result in dental caries. A fluoride level of 0.7 to 1.2 ppm is required in drinking water for prevention of dental caries. Higher concentrations on the other hand lead to development of dental and skeletal fluorosis.

Mehta and Arya (1981)[25] made the interesting observation that while a cup of tea contains 0.25 mg of fluoride, the calcium from the milk binds the fluoride and hence makes it unavailable for the body.

Preventive Measures 20, 32, 33

1. Flouridation of public water supplies in concentrations between 0·7 to 1·2 ppm fluoride reduces dental caries by 50—65%.
2. Use of fluoridated salt and milk and fluoride tablets have been tried in some countries.
3. Mouth rinsing with dilute solutions o fluoride after midday meal for schoo children — can reduce incidence of caries by about 35%.
4. Where drinking water has a very high fluoride content, defluoridation should be carried using Nalgonda technique.
5. Sweets and candies should not be allowed to be sold near school.
6. Use of fluoridated toothpastes except by children living in areas of endemic fluorisis.
7. Promotion of oral hygiene practices.
8. Periodic dental screening for early detection and treatment.

II. Periodontal Diseases : Periodontal disease is the greatest single cause of tooth loss in India.[28] This term refers to any disease peculiar to the periodontium or parts thereof and covers advanced gum disease affecting gums and supporting jawbones. The most common categories seen are chronic marginal gingivitis and periodontitis.[32] The initial gingival lesion and its progression are related to the bacterial plaque present at or under the gum margin. Gingivitis precedes periodontitis which may further go on to pocket formation and destruction of alveolar bone. Unlike dental caries, gum inflammation can usually be controlled by improvements in oral hygiene practices.

Magnitude of problem

Various surveys in different parts of India show that the periodontal diseases have a high prevalence (Table II). Every second person above 35 years of age has pus oozing gum pockets.[32] The disease starts very early in life with bleeding from gums.

Table II.—Prevalence of periodontal diseases

Author and year	Place	Prevalence of periodontal Disease
Marshali Day (1940)[4]	N. India	60%
Mehta (1953)[6]	Bombay	100%
Gupta (1962)[12]	Trivandrum	90·3%
Chawla (1963)[13]	Lucknow	100%
Miglani (1965)[16]	Madras	95%
Mangi (1966)[18]	M.P.	98·9%
Vacher (1967)[17]	Amritsar	86·6%
Vijaykar (1979)[24]	Bombay	92·7%

A case of advanced dental caries. This could have been avoided with simple oral hygiene practices.

Influencing factors:

Studies by Marshall Day (1944),[3] Mehta *et al* (1953)[5] and Mehta *et al* (1956)[10] show that socio-economic status does influence prevalence of periodontal diseases.

No significant difference has been observed on comparing the urban and rural distribution as indicated by Mangi (1966)[18], Vacher and Gupta (1967)[17] and Vijaykar and Nayak (1981)[24]

The single most important factor associated with periodontal diseases is 'Oral cleanliness'.[25] Already formed dental calculus further reduces the effect of oral hygiene measures. Habits such as smoking and betel leaf chewing are found to be related to higher prevalence and severity of periodontal disease.

People with systemic diseases and malnutrition may be more prone for periodontal disease.[25]

Preventive Measures

1. Rinsing of mouth with plain water after each meal and regular brushing of teeth particularly before going to sleep at night and after rising in the morning.
2. Use of paste in preference to powder with tooth brush. Those, who cannot afford tooth brush, can use 'datun' (chew-stick).
3. Finger massage of gums and teeth.
4. Calculus when found should be removed by dental hygienist.

III. **Oral Cancer** : Cancer of the tongue, mouth and pharynx is an important oral health problem in India. This may be related to chronic irritation from decayed teeth or poorly fitting artificial restorations or continuous exposure to toxic substances such as from smoking, reverse smoking, betel chewing etc.

Oral Cancer account for 38% of all body cancers in India.[23]

Preventive Measures

1. Smoking should be avoided.
2. Betel leaf and nuts should not be used.
3. Tobacco chewing in the form of quid should be stopped.
4. Physical irritation from sharp teeth, broken teeth, ill-fitting dentures etc. should be brought to the notice of the dentist.
5. Periodical screening should be done for early detection of oral cancer.

Oral Health Care

Oral Health Care has two components[32]

1. that which influences the ways of life of the individual and community so that oral health is promoted or maintained and oral diseases is prevented.
2. that which provides adequate treatment to those with oral diseases facilitating arrest of disease at an early stage and prevention of loss of function.

Primary oral health care[37] would thus consist of effective ways of teaching and promoting self-care of involving communities in oral care decisions and of developing education and instruction packages for different groups in the community.

Role of Health Education

Health education has been defined as any combination of learning opportunities and teaching activities designed to facilitate voluntary adaptations of behaviour that are conducive to headth (Green 1919[35]) Individuals, groups or communities may require modification/adaptation of their behaviour.

Five general principles have been identified by WHO (1984)[33] for health education in community oral health programmes.

These are:—

1. Every available preventive oral health procedure includes educational components.
2. Education of a variety of different target groups, *e.g.*, health personnel, parents, school teachers, students, food manufacturers etc. should be an integral part of any regular effort, legislation or preventive service programme.

A—Z DENTAL CARE

DR DAYA SANGHAL

Aching tooth troubling you?
Consult a Dental Surgeon, he will help you.

Brush your teeth with tooth brush and paste,
Take your own time, don't make any haste.

Clean your teeth twice a day,
To save the teeth it is easiest way.

Deposit in bank? improve it.
Deposit on tooth? get removed it.

Enamel of tooth is outer most layer,
It protects the inner tissues, preserve it with care.

Fluoride in diet is necessary,
To keep the teeth carious free.

Gum bleeding happens due to tartar or dental plaque,
The deposit may lead to pyorrhoea and/or tooth decay.

Healthy teeth help in maintaining general health,
I am sure, you know "Health is Wealth".

Instruct the children to avoid sweets & candies from diet,
And remind them for brushing in the night.

Jack fell down and broke his tooth crown,
Jill called dentist to make it again.

Knowledge about beauty remains incomplete,
Till it covers the care of the teeth.

Lemon, raw vegetables and fruits in diet,
Help in keeping the gums healthy and teeth bright.

Massage is necessary for the gums,
To keep them health, pink and firm.

Never use your teeth to open a bottle or crack a nut,
Your tooth may be loose, lost or hurt.

Orthodontist deals with dental irregularity,
He removes the ugliness and creates beauty.

Prosthodontist believes in construction,
He also preserves whatever is left after destruction.

Question your dentist about dental care,
He is a person to help you for tooth welfare.

