

swasth hind

MAY 1987

- * Medico-Social Problems of Today's Youth
- * The other side of Smack-Addiction
- * Nutrition Education at School Level
- * Nutrition and Mental Development
- * Commonsense can avoid Accidents
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- * Popularising Breastfeeding as a method of Contraception—A Study
- * Plastic Surgery has Special Role in India, says Shri Rajiv Gandhi

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READERS WRITE

Though I am a man of Mathematics, Swasth Hind has given me a lot of information regarding healthy lives. Any lay man who wants to have more information about the recent inventions in medical science can get plenty of knowledge from this magazine. I have liked very much your issues on Cancer, and Heart disease (July 1985).

—SRI RATNAKAR PALO, M.Sc.

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Articles on health topics are invited for publication in this Journal.

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

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ASM
20/10/87

MEDICO-SOCIAL PROBLEMS OF TODAY'S YOUTH

LT COL A.C. URMIL & COL P.K. DUTTA

It is high time now to pay immediate attention to the medico-social problems of youth, analyse their aetiology, magnitude and find a solution so that the youth energy can be properly harnessed and given a twist in the right direction towards social progress.

'Flaming youth has become a flaming question. And youth comes to us wanting to know what we may purpose to do about a society that hurts so many of them.'

—Franklin D. Roosevelt.

AND whatever Roosevelt spoke about youth half a century ago, still holds good today. Today's youth is a confused and bewildered lot. He has been finding it more and more difficult to adjust and adopt himself to the fast pace of social change that has particularly shaken up the last century or so. Widening of generation gap, conflict of moral values, uncertainty about future career and lack of proper guidance have been the real causes of the youth revolution so noticeable all over the world. It has been rightly said that this reckonable youth force is like a flood which must be controlled and shown proper direction, failing which it is likely to sweep away the gains of social progress so far achieved and leave the society struggling in turbulent water. The signs of this have already started appearing in the form of much of the violence, drug abuse, feeling of frustration and aimlessness among the youth. It is high time now to pay immediate attention to the problems of youth, analyse their aetiology, magnitude and find a solution so that the 'youth energy' can be properly harnessed and given a twist in the right direction towards social progress. Rightly, therefore, the United Nations voiced their concern and drew public attention by declaring 1985 as the 'International Year of the Youth' and the World Health Or-

ganization adopted 'Healthy Youth: Our Best Resource' as the theme for the World Health Day in 1985.

Population explosion

Any problem connected with youth should be immediately taken note of because of their sheer number alone. It is expected that by the turn of this century, the young population in the age group 15 to 24 years will reach some 1,128 million. In India this age group accounted for 16.6 per cent of our total population in 1971 which increased to 18.6 per cent in 1981, an increase of about 12 per cent. The population explosion itself has been a major factor lending immensity to the problems of youth. It is felt that by solving this problem of 'population explosion' alone, the country will be able to mitigate most of their problems.

Education policy

Correct educational policy in respect of youth is another major area of our concern. The present system of education has miserably failed to meet the psycho-social requirements of the youth in toto. Until now it has only been providing a passport to their future employment. With growing unemployment, the system has lost this utility and the youth their faith in the education being provided to them. It is desirable that the education should instill in them a sense of responsibility towards themselves, their families and the society at large. It should also give

them a sense of belonging, help them make self supporting and a disciplined lot. The National Educational Policy should not overlook the specific needs of the youth.

One of the major causes of frustration among youth has been a growing uncertainty about employment opportunities. There is a felt need to have a comprehensive plan to rehabilitate all unemployed youth and to give priorities to those activities under Five Year Plans which will create maximum employment opportunities. The rush for service which is the ambition of many youths should be stopped and encouragement provided to settle them in business, agriculture, handicrafts and small scale industries either on individual or cooperative basis. For this, necessary guidance, training and financial help should be made available to them.

Health problems

Youths have fallen victim to certain health problems, multifactorial in origin, with a variety of psycho-social contributory factors. Most of these problems develop during adolescence which is a very crucial transitional phase from childhood to adulthood. This period is fraught with danger to mental health and may result in 'juvenile delinquency'. A juvenile delinquent is one who has deviated from accepted normal behaviour in interpersonal relations and social life and may be labelled as incorrigible, undisciplined, disobedient, immoral or anti-social. A change in socio-cultural pattern resulting into broken homes, unhappy home atmosphere and lack of healthy recreational facilities has been the basic reason for rise in juvenile delinquency in India as elsewhere during the last few decades. The highest incidence is encountered in children aged 15 years and above and the incidence is four to five times more common among boys than among girls.

Sexually Transmitted Diseases

During recent times a world wide concern has been voiced about the growing incidence of Sexually Transmitted Diseases (STD) among teen-agers. Surveys carried out by various workers in our country have revealed a high proportional case rate in respect of youth. The Central Health Education Bureau (CHEB), in their pilot study in Government hospitals of Delhi in 1981 found that an overwhelming majority of victims were youths. Similarly another

survey carried out in Lucknow reported that 60 per cent of the patients surveyed were students. Most of the patients admitted that they had their first sexual exposure around 18 years of age. Various surveys also reveal that premarital sex is increasingly becoming an accepted way of behaviour. The prostitutes still happen to be the main source of infection in our country although the 'good time girl' has replaced them in many other countries. Lack of proper sex education, inadequate parental supervision, broken homes, lack of healthy recreation, easy availability of sex thrillers and other pornographic material, easy availability of contraceptive devices and permissiveness have all contributed towards this growing incidence of STD among youth.

Adolescent girls

Special attention should be paid to the problems of adolescent girls. In many societies the girls have not been provided with same opportunities as in the case of boys in respect of education, health care, employment, etc. They are in no way inferior to boys and their education should not be neglected. In 1975, it was estimated that out of 800 million illiterates in the world, majority (60%) were females. Besides general education, the adolescent girls need to be old about their role as would be mothers and governesses of the household and be prepared for the same. Similarly the adolescent boys will also need to be trained for their future role as fathers and heads of the families. Education on planned parenthood emphasising the evils of population explosion and desirability of small family norm must form an indispensable part of education of adolescents of both the sexes.

Drug addiction

On the drug front, the picture is getting more dismal. It is no wonder, if today's frustrated and neglected youth, with misguided curiosity, seeks a solace in addiction to drugs which are so easily available. Various surveys carried out among college students in our country reveal that a large proportion of them are addicted to drugs. The proportion was found to be 33 per cent and 37.4 per cent respectively among students of Delhi and Calcutta Universities. In U.S.A., it is estimated that 12-20 million people smoke marijuana and 30 to 50 per cent of all high school students have accepted it as an

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Special attention should be paid to the problems of adolescent girls. They need be prepared for their role as would-be mothers and governesses of the households.

indispensible part of life. It is feared that by the year 2000 AD when 'Health for All' is to be attained. India will be having nearly 15 million drug addicts. Besides the problem of drug addiction, the youth needs to be protected from the health hazards associated with alcoholism and smoking. Efforts on war footing are required to impart health education and guide the students, teachers, parents, social workers, etc, on various aspects of preventive measures against drug abuse and their role in implementing these measures. Steps need be taken to enact necessary laws if required to stop the drug proliferation and to arrange for psychiatric help to addicts, where required. A newer concept in the form of 'Youth Guidance Clinics' may be given a serious thought on similar lines as 'Child Guidance Clinics' for a comparatively younger lot.

Youth and accidents

The youth should also be cautioned against accidents. Motor vehicle accidents, drowning and burns happen to be the predominant causes of accidental deaths among 5-24 years age group in the U.S.A. In India also accidental deaths are on increase parti-

cularly road accidents which account for nearly 33 per cent of all accidental deaths. While extraneous factors responsible for such accidents must be controlled, the children and youth should be taught proper road discipline, traffic rules and made accident conscious.

Lastly, the Government through existing schemes institutions and also various voluntary organisations should pay special attention to the problems of disadvantaged young people (such as those who are illiterate or could not complete their education; rural youth who finds himself at a disadvantage *vis a vis* his urban counterpart in various competitive fields; slum dwellers; mentally and physically handicapped youth; adolescent social deviants, etc) and rehabilitate them by instilling in them a ray of hope, by assuring them that they are wanted, by guaranteeing them economic independence and by paying prompt attention to various other factors adversely affecting their physical, mental and social development. Any further neglect of our youth will be suicidal on our part and attainment of 'Health for All by 2000 AD' would be a far fetched dream never to be realised. Δ

THE OTHER SIDE OF SMACK—ADDICTION

DR M. S. BHATIA & DR N. K. DHAR

More research is needed to find out the causes and factors predisposing to drug addiction. It can also help in finding out better alternatives to the "at risk" individuals at a time when they are at the verge of becoming drug addicts.

MAN has long used psychoactive drugs not only to enhance pleasure and relieve discomfort, but also to facilitate the achievement of social, religious, and ritualistic aims. But during the last decade, many countries have experienced new trends or problems related to drug-abuse. Many people have become addicted to socially-"unacceptable", "disapproved", and "unfamiliar" drugs, which are not only highly potent but also quite difficult to be got rid off.

Problem

The commonly abused drugs are usually classified according to the effects they have. Therefore, there are three broad categories most drugs fall into—*depressants* (for example—barbiturates, and narcotics like Mandrax, Heroin), *psychedelics* (for example—Hashish, *Charas, Ganja*) and *stimulants* (like Cocaine, and amphetamine). Out of these, depressants are quite dangerous because they produce a strong physical and psychological dependence (thus producing a wide spectrum of withdrawal symptoms when stopped).

Narcotics or opiates are easily available in the streets of many cities including Delhi, Bombay, etc., under various names as "Horse", "Morph", "junk" and "Chandu". Out of the opiates, Heroin (which is 200 times more potent than Morphine) is sold under the various terms as—"Brown Sugar" and "*Gardh*" in Bombay, "Smack" and "Powder" in Delhi, "Sakos" (Sugar), "Skag", "Peeto" (powder), "Brown Sugar" and "Cold Turkey" in Goa.

Not only is the number of addicts increasing but also more and more younger people, coming from all socio-economic status, are becoming involved. Like no drug before, it is uniquely equipped to wreck the greatest amount of damage in the shortest period. In Sucheta Kriplani Hospital, during 1982 to 1983, 60 per cent patients who came for de-addiction were alcohol addicts while 20 per cent were taking canna-

bis; 15% other narcotics and 5 per cent were using more than one drug but none of them was Heroin or "Smack" addict. But from 1984 to June 1986, the persons who came for de-addiction included as many as 80 per cent "Smack" addicts. These cases came more from younger age-group 15-25 years and 20 per cent were having age less than 15 years (many were school children). Most of them were using this drug in variable amounts ranging from half to five grams. The methods employed were snuffing, inhalation or injections.

Why they become addicts

Personal causes—Whether or not a given person develops dependence on a particular drug will depend on the interaction of three factors :

(a) *The personal characteristics and experiences of the individual taking the drugs* : Modern research in Neuro-Biochemistry has found out that these persons who become drug addicts lack a chemical substance called "*Endorphins*" in their brain, so they seek artificial sources to fulfil the deficiency of these chemicals necessary for the performance of proper cognitive functions with concentration and interest. Such persons form a separate special group of drug addicts who are very difficult to treat and if they are de-addicted, they are again prone to addiction. This is the explanation why out of every ten who experiment with these drugs, only one becomes an addict. The other special group consists of persons who are either suffering from minor or major psychiatric problems (for example—depression, anxiety neurosis, Schizophrenia and various personality disorders) are more prone to addiction. This constitutes a special group because the successful treatment of these patients primarily consists of treating the underlying psychiatric illness.

