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* Role of nutrition in the prevention and treatment of diseases
* Health education based feeding practices
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A&M

ROLE OF NUTRITION IN THE PREVENTION AND TREATMENT OF DISEASES

ARUNA PALTA & K.L. TIWARI

Diet therapy serves in supporting the overall therapeutic programme and it may also be used as a prophylactic measure in diseases like diabetes, atherosclerosis, liver cirrhosis and peptic ulcer.

FOOD is the prime necessity of health and diet therapy is the use of food as an agent in effecting an early recovery from illness. Diet in disease or diet therapy forms an integral part of medical treatment whether it is medical, surgical or otherwise. Modified or therapeutic diet is the food allowance which has been adjusted to meet the specific requirements of the individual. It may include or exclude certain foods, may increase or decrease certain nutrients, may restrict quantity or may involve a change in consistency of food.

Role of diet in diseases

Modified diets are the principal therapeutic agents in some diseases such as Diabetes Mellitus and Phenyl Ketonuria and diet therapy serves in supporting the overall therapeutic programme. In other instances, it may be used as a prophylactic measure. The improved nutrition may aiso cut the nations health bill. For some patients modified diet may be required for weeks, months or even for life time, whereas for others only guidance may be enough for the improvement of the normal diet. Diet plays an important role as the principal agent or as a prophylactic measure in many diseases like diabetes, Atherosclerosis, liver cirrhosis and peptic ulcer.

Diabetes

There is no diesase which provokes greater thought on diet than diabetes. Diabetes (according to Root & Bailey (1968)) is a disorder of blood sugar regulation. Diet is the sheet-anchor of treatment in obese middle aged diabetics and a useful supplement to insulin therapy in juvenile patients. A "well managed" diabetic has a good life expectancy and hence it is no more a dreaded disease.

Approximately 40% of the new cases of diabetes can be controlled by diet alone. Rest can be treated by insulin and diet or oral hypoglycaemic drugs and diet. All diabetic diets involve some dietary restrictions, if control is to be satisfactory. By regulating the amount and the time of food intake, the blood sugar can be maintained throughout twenty four hours. Eighty per cent of the diabetics are obese. So the most important objective of the dietary treatment is to control the total caloric intake in order to attain the desirable body weight. This can be done by giving a low sugar diet.

Previously high carbohydrates containing foods were restricted for diabetics but according to the Committee on Foods and Nutrition of the American Diabetes Association (1971) "There no longer appears to be any need to restrict disproportionately the intake of carbohydrates in the diet of most diabetic patients. Increase of dietary carbohydrates to extremes without increase of total calories does not appear to increase insulin requirement in the insulin treated diabetic patient. In the less severe typically obese diabetics, substitution of carbohydrates for fats does not appear to elevate blood glucose or worsen glucose tolerance. The average proportion of calories consumed from carbohydrates in U.S. Population as a whole approximates 45%. This proportion or even higher appears to be acceptable for the usual diabetic patient as Well". From this, it is concluded that more attention should be given to total calories rather than to carbohydrates in the prescription of therapeutic diets, for diabetes. Attention has been drawn to the beneficial effects of a high carbohydrate intake on the blood glucose in diabetics, (Brunzell *et al* 1967), a high protein intake (Estrich *et al* 1967) and frequent feedings (Wadhura *et al* 1973).

Role of exchange list in diabetes.—The diabetic diet is different for each individual depending upon the severity of his disease, his activity, the type of insulin given and on the amount of calories required to maintain his desirable body weight. Six food exchange lists are prepared by the Committee of the American Diabetes Association. These are: (i) Milk exchange list, (ii) Vegetable exchanges, (iii) Fruit

exchanges. (iv) Meat exchanges, (v) Bread exchanges, (vi) Fats exchange list. Any food within an exchange list may be used in place of another food of the same list, though the serving sizes vary. Thus by the use of exchange lists the diabetics can enjoy all types of foods which were previously omitted in their menu, in amounts indicated in the exchange list.

Atherosclerosis

An advancement in the knowledge of nutrition, preventive medicine and control of infectious diseases by antibiotics has increased the life expectancy but on the contrary has made the degenerative arterial diseases more prominent. A person is said to be "as old as his arteries." Indeed when the arteries of the heart, brain and kidneys show degenerative changes, the circulation and nutrition of these organs is affected. Atherosclerosis, which is the thickening of the arterial walls, due to the deposition of cholesterol, is generally associated with prosperity. In under-developed countries where proverty, is still there, the incidence is low. In prosperous countries the intake of fat is high and a major proportion is of animal origin, containing large amounts of saturated fatty acids. There is a strong correlation between dietary saturated fats and serum cholesterol, and between serum cholesterol and coronary heart disease. Masironi (1970) compared death rates from atherosclerotic heart diseases in 37 countries with their estimated average dietary consumption and found that the significant correlation was with saturated fats. Dietary cholesterol has been shown to have an hypercholesterolemic effect. Keys *et al* (1965) suggested that "other things being equal, the serum cholesterol appears to be a linear function of the square root of the cholesterol in the daily diet". Saturated fats increase the serum cholesterol level while the polyunsaturated fats are found to lower the serum cholesterol level. Keys (1957) concluded that polyunsaturated fatty acids have half the effect per gram on decreasing serum cholesterol concentrations as do saturated fatty acids acting in the opposite direction. The Principal polyunsaturates in the diet are the linoleic and linolenic acids which are the most abundant in oils of grains, seeds and nuts. (Saff Flower-74%, Sunflower-64%; Corn 58%; Soyabean dehydrogenated-57%; Cotton seed-51%; Seasame-40%; Soyabean hydrogenated-37%; Peanut-31%; Palm 9%; Olive-9%; and Coconut 2%).

Increased consumption of sucrose can increase plasma endogenous triglycerides. In contrast the starchy foods have a beneficial effect because the fibres associated with them may have a lipid lowering effect. It was seen that countries where the intake of starches is high, the rate of coronary heart diseases is low. Obesity associated with diabetes and hypertension is an important risk factor in the development of atherosclerosis. So correction of obesity, if present, should be the chief objective of dietary treatment. National Diet-Heart Feasibility Study 1960-67 shows that cholesterol concentrations can be effectively lowered by 8-18% through diet and thus may help in the prevention and treatment of atherosclerosis.

Liver Cirrhosis

Diet therapy is generally accepted as an important, if not the most important factor in the management of patients suffering from diseases of the liver. In certain specific instances alterations of the diet have a proven relationship to some of the complications of liver disease, especially to ascites formation and hepatic coma. Everyone seems to agree that malnutrition can and does produce functional, structural and clinical alterations of the liver in Kwashiorkor and other types of "fatty" liver. A diet deficient in proteins and aminoacids, particularly choline and methionine will produce fatty liver in experimental animals and if continued long will lead to cirrhosis in most animals.

Experimentally the liver is found to be more susceptible to any injury when there is associated malnutrition and therefore adequate nutrition appears to safeguard the liver against cirrhosis. An injury to the liver is aggravated when the nutrition is poor and thus undernutrition has always been blamed as a cause of cirrhosis. Necrosis, due to injurious agents, more readily occurs in cases of malnourished liver. A low protein diet, a high iron intake alongwith a low protein diet, some toxic substances in diet and excessive amounts of alcohol, may contribute to the aetiology of liver disease. Provision of diet rich in proteins, calories, carbohydrates and vitamins may be beneficial for the patients of cirrhosis. Restriction of dietary sodium to levels about equal to that lost by the body from the skin, stool and urine (200 mg/day) prevents further accumulation of ascitic fluid. A nutritionally well-balanced, low sodium, adequate protein diet is offered and consumed day after day by the cirrhotic patient. To replace the taste of salt which is missing in the diet, patients may use a salt substitute.