Replacement of missing tooth is necessary,
To approach a Prosthodontist make hurry.

Stained teeth are no more a problem,
As to remove the stains bleeching can be done.

Teething in children may be much painless,
If due care is taken for cleanliness.

Use of charcoal tooth powder is not fair,
It makes the teeth sensitive to hot, cold, sweets & air.

Visit your dentist regularly,
And follow his instructions properly.

White, pearly, shining bright are the few words,
Which should be used to describe your teeth onwards.

X-Ray can tell you the hidden decay,
Impacted teeth also can be detected this way.

Yellowish teeth are natural with fair complexion,
While milky white are common in dark one.

Zestful life with broad smile,
Wish you good dental health throughout your life.

3. Educational materials should be designed to gain or focus attention to provide new knowledge, to facilitate inter-personal and group discussion and to reinforce or clarify prior knowledge and behaviour. Materials such as leaflets, news releases, posters, films and slides are appropriate educational aids.

4. Oral health education should be built into general health education programmes.

5. In all community and school based settings, oral health instructions should be consistent and compatible with scientific knowledge as well as with local culture, educational system and social goals.

Methods for community oral health education

These include:—

1. One-to-one communication.
2. Group meetings and discussions.
3. Organisation of the community by forming committees, working with local leaders and holding meeting with professionals.
4. Use of mass media such as Doordarshan, AIR, Press, Cinema slides etc.

The effectiveness of an oral health education programme depends on:—

(i) level of understanding of the target audience.

(ii) their acceptability of suggested oral health measures.

(iii) the economic feasibility of putting these measures into practice.

(iv) availability of oral health services and of advice generating confidence in the community.

Strategy for oral health education programme

The different phases in the strategy[28] would be:—

1. Collection of information for planning:—
   (a) magnitude of oral health problem.
   (b) oral health services and facilities available.
   (c) information about the community—their level of understanding, cultural beliefs, practices etc.
   (d) identification of available channels of communication.

2. Establishment of objectives for oral health education:—
   (a) listing of actions desired of individuals, families and community.
   (b) specific information for communication to target groups and specific beliefs requiring change.

3. Assessment of barriers to oral health education and ways of overcoming these.

4. Appraisal of apparent and potential resources such as Governmental departments and agencies, voluntary organisations, professional associations, community level organisations etc.

5. Development and implementation of detailed plan of action.

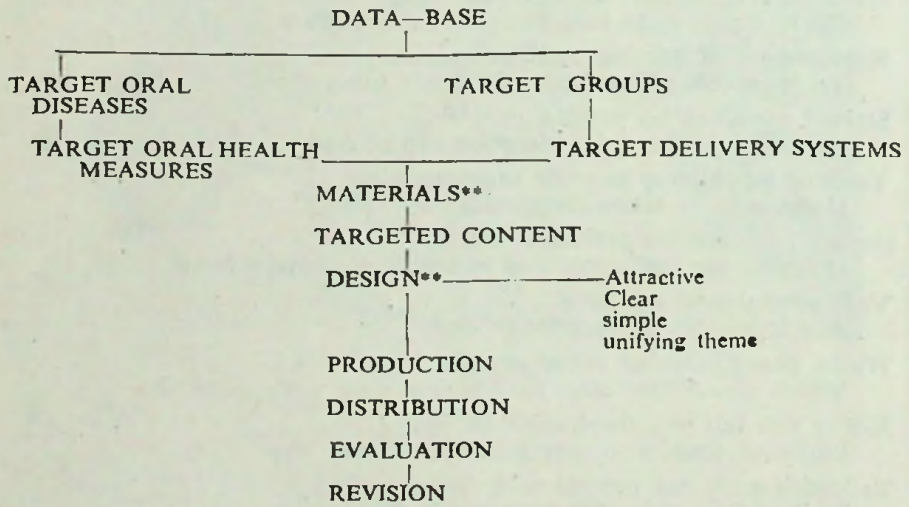
- identification of individuals and groups to be involved in planning.
- identification of target group/audience.
- specific information resources, methods and educational aids required for communication (Fig. 1).

6. **Evaluation.**

Such systematic oral health education strategy is of crucial importance in the prevention and control of oral diseases.

Fig. 1

Scheme for Development & Testing of oral Health Educational Material



**Requires consultation among

- dental experts
- media professionals
- members of target groups

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PREVENTION OF CHILDHOOD ACCIDENTS

DR A. K. MUKHERJEE

All childhood injuries are not preventable. In fact, the minor injury that accompanies childhood experimentation with the environment provides an experimental factor in child development. Therefore, in setting goals for prevention programmes, it is important to define the severity level and the causes of injuries to be targeted for intervention.

Playing with bow and arrows can result in serious eye injuries.

ABOUT 13% of the world's population is disabled, 15% of these being due to injury (WHO. 1976). India's share would be roughly 12 million disabled due to injury. A community based survey carried out by Sahasrabudhe and Sancheti (1979) indicated that 0.7% of the population had Orthopedic deformities. Assuming that 20% of these were due to injuries, this would give an all-India figure of one million. As disability can occur due to deformity and as injuries can also cause other disabilities like deafness, blindness and mental defects, it is presumed that the figure of 12 million disabilities due to injuries in India would not be out of order. The incidence every year would be around a million and childhood injuries form a very important cause.

For nearly half a century, injuries have been recognised as a leading cause of childhood morbidity and mortality. In United States, it is estimated that every year some 30,000 children and youth die of injuries—more than 4 times the number dying of other diseases. Injury has also been recognised as the leading cause of loss of potential years of produc-

tive life. The total impact of childhood injuries in terms of serious disability, mental retardation, medical costs, etc., is enormous.

Similar statistics are hard to obtain in India because of the very small proportion reporting to hospitals/health centres. While in U.S., an accidental death is defined as one which occurs within one year after the accident, no such definition has yet been used in India. Such figures as are available are of those deaths reported to the police. If an injured child dies at home owing to secondary complications many families do not report the death to the police. A large number of accidental deaths and injuries also go unreported in rural areas possibly because the police stations are far away/the rural people do not want to get involved with police.