In USA, a study conducted on drug-addicts has found that these drug addicts are not simply drug addicts but as many as 30 to 60 per cent of them

suffer from various underlying psychiatric disorders ranging from simple anxiety neurosis, depression to personality disorders (the most dangerous being the antisocial personality disorder which tend to demonstrate criminality at times).

(b) *The second important factor being the nature of immediate socio-cultural milieu* : The socio-cultural precursors which facilitate initiation of drug-use are—problems within the family such as break-up, divorce, violence, repression and most important is the lack of communication. The problems of drug abuse can often be traced back to *communication problems* between parents and adolescents. If the parents are very strict, or very permissive, to the point of being neglectful, their child may turn to drugs as a way of dealing with the situation. Tolstoy once said, “*Every unhappy family is unhappy in its own way*”:

Other factors

- low self-esteem and little sense of belonging to the community.
- frustration, unemployment, increasing mobility particularly of youth.
- peer group pressures.
- an abundance of information about the drug effect and sources.
- quest for pleasure.
- curiosity or defiance of a taboo.
- a response to despair, nervousness, timidity, depression, boredom or rebellion.

(c) *The pharmacodynamic characteristics of drug used, taking into account also the* :

- amount used
- frequency of use
- route of administration (ingestion, inhalation or injection)
- ready availability of drug and the general public acceptance of the use of these “mood modifiers” because one socially acceptable drug abuse predisposes to other which may not be socially approved.

The experimental and, or casual use are necessary precursors to dependence on drugs.

Complications

There are many side-effects of Smack intake ranging from nausea, loss of interest, lethargy, constipation, impotence, cirrhosis of liver, hepatitis, sedation, abscess, coma and now may be AIDS (acquired through infected syringes or sexual perversions like homosexuality common among drug addicts). The intake of this kind of drug also suppresses those drives that motivate an individual to feel hungry, seek sexual gratification and respond to provocation with anger. In short, they seem to produce a state of total drive satiation. Some narcotic users

say that opiate type drugs give them a pleasant ‘floating’, ‘drifting’ or ‘coasting’ sensation and that every thing seems to be all right.

The cost of refined Heroin is around Rs. 400 per gram while that of crude one is between Rs. 20 to Rs. 40 per gram.

Withdrawal syndrome

Heroin is 200 times stronger than the raw opium in its physical, psychological and withdrawal effects. The abstinence (withdrawal) syndrome consists of a complex of symptoms and signs which include restlessness, body-aches, yawning, lacrimation, running nose, sweating, flushing, trembling, nausea, diarrhoea, increased body temperature, and blood pressure, loss of appetite and body weight. A lay man can judge a person for Smack intake from the size of pupil (in eye) (the pupil being pinpoint if the person has taken the drug).

These withdrawal symptoms are because of adaptation of body to the physiological changes resulting from drug intake.

The withdrawal symptoms due to psychic dependence are—anxiety, lack of concentration, irritability, altered behaviour, sleeplessness and even depressed mood.

The abstinence syndrome appears within a few hours of the last dose, reaches peak intensity in 24 to 48 hours and then subsides gradually within two weeks time. Thus two weeks time is the crucial time for patient to suffer these intolerable symptoms.

Management

In spite of the phenomenal increase in the number of drug (Smack) addicts, there is limited hospital facilities and low priority is accorded to drug addicts. Only few hospitals in Delhi have facility of admission for drug addicts (eg—G.B. Pant Hospital in New Delhi has 4 beds but these are only for women. These hospitals also run De-addiction clinics once a week).

(a) *Treating drug addicts*—The basic determinant of success in treatment of drug addicts is *high motivation* (higher the motivation, the better is success).

The drug therapy is not the only solution for the treatment of drug addicts.

There are a great number of people who have a role to play in dealing with drug use and they are to be found at different levels of social structure. They include

- The legislative authorities who make laws and regulations (strict is the law, the better is control, e.g. as in USA, Germany)
- Public administrators to control the drug availability

- Health (mental and physical) and social service professionals
- Drug treatment (psychiatric services) and research centres
- School administrators to create awareness among children because 42 per cent of our population consists of individuals less than 15 years of age
- University services and counselling
- Community services and educators
- The Media helping in advertisement and health education.

The treatment is more successful if:

- person is taking less dose and addicted to only one type of drug,
- newly addicted and highly motivated,
- good premorbid-adjustment,
- person has no other obvious stresses or psychiatric problems, and the most important
- good family support.

(b) *Relapse*—About 80 per cent of the addicts resume their habit within six months.

The main causes of relapse are:

- presence of overt or latent psychiatric illness.
- poor follow up of patients,
- poor rehabilitation services,
- easy availability of drug and continuous peer pressure,
- out door treatment because only few hospitals have the facility for admission and so the outcome of treatment is poor.

(c) *Prevention:*

Methods of prevention can be considered in three headings:

(i) *Legal control restricting the availability*—It may be aimed at the user, curtailing his liberty or imposing other restraints upon himself if he illegally possesses or uses the substance.

In general, when a drug is legally and readily available in a community, variations in the prevalence of dependence on the drug correspond directly to the extent of its use.

The excessive use of certain drugs and the related high prevalence of dependence on them in particular communities appear to have been associated with promotion by advertising. Further more the advertising of pharmaceutical preparations in some countries may have had the result of encouraging the free and uncritical use of drugs in general.

If it is believed that an alteration in legal control will result in an altered prevalence of a particular problem, data should be gathered to confirm or refute this expectation.

(ii) *Education*—Knowledge, in itself is not necessarily protective if the drug is readily available. Reports show that the incidence of dependence on restricted drugs is in many communities higher among members of the health profession than in the general population. It throws doubt upon the preventive value of knowledge about the dangers of drugs and emphasises the importance of drug availability as a factor in the deviant use of drug. So educational programmes should avoid the danger of promoting an unnecessary and excessive interest in dependence producing drugs.

(c) *At risk approach*—Advanced techniques are needed to influence the groups of the population particularly “at risk” of becoming drug dependent. That is, adolescents, individuals in occupational groups having ready access to drugs, persons with deficiency of Endorphins in brain, persons suffering from psychiatric illnesses like delinquency, sociopathic personalities, depressives, etc. According to a survey conducted by NIMHANS, Bangalore, around 35 million people in India suffer from some minor psychiatric illnesses like anxiety neurosis and about 15 million from major psychiatric illnesses like depression, mania, schizophrenia, etc. So this group is always more prone to drug addiction because only few patients have access to psychiatric treatment due to scarcity of psychiatrists.

According to Kramer and Cameron (Senior Medical Officers, WHO), “Unfounded scare or fear tactics tend only to discredit and, therefore, are not likely to be helpful and may be harmful”.

The school class may be developed as a special form of the “therapeutic community” to treat the disturbed child early in his school career.

The advertisement without proper preventive and rehabilitative treatment is going to create more curiosity in “at risk” individuals to experiment these drugs (for example, statutory warning on cigarette packets had no effect on the sale of cigarettes). It can be concluded that only the drug treatment of these addicts is not the end (just like as if the leaves of an infested tree are sprayed with insecticides without paying attention to the infected roots), thus, it needs much more than this.

Research

More research is needed to find out the causes and factors predisposing to drug addiction.

It can also help in finding out better alternatives to the “at risk” individuals at a time when they are at the verge of becoming drug addicts. ○

NUTRITION EDUCATION AT SCHOOL LEVEL

DR A. C. MOUDGIL, DR S. K. VERMA, DR PARMJIT KAUR,
MS AMITA UMMAT & MS RAMAN MEHTA

Nutrition education programme is required in the elementary and secondary schools along with the comprehensive health education programme. It affects attitudes, knowledge and behaviour of children in relation to food. At different school levels, a series of learning experiences should be developed regarding different aspects of nutrition such as accepting a variety of foods, realizing that individual differences exist in requirement and use of foods, and realistically evaluating his own nutritional practices. Inservice teacher education should form an important aspect of the health education policy. The emphasis should be on prevention-through-education approach.

A DYNAMIC nutrition education programme that begins in early childhood and continues through the elementary and secondary schools, can help young children to acquire a positive attitude toward food. Also, it can help older children assume responsibility for their own food selection and prepare them for adult and parental responsibility for food-selection.

Comprehensive health education programmes in elementary and secondary schools offer exceptional opportunities to make effective nutrition education available to a large number of children. The course of study has to be heavily based on human ecology, namely, a study of man in interaction with his environment. According to Sinnacore and Harrison (1971), by environment we do not mean just those elements provided by nature but also those aspects of the environment introduced by man, such as pollutants of air and water, cigarettes, food additives, chemical fertilizers, insecticides, hybrid varieties and the myriad of drugs now available in our society.

The nutrition education programme is urgently required. Problems such as drug abuse, alcoholism, lung cancer and malnutrition do not represent medical failures but educational failures. The drug addict, the alcoholic, the lung cancer patient and malnourished individual may be seriously damaged or reach a point of beyond help by the time he consults a physician.

It is now recognised that prevention through educational approach conserves not only people but money as well; rehabilitation is always much more expensive than prevention.

Food, nutrition and health cut across many areas of learning, therefore, these subjects lend themselves to integration into the school programme without requiring large and special allocations of time in the already crowded school curriculum. Nutrition is required as a part of health education in the schools. Other disciplines, for example, home economics, biology and general science have much to contribute in nutrition-education as well. Ideally, these disciplines should play complementary role in providing a rich and varied experience. But, basic nutrition education should be made available to every child—college-bound or not; boys as well as girls—on a continuing basis.

Preparation for nutrition-related responsibilities

The curriculum-guides in nutrition are geared toward preparing the student for the two types of nutrition-related responsibilities which individuals have in our society. These are—

1. To make reasonably adequate choices in selecting his own diet and that of anyone for whom he selects food.

2. To develop and express informed opinions on issues of public policy which affect nutrition. Nutrition education is concerned with not only the student (his attitude, his knowledge and his behaviour for the next week or the next year) but also when he becomes a parent and a voting citizen several years from now. To affect attitudes, knowledge and behaviour, we need programmes which do more than repeat irrelevant phrases about how many servings a day, of which food-groups should be eaten for good health. Our goal should be to guide the behaviour of children in relation to food, not to "teach nutrition".

The child entering school is not a blank slate when it comes to ideas and feelings about food. Some educators have failed to recognise that although a student is not acquainted with the teacher's concepts about food and nutrition, he does have concepts of his own. Everybody eats and everybody has a conceptual frame-

the child to develop positive attitude toward food and eating; accept a variety of foods; recognise differences in how and what people eat and begin to understand the relationship of food to health and growth.

At the *intermediate level*, the curriculum is geared toward helping the student to understand in some detail the relationships among food, health and growth; understand and apply principles for selecting food to meet nutritional need; develop an appreciation of food as part of man's physical and socio-cultural environment.

At the *junior high school level*, the learning experiences work toward helping the student to apply knowledge of nutrition to everyday situation; realize that individual differences exist in requirement and use of foods; appreciate the effects of social and environmental factors on nutritional health; and realistically evaluate his own nutritional practices.