Peptic ulcer

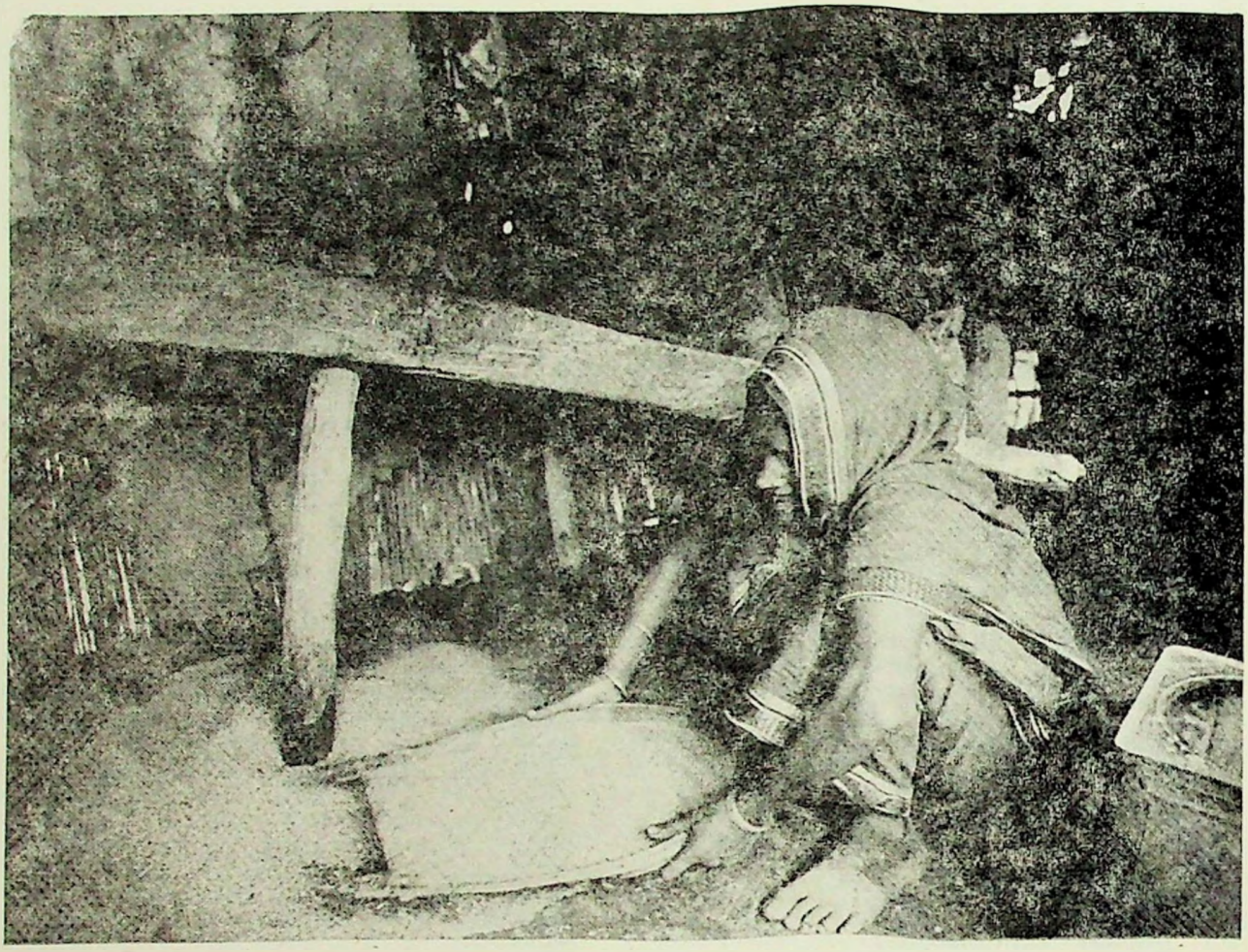
In no disease does diet treatment give such dramatic symptomatic relief as in peptic ulcer. In the majority of uncomplicated cases, drugs play a secondary role. Success of medical treatment also depends upon diet control. The overall aim of dietary control is to provide 'Physiologic rest' for the stomach, reduce mechanical trauma, minimize the effects of the ingested food on the chemical phase of gastric secretion and more important to provide nutrient with maximum neutralizing capacity.

The chief argument to support the claim that dietary factors might be responsible for gastric ulcer is the fact that in Great Britain between the two world wars: Peptic ulcer was 2-5 times as prevalent in the poorest class as in the upper social classes. At this time the poorest class was consuming diets which were below physiological standards both in quantity and quality. —>

SOURCES OF IMPORTANT NUTRIENTS

(Per 100 gm. edible portion)

Foods	Protein	Calcium	Iron	Vitamin A
CEREALS				
Wheat flour	XX		XX	
Rice	X			
Rice flakes (chidwa)	X		XXXX	
Bajra	XX		X	
Jawar	XX		X	
Ragi	X	XXXX**	X	
PULSES				
Soyabean	XXXX**	XXXX	XX	
Rajmah	XXX	XXXX**	X	
Bengal gram dal (channa)	XXX	X	X	
Black gram dal (urad)	XXX	XXX	X	
Cow pea (lobhia)	XXX	X	X	
Green gram dal (moong)	XXX	X	X	
Lentil	XXX	X	X	
GREEN LEAFY VEGETABLES				
Cauliflower leaves		XXXX**	XXXX**	
Turnip leaves		XXXX**	XXXX**	XXXX
Amaranth (Chulai)		XXXX**	XXXX	XXX
Bengal gram leaves (channa sag)		XXXX**	XXXX	X
Beet greens		XXXX**	XXX	XXX
Corriander leaves (dhania)		XXX	XXX	XXXX
Fenu greek (methi)		XXXX**	XXX	XX
Mustard leaves (sarson)		XXX	XXX	XX
Radish leaves		XXXX**	XXX	XXX
Mint (pudina)		XXXX	XXX	XX
Spinach (palak)		X	XX	XXX
Carrot leaves		XXXX**	X	XXX
Colocasia leaves (arvi leaves)		XXXX**	X	XXXX**
Drumstick leaves (Saijan patta)		XXXX**	X	XXXX
Bathua		XXXX		XX
FRUITS				
Orange				XX
Mango				XX
Papaya				X
Apricot (khurmani)				XX
Loquat				X
Currants		XX		
Phalsa		XX		
Bael		X		
Lemon		X		
Mulburry (shatoot)		X		
Amla		X		
Respberry				XX
NUTS & DRIED FRUITS				
Gingelly seeds (til)	XX	XXXX**	XX	
Currants		XX	X	
Cashewnut (kaju)	XXX	X	X	
Raisain (kishmish)		X	X	
Dates dried (Khajoor)		XX	X	
Almond (badam)	XXX	XXXX	X	
Figs (anjeer)		X		
Walnut (akhroat)	XX	XX	X	
Chilgoza	XX	X		
Groundnut	XXX	X		
Coconut (dry)	X	XXXX**		
MILK & MILK PRODUCED				
Milk (buffalo)		XXXX		
Milk (cow)		XX		
Cheese		XXXX**		
Paneer		XXXX**		
Khoa		XXXX**	X	



Our fight against debilitating illnesses or diseases depends on the vital constituents of food such as proteins, fats, carbohydrates, vitamins and minerals. Modified diets are also the principal therapeutic agents in some diseases.

(Reproduced with permission)
Photo Paul Harrison ©

ANIMAL FOODS				
Mutton	XX	XXX		
Liver (sheep)	XX		X	XXXX**
Fish (pomphret)	XX	XXXX		
Prawns	XX	XXXX**	X	
Egg	XX	X	X	XX
MISC.				
Jaggery		X	XX	
Butter				XX

Protein Legend
X-5-10 gm.
XX-10-20 gm.
XXX-20-30 gm.
XXXX-30-40 gm.

Calcium Legend
X-50-100 mg.
XX-100-150 mg.
XXX-150-200 mg.
XXXX-200-250 mg.

Iron Legend
X-5-10 mg.
XX-10-15 gm.
XXX-15-20 mg.
XXXX-20-25 gm.

Vitamin A Legend
X-500-1000
XX-1000-3000
XXX-3000-6000
XXXX-6000-10,000

mega gram of carotene

**Values higher than the upper limit on the scale.

Nutrition cell of the Directorate General of Health Services, Ministry of Health & family welfare, New Delhi-110011. —>

QUALITY CONTROL OF FOOD

FOOD is essential for growth and development. Food habits reflect a variety of patterns according to regions of the country. The quality of food eaten, features the health status of the population in the country. It is not denying a fact that the strength of the Nation depends on the health of its population. This is the prime indicator for the ultimate potentialities a nation may aspire to reach in the sphere of overall national developmental endeavour.

Nutrition on the other hand determines the state of health. The necessity to maintain health, suggests an intake of balanced diet, following the principles of food, hygiene and sanitation. Our strength to fight against debilitating illnesses or diseases, depends on the vital constituents of food such as proteins, fats, carbohydrates, vitamins and minerals. Removal in part or in whole of any of the nutrients from food articles or addition of adulterants adversely affect our health.

Food adulteration, is, therefore, recognised as an offence punishable under the Prevention of Food Adulteration Act, 1954.

Various provisions of the Act will not only ensure pure and wholesome food to you but also protect you from being duped by false/exaggerated/misleading claims. The Act also guides the honest trade about fair trade practices. Food adulteration helps none—not even the persons who indulge in it for more economic gains.

You can prevent adulteration

Mere legislation is not enough. Menace of adulteration can be effectively checked only if you co-operate with the Government. You can protect yourself from adulteration by your wise marketing. Buy from cooperative stores/super bazars or reputed retail stores. Buy packed commodities carrying I.S.I./ Agmark certification mark.

Whenever you suspect any defect in food articles, either in taste or appearence, report the matter immediately to the Local (Health) Authority. Some voluntary consumer organisations may also assist you in taking up your complaints with the authorities. In Delhi, complaints may be addressed to: The Director (PFA), Department of PFA, Delhi Administration. 5th Floor, I.S.B.T. Building, Kashmere Gate, Delhi.

Complaints against I.S.I. & Agmarked products may be made to : (1) The Dirtctor General, I.S.I., Manak Bhawan, New Delhi—110002 (For I.S.I. Marked products); (2) The Agricultural Marketing Adviser, Government of India, C.G.O. Building, Faridabad-121 001 (Haryana) For Agmark products).

Let us launch an all out drive for eradicating the menace of food adulteration so that pure and nutritious food is available to each and every consumer of our country. This will be our first step in achieving the goal of 'Health for All' by the year 2000 A.D.●

PFA Division, Directorate General of Health Services, Ministry of Health & Family Welfare New Delhi-110011.

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Dietary principles: The following dietary principles should be acceptable in all instances relating to ulcers.

The diet should be adequate to meet in full the nutritional needs of the patient with a margin of safety to compensate for various stresses. Obesity should be corrected if present. High fat containing foods can be given but not those containing saturated fatty acids, as the risk of coronary heart diseases is increased with it. The diet may consist of small frequent feedings of chemically, thermally and mechanically non-irritating foods. It is of utmost importance that ulcer patient does not allow long periods to elapse without having something to eat or drink. When a patient has severe symptoms, seven small meals daily should be prescribed. Milk, egg and fruit juices should be the main ingredients. It is important to ensure a good intake of Vitamin C. Previously only milk and cream feedings were given to ulcer patients but the current trend is towards a more liberal diet, similar to the usual soft or light hospital diet, but involving frequent, small feedings. Meulengracht presented good evidence that bleeding from the ulcers may be controlled by feeding the patients with more sizeable meals composed of high calories, pureed food, with feedings of milk in between meals. By this nutrition is maintained, loss of weight is prevented, convalescence is shortened, blood regeneration is favoured and mortality rate is lowered than under the older starvation method.