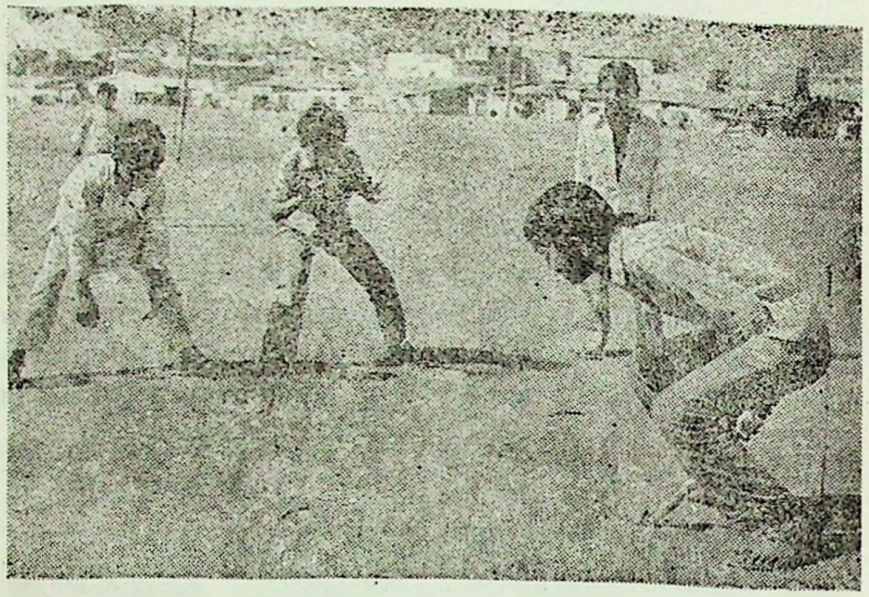
Accidents and injuries form a major cause-group of deaths in rural India accounting for 5.5% of all deaths in 1983 (as compared to 4.2% in 1971). 2.6% of these accidents and injuries have occurred in infants, 6.2% in the 1-4 year age group and 15.5% in those children aged 5—14 years. Thus, we see that almost a quarter (24.3%) of the deaths due to the accidents and injuries in rural India are in these under 15 years of age.

An estimate made of accidental injuries in India shows that annually

(i) Traffic accidents may be responsible for 40,000 deaths with another 4 to 8 lakhs being disabled seriously injured;

(ii) domestic accidents may account for 2 lakh deaths with 20 to 40 lakhs being disabled/seriously injured;

(iii) occupational accidents would account for one lakh deaths with 10 to 20 lakhs being disabled seriously injured.



Guli danda is also a common cause of childhood injuries.

Children and young adults form a sizeable group in the domestic and traffic accidents. Falls, burns and poisoning are the major causes of injuries of children at home as shown by several studies in India (Chandra, 1976; Gandhi, 1963; Sharma & Saxena, 1974; Ghose *et. al*, 1962; Agarwall & Gupta, 1974; Chaudhuri & Chaudhuri, 1962).

The term 'accident' has proven a barrier to progress in its prevention. It implies a misfortune or an 'act of God', an occurrence not understandable in terms of the normal cause of the disease. People often attribute avoiding accidents to sheer luck, a miracle or a good fortune. It is,

Playground and play equipment also present hazards to children

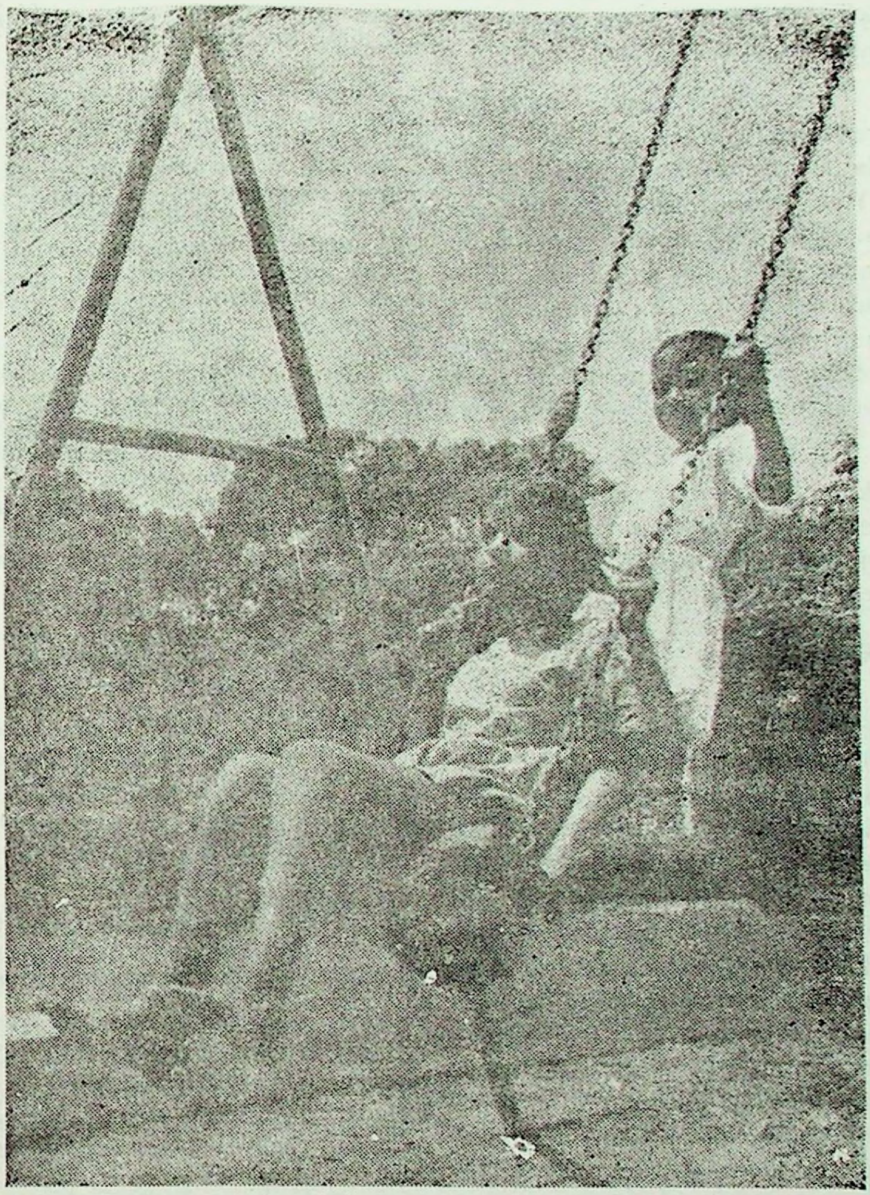
advisable to use terms such as 'INJURY' and 'INJURY CONTROL' instead as they support the view that accidents have a context and can be avoided. Thus, this would represent a major shift in our concept of the idea of accidents as random, chance, uncontrollable events to the recognition of injuries as describable epidemiologic conditions that can be controlled or prevented. A systematic approach can then be used for prevention strategies.