The child entering school is not a blank slate when it comes to ideas and feelings about food. Some educators have failed to recognise that although a student is not acquainted with the teacher's concepts about food and nutrition, he does have concepts of his own. . . . Our task is to help the child build nutritionally viable concepts, while respecting those viable concepts he already has and are part of his family and cultural background.

work within which he makes decisions about what he eats. Our task is to help the child build nutritionally viable concepts, while respecting those viable concepts he already has and are part of his family and cultural background.

Learning experiences

Nutrition education in schools has in the past been notoriously dull and ineffective, because too often, it has been seen by both the teacher and the student only as a set of standards to be learnt. Within this conceptual framework, a series of learning experiences should be developed—interaction of the child with his environment, which could lead to the gradual evaluation of the concepts, and the achievement of behavioural goals.

At the *primary level* (kindergarten through third grade), the learning experiences work toward helping

The *senior high school nutrition curriculum* seeks to relate the student's understanding of nutrition to broad social concerns and to concerns about his own future. The student is encouraged to understand that his eating habits affect his own long-range health and the health of the next generation; to explore the problems of malnutrition in his own State, country, and the rest of the world to become aware of unanswered questions in the field of nutrition; and of career opportunities in related fields.

Learning experiences are selected so that a progression occurs from the simple to the complex, allowing the student to gradually evolve his own concepts and ideas. Many times, the same subject-matter topics are found at all grade levels, but the experiences suggested should be geared to abilities and needs at each level to avoid repetition of identical experience and to provide for increased depth of understanding and potential for application.

Preparation of teachers

In order to launch an educational programme in the health sciences (including the nutritional sciences), the low level preparation of teachers in these areas must be overcome. The professional preparation of the average school teacher does not in the majority of instances include even a single course of study in health sciences, much less a specific course of study in the field of nutrition. Broad-scale inservice teacher-education programmes are thus the order of the day. A major role of the health education coordinator is teacher-training; he may teach inservice courses himself or call upon personnel from the community and/or school to provide inservice educational opportunities for teachers.

All schools should follow the applied nutrition programme recommended by the Government of India (Halder, 1969). This programme is aimed at upgrading the nutritional status of all the vulnerable groups including the school-going population, by helping them produce their own requirement of protective foods and thereby educating them to realize the need for consuming those foods. Each school-garden is to be cultivated and maintained by school children under the supervision of a trained teacher. Green leafy vegetables and fruits grown in these gardens are consumed by the school children in their school-meal programmes or any other feeding programme. The Masterplan also provides for the development, in each Block, of poultry, fisheries and dairies with financial and technical assistance from the government and the UNICEF.

A good educational system should be sensitive to the changes in the social environment which it seeks to serve and constantly adapt itself to meet the changing requirements.

Article 47 of the Constitution of India states, "The State shall regard the raising of the level of nutrition and standard of living of its people and improvement of public health as among its primary duties" (Chandrasekhar, 1969).

The objectives envisaged in Article 47 can be easily achieved if nutrition education is made a compulsory subject in the school syllabus. (This paper is based upon a research project funded by Ministry of Health and Family Welfare, Government of India).

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May 1987

PROGRAMME TO CONTROL 'AIDS'

KUMARI SAROJ KHAPARDE, Minister of State for Health and Family Welfare said in Lok Sabha on 5 March, 1987. "Six cases of AIDS have so far been reported from Gujarat (1), J & K (1), Andhra Pradesh (1), Maharashtra (2), and Delhi (1).

Five persons detected as full blown cases of AIDS have died. The surveillance figures have so far indicated 86 cases of AIDS infection.

The steps being taken by the Government are as under:

(1) 27 Surveillance centres have been established in the country to screen high risk group. In addition, 4 referral centres where higher level diagnostic facilities for AIDS are available, have been set up.

(2) Restrictions have been imposed for import of blood and blood products without AIDS Clearance Certificate.

(3) All the State Health authorities/Hospitals/STD clinics have been alerted to look for AIDS cases.

(4) All the blood banks have been instructed to screen the professional blood donors.

(5) All the State Health authorities have been advised to ensure strict sterilization practices in hospitals and clinics or to use pre-sterilized disposable syringes and needles as far as possible.

(6) Guidelines have been sent to all the State health authorities for health care personnel.

(7) All the mass media channels have been involved in educating the people on AIDS, its nature, transmission and prevention.

(8) Instructions/Guidelines to the State/Union Territory health authorities have been issued for medical examination including that for AIDS for foreign students being admitted to Indian Universities.

These activities are periodically reviewed and appropriate remedial and intervention measures are taken.

There is an allocation of Rs. 50.00 lakhs for the programme during the year 1987-88."

She further added that so far, the following expenditure had been incurred by the government on AIDS control programme:

1. Purchase of Elisa tests kits, chemicals and reagent	Rs. 51,25,588 (US \$ 394276)
2. Health education activities.	Rs. 40,85,000
Total	Rs. 92,10,588

NUTRITION AND MENTAL DEVELOPMENT

DR R. D. SHARMA

Studies show that undernutrition has been mostly associated with low income groups, and is more prominent in developing countries. There are large number of children in the world who, because of undernutrition and other social and economic conditions, will not reach their full intellectual potential.

It has been felt that undernutrition is the most common health problem in the world, specially in the third world countries, which affect the physical and psychological development of a child. It is estimated that about 60 per cent of the total pre-school population of the world suffer from some degree of moderate-to-severe protein-energy malnutrition. It is most widely known from the literature that undernutrition affects behavioural development. Dobbing (1971) and Winick *et al* (1971) have demonstrated that when undernutrition occurs either pre-natally or during the first two years of life, when brain growth is at its maximum, the damage to brain cells will be permanent, thus leading to mental impairment.

Many researchers who are working in the area of nutrition have tried to find out the causes of undernutrition. They have found that undernutrition has been mostly associated with low income groups, and is more prominent in developing countries. Cobos and Guevara (1970) proposed an interaction between the nutrition status of the individual and his food intake, physical health, psychological make up, individual and his food intake, physical health, psychological make up, related to one another and not to the total system in a manner not yet well understood.

Miguel, Peter and Bernard (1982) have assessed the significant role of nutritional status in pregnant women. They found a good correlation

between the weight for weight at different stages of pregnancy. Prentice, Whitehead, Watkinson, Lamb and Cole (1983) have felt the need to identify truly at risk groups for prenatal supplementation programmes in developing countries. The various factors interact and are interdependent. Cobos and Guevara (1970) have argued that food intake is dependent upon food availability, size of family, economic status, food habits and other factors. They propose that psychological damage is associated with undernutrition. Grantham, McGregor, Stewart and Desai (1980) have also found that malnourished children had lower mean mental development quotients than those of the adequately nourished children. They also had poorer mothers with lower I.Q. and have lower birth weights. Therefore, nutritional status is an important factor directly related to the mental ability.

Mental measurement

Though this article deals in general with the area of undernutrition and mental development, some methodological issues of mental tests will be presented. Of particular concern is the use of mental tests in a culture different from the one on which they are standardized. This is critical to quantification of the data. Psychologists have been trying to identify and measure cognitive functions in children. Definitions of intelligence were offered implying various degrees of contributions from the environment or from inheritance. Today, how-

ever, there is tendency to consider many causal elements for intelligent behaviour. These currently considered factors are culture, level of education of parents, family's social condition, opportunities for the child's experience, his needs, motivation, aspirations and biological conditions. All these variables undoubtedly are pertinent to the interpretation of the test's findings. However, our problem in the practical sense is to find reliable ways of assessing an index of cognitive functions, and then to try to identify the reasons for the functioning.

It has been argued that it is inappropriate to compare the child's obtained scores to a culturally different reference population. This argument is totally valid when one considers I.Q. scores as a theoretical abstraction. For the purpose of comparison within cultural groups, the obtained numbers serve as reliable indicators relative to the groups, but should in no way be construed as I.Q. scores. For example, it is nonsense to compare a child from Mexico with an American child on an American test. One might, on the other hand, consider that after appropriate changes are made in the test, there remains some correlative value within the same population. One can further argue that the transformed tests are capable of assessing and comparing the behaviour of children who have suffered nutritional deprivation with children who have not experienced such nutritional stress.

Moderate undernutrition

A study on Head Start children in United States was conducted by Sulzer *et al* (1970) and found that children suffering from anaemia, as defined by low haemoglobin or low haematocrit, performed less well on a vocabulary test than non-anaemic Head Start children. These results suggest that anaemic children have a slower reaction time and poorer level of motivation and, therefore, poorer learning ability. These data do not, however, allow us to conclude whether this effect is chronic or acute.

In Santiago a study on 500 pre-school children was conducted by Monckebert (1970). He found strong relationship between nutrition and intellectual development. He studied three different groups: *Group A* consisted of middle class children who were not undernourished, and both of whose parents had an average secondary education. *Group B* and *C* were of lower-class children, with parents having an average of two years of schooling. *Group B* had participated for a period of ten years in a programme of nutritional supplementation with milk and free medical care. *Group C* did not receive special medical care. These children had poor physical health with the average height at one year being below the third percentile of the *Io Wa norms*. They reported that in *group A* and *B* the subnormality rate was three per cent and five per cent respectively, while in *group C* it reached 40 per cent. Although these results demonstrate a strong relationship between nutrition and intellectual level, the experiments did not conclude that the differences were due only to nutrition. They feel that the extra feeding and medical care programme of *group B* may have had an effect on the environment and cultural and maternal motivations. These results, as well as results of other studies, demonstrate the difficulties of isolating the effect of undernutrition on mental capacity.

Severe protein-energy malnutrition

Several recent studies show that the brain is affected, and to a great extent, by malnutrition. The degree to which the brain is affected depends upon the severity of malnu-

trition and the age at which malnutrition takes place. The majority of studies conducted in the area of malnutrition have examined the effect of severe protein-energy malnutrition on cognitive development. Several other factors which have significant effect on the long-term consequences of the severe malnutrition are; (i) age of onset; (ii) severity; (iii) duration; (iv) health and environmental rehabilitation.

Human studies relating to the effect of undernutrition on mental development present major problems which are not easily overcome. Warren (1973) presents a critical review of the pioneering studies and examines the methodological problems involved. He cites the studies of Caback and Nojdanvic (1965), Stoch and Smythe (1963, 1967) and several others, where the age of onset of undernutrition, severity, duration and rehabilitation were unknown. Furthermore, most of these studies employed a crude matching control group, and when siblings were used only a few were tested. Another weakness of these studies is that undernourished children were selected on the basis of their height, weight and head circumference and very little was known about their health background.

During the assessment of behavioural and psychological development in malnourished infants, certain methodological considerations should be kept in mind. It is essential to distinguish between immediate, short term and long term effects of undernutrition and to trace the patterns of behaviour recovery. Thus, it is important to assess the undernourished infant's behaviour during nutritional treatment and recovery, and to assess the longitudinal effects through early puberty. In addition, it is essential to establish well defined control groups. A matched control reference group should be drawn from well-nourished infants from other families of the same socio-economic status. Healthy siblings in fact may constitute better control group, whose genetic and environmental backgrounds are more similar. However, it should be noted that such controls come from the same home that lead to undernutrition in one child.