Conclusion

Years back Dr Harvey of the U.S. Bureau of Food and Drugs, made a great prediction. "Food is the medicine of the future". Recent researches prove the truth of his prediction. People do not get adequate advice and instruction and as a result they may fail to derive full benefits from their diets.

Thus in the end it may be concluded that diets have an important role to play as a curative, prophylactic or supporting agent in the treatment of different diseases. ○

AHARA—86: *The Central Health Education Bureau, Directorate General of Health Services, had set-up a stall entitled "Food For Health" in the "AHARA—86—FOOD EXPO" Exhibition held from 25 January to 3 February, 1986, organised by the Trade Fair Authority in New Delhi. Shri Natwar Singh, State Minister for Fertilizers, inaugurated the Exhibition on 25 January, 1986.*

HEALTH EDUCATION BASED FEEDING PRACTICES

DR S.C. GUPTA

The child-feeding practices are associated with the morbidity and mortality patterns among children. Health education modifies the impact of child feeding practices on the morbidity and mortality patterns among the children. Socio-cultural factors are also directly associated with the child-feeding practices. Health education reshapes the above association also.

CHILDREN between 0 to 2 years entirely depend upon their mothers for the socially determined food which may influence their growth and development. Some aspects of the above stated inter-relationship have already invited the attention of a few eminent scientists like Jelliffe (1955), Cowan (1982), Chen (1982), Wyon and Gorden (1971) and Foster *et al* (1978), etc. The present study begins with the question: As to how far the childfeeding practices are associated with the morbidity and mortality patterns among the children; to what extent the above association can be modified through health education?

Material and methods

The study deals with a sample of 300 children within 0-2 years age group. Out of 300 children and their mothers, a sample of 100 children along with their mothers was drawn from the children born in the Christian Medical College, Ludhiana, Punjab, by using the systematic random sampling method. These mothers were consistently imparted health education regarding the maintenance and promotion of child-feeding practices which are scientifically recommended. The sample of the remaining 200 children and their mothers was obtained from the children born in the homes through stratified random sampling method. Both the primary and secondary sources of data collection were used.

Major findings

The findings reveal that protein-calorie malnutrition is more common among the children fed on the vegetarian food than among those who are fed on the non-vegetarian food. Even if the kind of food given to children is held constant, the occurrence of protein-calorie malnutrition is significantly higher among the children born at home than those who are delivered in the hospital and whose mothers are exposed to health education. The above finding adds to the observation of Cowan (1982-83): The delay in the inclusion of the semi-solid food into the diet of the child is closely associated with a great risk of malnutrition. Deprivation in the total feeding care to the children also has an intimate relationship with the higher incidence of malnutrition. Foster and Anderson (1978:264) and Chen (1982:3) have also seen a similar trend. The lack of total feeding care and the delay in the inclusion of semisolid food into the diet of a child makes the situation more grave. Although, the above variables, *i.e.*, total feeding care and the age at which the semi-solid food is introduced in the diet of the child have an independent influence on the incidence of protein-calorie malnutrition, yet they modify the effect of each other.

If the inclusion of semi-solid food into the diet of the child is delayed, and he gets an adequate feeding care in the other pertinent spheres, to a certain extent the incidence of malnutrition can be controlled. The above results add to the experiences documented by Cowan (1982:3). Even if the total feeding care given to the child is deficient, a substantial percentage of children can be saved from protein-calorie malnutrition by extending health education to the mothers. In a similar study, W.H.O. (1960:10) also observes that health education reinforces the desirable health practices which ultimately result in low sickness rate.

With an increase in the duration of breastfeeding, the incidence of diarrhoea progressively declines, which substantiates the results drawn by W.H.O./UNICEF (1979:7). Poor hygiene in the child-feeding practices is also markedly responsible for the higher frequency of diarrhoeal sickness. The higher degree of hygiene in child feeding and adequate breastfeeding reduce the incidence of diarrhoeal sickness. Even when the level of child-feeding hygiene is held constant, the impact of breastfeeding is still visible. Even under poor hygienic conditions, breast-fed children are less likely to develop gastrointestinal diseases.

At all the levels of duration of supplementary feeding, a high frequency of sickness owing to diarrhoea, is much prevalent among the children born at home. The mother's awareness of the proper child-feeding practices and the longer duration of breastfeeding, prevent the incidence of diarrhoea to a significant level. Health education brings down the incidence of diarrhoeal sickness and thus promotes the positive effect of longer duration of breastfeeding. To some extent the above consideration draws support from Korostelev (1976:291) and Winikoffe *et al* (1981:1). While ascertaining the relationship between morbidity and mortality patterns among the children it is also observed that malnutrition decreases the resistance of children with the result that they become more prone to infectious diseases. The higher the degree of malnutrition, the greater are the chances of a high death rate from infectious diseases. As the nutritional status improves, the susceptibility to high mortality diminishes. The malnourished children suffer from diarrhoea and respiratory infections more frequently and more severely. The findings of Chen (1982:1) and Probit (1979:51) accord with the above observations. It is also substantiated that health education minimizes the incidence of morbidity among the children fed through faulty child feeding practices. In the sample of children studied, the major groups of illnesses are intestinal disorders, nutritional disorders and respiratory diseases.

The socio-cultural factores in morbidity and mortality patterns

A higher number of the female children suffer from protein-caloric malnutrition than the male children, especially among those whose mothers have a traditional outlook. The above observation adds to the facts drawn by Grewal and Cowan (1979:42).

The girls are also over-represented among the children suffering from a higher degree of malnutrition. The above conclusions draw support from Hendrickse (1966:344). Health education has a great positive effect in the controlling of protein-calorie malnutrition. It also reduces the chances of protein-calorie malnutrition among the children of traditionally-oriented mothers. The interesting finding which emerges from this study is that the children whose mothers possess traditional outlook are not only susceptible to different degrees of protein-calorie malnutrition but also suffer from its serious forms like kwashiorkor and Marasmus.

The study in question also draws one's attention to the fact that the existence of the protein-calorie malnutrition is significantly lower among the children born in the nuclear households than among those who are born in households with complex structure. These findings draw a certain degree of support from the experiences of Illingworth (1974:20). The higher the average number of children in the family, the greater are the chances of protein-calorie malnutrition.

It was also established that malnutrition is a product of poverty and it depends most directly on the quality of life. Low economic level is a major determinant of malnutrition in a society. Gopalan (1980: 39) and Chen (1982:1) have also noticed similar trends. But to some extent among the poor respondents also, if the people avail themselves of health services, the problem of malnutrition can be diminished to a great extent. The mother's exposure to health education significantly minimizes the adverse effect of low economic level on the incidence of protein-calorie malnutrition among the children. In fact, even when the place of delivery and birth order of the child are held constant, the impact of economic level of the family on the occurrence of malnutrition among the children can be seen. The above findings are not only in conformity with the findings of Meegama (1980:124) and Devadas (1972:3) but also go beyond their respective studies.

In regard to the sex of the child and the mortality rates among the children, findings show that the death rate among the female infants is lower than that among the male infants. During the intrauterine period also the females had better chances of survival than males. But while examining the death rate in

the age group of 1-5 years, we found that the rate among the female children is significantly higher. This higher rate of child mortality among girls is related to the sex discrimination in child care. The conclusions drawn by Singh (1972:14) are consistent with the above observations.

Mortality rates among children born at home are significantly higher as compared with the children born in the hospital. The child mortality rates are markedly higher among children whose mothers have traditional outlook than those whose mothers have a modern outlook.

The above analysis establishes that the socio-cultural factors are also closely associated with the morbidity and mortality pattern among children. Similarly, our assumption that health education modifies the impact of the socio-cultural factors on the mortality and morbidity among children is also supported by the evidence. But even under poor social circumstances health education services can help to improve the feeding practices as is also experienced by Cowan *et al* (1981:5) and W.H.O. (1969:13).

In addition to this, the birth order of the child is also closely related with the total feeding care given to the children. Even if the sex of the child and the place of delivery are controlled the effect of birth order of the child persists. The findings of Krishnamurthy (1971:181) and Cowan *et al* (1982:4) are consistent to some extent with these observations. Our data in this context also show that health education strongly reinforces the positive effect of birth-order of the child on the total feeding care extended to it. This demonstrates that health education, as stated by W.H.O. (1980:2), is the most potential variable for improving the total feeding care to be given to the children. ○

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HEALTH FOR ALL BY 2000 A.D. —Role of Health Education

P. MANOHAR REDDY

INDIA is a democratic country and the majority of our people live in rural areas. There are so many misbeliefs and misconceptions among them and they follow traditional way of life as well as traditional food habits. In the rural areas there are no properly ventilated houses and people live in insanitary houses. There is water stagnation in streets and the surroundings of the houses. This helps in breeding of flies and mosquitoes which transmit many communicable diseases like cholera, malaria, filaria, etc. The literacy rate is low when compared to the developed countries. Due to illiteracy there are many barriers for bringing a rapid change in the health practices of our people. Therefore, to break these barriers and to bring a rapid change in the knowledge, attitude, and behaviour of the people to adopt healthful habits, health education activity needs to be intensified extensively on a war footing in the rural and slum areas in particular and in urban areas in general. There are only 14 years of time to achieve the goal of Health for All by 2000 A.D. It is during this time that M.C.H. services are to be strengthened, immunization coverage to be improved and mortality rates to be brought down.