Multi-disciplinary approach

There is need for new data sources, new classification system and new conceptual frameworks for approaching the problem of childhood injuries and their prevention. This field needs a multi-disciplinary approach. Practising paediatricians, neurologists, surgeons, Orthopedicians and other doctors—encounter children with injuries of various levels of severity. Research needs to be focussed on the mechanism of injury, treatment and rehabilitation. Epidemiologic studies need to be carried out on the different types of childhood injuries.

The Childhood injuries can be analysed in terms of the epidemiological triad. Here, the AGENT is the object that is the direct cause of injury, the HOST is the affected child and the ENVIRONMENT includes not only the physical situation but also the psycho-social one.

The crawling nine-month-old infant who explores the world with his mouth may, with equal likelihood, poison himself by swallowing misplaced pills, choke on a 'goli' or receive a serious burn from the stove. Thus, there is need to focus on developmental commonalities of the behaviour (instead of a discipline specific approach to poisoning, choking or burns respectively)—A DEVELOPMENTAL APPROACH that emphasizes that children have different cognitive, perceptual, motor and language competencies.



A positive approach needs to be inculcated among children by motivation for adopting safe play habits.

The clinical manifestations of childhood injury ranges from minor cuts and bruises to severe multiple trauma and death. For convenience in our understanding, we normally group them into four from the treatment viewpoint as those involving (1) Self/home management, (2) Casualty treatment & discharge, (3) hospitalization, and (4) death. No doubt all childhood injuries are not preventable. In fact, the minor injury that accompanies childhood experimentation with the environment provides an important experimental factor in child development. Therefore, in setting goals for prevention programmes, it is important to define

the severity level as well as the causes of injuries to be targeted for intervention.

There is also need to evolve a simplified standardised instrument for scoring the severity of injuries. Those already in use in western countries such as the Abbreviated Injury Scale, Injury Severity Score, etc., are complicated, trauma-oriented and are for evaluating emergency treatment and subsequent care rather than for prevention.

It is important to develop a profile of the family, and the child at risk and to identify the agents of injuries as this would contribute to preventing childhood injuries.

Selection of toys

Play and playthings are important in the process of growing up for children providing them not only an outlet for their energy but also an opportunity for discovering for themselves. But, the joy of play sometimes ends in tragic disability or death. Parents need to be educated to avoid toy hazards such as aspiration and ingestion dangers, burns and shock, catch injuries, explosions and poisonings, lacerations, noise, piercing injuries, projectile injuries and even strangulation on long ropes or loops. Advice needs to be given to parents on the purchase of toys appropriate for child's age, sex, development and temperament. These toys should have the least potential for misuse. Under-five children should have their play supervised and taught by good example. Toys should be properly stored to prevent falls.

Positive approach

Playground and playground equipment also present hazards to children, *e.g.*, swings, slides and see-saws result in a large number of injuries. Children should be taught safe play habits by motivating them through a positive approach.

Falls form another important cause of childhood injuries. Variables such as age, sex, socio-economic class, place of residence, time of day and seasons are associated with the frequency of injuries due to falls. The number of falls needs to be limited by suitable environmental modification, by use of appropriate devices and by parental counselling.

Traffic-related injuries among children are another area of concern. Having created a world in which children are exposed to the hazards of the road, we have the obligation to protect them from these hazards. There is need to address ourselves to answer questions *e.g.* pedestrian injuries to children such as—

(i) What are the main detriments of unsafe behaviour and accidents?

(ii) What our educators do, gives the mental make up of the child at various ages?

(iii) What can be done to reach the objectives of traffic education?

Another aspect is the prevention of injuries to children travelling in vehicles as passengers or sometimes as drivers.

Burns injuries among children, which vary in severity and frequency include flame, scald, contact, electrical and chemical burns and smoke inhalation injuries. There is a marked variation in the patterns of risk of boys and girls. Prevention of burn injuries, inculcation of emergency behaviour to reduce burns severity and rehabilitation of a child victim with burns who has functional disability and disfigurements needs our concerted efforts.

Childhood poisoning, a tragically common event, is often due to the negligence of parents in following simple precautionary measures.

Other common causes of childhood injuries in India include animal bites and drowning.

All children should grow up in a safe environment. Towards this end, anticipatory guidance for injury prevention should be an integral part of primary child care provided for all infants and small children. Parents need to be counselled on age-appropriate, season-appropriate and locality-appropriate preventive measures which reduce common serious injuries.

A co-ordinated political, medical, individual and community effort is required for prevention of childhood injuries. This effort must be organised as a planned programme wherein the epidemiological factors are analysed, a target injury is identified and an effective intervention strategy selected. A systems approach (with phases such as Analysis, Design, Development, Implementation and Evaluation) should be adopted.

Mass media have an important role to play in frequent reinforcement of targetted messages and to bring about behaviour changes. Noteworthy in this context is the effort made over Doordarshan prior to Holi for the prevention of eye injuries and prior to Diwali last year and again now with reference to the management of burns. While television and radio are suitable for short messages, newspapers can reinforce the messages or print feature articles on target-injuries. Prominent and creditable community leaders can be quoted and community efforts lauded. Involvement of mass-media representatives in our childhood injury prevention programmes provides the necessary expertise on the effective use of the media.

A well organised programme for the prevention of childhood injuries should also include monitoring and evaluation. Changes, not only in morbidity and mortality due to injuries should be measured, but also, in the reduction of risk hazards in order to ensure that the programme is effective and for making necessary changes. **—From the Inaugural Address of the author during the Seminar on Prevention of Childhood Accidents organized by the National Institute of Public Co-operation and Child Development on 14 October, 1987 in New Delhi.**

HOW DRUGS AFFECT OUR NUTRITIONAL STATUS

KAMAL G. NATH

All drugs are toxic, if used in excess, and will almost always cause undesirable side effects—Nutritional deficiency being one of them.

THE drugs we use include over the counter (OTC) and prescription medications, alcohol and hard drugs. Even nutrients themselves, vitamins in particular, are sometimes used in large amounts as drugs instead of nutrients.

While drugs are used by all age-groups, the health conscious elderly are the most likely to be overusing OTC drugs such as laxatives and vitamin supplements in addition to the prescription drugs they use to treat their many ailments. Teenagers and young adults are in age group that most frequently abuse hard drugs.

All drugs are toxic, if used in excess, and will almost always cause undesirable side-effects, one of which may be nutritional deficiency. Persons most at nutritional risk from drug use are those who:

(1) Lack reserve nutritional stores and are more vulnerable to nutritional assault. They are already undernourished, are chronically ill, or are in a period of rapid growth.

(2) Use drugs over a long period of time. The longer a drug is used, the more likely it is to cause damage.

(3) Use large amounts of one drug. Drug effects are exaggerated when excessive doses are taken.