Other possible factors contributing to the effects of undernutrition could be the age of onset and duration of undernutrition. Craviote and Robels (1965) suggested that the younger the child at the time of hospitalization for severe undernutrition the less complete his behaviour recovery. This is in line with the views of Dobbing (1971) and Winick (1971) who stress the greatest risk to the structure of nervous system is in the young undernourished organism. Chase and Martin (1970) reported that children who became severely undernourished before the age of four months showed less mental impairment when tested about 2½ years later, than those who suffered undernutrition after four months. Hertzog *et al* (1972) found no association with the age of onset, nor did Evans *et al* (1971), Yatkin *et al* (1971) reported an inverse relationship between age on admission and I.Q. on discharge from the Rehabilitation unit. The differences between their three age groups (birth—6 months; 6 months—12 months; 12 months—18 months) were significant at 0.01 level. In a follow up study conducted by McLaren, Yatkin, Kanawati, Sabhagh and Kadi (1973) reported no association with age of admission and subsequent I.Q. They suggested that this lack of relationship may stem from two major factors. Firstly, older children would tend to have undernourished for a longer period of time, with a more adverse effect on later intellectual level. Secondly, the effects of undernutrition on mental performance are likely to be more severe during an earlier rather than a later period of post-natal life. These two main factors operate with mutually antagonistic effects. Therefore, the duration of as well as the age of onset of undernutrition is a contributing and interacting factor affecting mental growth.

Many researchers have observed that the general stimulus type milieu of the institution during medical rehabilitation contributes to the overall progress of the subjects. In order to study and control for the stimulation factor, half of the infants of the unstimulated group (US), were roomed in the usual clinical environment. The other half, that stimulated group(s), received

extra perceptual and emotional stimulation consisting of a colourful room decorated with pictures, red curtains and bright coloured linoleum on the floor.

During their stay in hospital the children were assessed every 2 weeks for 8 testing sessions on the 1955 revision of the Griffiths Mental Development Scale. This scale gives a general development quotient (DQ) and measures of five mental functions: locomotor, personal, social, learning and speech, eye and hand-co-ordination, and performance. The control group was tested in a similar fashion: 8 times, every 2 weeks.

During hospitalization, both experimental groups (S and US) improved consistently and significantly regardless of the environmental stimulus conditions. The differences between all the eight test sessions were significant at the $P < .001$ level. The greatest improvement occurred during the first three test sessions, i.e., during the first month that the children spent in the hospital. Moreover, the stimulated group improved significantly more than unstimulated group. The difference became significant ($p = 0.05$) at the fourth session. From the fifth session onward, or 8 weeks after admission, the difference was highly significant ($P = .001$). However, despite the fact that both groups kept on improving steadily throughout the four months, they never attained the level of the normal group. The control group kept more or less to the same rate of mental development during the six sessions. It is of interest to note that, in the experimental groups, of the five mental function studies, the greatest improvement occurred in the personal social function. The scores for hearing and speech seemed the most retarded over the entire period of recovery.

Mclaren *et al* (1973) conducted a follow up study of 30 of the severely malnourished children and 15 of their controls. The results were compared to their three respective control groups: data were collected on three additional groups for the purpose of comparison with the follow up data. Measurements were taken with 30 young siblings of the original marasmic group. An additional 15 children with 'failure to thrive' who had



Studies show that psychological damage is associated with undernutrition

never received nutritional treatment, and 15 of their healthy siblings were examined. Of the 30 previously marasmic children, 15 were of the stimulated group and 15 were of the unstimulated. All children were assessed on the adopted Lebanese version of the Stanford-Binet Intelligence Scale. The results show that all the previously marasmic children obtained poorer scores than the other two groups on general intelligence, memory, visual motor, reasoning and social-intelligence tasks. The best scores were obtained by the healthy children. These results are remarkably similar to two recent follow up studies of severely undernourished children who were fully rehabilitated (Hertzig, Birch,

Richardson and Tizard, 1972) and Birch, Pinciro, Alcade, Toca and Cravioto-study was a significant correlation between the present I.Q. of previously marasmic infants and their present physical growth ($r=0.56$, $p < 0.01$).

Schofield (1980) studied the effect of long term psychological stimulation on mental development of severely malnourished children. The effect of adding psychological stimulation to the treatment of severely malnourished children was studied by comparing the development level (DQ) of children with those of an adequately nourished group with diseases other than malnutrition and a second malnourished group who received standard care

only. The intervention children underwent structured play sessions daily in the hospital and weekly for six months after discharge; mothers were also shown how to play with them. The non-intervention malnourished group showed a lower D.Q. than the adequately nourished group throughout the study. The intervention group made significant improvements in D.Q. in hospital and continued to do so after discharge. By six months they were significantly ahead of the non-intervention malnourished group and were no longer significantly behind the adequately nourished group.

A study, conducted by Usha, Bhat (Nee Parekh), Udani, Shah, Naik and Ezhuchan (1973), consisted of 45 children with varying degrees of growth failure due to severe protein calorie malnutrition (PCM). The nutritional assessment was graded by comparing the heights and weights in percentage of the 50th percentiled Harvard Standards. As the children belonged to low socio-economic group, 20% of them had low birth weight and had prolonged continuing malnutrition since birth.

The study revealed that there was a close correlation between intelligent quotient (I.Q.) and height and weight. Greater the deficit in height and weight, lower was the I.Q. The head circumference of these children correlated well with I.Q.

There are large number of children in the world who, because of undernutrition and other social and economic conditions, will not reach their full intellectual potential. Some believe that investments in education are to certain degree being wasted and suggest that funds be spent on improving nutritional and preventive measures. Others, however, feel that improvement in education will bring permanent improvement in all social and economic conditions.

I hope it is quite clear to the reader that despite our emphasis on people with behavioural deficit and retarded mental growth, we expect the large majority of individuals in

populations living under nutritional stress to be normal even if the stress is extreme and 25 per cent of the population manifests moderate to severe neurological deficits. The remaining individuals in such populations have either avoided or survived these stresses.

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COMMONSENSE CAN AVOID ACCIDENTS

DR MADHUBAN GOPAL

Most accidents are caused by unsafe conditions, and unsafe acts, or both. In the event of an accident some simple commonsense rule has either been ignored, forgotten or misunderstood.

ACCIDENTS lower production rates and lessen the quality of products. Accidents, by increasing production costs, raise the prices of commodities purchased by the people. The injured worker, however, pays most through the loss of an arm, legs, eye or perhaps the loss of his job or even his life.

Most accidents are caused by unsafe conditions, and unsafe acts, or both. Some simple commonsense rule has either been ignored, forgotten or misunderstood.

Major cause of injuries is the *mishandling* of materials. Stooping with the back arched and with the load out at the end of the arms causes the back injury while lifting. The worker, therefore, should plant his feet firmly, well apart. He should then squat with his knees bent and get a good grip on the object. He should keep his back as straight as he can and lift slowly, without jerking, but pushing up with his legs. The strong leg muscles should do the work rather than the back muscles. The body should never be twisted with the load.

Filled cylinders should be kept chained. Cylinder dollies should be used to move compressed gas cylinders. Long objects should be carried over the shoulder with the end held as high as possible to prevent striking other employees or damaging property.

Falls from an elevated place as a result of stumbling, slipping, or loss of balance are usually caused by plain carelessness. For example, objects left in the middle of the aisle or on stairs, spilled oil, grease, or water, waxed floor may cause falls.

Stairs should be walked up and down slowly with feet firmly planted on each step and the handrail used. Jumping from trucks or rushing has caused serious injuries. Falls from ladders have disabled many. Ladders should be long enough so that it is not necessary to stand on the top rungs. The ladder should be set one foot away for every four feet up to the point of support. Since the rungs are usually one foot apart, it is easy to figure the distance. Ladders

should be checked for crack or loose rungs and one should never overreach from a ladder.

Work injuries due to falling, moving or flying objects have occurred when the injured worker has failed to wear protective equipment needed. Safety glasses or shields will protect the eyes from small particles that can cause permanent blindness. Protective equipments are of no value unless worn. Similarly, safety hats should be worn while overhead work is going on and where there might be falling objects.

Safety shoes and steel toe box saves from a crushed foot or an injured toe.

In addition to wearing required protective equipment, the worker must stay away from under cranes, suspended loads, or overhead works. One should stand clear when bells or horns warn him of passing vehicles or overhead equipment. One should stay clear from danger zone or barricaded areas.

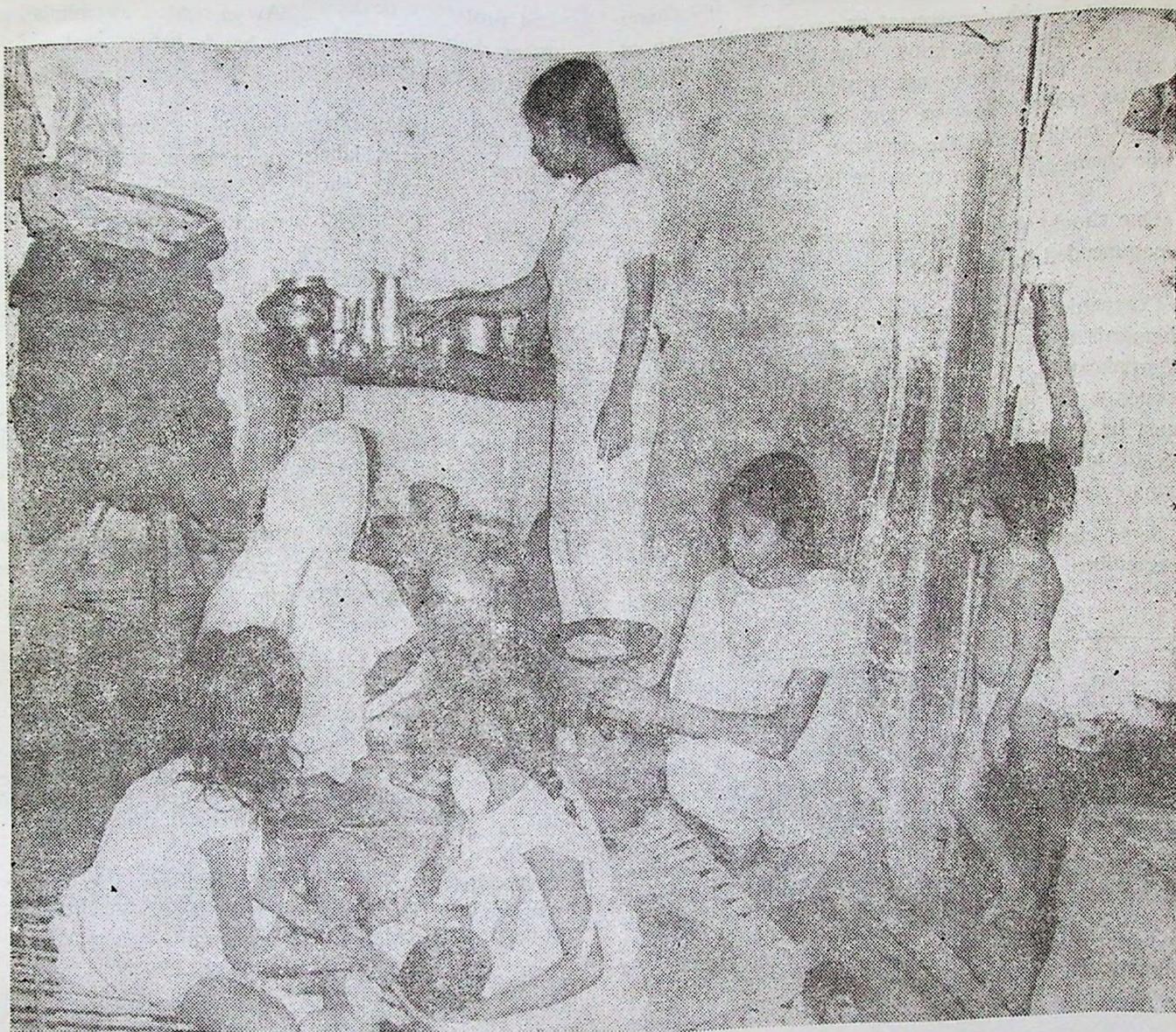
Misuse of machines, disregard of guards, failure to dress properly when operating machines (loose jewelry or clothing), not locking or lagging main power switches during repairs, or letting machines run unattended also cause work related injuries. Accidents have resulted due to non-maintenance of safety devices installed to neutralize a toxicant from going to the atmosphere.