Strengthening of School Health Services: In the country 50% of the Primary Schools are lacking proper pucca buildings. Most of the schools are not provided with playgrounds and so there is no opportunity for the children to play and exercise. The school should have a clean pot with a lid for storing safe water daily and only one tumbler should be used for drawing water from the pot. The health staff who visit the village should hand over .1 Gram chlorine tablets to the teacher and ask the teacher to use the tablets daily for pot chlorination. The teacher is the best person to identify the sick child and have good opportunities for parent counselling. Therefore the teacher should be given special training in health education who in turn can educate the young children towards cultivation of healthful habits among children from the very beginning. The health workers (male and female) should visit the schools once in a month and should see that the children get safe water for drinking. They should also take health education classes with the help of simple audio-visual aids to bring about a change towards healthful habits from the childhood itself. The health workers should maintain a separate Register with the teacher and carry out all immunization activities against diphtheria, tetanus, cholera, and typhoid so that the school children are prevented from the above diseases. The Medical Officer of the area should visit the school quarterly and examine all the children and ensure treatment. He should also advise the sick children and their parents on follow-up of treatment and practising healthful habits. Anaemic children should be selected, and their parents should be contacted to hand over a course of Iron and Folic Acid Tablets preferably to the mother of the child. Education on nutritious diet should be provided. The teacher should be asked to ensure good sanitary surroundings.

Role of health staff: In some of the States, like Andhra Pradesh, Health Workers are responsible for 5000 population with a package of preventive, promotive and curative services in the rural area. The health workers are supplied with a variety of medicines for minor ailments. Hence, the health workers should be given special training in health education, so that they can apply health education principles at every step in the field according to the local situation and opportunity to bring desired change in the knowledge, attitude and behaviour of the people.

Conducting clinic at sub-centre: Parents hide their children from immunisation expecting that their child will weap and get temperature. As a result of this the coverage in the villages is not upto the mark. Hence, one day in a week should be kept for Antematal Clinic and for check up by the Lady Medical Officer at the sub-centre. Each such centre should be supplied with a refrigerator/ice Box with ice pockets to store and maintain the vaccines under cold chain system. Each sub-centre should also be supplied with educational aids like posters, flash cards and flannel graphs to impart education on mother craft, personal hygiene, locally available nutritious diet and on proper family spacing methods.

The health workers can also utilise the opportunity to communicate the "small family norm" and mobilise the community for community participation in the implementation of Health Programmes.

Latrine promotion programme: In the rural areas most of the people are not aware of the fact that many faecal borne diseases are transmitted by improper disposal of human excreta. Therefore, the people should be educated on proper disposal of excreta by constructing sanitary latrines. Atleast two village leaders should be selected from each village and they should be well educated regarding the latrine promotion programme.

Nutrition demonstration: Most of the people in rural areas take food to satisfy their hunger and not for health. They are not aware of the fact that the locally available cheap foods which are rich in nutritive values are within their easy reach such as green leaves, leafy vegetables, and local fruit. In order to educate the people nutrition demonstrations with community participation should be conducted.

Small family norm: To popularise small family norm, the health staff should educate the rural people by involving satisfied acceptors and should also involve local leaders in Family Welfare Programme. Community Health Worker should be given reorientation training in health education and they should be given responsibility to popularise small family norm in the community through simple visual aids.

Health education: In fact, health education has to be imparted in all the National Health Programmes to enlighten the people and to create awareness among the people for proper utilisation of Government services available at the door steps or at Government Institutions.

Health education should be carried through various ways. During family contacts, the health worker is the best person to bring the desired change in the lifestyle of the family. Health worker should involve the head of the family while enquiring the welfare of the family members.

Group meetings should be conducted at the centre of the village or in school building, preferably in the evenings, to educate the group of people by using film-strip projector. Filmshows should be conducted for mass communication in all villages of the sub-centre area in a systematic manner involving local leaders. This will have a good impact on the community for bringing positive change.

Every citizen of India should realise that good health is essential for the welfare of individual, community and the nation. Hence, through intensified health education, we can bring about desired change in the health practices of the people towards positive health by 2000 A.D. ○

HEALTH FOR ALL STRATEGIES EVALUATED

THE Executive Board of the World Health Organization (WHO) studied the first evaluation of the strategy for health for all by the year 2000, prepared by WHO on the basis of data provided by its Member States. Noting with satisfaction that 86% of Member States submitted reports on the evaluation of their national strategies, the Executive Board urged all Member States, at the conclusion of its 77th session in Geneva in January 1986, to work towards the "reduction of socio-economic and related health disparities among people, thus fulfilling a fundamental requisite for the achievement of health for all".

In a resolution on the world health situation, the Board emphasized that "the achievement of the goal of health for all by the year 2000 requires continuing political commitment and is intimately linked to socio-economic development, and to the preservation of peace". Member States were also urged "to guide further their national health policies and health development processes towards the achievement of the goal of health for all and to involve decision-makers, community leaders, health workers, non-governmental organizations and people from all walks of life in the attainment of national health goals".

Recognizing that the ongoing economic crisis facing much of humanity made it difficult for many countries to reach the goal of health for all by the year 2000, the resolution requested the Director-General of WHO "to intensify further support to the least developed countries, with particular emphasis on rationalizing and mobilizing additional financial resources for strengthening their health infrastructure from national, international, bilateral and nongovernmental sources". The Executive Board of WHO will review the next evaluation of the global strategy in January 1989.

Regional Director's report

Before adopting the resolution, the members of the Board were further briefed on the world health situation by the Regional Directors' reports on the significant events which occurred in their respective regions since the previous session. The overall conclusion is that the problems facing developed countries are surfacing in developing countries while the health problems linked to underdevelopment still have to be solved.

Dr U Ko Ko, Regional Director for South-East Asia since 1981, was re-elected by the Board for a new five-year term. He noted in his report that cancer, cardio-vascular diseases and other diseases of developed countries were threatening to emerge as major public health problems in countries that had achieved higher levels of life expectancy. Malnutrition and nutritional deficiency disorders and water-, food-, and vector-borne diseases continued to be major causes of morbidity and death. However, infant mortality rates had decreased considerably and life expectancy at birth was increasing in most countries of the Region.

Focus on immunization

In a resolution on the Expanded Programme on Immunization, the Executive Board of WHO reaffirmed that the goal of "reducing morbidity and mortality by providing vaccination for all children of the world by 1990 remains a global priority and represents a milestone towards achieving health for all by the year 2000". The resolution warned "that the goal will not be achieved without continuing acceleration of national programmes". The resolution "notes with appreciation the increased international support for immunization programmes being provided particularly by UNICEF and by national development agencies, private and voluntary organizations and individuals, whose collective efforts are helping to bring the immunization goal within reach". ○

—WHO

CAMPAIGN AGAINST RABIES

JEAN BLANCOU & KONRAD BÖGEL

ABOUT 88 countries and territories—mainly in the developing world—are still suffering from the spread of rabies among the dog population. Dogs are a most dangerous reservoir of the disease, accounting for over 99 per cent of all human cases worldwide and over 95 per cent of all human post-exposure treatments. Without systematic control of the dog population, the medical services have to give costly post-exposure treatment. Each year, for every one million inhabitants in a given country, at least 2,000 receive anti-rabies injections. Even so, a great many people die in pitiful circumstances for want of this treatment. The cost to medical services is enormous, and many countries do not have enough vaccine to treat all the bitten people who expect help in an emergency situation.

The special features of rabies—the fact that it usually involves known exposure to a deadly infection, its long incubation period of weeks and months, and the spread of the disease through dogs over large distances as a result of international travel—call for technical cooperation between the affected countries in combating the disease.

WHO has given new emphasis to the control of this disease, particularly in dogs. Frequently abandoned by their owners, stray dogs can be seen by the hundred in towns and villages, feeding on what they can scavenge. This is why dog ecology studies are being organized in many countries to learn more about the dog population and how to control strays or include them in the vaccination programme. WHO Collaborating Centres are trying to develop new vaccines and methods for applying them, for instance through oral vaccination with suitable baits. Planners are designing special projects to deal with the transfer of technologies of vaccine production to developing countries, so that they may become largely independent from foreign currency markets.

The work of the veterinarian is intimately linked with the rapid treatment of exposed persons by the doctors. The two professions work closely in the field of rabies, as in many other major diseases which are transmitted by animals to man. We can reasonably assume that canine rabies can be brought under control by a joint effort, as has indeed occurred in a number of countries over the past 30 years, for example in Argentina, Chile, Greece, Hong Kong, Italy, Japan, Portugal and Zimbabwe.

The Ministers of Agriculture of all countries of the Americas decided to bring the disease under control by 1990, at least in towns and cities. Successful operations in several countries, such as Tunisia, have shown that this is a realistic goal. Certain countries in Asia and Africa have also sought WHO's help in developing plans, resources and countrywide campaigns. International funding institutions help as far as possible. Thus the Arab Gulf Programme for UN Development Organizations and the Swedish Save the Children Fund support three pilot projects in Ecuador, Tunisia and Sri Lanka. The UN Development Programme (UNDP) itself is supporting projects in Asia.

The Rockefeller Foundation is particularly concerned with the transfer of vaccine technology, and the Order of Malta has created a special World Rabies Foundation. The World Society for the Protection of Animals is cooperating closely in view of the responsibility dog owners have for ensuring the protection of their animals and man. So high technology, the management of day-to-day operations, and the cooperation of the community have all to be inextricably intertwined if they are to be crowned with success.

WHO Collaborating Centres provide assistance by testing vaccines, improving diagnostic procedures, helping national programmes, providing knowhow and facilitating rapid exchange of epidemioloical information. This information network functions in close cooperation with the International Office of Epizootics in Paris.

As the worldwide programme proceeds, the watch and alarm system must be build up. Re-introduction of the disease in rabies-free areas causes great public concern and fear, and may result in the loss of human lives. In any case, it then becomes very expensive to combat such outbreaks. The most recent outbreaks have been reported, with all their full impact and consequences, from Spain (1975-1977), Hong Kong, (1980-1981) and France (1983).