(4) Use several drugs at once. In that case, one drug may multiply the effect of another.

Drugs can cause nutritional deficiencies in several ways. A very obvious effect is reduction of food intake because drugs either suppress the appetite, perhaps by interfering with taste, smell or saliva production, or cause nausea, vomiting and diarrhoea. The most severe food reduction response to drugs is seen in cancer patients undergoing chemotherapy.

Diet and Drugs

Drugs may reduce absorption of nutrients:—Laxatives for example, speed up the emptying of the stomach and intestine so that nutrients have less time to be absorbed. Some drugs such as antacids, change the acidity level in the gastrointestinal tract and affect the solubility of the nutrients such as minerals. Some drugs, such as diuretics increase the excretion of nutrients in urine by the kidneys. Sodium and potassium are depleted in this way.

Some drugs interfere with metabolism of nutrients:—Drugs may damage the liver so it cannot metabolize vitamins, store nutrients or synthesize protein. Or, they may damage the pancreas so it cannot make digestive enzymes; sometimes drugs are used for the deliberate purpose of interfering with nutrient metabolism. For example—anti-coagulants act by reducing vitamin K, the vitamin needed for blood clotting, Anticonvulsant drugs used by epileptics may alter the metabolism of Vitamins D, K and folic acid and they can also cause appetite loss.

Nutrient synthesis by bacteria in the intestine also may be adversely affected by certain drugs. Anti-biotics in particular tend to kill 'friendly' bacteria in the intestines at the same time that they are destroying disease causing bacteria.

Oral Contraceptives are hormones that affect numerous metabolic processes:—They are known to reduce

blood levels of thiamine, riboflavin, Vitamin B_6, B_{12}, C and folic acid and also to affect metabolism of protein, fat and carbohydrates.

How Food affects drugs absorption and action:—While drugs affect nutrition, food eaten during drug use can affect the drug action—sometimes decreasing it, sometimes increasing it.

How food affects drugs in the body—Delay and/or reduces absorption: improves absorption; prevents nausea or vomiting and causes toxic food drug interaction.

Often when a drug is taken at the same time as food, or shortly after eating, the food in the stomach will delay the absorption of the drug, and it also may reduce the amount absorbed.

Some drugs are absorbed more readily when taken with food. Fat, for example, may promote absorption of certain compounds. Moreover, drugs are taken with food to prevent reactions such as nausea and vomiting. Some drugs are metabolised faster when the diet is high in protein and low in carbohydrate. Drastic changes in diet, for example, an increase in fibre, may affect the intestinal bacteria and change the rate or level of absorption of some drugs.

Obviously, it's very important that people be given explicit directions for each drug: when it should be taken before, after, or during meals—and what foods, if any, need to be avoided when the drug is used.

Nutrition and alcoholism

Alcohol is both a food and a drug. It is considered a food because it does supply energy, 7 calories per gram, and some alcoholic beverages such as beer and wine, also have other nutrients, including carbohydrates, protein, minerals and vitamins. However, these nutrients are present in minute quantities, and alcoholic beverages are high calorie, low nutrient—density foods.

Alcoholism, or too much alcohol consumed regularly over an extended period of time, can lead to serious nutritional deficiencies as well as to physical ailments, such as obesity, gout, alcoholic hepatitis, cirrhosis of the liver and many neurological disorders, including a form of psychosis. Alcohol also appears to play a role in the development of coronary heart disease, cancer and diabetes. Alcohol seems to work synergistically with cigarette smoking to enhance a person's chances of developing cancer of the oral cavity. The effect of alcohol and tobacco combined is greater than the sum of their individual effects.

Nutritional disorders resulting from the over use of alcohol come about in several ways.

Effect of alcohol on nutritional status:

Depresses appetite	—	Too few nutrients	—	Malnutrition Nutrient deficiencies.
Increases appetite	—	Too many calories	—	Malnutrition Overweight/Obesity
Toxic effects on liver, stomach, Pancreas, intestines and other organs	—	Reduced efficiency of digestion absorption & metabolism	—	*Malnutrition* Nutrient deficiencies, increased triglyceride production.

First, alcohol acts as an appetite depressant and an alcoholic may eat very little, thereby getting too few nutrients except calories. But alcohol requires nutrients for its metabolism and the liver preferentially metabolizes alcohol. This depletes the nutrient supply needed for metabolism of other nutrients.

At one time it was thought that the liver disease resulting from alcoholism was totally due to the poor diet and state of malnutrition of the alcoholic. It is now known, however, that alcohol is toxic to the liver and other organs even in the presence of a good diet. Alcohol causes changes in the liver similar to those found in protein malnutrition.

Because of alcohol's toxic effect on the liver, stomach, pancreas and intestines, they act less efficiently in digesting metabolizing and absorbing nutrients. Alcoholics are found to have symptoms of deficiency of B-vitamins, especially thiamine, which may result in beri-beri, anaemia caused by lack of folic acid, night blindness from lack of vitamin A, loss of taste sensitivity and appetite from lack of zinc, tremors from lack of magnesium and shortages of protein, vitamin C and potassium.

In the presence of alcohol, the liver increases its synthesis of triglycerides and these fats are secreted in the blood leading to Hyperlipedemia and possibly atherosclerosis, high blood pressure and coronary heart disease. The liver stores the fats too and becomes a fatty liver. A damaged liver is unable to store fat soluble vitamins. Fat not absorbed may take up calcium and result in kidney stone development. Impairment of glucose and glycogen stores in the

liver lead to hypoglycemia, an increase of lactic acid level and a rise in blood uric acid, and this makes an alcoholic prone to gout.

Treatment of alcoholics includes nutritional rehabilitation with nutrient supplements, to rebuild the body's nutrient stores. As with all other aspects of nutrition and diet, moderation is the most healthful mode.

More research is needed on this subject, in view of some of the conflicting information. Scientists say it is too early to endorse moderate use of alcohol as a heart attack preventive, especially because of its known medical risk.

Nutrients as drugs

Sometimes nutrients, usually vitamins, are prescribed in large or mega doses for treatment or prevention of an ailment. When used in large amounts, nutrients go beyond functioning as nutrients and instead act as drugs.

One of the major reasons why many health professionals object to the use of megadoses of nutrients is their potential toxic affect on the body. For some nutrients, such as the fat soluble vitamin A and D, toxicity is well documented. For other nutrients such as Vitamin C and E, the belief has been that they are relatively harmless, even when used in large amounts. However, evidence is accumulating that suggests, caution is needed when using these apparently harmless nutrients in amounts well above the Recommended daily Allowances (RDA).