These are a few commonsense precautions all workers should take because, in addition to preventing injuries, they are the best way to do the job.

Occupational health and safety programmes with emphasis on prevention have been able to reduce mechanical and health hazards. Safety team-work needs everyone's cooperation.

Hazards of pesticides

Precautions are advisable in special jobs. In this article, information on hazards of pesticides is being disseminated.



Major cause of accidents is the mishandling of materials.
Photo shows a scene of a mismanaged kitchen.

Many *agricultural chemicals* are now used in farming operations to kill insects, weeds, disease agents, or rodents and to improve the fertility of the soil. The pesticides used in fight against harvest depressing factor is compared to a weapon which can become dangerous. Even when using it for a good cause, the operator must be fully aware of dangers involved and of safety measures.

Besides direct contact with the pesticide at the time of manufacture, storage or operation, people are exposed indirectly to the residues (the remnant of pesticide or its toxic metabolite after application) on vegetable, fruits or soil. Although these residues are present in *ppm* to *ng* level, they need to be monitored and should not be consumed before the recommended waiting period. Such exposure may lead to chronic toxicity.

Basic rules

Simple basic rules are given.

Read the label and follow the directions on the label. Rule 19 of the Insecticides Act calls for the following information:

Name of insecticide and manufacturer, registration number of the insecticide, names of ingredients, type of formulation, net contents of the pack, quality control batch number, date of manufacture, expiry date, antidote statement and warning symbols.

Besides, each unit pack has one leaflet to accommodate a detailed information about the pesticide like names of insects, weeds which are controlled, optimum dosage, symptoms of poisoning and safety measures required, container disposal and method of storage.

If the label is not clear, one should call the chemical dealer, health department or someone who can explain it. One must know what is in the container, what it is for, how to use it safely, what equipment may be needed, how to store it, how to dispose of unused portions and the container, and what to do if toxic chemicals get on or in the body.

One should use as directed, using only the amount recommended on the label.

Companies spend much money and effort testing chemicals to determine the amount, time, and method of application for maximum effectiveness, safety and economy. Don't believe that a little more chemical must be better. It is not true. If the chemical fails, consult an expert rather than trying out heavier applications or mixtures with other chemicals.

Some chemicals can be safely handled with a few precautions; while others may require special handling

and protective devices. Avoid contact or inhalation. After their use, wash your hands before eating or smoking and change clothing on return to your home.

Chemicals should be stored in the original or approved container, labels intact, in a suitable storage area. Chemicals should be locked up or stored beyond the access and ingenuity of children, animals, and unauthorised persons. Never put chemicals in unmarked containers. Many children are poisoned because people keep chemicals in ordinary bottles meant for foodstuff.

Dispose of unused chemicals and empty containers. Burial is best, especially for toxic materials. Unless the label says so, chemicals and containers should not be burned because they might give off harmful fumes, leave poisonous ashes, cause intense fire, or even explode. Toxic chemicals should never be poured on the ground or into a stream. ○

Process begins on World Narcotics Pact

WHEN someone at an international meeting on narcotics suggested that the kat plant be added to the list of banned drugs, representatives of the Arab states strongly objected. The expert from Yemen, where mildly narcotic kat is chewed like gum but alcohol is prohibited, suggested in rebuttal that liquor be added to that list. The angry exchange reflects the difficult work ahead for the UN Commission on Narcotic Drugs, which ended a week-long meeting in Vienna on 11 February.

The 28 nations attending the meeting passed a resolution creating a panel of experts to draft a convention for world-wide co-operation in fighting illicit drug traffic. But speedy adoption of a convention faces obstacles when such basic tasks as defining a list of illegal narcotics drugs prove to be difficult.

Use of marijuana, for example, gets tacit approval in some countries where people do not consider it harmful. And scientists have yet to agree on a standard international definition of marijuana. The so-called 'designer drugs' pose a different problem. Although just as potent and dangerous as closely related narcotics, designer drugs differ from them chemically, thus preventing police and the courts from acting. If a nation goes through the cumbersome process of making one such variation illegal, the manufacturer can produce a new drug by marginally changing the formula again.

Other issues become sticky. The UN Commission passed another resolution urging the rich 'consumer'

countries to give more money to help poorer Third World countries battle the powerful drug barons.

The delegates to this conference are already preparing for the next one, to be held from 17 to 26 June, the first ever with delegates.

Ms. Tamar Oppenheimer, Director of the Conference secretariat, said the goal of the June meeting is to "combat the drug problem in all its forms at the national, regional and international levels and adopt a comprehensive multidisciplinary outline on future activities."

She said the delegates would "produce a final document, which is a manual which can be used by everyone, from governments to individuals." Although they may debate the terms of the proposed convention, they won't be able to adopt one yet; that will take longer. Non-governmental organisations will be meeting simultaneously with the ministers in June, Ms. Oppenheimer said.

"What we are aiming for is a change of emphasis," she told a press conference on 11 February. "Upto now we have been attacking the supply. Now we want to attack demand—and for that we need the co-operation of non-governmental organisations." With a slogan "Yes to life, no to drugs", she said, the June conference will consider such issues as drug education and the treatment and rehabilitation of drug addicts.—*U.N. Newsletter*, 21 Feb. 1987. ○

EPILEPSY EDUCATION AND ITS EVALUATION

PRAKASHI RAJARAM AND DR R. PARTHASARATHY

In order to evaluate the impact of 'epilepsy education', a small experiment was conducted at the Neurology unit of the National Institute of Mental Health & Neuro-Sciences, Bangalore. Authors feel that after educational campaign a significant improvement was noticed in awareness about causation, hereditary influences, nature of epilepsy and social aspects of fits.

PEOPLE have many misconceptions, negative attitudes and unhealthy behaviour towards issues pertaining to health in general and epilepsy in particular. Planned efforts by health professionals are needed to make a positive impact on the existing conditions. In the absence of systematic attempts at people's education, it is difficult to induce any kind of change in the minds of common men.

Studies indicate that attitudes towards health problems remain negative at different levels in various sections of the community. Such findings alone may not be sufficient. Of late, it is emphasised that attention needs to be focussed on the methods of change of attitudes and not the attitudes *per se*.

Rarely do we come across studies evaluating methods of education regarding illnesses. Epilepsy being one of the commonest illnesses affecting at least one per cent of population at any given point of time, it is important to focus on this problem from an educational perspective. Moreover, considering the inexplicable anxieties it creates in the individual and infinite 'relationship difficulties' arising out of epilepsy and also the stigma attached with this illness, it is essential to assess the impact of education about epilepsy.

In organizing educational programmes in the hospitals and community, the professional social workers play a vital role. Professional skills for working with

individuals, groups and communities are indispensable for effective health education.

Simple experiment in epilepsy education

In order to evaluate the impact of "epilepsy education", a small experiment was conducted by psychiatric social worker attached to the Neurology Unit of the National Institute of Mental Health and Neuro Sciences, Bangalore. For this purpose, an informative lecture followed by discussion was organised by neurologist, for a group of 25 educated members of a women's voluntary agency involved in various social service activities. At the end of the discussion they were given a booklet on "*Social and Medical aspects of Epilepsy*", published by the Indian Epilepsy Association, Bangalore Chapter.

FIRST PHASE

Misconceptions of the Members

An assessment prior to epilepsy education: To know their attitude and knowledge, the members were asked to fill in a structured questionnaire on epilepsy. More than 65% of the members believed that epilepsy was caused by evil spirits and black magic. Another belief that most of them (more than 50%) entertained was that, worms in the stomach caused epilepsy. More than 70% of the members believed that fits were contagious. Yet another misconception prevailing among at least 30% of the members was that placing a key in the hands of the

patient during fits would alone be sufficient to cure him of fits. Besides, many other wrong notions pertaining to personal and social life of epileptics, about 65% of the respondents expressed their ignorance about its various important social aspects.

SECOND PHASE

Contents and method of epilepsy education

In one of the weekly meetings of the Women's Association, a neurology expert was asked to deliver a simple lecture on "Social and Medical Aspects of Epilepsy". This lecture highlighted the causes, nature and common types of fits, nature of medical treatment and its principles, first-aid during major fits and febrile convulsions among children. Besides the social components of the illness, *i.e.*, Do's and Don'ts for the patients, epilepsy in relation to schooling, work, marriage, sex, children's sports, driving, emotions and alcohol were given much emphasis in this lecture.

The lecture, given in local language, avoided technical terms and difficult terminologies and used the question-and-answer method. Following the lecture, ample time was given for clarification and discussion. This session lasted for about three hours. The group members showed keen interest and actively participated in the discussions. A booklet on social and medical aspects of epilepsy was also given to all the members to supplement their knowledge about it.

THIRD PHASE

Preliminary assessment of gains in knowledge and changes in attitude

To know the impact of the 'Epilepsy Education Components', the same questionnaire was readministered to the members of the women's association after four weeks. It was interesting to find that the responses like 'I don't know' had almost become nil. Only a negligible small number (less than 4%) did not know about seven items in the questionnaire. A significant improvement was noticed in awareness about causation, hereditary influences, nature of epilepsy and social aspects of fits. This, in turn proves that education given about epilepsy had an impact on the members of the voluntary association. However, it is worth noting that 100% change could not be achieved in all the items. Unless we take these issues continuously and consistently with the members, improvement to the highest degree may not be possible.

NATIONAL DRUG AUTHORITY

Replying to a question in Rajya Sabha on 3 March, 1987, Shri R. K. Jaichandra Singh, Minister for Chemicals & Petrochemicals said, "The National Drugs & Pharmaceuticals Authority, an Apex Body, is proposed to be established with a permanent Secretariat to coordinate matters relating to the development of the Pharmaceutical Industry in the country."

He further said, "Fifteen drugs have been reserved for public sector. They are Streptomycin, Tetracycline, Oxytetracycline, Gentamycin, Sulphaquinoxidine, Sulphadimidine, Sulphamethoxy-pyridazine, Sulphadimethoxine, Vitamin B₁, Vitamin B₂, Folic Acid, Quinine, Analgin, Phenobarbitone and Morphine."

Replying to another question, the Minister said that the existing Drugs (Prices Control) Order, 1979 would continue to operate till a new Drugs (Price Control) Order was issued incorporating the new measures announced by the Government.