In the Spanish outbreak, after eight years without a sign of the disease, a dog was diagnosed as rabid in Malaga, in July 1975. It had bitten its owner, who died from the disease two months later. The authorities took immediate steps to stifle any possible outbreak. These included keeping the public fully informed, banning the transport of cats and dogs for a radius of 10 kilometres around the first case, listing all such animals in the whole of Malaga province and putting down all strays, eliminating the fox population in the area to avoid any possible spread to the

(*contd. on page 104*)

ANIMALS AND MAN

Disorders in nature are frequently of man's making, human mismanagement increases the risk of many diseases. However, natural conditions are not necessarily synonymous with peace and harmony. The struggle for survival of animal species and individual creatures is permanent and projects many risk factors into human life. Infectious diseases in particular are part of this natural system to which we belong. Over 150 kinds of human infections and intoxications, many of them foodborne, have their reservoir in animals.

Infections are often the cause of catastrophic population declines among animals living in the wild, such as antelope (rinderpest), jackals (distemper) or rabbits (myxomatosis). Fortunately, nature possesses mechanisms to heal such severe wounds inflicted on its ecology.

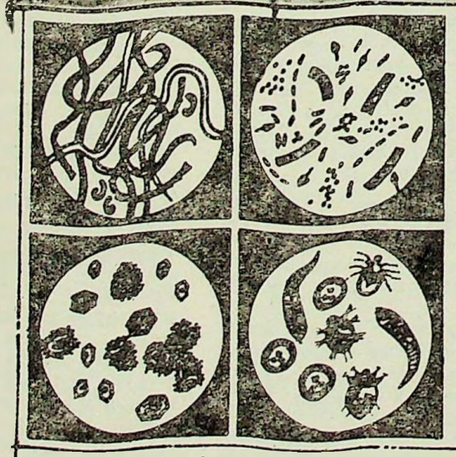
Infections in nature, including those transmissible to humans (which we call zoonoses) can result in frightening epidemics when man penetrates into nature and conquers new territories. Biting arthropods (ticks and other insects) may transmit, from ancient reservoirs in wild animals, some of the most dangerous diseases to man such as relapsing fever, plague and haemorrhagic fever. Rodents contaminate the human environment, and particularly foodstuffs, with the agents of leptospirosis and other mortal diseases such as Lassa fever.

Biting animals transmit rabies. People who work in forests and agriculture as well as tourists are at special risk. In 1967, monkeys caught in Africa transmitted to Europe a highly contagious disease which caused several deaths among laboratory and hospital staff. The natural reservoir of this newly-detected infection, now called Marburg Disease, is still unknown. Birds and mammals are thought to play a decisive role in harbouring various close relatives of the human influenza virus. Worldwide influenza epidemics in man may well originate from such reservoirs.

Man-made changes in the landscape or the ecology may introduce or abruptly increase the danger of human infections from natural reservoirs. Diseases resulting in much sickness and death have been reported from irrigation projects, artificial lakes, areas of deforestation, and railway and road construction sites.

"Natural disorders" become evident and most hazardous where such zoonotic diseases establish reservoirs in our domestic animals which serve as a source of meat, milk and eggs or are otherwise close to us as companions. Changes in land use and its management can cause considerable harm. Thus, deforestation to create cattle breeding pastures in South America introduced vampire bats and, through them, rabies.

A high density of domestic animals, both in the countryside and in towns, may not only increase the host-parasite burden of infectious diseases but can also cause environmental pollution, since their wastes carry a heavy burden of micro-organisms, nitrogens and phosphates into the soil. ■

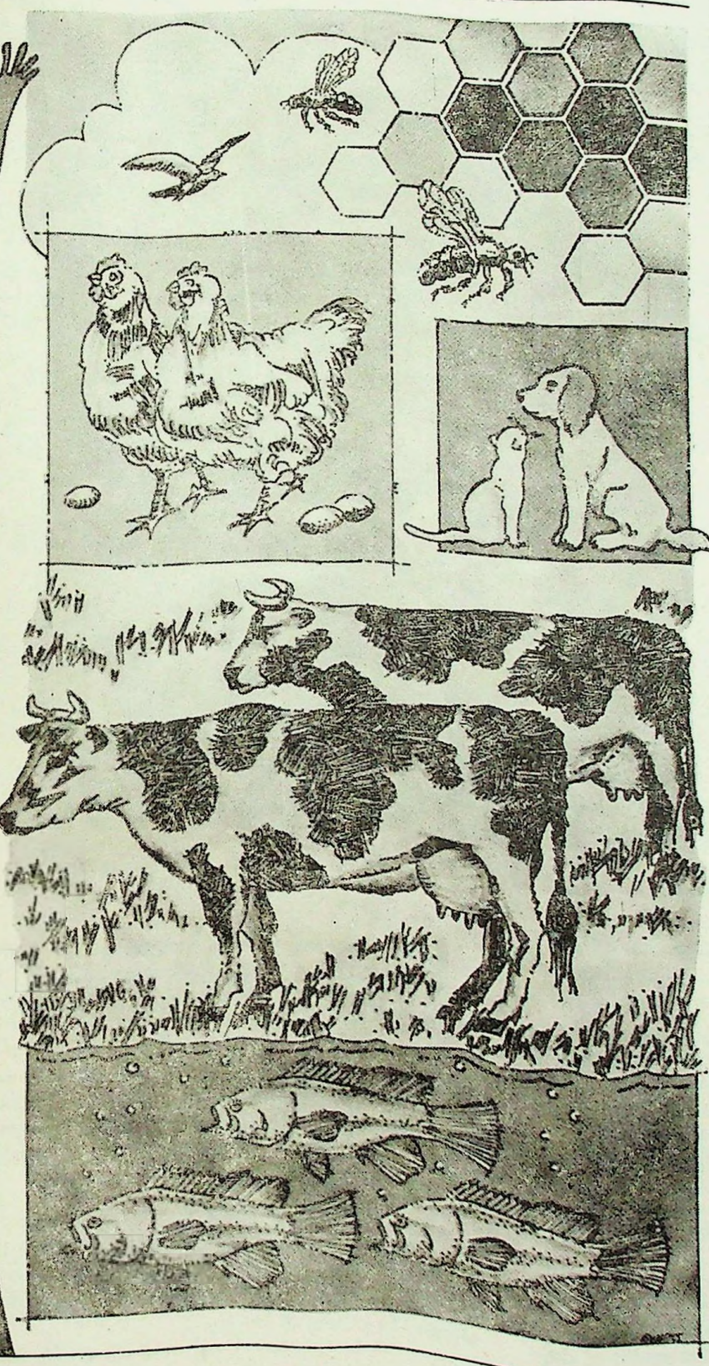


undesirable guests that animals can transmit to us

1. Parasites – worms, mites, protozoa and so forth
2. Bacteria – such as anthrax, brucellosis, leptospirosis, salmonellosis, plague
3. Viruses – including rabies, Rift Valley fever, certain encephalitides and haemorrhagic fevers
4. Fungi – such as ringworm

Photos WHO

Original drawings by Steve Ewart



Harmony between man and animals in the context of health means the safe and effective application of sanitary and veterinary measures in wildlife, domestic animals and man. These measures are essential to avoid serious diseases in man and animals (domestic and wild), to obtain energy, food and by-products from healthy animals, and to avoid polluting the environment.

Individual and general measures of hygiene are as important as are specific approaches for preventing, monitoring, controlling and treating diseases that originate from animal reservoirs and products. And the safety and effectiveness of what we do depend on close cooperation between those national services responsible for animal and for human health. Steps that have been jointly planned by these services and maintained in harmony are today reducing the burden of many zoonotic diseases, such as rabies, Rift Valley fever, anthrax, brucellosis, leptopsirosis, hydatidosis, tapeworm infestation and most foodborne infections and intoxications. In their daily life, people often help to prevent and control such diseases through their traditional attitudes towards animals and food habits; the most successful national programmes are based on community cooperation. Meantime many national and international regulations regulate the trade in animals and their products.

Mankind has learned to use and manage large animal populations, and thus to influence their growth, density, nutrition, shelter and health. But it follows that careful observation of the harmony between ecology and health measures has become imperative, particularly in view of the rapidly increasing demand for foodstuffs and changes in land-use and farm management.

To an even greater degree, national programmes of rural development and urbanisation take advantage of the intersectoral functions of veterinary public health in order to ensure the right ecological balance through proper prevention, control and treatment of zoonotic diseases and the related risk factors. At the international level, WHO maintains monitoring systems for certain diseases, whilst a network of over 50 specialised WHO collaborating centres provide their services to prepare and test vaccines, to help in planning national programmes, in training specialists and in coordinating research in the field of veterinary public health. Harmony of action at international level supports national efforts. For example, one country on its own is unlikely to get rid of rabies in the dog population, unless actions are well coordinated by neighbouring countries in their own border areas.

In many countries, national intersectoral committees (on rabies, salmonellosis or zoonoses in general) are being mobilised to ensure that there is harmony at an operational level within the country as well as in international work.