Often the rationale used by people who take extra large dose of vitamins is that if a small amount is good, for them, then a large amount must be even better. But it should be recognised that while increasing the dosage of a therapeutic compound leads to maximum effectiveness, a further increase leads to the production of toxic affects.

Vitamins work in partnership with each other and with other nutrients in performing their functions in the body. The best way for us to get them in proper balance is to eat a wide variety of foods. Money spent on high nutrient density foods from the Basic Five can provide us with better nutrition than money spent on expensive vitamin supplements.

Nutrient supplements

Vitamin and mineral deficiencies do exist, and some people may need to take supplements. The groups most likely to need supplements are:

- Pregnant and lactating women.
- Children or teenagers who eat poorly balanced meals.
- Elderly persons with limited diets.
- People who eat out most of the time.
- People convalescing from surgery, burns, injuries, etc.
- People with malfunctioning digestive systems or allergies.

In cases where nutrient supplements do appear to be needed, products supplying moderate amounts *i.e.*, similar to RDA are generally the safest choice.

Some vitamins lose potency over time. Air, light, heat all can destroy them. So, supplements should be stored in a cool dark place and should not be kept for a long period of time. ○

WORKSHOP ON HEALTH WRITING

T. K. PARTHASARATHY

THE Press Institute of Indian (PII) organised a three-day workshop on Health Writing from July 8 to 10, 1987, at the Institution of Engineers, Bangalore, in collaboration with the Asian Mass Communication Research and Information Centre (AMIC), Singapore, the Press Trust of India and Deccan Herald, Bangalore. This was the second one on Health Writing organised by the Institute in the past eight months. The Bangalore Workshop was confined only to the southern States as the Institute plans to hold two more workshops—one each in the Eastern and Western Regions later.

Objectives

The workshop set itself the following objectives:

* To provide information on national and regional health problems to help journalists understand, identify the sources of information and utilize different formats for handling the information;

* To explain the need for news and feature reporting on the subject to help spread the health message.

The workshop comprised lecture sessions, field visits, case studies and discussions.

Ten participants from newspapers and news agencies attended the Workshop. The workshop discussed five subjects: Health for all by 2000 AD and Nutrition; Immunization Programme; Diarrhoeal diseases and oral rehydration; Communicable diseases control; Kysanur forest disease.

The five-lecture-sessions were handled by resource persons who were senior health administrators and experts in their own right on the subjects they covered.

The sixth session was a sort of round-up, providing answers to questions unanswered or not fully clarified. How can newspapers help people to participate in health programmes? was one question. Another point was about the term "affordable by the community", mentioned in the definition on primary health care. When the services are provided free of cost to the people, how does 'affordable' fit in?

WHO, UNICEF and the Central Health Education Bureau of the Ministry of Health and Family Welfare, New Delhi, provided material for the use of the journalists. A video film on health provided by UNICEF was also screened.

There were lively discussions on all days of the Workshop.

Acquire skill of presentation

Shri S. Prakasa Rao, Director, PII, set the tone to the Workshop when in his inaugural address he said it was heartening that the process of realization of the importance of health writing had begun, thanks to the interest shown by many national newspapers and magazines in the past few years.

He said it was not enough to know that 35 people died of gastroenteritis in Kanpur or there were 40 starvation deaths in Kalahandi. What was more necessary was that what these figures meant to the common man and what action, if any, was being taken to deal with the problems. Before a crisis situation was reached, media men should highlight the problems and warn the readers.

"Media cannot solve many problems or carry on campaigns on all of them. Media, if properly employed, do reach large numbers of people. If the people could be reached and involved in the programme to take action to improve their lives, journalists to that extent would have done a fine job. But to do this journalists should first equip themselves with information and secondly acquire skills for better presentation and greater communication", he added.

Without the technical input of the health sector the media could not fulfil their obligations to serve the interests of the public. What the media persons should remember was that the mode of presentation of their reports, the style and language, sometimes even the choice of words would have to vary according to the educational and social levels of the respective target populations.

Shri. T. K. Parthasarathy, Editor, **SEARB Bulletin** of the International Union for Health Education and former Editor, **Swasth Hind** was the Course Director. He said that the Press should highlight the positive aspects of health programmes. The Press should also mention those aspects where the community had failed to adopt preventive measures.

Dr. C. Achuthan, former Joint Director of Health Services, Karnataka, who took the first session, explained the concept of Health for All by 2000 AD (HFA). He said HFA did not mean complete absence of diseases from the face of earth. It only meant that everyone had the right to health care and had access to the health care system (prevention, treatment, diagnosis and rehabilitation). This began from the simplest care which was available in the home and in the community up to the highest level hospital care. It was based on the nature of health problem and on the resources of the community.

Dr. Achuthan described the basic principles of primary health care which took the health services to the doorsteps of the home, workplace and the community and the most advanced hospital.

Primary health care approach gave equal emphasis and place to indigenous systems of medicine which were popular in the countryside.

Dr. Achuthan said that people should be involved in the health programmes from the planning stage so that they could be convinced that the programme was their own and should participate in the activities connected with its implementation. Primary health care had given first position to educating of the people relating to the prevailing health problems with an emphasis on their prevention and control.

This difference should be reduced and the area of interaction between the providers and the receivers (community) should increase and this would lead to the higher acceptance of the health programmes.

Immunization Programme

On the second day, Dr. T. M. Ramesh, Additional Director (F.W. and MCH) spoke on the Immunization programme. The universal immunization programme which started in 1985 was important and this was being monitored by the Prime Ministers' office. Emphasis was placed on child survival which meant reduction of infant mortality and child mortality and improvement of health standards.

Diarrhoeal Diseases

Dr. D. G. Benakappa, Professor and Head, Paediatrics Department, Vani Vilas Hospital, Bangalore prefaced his lecture with the statement that the child was the most neglected. Twenty per cent of children malnourished. Diarrhoea claimed 1.5 million children every year in India. Lack of protected water supply, fly nuisance, material malnutrition were some of the important causes for heavy child morbidity and mortality.

Dr. Benakappa said that in the Vani Vilas Hospital, Bangalore, drugs were not used but oral rehydration solution was given to the patients. Thus a saving of Rs. 3 lakhs on drugs was made by the Hospital. While intravenus administration of glucose needed a doctor, ORT did not need any medical help. The ORS could be made at home.

The mother should be taught the signs and symptoms of dehydration. Health education of the people was very essential for prevention of diarrhoea and for giving prompt attention to the victims. Personal hygiene, environmental sanitation and proper storage and use of water should be given importance.