The Minister said that a seven member Committee would identify the essential drugs to be included in the proposed Category II which was headed by Dr Vijay Kelkar, Chairman, Bureau of Industrial Costs and Prices. ○

Implications of evaluation for health education

Systematic efforts at monitoring the progress are essential in health care, specially health education. In health education, this component is not given due consideration by the health professionals. The evaluation not only reveals what positive changes resulted because of the education but also what positive results failed to occur despite the education. Illnesses carrying 'stigma' require evaluation-oriented education to develop new methods of education and to improvise methodologies and change the contents. These attempts when replicated in different centres, would help developing definite modules of health education specific to our socio-cultural settings. No doubt, such collective efforts by the health professionals will make the "Health for all by 2,000 A.D." a reality. ○

COUGH AND COUGH

DR J.N. PANDE

Most of the respiratory disorders result from tobacco smoking, environmental pollution, lack of immunization and poor nutrition. These conditions are preventable to a great extent. The author in this article suggests simple guidelines to promote respiratory health.

Cough is an extremely common symptom of respiratory disease. There is hardly any one amongst us who has not had cough. Quite frequently cough is a manifestation of minor respiratory infections such as common cold or flu, but it may also be an important symptom of underlying serious disorders such as tuberculosis or lung cancer.

A NORMAL adult inhales something like 15,000 litres of air every day. This air is frequently contaminated by various pollutants, namely, dust particles, tobacco smoke, smoke from the factories, emissions from automobiles, and smoke from domestic fuel. In spite of the fact that the nose and upper respiratory passages have an excellent mechanism for filtration of air and removal of particulate material above 10 microns, some of the pollutants do reach the lower respiratory tract. They are then trapped in a protective mucus blanket covering the lower respiratory tract, and either coughed out or removed by ciliary movement to the throat from where they are swallowed.

Like sneezing, cough is also a protective reflex for the respiratory tract. It helps in eliminating foreign bodies, inhaled irritants or excessive secretions from the respiratory passages. During the act of coughing, these materials are ejected very much like the bullet from an air gun.

Respiratory infections

Respiratory infections are the commonest cause of cough. These infections, which may be caused by bacteria or viruses, result from inhalation of air contaminated by micro-organisms. When a diseased person coughs or sneezes, he may eject up to a million tiny particles containing micro-organisms. Many of these remain suspended in the air as droplet nuclei, and cause infection in other subjects in the vicinity.

Cough is a common symptom of upper respiratory viral infections or colds. It is estimated that an average healthy person suffers from 2-3 episodes of viral respiratory infections every year. The disease is mostly self-limiting, and requires no specific treatment. In most of these instances, the person recovers within a week of onset of symptoms with a 'cold-like' illness. However, any cough which lasts more than a fortnight must be taken seriously. Moreover, if the cough is accompanied by pus or blood mixed sputum it calls for immediate attention by a physician. Other signs of underlying serious disease include weight loss, prolonged fever, chest pain, breathlessness, night sweats, palpitations, wheezing, hoarseness of voice, etc.

Smokers frequently suffer from chronic cough, which is often dismissed as 'smokers cough' and of no importance. This, however, is a wrong notion. Tobacco smoking is the most important cause of serious respiratory disorders such as chronic bronchitis, emphysema and lung cancer. Early symptoms of these disorders are likely to be treated lightly as 'smokers cough' with disastrous consequences.

Tuberculosis of lungs

Tuberculosis of the lungs continues to be a very serious health problem in India. Persistent and unexplained cough calls for thorough medical check-up as well as an X-ray of the chest, and sputum examination. It may be emphasized that physical examination of the patient by stethoscope alone may not

By and large, most of the respiratory disorders result from tobacco smoking, environmental pollution, lack of immunization and poor nutrition. These conditions therefore, can be preventable to a great extent.

be enough to rule out the possibility of tuberculosis, and in the presence of suggestive symptoms, an X-ray of the chest must always be taken. An enlightened individual has the right to demand this investigation, if overlooked by the treating physician.

Lung cancer

Lung cancer is a smoking related cancer, and therefore largely preventable. Cough and spitting of blood are important symptoms of this disease, but unfortunately, the diagnosis is rarely established at early stages, and the disease usually has a fatal outcome. Hence greater emphasis should be on prevention of lung cancer by avoiding or stopping smoking rather than its early diagnosis and treatment.

Prevention of respiratory diseases

There are several measures which can be extremely useful in the prevention of various respiratory diseases. They must be practised by all of us, and are an important part of health education. Some of the important measures are enumerated below:

- (1) Proper observation of immunization schedule recommended in India. B.C.G. vaccination given at three months of age is helpful in reducing the incidence of tuberculosis. Vaccination against diphtheria, whooping cough and measles is also important in preventing these disorders and their sequelae.
- (2) Large family size, overcrowding, poor socio-economic status and malnutrition are significantly related to the incidence of respiratory infections in children. These are basic issues and the Government is tackling the problem by promoting family planning and literacy amongst the affected communities.
- (3) Prompt and adequate treatment of childhood respiratory infections is necessary to prevent the development of complications and sequelae causing life-long respiratory disability.
- (4) Certain measures may be useful in preventing the spread of respiratory infections from one person to another. A person having cough should always put a cloth or kerchief over his mouth and nose while coughing or sneezing. Close physical contact with a diseased person by his friends and relatives should be avoided. Diseased person should not spit indis-

criminally in the house, on the roadside or in public places. Sputum should preferably be collected in a closed container and disposed of in a proper fashion.

- (5) Tobacco smoking should be discouraged. It should be banned at all public places. Every smoker must remember that he is endangering not only his own health, but also of his spouse and children, as well as his close associates.
- (6) Regulations regarding industrial hygiene must be strictly enforced in order to provide clean air not only to the industrial workers, but also to the persons residing in the vicinity of industrial areas. Adequate ventilation must be provided for the workers working in dusty environments. Smoke-emitting vehicles should be banned from plying on the road.
- (7) Use of smoky domestic fuel should be avoided if possible. If at all it is used, the kitchen should be well ventilated to let out the smoke. Smoke-emitting fuel should not be used in the bedrooms.
- (8) Any person having cough for more than a fortnight should consult a physician. It should be done earlier if other symptoms such as chest pain or blood spitting are present. If the physician is unable to make a diagnosis by physical examination alone, he should order a chest X-ray and sputum examination.
- (9) Full and complete treatment for respiratory infections, particularly tuberculosis, is mandatory in order to avoid complications and chronicity. Physician's advice regarding treatment should be strictly adhered to.
- (10) Regular physical exercise tones up the respiratory system. Daily physical exercise resulting in a feeling of mild breathlessness is desirable. Certain breathing exercises are also beneficial in improving the efficiency of the respiratory muscles.

By and large, most of the respiratory disorders result from tobacco smoking, environmental pollution, lack of immunization and poor nutrition. These conditions therefore can be preventable to a great extent. We should all endeavour to promote respiratory health by observation of the simple guidelines suggested above.—From AIIMS Public Lecture. ○

IATROGENIC CORNEAL ULCERS

DR SWATANTRA SHARMA, DR PRAKASH GUPTA & SHRI PRADEEP KUMAR GAUTAM

Iatrogenic corneal ulcers in eyes are the commonest, and are caused by quacks to whom the patient goes for one or the other type of eye trouble. Quacks in turn pretend to have removed some foreign body by mopping with cotton or sewing needle or pin causing corneal ulcers and permanent opacities in patients.

SUPERFICIAL and purulent inflammation of cornea is called corneal ulcer. Corneal Ulcers often lead to permanent opacities leading to lower visual acuity while complications may lead to loss of the eye.

Infection, malnutrition and injuries are the important causes of corneal ulcers, out of which trauma is the commonest and frequent cause of corneal ulcers. While the Government is focussing greater attention on Blindness Control, we noticed at District Hospital, Hamirpur in Himachal Pradesh, that Iatrogenic Corneal Ulcers in eyes are the commonest, and are caused by quacks to whom the patient goes for one or the other type of eye trouble. Quacks in-turn pretend to have removed some foreign body by mopping with cotton or sewing needle or pin causing corneal ulcers and permanent opacities in patients.

Case studies

Of the 100 patients examined in the Eye Out-Patient Department during a period of three months at the District Hospital, Hamirpur, only 21 came directly without any previous treatment. The rest (79 cases) had come after getting foreign body removed ranging from one to 50 times. Out of the total 79 cases, 60 were females, 4 males and 15 children.

Disease pattern

1. Viral conjunctivitis with Corneal Ulcer	95
2. Iridocyclitis	2
3. Acute Congestive Glaucoma	1
4. Sub-conjunctival Haemorrhage	1
5. Acid Burn (Accidental)	1

Quackery pattern

As many as six persons have been identified in this District who practise eye quackery, five of whom being old women. All of them were from poor families and charged nothing but some grains in return. Warning to these quacks proved successful and efforts are on to put an end to such type of iatrogenic blindness in this area.

Interesting cases

Case No. 1: A 60 year old female had aphakia right eye for the last five years. She got foreign body removed 50 times which she attributes to "KHOT" (evil spirit). Clinically she had superficial keratitis with iritis and trachoma, for which she was treated and responded.

Case No. 2: A 50 year old female got foreign body removed 30 times. Clinically she had superficial keratitis with *grade IV* trachoma in both eyes which responded to treatment.

Case No. 3: A 70 year old female got foreign body removed when she got white patch on the cornea. Clinically she had hypopion corneal ulcer in her right eye with mucocoele and she was operated upon for mucocoele, after which she responded to treatment for corneal ulcer.

Case No. 4: A 45 year old female developed severe headache and watering eyes for which she got foreign body removed twice. Clinically she had acute congestive glaucoma in both eyes with PL & PR present in both eyes. After a course of medical treatment she was operated upon and improved.

Discussion

Of the many causes of corneal ulcer described in books and reported in the literature, Iatrogenic corneal ulcers are poorly highlighted. It is hopeless on the part of the profession as well as our country when the Control of Blindness is covered under the National Health Programmes, that such practices still continue. Blindness due to corneal cause is by and large cured by corneal grafting. Corneas are rarely available and India has to import donated eyes mostly from Sri-Lanka which are very costly and a laborious technique of surgery is involved which is not practised in many parts of the country including Himachal Pradesh. Hence, the purpose of this article is to create awareness about iatrogenic corneal ulcer that it can be, and is better, prevented. Health authorities and health workers should on their part take suitable measures against such quacks and educate people on such problems. ○

POPULARISING BREASTFEEDING AS A METHOD OF CONTRACEPTION

A Study of Yanadi Tribal Women in Andhra Pradesh

DR G. GURUMURTHY

Breastfeeding has a strong fertility inhibiting effect, i.e. the prolonged breastfeeding reduces fertility as a natural biological phenomenon, claims the author. Hence, it may be treated as one of the types of contraception for postponing and limiting the birth.

BREASTFEEDING is an important cultural variable which influences fertility through post-partum amenorrhoea (PPA) and birth interval (Bongaarts, 1980). It is one of the proximate variables which inhibit fertility as a result of prolonging the duration of postpartum amenorrhoea. Breastfeeding influences ovulation by means of physiological mechanism and is also a principal determinant of amenorrhoea. They are interrelated and one affects the other resulting in positive correlation. Normally, without breastfeeding the average amenorrhoea interval is only 1.5 to 2.0 months. Secondly, amenorrhoea is affected not only by the duration of breastfeeding, but also by the type and intensity of breastfeeding. It has been noted that women who give only breast milk to their infants are much less likely to resume menstruation than are those who supplement the diets of their infants with fluids by bottle or with solid food.