It is only through the harmony of mankind with the environment and with the animal kingdom that the lasting health of our future generations can be safeguarded. ■

— WORLD HEALTH, July 1985

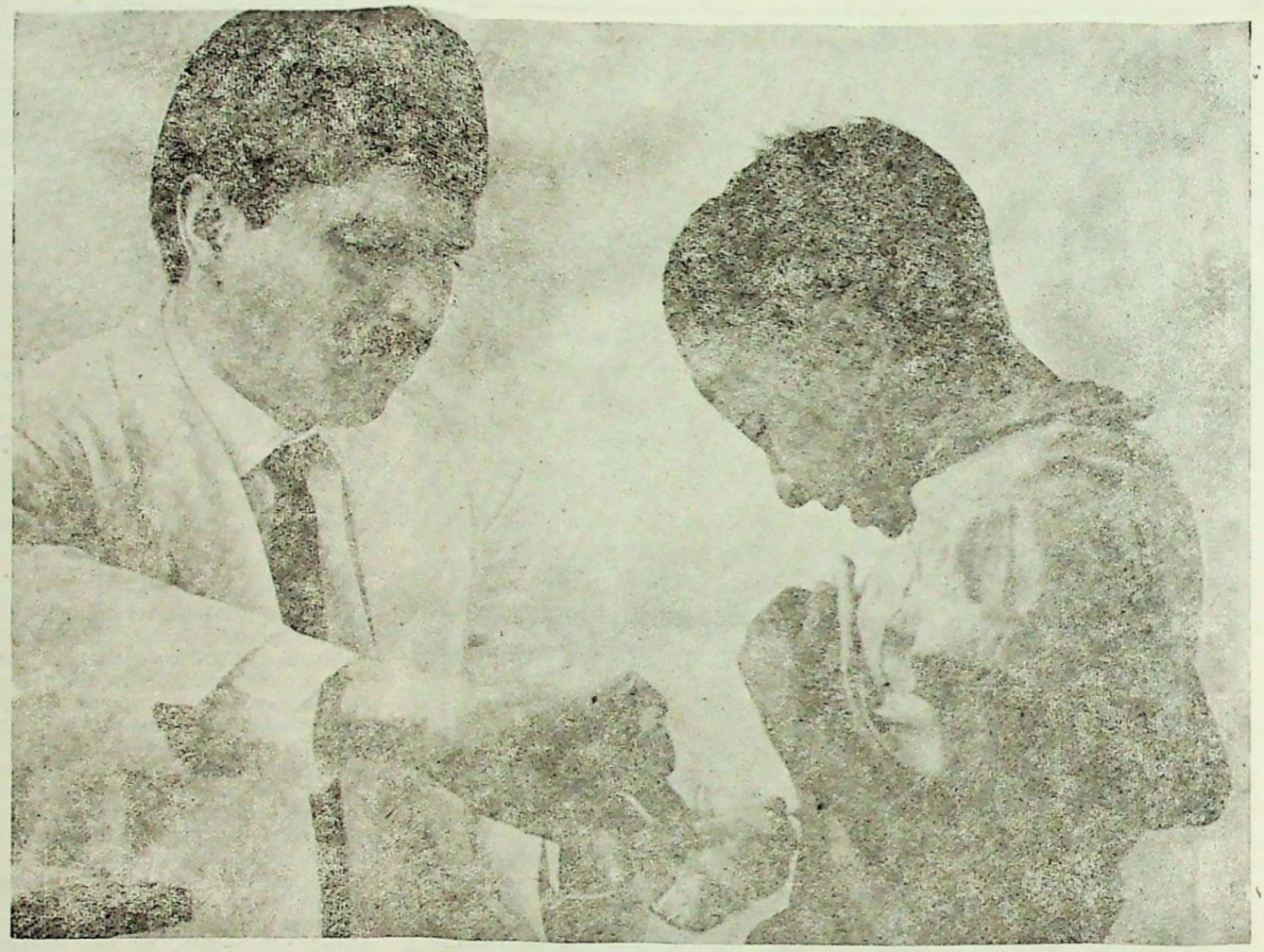


Photo shows injection being given to a boy to protect him from rabies. (Photo WHO)

(*Contd. from page 101*)

wild life, and introducing severe penalties for pet owners who did not conform to regulations.

The measures were successful, and within two years the disease was considered eradicated from Spain.

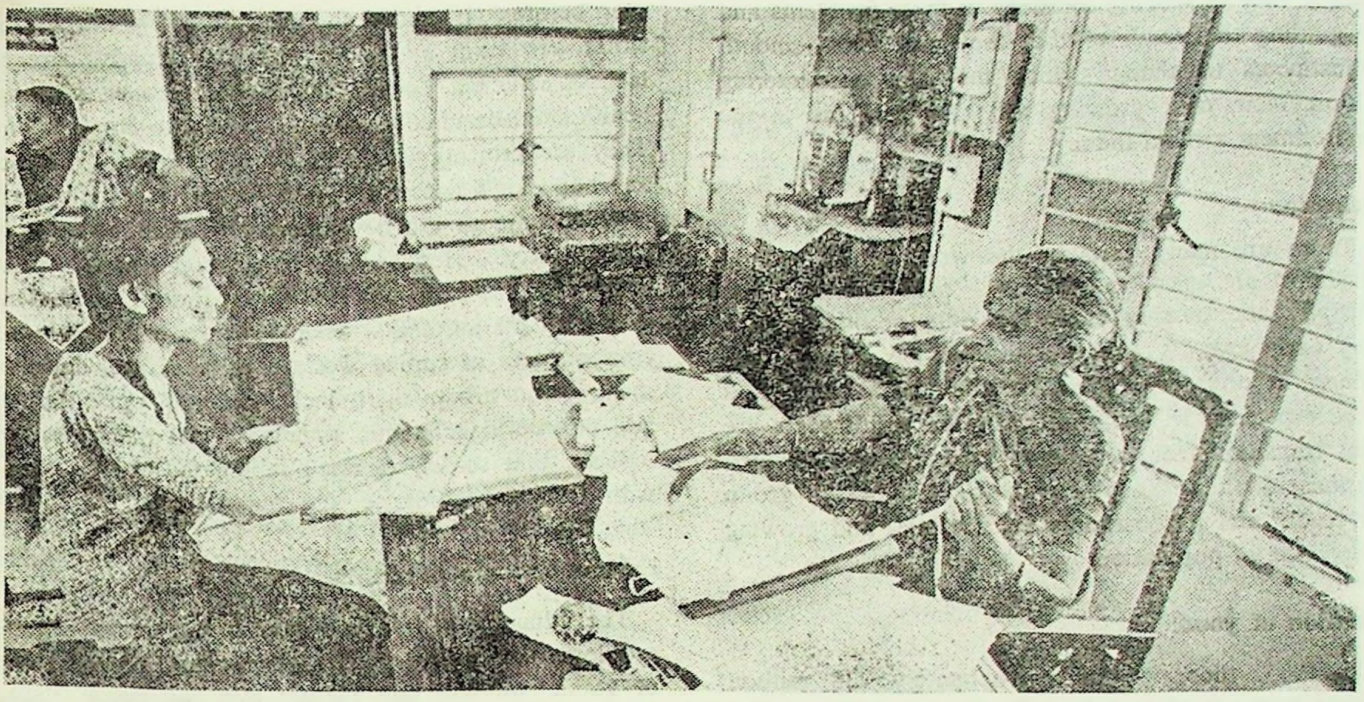
In Hong Kong, the outbreak was confined to the north of the New Territories. Between 1980 and 1981, there were 16 confirmed cases in dogs, one case in a cat, and three human cases, all of which proved fatal.

The dog inoculation or destruction campaign was massive. Within 12 months, 118,217 dogs were inoculated against rabies and 82,816 were destroyed. Police and other services mounted roadblocks on roads leading into and out of the infected area. No further cases were found, and restrictions on the movement of dogs were finally lifted in April 1982.

In the rabies-free area of France, a cocker spaniel bitch bit its owner and his daughter after behaving strangely, then escaped and bit 5 other people, 13 dogs and cats, and five sheep before being destroyed. The bitten humans were safely inoculated, and the exposed animals were put down. Two other cases occurred soon afterwards, but again a mass vaccination campaign for all dogs in the neighbourhood and the death sentence on any unclaimed pets ensured that the outbreak was contained.

All three examples show that, provided preventive measures are speedily and forcefully applied, with the full cooperation of the community, rabies may remain a disease to be dreaded but need never be allowed to get out of hand. ○

—World Health, July 1985



(Photo WHO)

SOLVING THE PROBLEMS OF THE YOUTH

KUM. N.V. RAJESWARI & M. HARI

Youth, whether student or non-student, require health education regarding nutrition, exercise, personal hygiene, disease prevention, family life education and counselling services. Parents, teachers and social leaders have to play an important part in these activities.

THE Potential of youth, if it is to be properly tapped, requires understanding and support. Youth is a very special time with special challenges and is a period during which the body, personality, intellect and social attitudes are developing erratically usually independently of one another and frequently explosively. It is a time of life that is full of potential and problems. It is an age characterized by impatience as well as curiosity and by a strong desire to leave child-hood behind and play an independent role. It, therefore, becomes imperative that youth are brought up in an environment which is stimulating and sufficiently challenging for them to be able to explore their potentialities and build up a satisfying future.

The adolescents differ physiologically and psychologically from children and adults. As such, youth is suffering from loss of identity. Thomas Forstenzer points out that very little has been done in the world to try to understand, let alone do something about, the problems of youth. It is, therefore, necessary to go into the needs and problems of our young people

with a view to seeking solutions to these problems and of guiding the youth so that they may make smooth adjustments to change which they are encountering within their own growing self as well as in the environment around them.

Definition

There are many parts of the world where 'youth' is almost an unknown concept. Many children are abruptly and harshly catapulted into adulthood at a very early age. Youth is a twentieth century phenomenon in one sense atleast in the Asian world and more especially in India. Ideally the youth years are vital transition from childhood to adulthood. United Nations identifies the people in the 15—24 age group as 'youth' and it constitutes a substantial and growing proportion of population.