Communicable Diseases

Dr. J. L. Javere Gowda, Director, Health Education & Training, Directorate of Health Services, Karnataka spoke on communicable diseases and their control/eradication on the last day of the Workshop. This was followed by a presentation on the Kysanur forest disease (KFD), peculiar to Karnataka State, by Dr. D.P. Narasimha Murthy, a retired Dy. Director of Communicable Diseases and Professor of P.S.M. Department at the Kempa Gowda Institute of Medical Sciences, Bangalore. Dr. Murthy was closely associated with the KFD programme while in service.

Dr. Gowda traced the history of malaria control programme from 1953 and said the incidence of the disease was brought down drammatically by 1966 when the disease was nearly eradicated. But there was recurrence later and the programme was revised, and the modified programme was to prevent deaths due to malaria. He mentioned the steps taken by the National Malaria Eradication Programme (NMEP) to achieve the goal. Health workers were maintaining surveillance—looking for fever cases, getting blood samples for examination, giving presumptive treatment, and radical treatment blood tests revealed malaria. Laboratory services were provided at the primary health centre level for quick examination of blood slides. The

DDT spray was used in areas where the annual parasitic index was 2 or more.

Drug distribution centres and fever treatment depots were set up in remote and needy areas utilising the community support. Dr. Gowda said that nomads and migrant labour of projects were spreading the infection by not taking radical treatment where needed. There were pockets of resistance to get the houses sprayed with DDT or other insecticides needed in the situation. The coverage at times was as low as 32 per cent.

Dr. Gowda referred to the Japanese B encephalitis which was imported into India in 1979. The disease was characterised by high mortality and disability. More than one-third cases died, and another one-third disabled. There was no specific medicine, and treatment was symptomatic. Vaccines available in foreign countries were very costly.

Children were mostly affected by the disease. He referred to the peculiar situation in Madhi (Karnataka) where sugarcane crushing industry was the main stay. The piggeries were set up to feed on the waste products of sugarcane crushing. The mosquitoes picked up the infection from the pigs and spread the disease.

One of the measures advocated was to isolate the pigs for a period of 24 days or remove the pigs around 2-3 km away from the residential areas. The vector mosquito-culex vishuni—could not travel the distance under normal conditions. People's participation on these preventive aspects were needed.

Kyasanur Forest Disease

Dr. Narasimha Murthy said that the Kyasanur forest disease (KFD) was peculiar to Karnataka. It was an arthropod-borne disease transmitted by a particular type of hard tick. The disease was named so as the etiological agent was first isolated from visceral specimens of a freshly dead monkey procured from Kyasanur forest near Barige village in Shimoga district. Subsequently, further isolation of the virus was made from human cases of illness resembling typhoid in the adjoining villages, ticks collected in forest floor and on monkeys.

The treatment of KFD was essentially symptomatic. Analgesics and anti-fever drugs were given. Rehydration was done with I.V. fluids in certain cases. Coagulants were used if there was a bleeding tendency and antibiotics given to prevent secondary infection.

KFD was restricted to a few taluks in Malnad forest areas of Shimoga district for nearly 15 years from 1957, affecting mainly four taluks limited to an area of about 250 sq. miles. During 1974-76 the spread was noticed southwards involving new areas.

Control Measures

Control measures included maintenance of constant surveillance of infected areas and their borders for monkey deaths and human cases and spraying of insecticide in areas where monkeys had died recently to kill the infected ticks. People should avoid visiting the forest areas especially in the epidemic seasons (post-monsoon) as also areas specially where monkeys had died recently.

People should report unnatural monkey deaths promptly to facilitate autopsy for confirmation of the presence of infection. Suspected human cases resembling KFD should be reported for treatment. Patients should be given blood for diagnostic purposes.

Dr. Murthy said that there was enough evidence to suggest the likelihood of KFD spreading to Kerala, Goa and Maharashtra and that the three States should take necessary precautionary steps in advance.

People's participation

At the last session, Dr. V. Ramakrishna, Regional Director, South East Asia Regional Bureau of International Union for Health Education, addressed the participants on People's participation. He said people should be closely associated with the welfare programme from the planning stage. Primary health care meant total involvement of the people. They should be involved in the community survey for health programmes, and should be deemed as equal partners in the development of health programmes. Such participation was a continuous process.

Ms Nazreem Bhura and Mr. Raghunathan raised questions about ways to secure information from the health authorities. It was stated that when items based on information collected from their own sources were published, the health authorities put out denials. What was the remedy?

Dr. Ramakrishna said that keeping away information was bad. Officials tended to do this for fear that they might be exposed to criticism from their superiors. This was partly also due to the Press publishing negative aspects or blowing out of proportion certain incidents. However, the Press should do a sort of investigative reporting. Agencies such as the Press Institute should collect information and supply to correspondents.

Dr. Ramakrishna spoke of a co-operative at Malur where people put by a small sum everyday and later invested it in a development programme. The cooperative was today running a primary health centre meeting all the drug requirements.

In Chinnalapatti village in Tamil Nadu, people had constructed community latrines with their own resources. Village people paid a small sum and used the facility which brought good revenue. These, he said, were good examples of people's participation. ○

cally confirmed, giving the lay reporting 'Correction factor' of 0.7. The projection for the district was 3732 ± 293 (2 S.D.) cases for six months period (*vide* table IV). As shown in table V ongoing surveillance programme in the district detected 2016 cases, giving the 'Correction factor' of 1.8. The same for clinically confirmed data was 2.6. Lower correction factor for measles than for diarrhoea was due to the fact that measles can be easily detected by the paramedical worker than the diarrhoea cases in the community. This may be strong point for measles elimination programme.

Poliomyelitis

Table-III shows that out of 10.505 children of 5—9 years surveyed 187 (18 per 1000) cases of polio lameness were para-medically detected, among these 137 (13 per 1000) were clinically confirmed, giving the lay-reporting correction factor of 0.73. The district estimates were 2792 ± 235 (2 S.D.). Polio-lameness prevalence was adjusted by multiplying a factor 1.25, taking into consideration the paralysis in body parts other than lower limbs which are affected in 75-80 per cent of cases (9). Therefore, the corrected polio-lameness prevalence rate per 1000 children of 5—9 years will be $13 \times 1.25 = 16.29$. The annual incidence rate per 1000 children of 0—5 years would be $16.29 \div 5 = 3.26$, since the children examined cover a five year period. About one-fourth of the cases including death and complete recovery, are not detected in the clinical surveys for residual polio-paralysis. Therefore, the rate was further multiplied by 1.33 correction factor (9) to take into account such cases, *viz.* $3.26 \times 1.33 = 4.3$, which is corrected annual incidence, calling for priority of oral polio vaccination programme in the district.