It is found from the Khanna study (Wyon and Gordon, 1971) that all wives believed that lactation protected against conception, particularly until the return of menstruation after child birth. Many maintained that lactation resulted in natural spacing of pregnancies with no need of any contraceptive for birth control for a year or more after a child is born, as breastfeeding was virtually universal in this region. It was also observed that breastfeeding evidently suppressed menstruation for a median period of ten months more than the time otherwise expected. Bongaarts (1982) suggested that the longer duration of breastfeeding might be the cause of the longer pregnancy interval. Biologically it is well known that through hormonal action initiated by lactation the birth interval can be prolonged; this can act as measure of birth control and also reduce the natural fertility. Therefore, breastfeeding has a strong fertility

inhibiting effect, i.e., the prolonged breastfeeding reduces fertility as a natural biological phenomenon. Hence, it may be treated as one of the types of contraception for postponing and limiting the births.

Breastfeeding period varies from society to society or country to country, depending upon the culture and development. It ranges from 3 to 48 months, the period is usually lower in urban women as compared to rural women (Venkatarangan, 1974). Moreover, in some of the studies carried out in India, it is indicated that the period of breastfeeding is more among the mothers aged 30 and above, as compared to those in the age group below 29 years. Also it is observed that age of the women and breastfeeding have a positive correlation (Krishnamurthy, 1967). In India women breastfeed their babies for 16.5 months in Bombay region (Malini Karkal, 1969) and 21 months in Punjab area (Wyon and Gordon, 1971). In the case of Andhra Pradesh it was 18 months for Muslims, 20 months for caste Hindus and 24 months for Harijans (Mahadevan *et al.*, 1981). The mean lactation period was 16.1 months in Taiwan, 23.0 months for Korea, 24 months in Nepal and 26.5 months in Indonesia (Bongaarts, 1982). Where as in western populations it is generally short, and many women do not lactate at all; in traditional societies of Africa, Latin America and Asia, breastfeeding is usually long and often lasts until next pregnancy occurs (Bongaarts, 1978). Hence, it was decided to study the effect of breastfeeding on fertility among Yanadi Tribal women in Andhra Pradesh.

Discussion

In the present study of Yanadic, it was found that 97.8 per cent of the mothers practised breastfeeding and the remaining 2.2 per cent stated that they had no

milk at the time of child birth to feed their babies. This shows that breastfeeding is universal in this tribal community. They also supplement the diet of their babies with goat or cow's milk and with fluids as well as solid foods from the fifth month onwards. It is the general practice in this community that they breastfeed their babies till the next pregnancy occurs. Even during night time whenever the child cries, the baby is given the breast to suck. They do not provide any type of bottle feeding. The mean number of time, mothers breast feed the babies per day is found to be 7.5. Besides, it is noticed that on an average the first breastfeeding commences at 5 A.M. and the last breastfeeding is at 8 P.M.

Further, an attempt was made to study the period of breastfeeding by Yanadi women; the last but one child was considered for the study, as in the case of last child, some of the babies may still be continuing to be breast feed and hence the duration of breastfeeding may not be completed. The mean period of breastfeeding is found to be 24 months.

It was noted that two-fifths of the women (42%) breastfeed their babies from 13 to 24 months while, over one-third of them (34%) continued breastfeeding for 25 to 36 months. About 14 per cent of women continued breastfeeding for 37 months or more. The remaining one-tenth of them (11%) practised breastfeeding only upto 12 months. In general it may be noted that an overwhelming majority of Yanadi women (76%) practised breastfeeding from one to three years (13 to 36 months). The fertility behaviour of Yanadis in relation to breastfeeding is shown in the Table below:

Table: Mean number of live births in relation to the period of breastfeeding and duration of marriage.

Period of Breastfeeding (in months)	Duration of marriage (in years)			
	upto 10	11 to 20	21+	Total
Upto 12	2.5 (12)	4.5 (24)	6.1 (27)	4.8 (63)
13 — 24	2.4 (108)	4.3 (84)	5.7 (60)	3.8 (252)
25 — 36	2.3 (66)	3.6 (102)	5.0 (33)	3.4 (201)
37 +	2.2 (15)	2.7 (38)	4.8 (31)	3.4 (84)
Total	2.4 (201)	3.8 (248)	5.4 (151)	3.7 (600)

Figures in brackets indicate the number of women.



The period of breastfeeding has a negative association with fertility behaviour of individuals.

The period of breastfeeding has a negative association with fertility behaviour of individuals which is found even in Yanadi tribal community. The women with 12 months duration of breastfeeding have the fertility of 4.8 live births and those who practised breastfeeding for 37 months and above have a significantly lower fertility of 3.4 mean live births. Hence, the fertility has declined as the period of breastfeeding progressively increased. When the duration of married life is controlled, a similar consistent relationship is noticed even under different age cohorts of women. Nevertheless, the decline of fertility is more conspicuous among the women of middle and older age groups as compared to youngsters. Therefore, the hypothesis that longer the duration of breastfeeding lower will be the fertility is proved which shows that breastfeeding acts as a method of contraception. In this context an effective mass education campaign about the advantages of breastfeeding through cinemas and television may encourage

the people to go for a longer period of breast feeding instead of bottle feeding. This may supplement the normal efforts being made to promote breast-feeding through population and health education programmes by the change agents who work in tribal areas also.

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UNICEF Chief for primary health care

A need to broaden and accelerate all aspects of primary health care—the goal of Alma-Ata—was expressed by Mr. James Grant, Executive Director of the United Nations Children's Fund (UNICEF) in an address to the 79th Session of the World Health Organization's Executive Board meeting in Geneva.

Mr. Grant emphasized the complementarity between UNICEF, which "addresses the needs of the whole child" and the World Health Organization (WHO)

INFLUENZA VACCINES FOR 1987-1988

—Modified composition recommended—

Representatives of the World Health Organization (WHO) Collaborating Centres for Reference and Research on Influenza have completed their yearly meeting to formulate their recommendations concerning the influenza vaccines to be manufactured for the 1987-1988 season. Having studied the prevalence and antigenic character of the various viruses isolated during the current season, they recommended that the vaccine for use in the 1987-1988 season be trivalent and contain the following antigens:

- an A/Singapore/6/86 (H1N1)—like antigen
- a B/Ann Arbor/1/86-like antigen, and
- an A (H3N2) antigen, to be recommended

During the 1986-1987 season, influenza A (H1N1) viruses have predominated and in most countries have been the only type of influenza virus to be isolated. Almost all of them were similar to the A/Singapore/6/86-like strains isolated in Asia from April to July 1986, which has been recommended in August 1986 in addition to the three components chosen in February 1986. There were few influenza B viruses isolated and all were similar to the type used in the previous vaccine.

As for the A (H3N2) type, the viruses isolated during the past season were very heterogenous and a change in this component appears necessary. Work is in progress to define an appropriate A (H3N2) antigen and further information will be issued at the end of March 1987.

Details of the influenza epidemiology, antigenic and vaccine studies leading to the recommendations for the influenza vaccine appear in the WHO *Weekly Epidemiological Record*, No. 9, issued in Geneva on 27 February 1987.

—W.H.O. Release

which "provides not only the technical expertise for policy, but addresses the health needs of all the world's population, extending many realms beyond UNICEF's area of concern."

"The challenge that we face in improving the well-being of the world's poor amidst the current economic climate will require solutions built on the foundation of all that we know and that we are capable of producing. We know that we stand together in confronting that challenge", said Mr. Grant.

Swasth Hind

SAVITA'S SAD STORY

DR R. L. BIJLANI

Every one has nearly forgotten it and forgiven her but she has neither forgotten it nor forgiven herself. The entire episode is still very fresh in her mind including its minutest details. She hasn't missed a single vaccination at school since then, and I don't think she will.

KAVITA and Savita were good friends. They were neighbours, and they went to the same school. They were generally seen together. One day their teacher announced that the next day all children would be given TAB vaccination. It was an injection to prevent typhoid, she told them. She added that in case some child did not want it, he or she should bring a letter from the parents explaining why the injection should not be given. The last sentence brought a sense of relief to all the children. So there was, after all, a way to escape the torture, they thought. Most children went home and pestered their parents for a letter. So did Kavita and Savita.

Kavita's father said, "Before I give you the letter, let me tell you an old story from my life. When I was twelve, I had fever, which started like any ordinary fever. But instead of coming down in a few days, it kept mounting up, slowly and steadily, day after day. Your grandpa changed a couple of doctors, and every doctor tried several medicines, but nothing seemed to work. Finally, we all knew it was typhoid. By then, I had grown very weak. In addition to fever, I also started getting loose motions. I was given only very watery curd and some rice to eat. After the third week, I was half awake and half asleep most of the time. I didn't really know what was happening. I was told that I used to say all sorts of funny and meaningless things. When the fever came down after five weeks, I had been reduced to a skeleton. I was scared of seeing my own face in the mirror. For another month, I could not walk, I will never forget that experience".

Troublesome illness

At this point, Kavita's mother said, "The other day Kusum the doctor auntie, was telling me that these days good drugs are available for typhoid. But still, generally it takes about a week of fever before doctors start suspecting typhoid and diagnose it, and another

week for the cure to be complete. Although it is much better than before, typhoid is still very troublesome illness".

Her father continued, "Summer has already set in. Soon it will be vacations, and we will go out somewhere. We may have to eat at all sorts of places. We will not be sure how clean the cooks are, and we will not know how old the food is. Besides, you would like to have plenty of ice-cream, sugarcane juice and many old things during summers. It will be quite a wonder if somehow or the other some typhoid germs do not get into your body. And if you want to know what typhoid can be like perhaps no body can tell you better than I have just done. Now, will you get me some paper and a pen. I shall give you the letter you wanted".

Kavita laughed and said, "Papa, don't be funny. Do you really think I am so stupid as to choose typhoid instead of a prick".

Like most of the other children, Savita also wanted to take the letter to school. As soon as she reached home, she talked about it to her mother. Her mother said, "Let us wait till Papa comes back home. Then he can give you the letter". That day her father came back home very late. Savita had already gone to bed. The next morning was like all other mornings. There was such a mad rush about getting ready. Naturally, Savita forgot all about the injection and the letter. On her way to school, Kavita reminded her about it. Savita felt so bad. She felt like running back home to get the letter. Kavita told her in brief the story her father had told her, and said, "See, I am not carrying any letter although I remembered. Come on Savita, both of us will take the injection". But Savita said, "I am no goody goody kid to be taken in by stories like that. I will find a way to avoid the injection". And she did find a way. She thought

that if she told the teacher the way things had really happened, the teacher would force her to take the injection. Instead, if she told the teacher that she had already got the injection, the teacher might exempt her easily for fear of any harm resulting from the second injection.

Escapes injection

At school, when the teacher told the children to queue up for the injection, Savita made a very innocent, almost pathetic, face and said to the teacher, "Ma'am, my father had taken me to the dispensary and got me the TAB injection only two weeks ago. He came back very late yesterday night. In the morning, when we got up, he said he would give me the letter. But after that he forgot all about it, and so did I", she said looking rather sheepish, and added, "I'm sorry, Ma'am". Savita was normally a well-behaved and honest girl. Therefore, the teacher believed her, and exempted her from the injection.