Situation of youth

In 1975, there were approximately 738 million people between 15 and 24. By the year 2000, when today's children will have become youth, it is estimated that there will be 1,180 million, an increase of 60 per cent worldwide. While youth population of the more developed regions will increase only 5 per cent in that period, the same age group in the less developed regions will increase by 80 per cent. Thus the challenge is greatest in developing countries. In 1985 there were approximately 170 million, 627 million and 105 million young people and it will increase to 341 million 679 million and 129 million by the year 2000 A.D. in Africa, Asia and Latin America respectively. The increasing numbers and demands of the world's youth pose some very serious problems that require special attention. Demographically, they are going to be a very significant next generation. Because they are just beginning their sexual and child bearing life, they hold the key to the future demographic patterns and the resultant quality of life.

Problems

The problems facing this age group are increasing as fast as its numbers. More than 300 million youths are unable to find jobs; lack of access to education and high rates of school drop outs result in widespread illiteracy, particularly among girls. Health care is inadequate, especially among rural youth. Drug and alcohol addiction, violence, scarcity, misplacement, anxiety, defensiveness, pragmatism, subsistence, crime and suicides involve more young people than ever before. In short, the majority of youth in the world are rural and poor and are already parents, lacking sufficient food, safe water, proper housing, health care, basic education and access to employment. They are growing upon the edge of survival without any hope for a decent life, and nothing to enable them to contribute to the development of their community and country. Hence, the young people have lots of problems—physical, emotional, social and ethical. This is a result of unfulfilled need response, complexes and consequences of copied western style of life, development, rural/urban drift, lack of job opportunities and the world economic situation. All this seems to indicate that society is often failing to provide youth with sufficient guidance and opportunity.

Lack of educational faciiities

The educational system is one of the many serious problems concerning youth. If we analyse the types of youth, we will find mainly two categories—firstly the student youth, the school goers and the other non-student youth including school dropouts. We have a lack of educational opportunities especially for the youth in rural areas, because most universities are located in the cities. The youth, if they are poor, cannot go to these centres of education. There are no proper facilities for their education in rural areas and in slums. Youth services are lacking for all. Hence they claim that they have no opportunities for education. The youth are given mainly a general education and professional education. No priority is given for vocational training either at the high school level or at the university level. With large numbers of young people from rural and urban areas clamouring for higher education, there has been a woeful deterioration of academic standards. In Western countries every school and college has counselling bureaus. In our country, this facility is woefully lacking. The education provided in schools and colleges is not job-oriented. Thus youth are facing problems of lack of education and training opportunities. Many students are lost to education after primary years (and only a small percentage of the secondary school students enrol in higher education) as there are not enough schools, or due to their low economic status and to some extent to irrelevance of education for the kind of life they live. Teenage pregnancies leads to a large number of school dropouts or wastage of education among girls. Our educational system does not provide social learning in any organized manner.

Unemployment and under-employment

Youth unemployment, that most crippling road block on the bridge from childhood to adulthood has reached unprecedented proportions in many industrial and developing countries particularly in urban areas. And it has struck without discrimination at the educated, and the uneducated alike. Another important problem is the economic situation increasingly demands a high level of education attainment for participation in the labour force. An adolescent who lacks the basic educational qualifications, greatly disadvantages himself for participation in the labour force. This can be evident from the finding that the unemployed in many parts of the world include a very high percentage of young people—many of them illiterate, most of them unskilled and inexperienced. The dice are already heavily loaded against them. Under-employment is very high in developing countries.

Health problems

The youth everywhere and in developing countries like ours in particular are facing manifold problems in relation to health care opportunities. The health problems of youth consist of, in addition to purely medical problems, problems of medico-social nature like emotional problems, psychosexual problems, delinquent behaviour, addictions, etc. The following medical problems may be considered peculiar to this age group: (i) disorders related to reproductive functions particularly in girls, (ii) communicable diseases especially sexually transmitted diseases, (iii) accidents and certain psychological disorders.

The age period 15—24 years is a period of sexual maturation and transition from childhood to adulthood and youth are further under great emotional, academic and vocational pressures. Hence, maladjustment resulting in psychological disorders, drug addiction, smoking and alcoholism are common in youth. Drug and alcohol consumption among youths leads to vandalism and disrespect for elders and authority.

Drug addictions

During the last decade we have seen a marked increase in the use of psychoactive or mind altering drugs in our society. Drug abuse and dependence may occur at any age but seem to be most common during adolescence and young adulthood. Drug use by youth may serve a number of special motivations. There may be simple urge to rebel against adult constraints by using disapproved drugs, or simple curiosity, due to lack of love and attention of parents or emotional disturbances of varying degrees of severity and an inability to cope with the demands of living or to find a meaningful personal identity.

Smoking

Unwise lifestyles pose the biggest threats to young people's health. Innovative judgements, a tendency to show off, or the desire to keep up with their fellows—all these incline them towards risk taking behaviour. In many cases, the cigarette is the very first contact young people have with the lifestyles of adulthood. The percentage of teenage boys and girls smoking is 16 and 19 per cent in United States, 26 and 13 per cent in Papua New Guinea; 14 and 10 per cent in Nigeria; 9 and 6 per cent in India respectively and 46 per cent both for boys and girls in Uruguay.

Drinking (alcoholism)

Drinking in general has increased during the last 20 years and this increase has been somewhat steeper among young people. In the urban areas it is usually the high school college and university students who take to drink because it is fashionable. Road accidents, many of which are related to alcohol, are one of the major killers and producers of disability in young people. The young also may become violent due to alcoholism.

Juvenile delinquency

Juvenile delinquency is one aspects of the maladjustment problems, chiefly due to lack of proper family support and educational and recreational facilities, youth turn to gang behaviour and juvenile crime particularly in urban areas. In other words broken homes, parental rejection and faulty discipline and unusual stresses, are mainly responsible for juvenile delinquenoy.

Crisis of identity

The major task facing youth today is a search for meaningful identity. The search for identity by an adolescent causes a great deal of stress on parents. The problem is further complicated by the constant testing of limits by the adolescents.

Attitude of the adults towards the youth

Most behaviour problems in adolescents are manifestations of an on-going conflict between adolescent and family. Parental rejection is the major problem facing the youth today. Parental criticism of appea-

rance, habits, dress and manners, parental strictness on spending habits and eating habits, parental teasing about friendships, parental comparison with sisters or brothers and with other children are some of the points that bother adolescents most about their parents. What is lacking most is the constant dialogue between the old and the young. In nuclear families, often working parents have little time so spend with their growing children. The youth is compelled to turn to outside groups for understanding and advice. Radio, TV, movies, cheap literature and other media of communication retard his moral growth.

Poor housing facilities

Many youths live in houses which are both overcrowded and hazardous to their health. About 54 per cent, 43 per cent and 63 per cent of the youth live in housing with 3 or more persons per room in Pakistan, Guatemala and E1 Salvador respectively. Many youth live in housing without access to safe water. The percentage of this in rural and urban areas respectively is 23 per cent and 69 per cent in India, 28 per cent and 80 per cent in Pakistan, 11 per cent and 79 per cent in Guatemala, 31 per cent and 90 per cent in Bolivia, 4 per cent and 87 per eent in Uruguay and 28 per cent and 67 per cent in Khana.

More responsibility at an early age

For many youths, particularly females, the responsibilities of adulthood come early. The early age of marriage is a serious problem for girls leading young girls into adult responsibility without preparation. Added to this, dowry system is affecting young girls especially in India.

Sexuality and fertility

In many societies there are reports of increased premarital sexual activities among ever-younger people, declining ages of first coitus, greater numbers of adolescent pregnancies, induced abortion, and sexually transmitted diseases and an increasing incidence of child birth among teenage mothers. In Jamaica, the problem of adolescent pregnancy is more acute, one in three births being to teenage mothers.

The solution

The major challenges of adolescence are completing the transition from childhood to adulthood, attaining mature attitudes in regard to sex, choosing a vocation and planning further education, searching for the meaning and purpose of life, and finding one's self.

We have not provided our youth with the services which they should have. We need to understand our young people. Youth students have more amenities, more choices and greater opportunities but there is more competition, more tensions and more emotional problems. We have to have new insights about the needs of the young persons, better understanding of the dynamic nature of his personality and the problems of adjustments he faces in order to help him in his growth in self-realisation, in civic responsibility and in vocational and economic efficiency. Youth cannot be seen in isolation, many of the problems facing them are closely linked to their childhood. We cannot address the problems that confront today's youth, appraise their situation, promote policies and define actions relating to them without taking a look at the all-embracing nature of their development, their care and upbringing before and through adolescence.

Despite increasing attention to youth research and programme development the record is far from consistent. So, we have to do more for them than they have and make a special effort to understand their problems. We have to tackle some of the common problems of youth such as youth unemployment, under-employment, issues of regional and international peace and security, issues of education and training, issues of family and community life, problems of equality for young women, health, housing and environment issues; crimes and problems resulting from migration.

The primary focus should be on activities at the national and local levels to "address and deal with specific needs and aspirations of youth".

A new education policy

At present a new system of education is needed. There should be strong educational reforms. For this we need a proper guidance system in our schools and colleges. High priority should be given to the education and to technical and vocational training. By extending the availability of education for all and compulsory education for children, we can improve the educational status of youth. Counselling and guidance services should find high priority in our educational planning. Special programmes for removal of illiteracy among non-student youth are to be taken up urgently.

Other do's an don'ts

It is important to take into account the less fortunate youths who are out of school. They could be reached in youth gatherings or homes and helped to gain back their confidence through, for example, adult literacy programmes or vocational training.

The employment opportunities should be increased and there should not be job discrimination against young workers. It is important that our young people are given guidance in choice of profession. The young people, and particularly the girls, need to be given an opportunity to contribute to the manpower and economic resources that are so vital to national development, and should not be burdened down with sexual and parental responsibilities before their appointed time.