Viral Hepatitis

The reference period for viral hepatitis was six months. Table III shows that out of 311373 persons surveyed 297 (95.4 per 0.1 million) cases of Jaundice were para-medically detected out of which 229 (73.5 per 0.1 million) were clinically confirmed as viral hepatitis, giving lay-reporting 'correction factor' of 0.82. The projection for the district was 1242 ± 82 (2 S.D.) cases for six months (table IV). As shown in table V the recently introduced ongoing surveillance programme in the district detected 71 cases of viral hepatitis, giving the correction factor of 17.5. The same for clinically confirmed data was 23.9 (table V).

No case of Japanese encephalitis was detected in the district, because this area is not endemic for the disease.

Table V--Correction factors for ongoing Community Surveillance data (the pilot project) Alwar district, Rajasthan

Disease	Episodes in the district during the reference periods			Correction factors	
	Detected by on-going surveillance*	Expected clinical cases**	Clinical cases extrapolated by sample survey	On-going surveillance data (Col. 3/1)	Clinically confirmed data (Col. 3/2)
Diarrhoeal Diseases	880	730	19305	21·9	26·1
Measles	2016	1431	3732	1·9	2·6
Viral Hepatitis	71	52	1242	17·5	23·9

*Adusted for non-reporting/partially reporting units.

**Adjusted for lay-reporting efficiency.

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SCHOOL FOR TREATING SPINAL CORD DISEASE

K. R. SWEDESHI

There is a special boarding school in Moscow where children not only study, but are also treated from various spinal cord diseases. The school has its own specialists who treat children both with conventional as well as modern methods and in some specific cases take the help of surgery. After carrying out prophylactic examinations on mass scale, physicians of the school selected conventional methods used for centuries and enriched them with by applying modern medical scientific techniques.

Thousands of children have already been treated here. Those who could not be treated completely have also improved their health and the progress of their maladies has been checked—90 per cent development of various spinal cord diseases—from further growth. During their class periods, students are advised to lie down or sit in special postures on specially designed furniture in order to lessen the loads on their spinal columns.

Vertebral diseases are also treated with thermal therapy, which improves nutrition of osseous and muscular tissues. Thermal therapeutics include both conventional—massage and wool wrapping—and modern—silver eletrophoresis, paraffin applications, ultrasound, Bernard currents and quartz-lamp ultraviolet irradiation treatment.

One of the most essential procedures is electrostimulation of the back muscles and abdomen. These muscles must be strong enough to form a natural corset, which can lessen overloads on the spine cord. Additional weight on legs during physiotherapy exercises also helps this. Medical therapy includes rumalon and vitrious body injections. Medicines are replaced by acupuncture whenever possible.

Specialists immediately diagnose children on their arrival at the school and find out the particular disease they are suffering from. Thus, when Svetlana and Irina came here, specialists found out that the former was suffering from second-degree scoliosis and the latter from kyphosis—the two forms of a widespread serious disease of vertebral column which affects 30 per 10,000 children.

Curative methods of both the cases have many common features. But the methods differ as these diseases progress differently. The main objective in these cases is to reduce loads on the backbone and pressure on intervertebral discs on their concave side, which creates favourable conditions for normal vertebral growth. Special physical training helps therapeutic methods. In addition to physical training, lessons and therapeutic exercises, each other lesson includes a PT interval for relief exercises. Archery is also taught to the students in order to improve their posture.

Overloads are as dangerous as underloads. At the same time, overstrain may exhaust resources of organism. Svetlana and Irina devote as much time for physical training as recommended by the physicians. Both go for swimming, but Svetlana has been advised butterfly stroke and Irina back-stroke because of her stooping. Svetlana wears an orthopedic corset and Irina recliner—simplified semicorset—which draws back scapulae.

Corsets are changed frequently with the growth of children. Their desks and special plaster-beds also differ quite apart. Students suffering from scoliosis read in a lying posture as it helps them avoid load on the backbone whereas those suffering from kyphosis are provided with desks of conventional make.

Children suffering from scoliosis and kyphosis are given special diet—rich in protein, phosphorus and calcium. They are given five meals a day, mostly consisting of meat and curds dishes, as well as fruits. The free upkeep and treatment of each student cost the State more than 1,200 roubles per annum.—*Information Department of the USSR Embassy in India, New Delhi.*

BOOKS

Measurement in health promotion and protection

Copenhagen, WHO Regional Office for Europe, 1987.

(WHO Regional Publications, European Series, No. 22)

658 pages, ISBN 92 890 1113 O
Price: Sw.fr. 80.-.

Traditionally, epidemiologists have measured people's health by concentrating on how sick they are and at what rate they die. A joint publication by WHO and the International Epidemiological Association published in 1979 looked instead at how healthy people were. While this can give a picture of the state of health of any group of people at any one time, it does not help explain why they are healthy. The present book now takes a step further and shows how to measure the changes in people's health, which can be used to assess the effectiveness of public health policies and programmes.

Part I clarifies the concepts of health and health promotion, discusses the main ways of improving health, and identifies the areas of health promotion and protection that can be measured. Part II works more like a textbook: it discusses how to measure health, health promotion and health protection, and summarizes the measurement options available. Part III gives some specific examples of the measurement of improvements in health, both successes and failures.

This book will help health planners and professionals to appreciate the nature and size of the health problems and the programmes needed to overcome them. It is aimed primarily at people in health departments who are responsible for health management, policy development and, in particular, health promotion, which is an increasingly important part of the movement for health for all. This book clarifies the central concepts of health promotion and encourages all concerned to put them into action. In addition, it should enable readers to assess the possibility of measurement in any given field. Finally, it should interest scientists concerned with the development of measurements in epidemiology, health services or social policy, and help them identify areas where further work and new methods are needed.

AIDS diagnosis and control: current situation. Copenhagen, WHO Regional Office for Europe, 1987. ISBN 92 890 1051 7, 36 pp., price Sw. fr. 5.-.

People are scared of AIDS, but now is the time to replace fear with facts and action. The help of people from all sectors of society is an essential ingredient of a successful campaign to control the disease. Only cooperative action, based on accurate information, can help end this threat to health for all.

This book, a report on a WHO meeting held this year, contains a clear analysis of the current situation of AIDS in Europe, of three models for predicting the future of the epidemic and of needs for further research. Perhaps even more valuable, however, it provides suggestions for action to prevent and control the spread of the disease. Current practice is evaluated and recommendations are made: on screening for antibodies to the human immunodeficiency virus (HIV); on counselling and care for people with HIV infection, AIDS or related conditions, particularly pregnant women and their babies; on public health measures and legislation; and on prevention through information and health education.

This book is interesting and useful reading for decision-makers, health authorities, professionals in health and other sectors, and the public. It can help people to take action against AIDS. ○

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