On their way back from school, Kavita was cross with Savita for telling a lie. Savita said, "My father never says no to anything I ask. He had not said no even to the letter. It is just that I forgot to ask him for it. So you can't say that I lied". Kavita said, "Then what about the injection at the dispensary?" "Oh", Savita said, "that was a harmless little lie so that the teacher would agree to leave me out". Kavita said, with obvious sarcasm in her voice, "Of course, it's harmless for everyone except you". Although Savita put up a brave front while facing Kavita, she did have a sense of guilt when she reached home. She was relieved that her parents did not broach the subject. In a few days, she also forgot the episode.

Develops Fever

Soon it was the summer vacation. Savita and her brother, Arun, were very excited because they were planning to go for a holiday to Kashmir in June. They started dreaming about the beautiful mountains, the clear Dal lake, and the pretty shikaras, which they had seen only in pictures so far. There were many sessions of arguments on whether they would stay in a hotel or in a house boat, and on what all they would bring from Kashmir. All this excitement did not last very long, however. It was cut short on 25th May when Savita developed fever. Her parents as well as their doctor, Kusum Khanna, assured Savita and Arun that it looked like a viral fever, and would be all right within a few days. However, when instead of going down, the

fever started going up, everybody's heart started sinking. On 30th May, finally, the doctor took a sample of Savita's blood in a large special-looking bottle, and said she would test it to see whether it was typhoid. On 31st May, after some deliberation, it was finally decided to cancel the trip to Kashmir. They would go next year, the parents said, to console the weeping children. The next day was the day they had been waiting for for several months. First June was the day for going to Kashmir. Instead it turned out to be the day on which Dr Kusum Khanna announced that Savita did have typhoid.

Learns from experience

As might be expected, Savita had been suffering for the past one week not only physically, but also mentally. The way she escaped the TAB injection, and the conversation she had with the teacher and later Kavita, kept coming back to her repeatedly. How she wished, she had been honest! "After all, what is there in a prick," she thought, "So many children had tolerated it smilingly, why couldn't I, oh, why couldn't I!" In her imagination, she relived the day of the injection with a difference umpteen number of times. She would imagine herself in the queue, take the injection with a smile, and tell everyone how brave she was. But suddenly, she would come back to reality with a thud. She was in bed, lying with fever. None could change the past, she realised from personal experience. When Kusum aunty announced that she had typhoid, she couldn't keep it to herself any more. She broke down and told everything. Her parents felt like scolding her, but seeing how sorry she was, and how much she had suffered, they didn't. But Arun couldn't control himself. He gave full vent to his anger without mincing words. He told her that she had ruined the holidays, she was a liar, she was a cheat, typhoid served her right, God had punished her, he would never forgive her, and a lot more.

The next summer came sooner than expected. TAB was given in the school, and need it be said that Savita was at the head of the queue to take the injection. They went to Kashmir in the vacation, and had a gala time. Everyone has nearly forgotten Savita's illness and forgiven her, but she has neither forgotten it nor forgiven herself. The entire episode is still very fresh in her mind including its minutest details. She hasn't missed a single vaccination at school since then, and I don't think she will. Do you?

Plastic Surgery has Special Role in India —Says Shri Rajiv Gandhi

".....India has an old tradition of science. We had developed a vibrant scientific temper many thousands years ago. Unfortunately, with time much of it has got a bit lost and we are trying to now revive that. Now as part of task of nation-building we once again try to rebuild that scientific temper, that openness of mind. We look to the past for inspiration, we look abroad to other countries for interaction and cross fertilization; but essentially it is our own effort.in your particular field (plastic surgery) we have an old tradition. An old doctor about 2500 years ago, called Shushruta had developed a technique for plastic surgery on noses. Apparently there was a great need for it at that time, because of punishment for adultery (one) was to have (one's) nose cut off and, then it needed its repairs, things were to set back into place again. These traditions from ancient sciences from different parts of the world have been adopted into modern science. Vaccinations from Turkey, many other Indian cures are now part of modern medicines. We in India are looking to use in these old methods with new science and developing them to their fullest today. We have somehow got absorbed in looking outside for every development and we have ignored our own pioneering fields. This time we look for a model that is suitable for India, a model that is suitable for every developing country.

For a country like India, Plastic surgery is very important: but perhaps in a different way to how it is used in the Western world. We are more worried about the problems that arise from our poverty, from the types of diseases that exist in India and the specific problems of the industry still in its infancy, an industry in which correct discipline has still not been absorbed. We have problems stemming from diseases such as leprosy, elephantiasis, problems in the home because of the types of technology that are in use, burns from stoves, the clothes women wear, nylon-inflammable materials, industrial accidents from threshers, from sugar presses, other industries, military accidents, diseases such as cancer. All these problems have to be faced in our environment. It is very easy to try and get the best, the most sophisticated equipment but then when you try to take it into the more remote areas, the rural areas, it does not work. The support systems are not there, adequate training is not there and many problems arise. We have to develop our own environment, our own methodologies, equipment suited to our own country and our own needs. This translation of developed sciences in other countries to our own needs, the innovation that is required is, what is challenging us today. We have to go to the fron-

tiers of science to benefit our people, yet that must be translated into what is socially meaningful, what is socially relevant, what can reach out to the millions of our people. The transition from laboratory to hospital must take into account the social, economic and cultural realities of our country. Our medical scientists are to some extent conscious of these larger realities. While global asset is very relevant for us, it is more relevant to absorb and synthesise and adapt these developments to the real challenge that is facing us in India, in our rural areas, in our more backward areas.....There is an essential role for plastic surgery in India.....
From the inaugural address to the IX International Congress of Plastic Surgery held on 1 March, 1987 in New Delhi. ○

Environmentalists adopt proposals on desert control

Environmentalists from 15 nations at a five-day meeting, adopted a set of recommendations designed to help save Asia and the Pacific from becoming a desert-plagued region.

Among the recommendations, contained in the concluding report of an intergovernmental meeting, are the establishment of a regional consultative group and the development of an atlas depicting the region's current and future desert situations.

According to the report, the group would provide policy guidance for a regional network of research and training centres for desertification control.

Establishing a regional consultative group "is a sound one", said V.J. Ram, Officer-in-Charge of the United Nations Economic and Social Commission, for Asia and the Pacific (ESCAP), in a closing statement. Through such body, "the already existing co-operation among the concerned agencies may be further strengthened," added Mr. Ram, who is also Chief, ESCAPUNIDO Division of Industry, Human Settlements and Technology. —*U.N. Weekly Newsletter.*

Health Minister calls for Eradicating Malaria

SHRI P. V. Narasimha Rao, Union Minister for Health and Family Welfare, recently called for an intensification of efforts to eradicate malaria. Speaking to members of the Parliamentary Consultative Committee of his Ministry at New Delhi, he said incidence of *p. falciparum* malaria must be brought down. The Minister said that a meeting of State Health Ministers and Secretaries and members of this Committee would be convened shortly to discuss this problem.

Two slide shows presented by the Ministry on the National Malaria Eradication Programme sparked off

a lively discussion among the members. A study by ICMR on an experiment conducted in Kheda district of Gujarat showed that malaria can be eradicated without the use of spray. The study revealed that one way to eradicate malaria is by feeding the inputs of health education, biological and ecological control and chemotherapy into the community. The study noted that the Kheda experiment was a success. The community had sustained economic gains as a result of this experiment.

The Minister said that other priority areas were leprosy, tuberculosis

and blindness. He agreed with the members on the urgent need to combat the menace of Japanese encephalitis. Areas of high incidence must be sprayed, he said. He also urged State Governments to implement the bye-laws to control breeding of mosquito larvae.

The meeting was attended by the Minister of State for Health and Family Welfare, Kumari Saroj Khaparde. Among the members present were Dr. (Smt.) Kalpana Devi, Dr. V. Venkatesh, Smt. Prabhawati Gupta (Lok Sabha) and Shri Durga Prasad Jamuda, Shri Sat Paul Mittal (Rajya Sabha). ○

Satellite may help Eradicate Malaria

AMERICAN scientists have launched an experimental project that will use earth-orbiting satellites with electronic sensors to combat the global resurgence of malaria.

Researchers at the National Aeronautics and Space Administration Ames Research Centre in Mountain-view, California, expect the pilot-project to lead to a major advance in Malaria control by the early 1990s. If effective in the war against malaria, the technique will be applied to many kinds of insect-borne diseases.

Malaria, although not very common in developed countries, occurs in hundreds of millions of people

each year in the tropical countries, killing one million people annually in tropical Africa alone.

The Ames project will use electronic remote-sensing equipment carried aboard orbiting satellites and high-flying aircraft to monitor environmental conditions, like rainfall and surface water, that trigger the breeding of malaria-carrying mosquitoes.

This will allow malaria control measures like water drainage and the use of pesticides, to be focused at times and in areas of highest risk. These scientists hope ultimately to monitor large equatorial regions weekly and deliver data to developing countries with 24 to 48 hours.

Remote-sensing satellites, like landsat, are able to "see" in both the visible and near-infrared wave-

lengths, and the recorded data are converted into computer images, enabling the study of various environmental features.

"It is our goal to develop a system that any nation can use", says project chief, Mr Paul Sebasta "All they would need is a personal computer and a rooftop antenna (small satellite dish) to collect data that would help them in predicting where malaria outbreaks might occur so they can take intervention measures. We feel the programme has a very good chance of success", he says.

After successful demonstration of the technique they hope to turn the operations over to an international health organisation or interested governments.

Centre Calling, Feb. 1987. ○

BOOKS

Public Health: Myth, mysticism and reality.
by Dr U Ko Ko, SEA RHP No. 14, pp 51, Price Ind.
Rs. 60.- or Sw. Fr. 12.

Health is indivisible, and the topic of public health has universal appeal, since it is of relevance to everyone everywhere.

In this slim publication, the author, Dr U Ko Ko, WHO Regional Director for South-East Asia, traces the history of public health, which can be said to have had its origins during the Industrial Revolution in England in the eighteenth century. The most marked feature of that period was the large-scale migration of people from the rural areas to the industrial towns and cities which, however, could not grow fast enough to accommodate the influx. The new health problems resulting from such overcrowding led to the gradual evolution of organizations responsible for the nation's health. Public health acts were also promulgated, stimulated by the outbreak of two epidemics—of cholera in 1845 and of influenza in 1847.

Thus, the realization of the intimate relationship between insanitary conditions and epidemics led to the recognition of the importance of workers' health and the establishment of hospitals. The frontiers of public health were expanding, especially in the direction of bacteriology, with the evolution of new theories about disease and infection in Europe and America, which were closely watching the public health movement in England. At the same time, however, curative medicine was beginning to acquire a separate identity, with surgery and medicine becoming distinct specialities together with a variety of sub-specialities.

Much progress has thus been made over the past two centuries. However, primary health care is a radical departure from the conventional health care systems of the past. It is an integrated approach—integrating promotive, preventive, curative and rehabilitative medicine—and is also an integral part of a country's socio-economic development leading, in turn, to an improved quality of life. This book, therefore, makes a strong plea for perceiving medicine as a whole so as to derive the maximum benefit from technological advancements and make medicine a potent instrument to achieve health for all.

The narrative makes fascinating readings, not only for health workers but all those interested in health—and that includes everyone. ○

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SPECIAL NUMBERS 1986

March—April	World Health Day (Theme: Healthy Living: Everyone a Winner)
June	Environment, Water and Sanitation
July	Food, Nutrition and Health
August	Health Progress in India
November	Children's Day
December	Family Welfare

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