Youth whether student or non-student requlre health education regarding nutrition, exercise, personal hygiene, disease prevention, etc., family life education and counselling services. Parents, teachers and social leaders have to play important part in these activities.

Promotion of sports and recreational services for youth in general are to be taken up. The co-operative effort of government and voluntary agencies is required for this purpose.

There should be more strict legislation reducing the availability of alcohol, especially for young people below certain ages, and it should be implemented more effectively. If age is characterized by caution, youth is characterized by a love of risk taking. Such impulses can be guided to take positive forms—sports, outdoor adventure, social experiments rather than towards the negative habits of cigarette smoking, abuse of alcohol or dependence on other drugs.

The youthful energy and drive can easily be misdirected into resentment or revolt, if parents and adults, in general do not find ways and means of communicating with teenagers and building up a constructive partnership. Well planned camps and youth services bring youth and adults close in a natural wholesome way. Through these are built bridges of understanding over which not only youth guidance can move along with case, but friendships develop between the young and older adults.

There is a mounting need for imparting home and family life education to our young adults. Youth services should include sex and health education. The young people need accurate scientific information, professional counselling and social services as well as medical and health programmes specially designed to deal with their need for sexual expression. There is a need for better trained, adolescent-oriented service personnel who can relate to their young client's perceptions, fears, attitudes, and aspirations.

Marriage counselling is another neglected area of youth education. Education at college level should include an elective course on "The Home, Family and Responsible Parenthood" to help youth in this most important area of life.

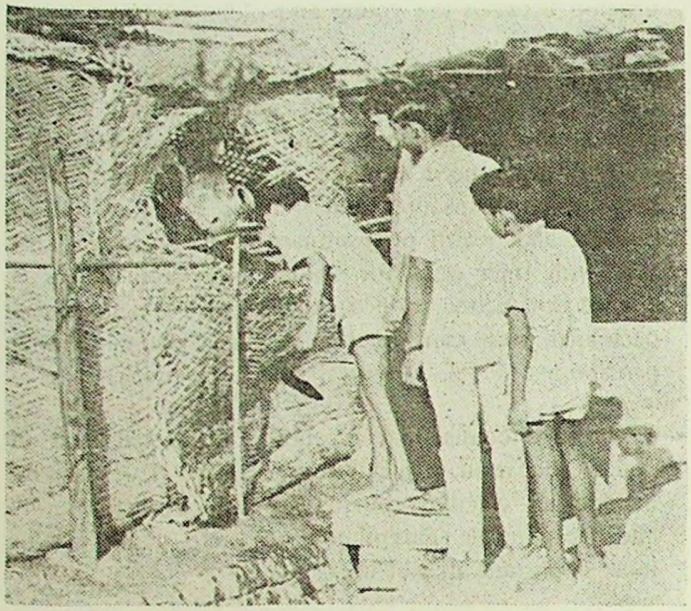
Youth needs guidance for leisure time. Our youth have the utmost leisure and they have the most wasteful of time. Parents and educators should recognise this as an important guidance service that we need to provide for our youth to save them from wasting their time and talent.

Conclusion

With our awareness now of the multiple problems that the adolescent faces, we are in real danger of being pessimistic about them. Adolescents are going to struggle through their adolescence and a large percentage of them are going to reach maturity and as a result of that they will make the world better than the one they entered. Youth can only motivate the youth. The Nation's prosperity thus depends to a considerable extent upon how the youth are organised, mobilised, trained and guided. The present adolescents are not only questioning and protesting and challenging but are potential agents of social change.

There are no clear-cut answers and solutions that would be applicable to all situations; each country and community must decide and act for itself. But act it must, for any further delay would only hurt our adolescents in the long run. ○

Courtesy: Vojana, September 1—15, 1985



WATER AND SANITATION

—Fundamental to life

Water and sanitation are fundamental to life. They are pre-requisites for a healthy life. This is a field where Governmental and Voluntary Agencies have to work with the people to make it a success. As it is for the people, it has to become a people's programme if its aims are to be realised.

INDIA'S commitment to the decade is definite and unhesitating as is clear from the fact that the Plan allocation (Rs. 49 crores in 1951—56) for water and sanitation rose to Rs. 3,908 crores which later was raised to 4,177.51 crores in the Sixth Plan.

At the beginning of the decade (1981) only 77.7 per cent of the towns and cities and 31 per cent rural people had adequate supply of drinking water. Only about 0.5 per cent of rural people had some sanitary facility for disposal of human waste. Almost the entire rural population, some 52 crores of them defecated in the open.

In a random survey in urban areas it was found that 27 per cent had flush latrines, about 67 per cent have either dry latrines or one bucket a day and some 33 per cent have no latrines at all. Such statistics may be cold and nauseating, but without them the country cannot work out solutions to this problem. After various studies and their evaluation, the Government of India is determined to go ahead with the programmes to reach drinking water to all citizens by March 1991. For waste disposal the target set is to cover 80 per cent for urban areas and 25 per cent for rural areas. The estimated expenditure is Rs. 14,700 crores, which will cover 95 per cent of the people. Five per cent, who could not be covered will be covered in Eighth Plan.

In the Code of Basic Requirements of Water Supply, Drainage and Sanitation, as well as the National Building Code a minimum of 135 litre per consumer day (lpcd) has been provided with all residences provided with full flushing system for excreta removal. The earlier manual had recommended certain requirements for domestic, non-domestic, fire demand and industrial needs. The present committee has reviewed these figures and the following recommendations have been made.

Urban requirements depend upon the size of the community. For communities with the strength of upto 10,000, upto 100 lpcd should be supplied, upto 50,000 about 125 litres and communities above that 200 litres. Each case will have to be studied individually.

In rural communities where house service connections are not contemplated and where water is given through hand pumps, the supply will not be less than 40 lpcd.

IMMUNIZE & PROTECT YOUR CHILD

Immunization can protect your child from such dreadful diseases as neonatal tetanus, poliomyelitis, diphtheria, whooping cough, tetanus, tuberculosis and measles. Bring your child at the right age for the full course of the vaccines to the nearest primary health centre, dispensary or hospital where free vaccination facilities are available.

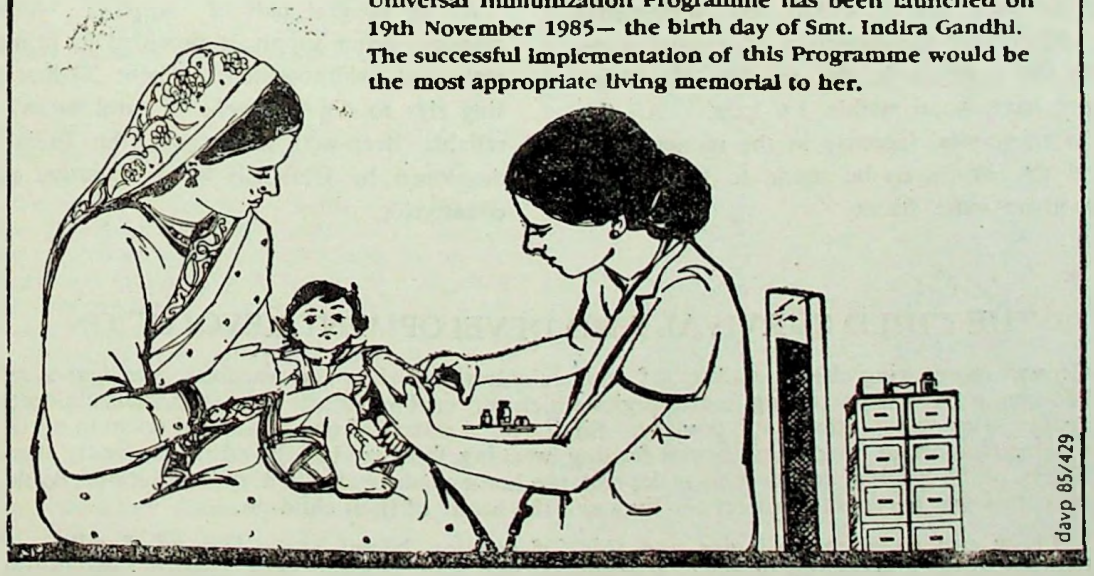
Immunization Schedule

Age	Vaccine	No. of doses	Disease
• Pregnant Women			
16-36 weeks	TT (Protects both mother and child)	2*	Tetanus
• Infants			
3-9 months	DPT	3	Diphtheria, whooping cough, Tetanus
	Polio	3	Poliomyelitis
	BCG	1	Tuberculosis
9-12 months	Measles	1	Measles
18-24 "	DPT	1 (booster)	
	Polio	1 (booster)	

*Give one dose, if vaccinated previously.

The interval between 2 doses should not be less than one month. Minor coughs, colds, mild fever and diarrhoea are not considered contra indications to vaccination.

Universal Immunization Programme has been launched on 19th November 1985— the birth day of Smt. Indira Gandhi. The successful implementation of this Programme would be the most appropriate living memorial to her.



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Institutional demands also have to be taken into consideration. Hospitals with less than 100 beds will have to be given 455 lpcd per bed while those with more than 100 should get 340 lpcd. Hotels, nurses, hostels, boarding schools, restaurants, air and sea ports, railway junctions offices, factories, cinemas, concert halls, theatres have all to be supplied with water, both for drinking and for sanitation.

A machinery has been set up to make the realisation of this aim a reality. An Apex Committee with the Secretary, Ministry of Works and Housing to co-ordinate programme planning and operations has been formed. It has constituted three Working Groups on "Financial Resources", "Materials and Equipments" and "Programme Manpower". Reports of the Working Groups have been approved by the Working Committee and endorsed by the Conference of State Ministers, Secretaries, Chief Engineers, and Heads of Implementation Agencies in charges of water supply and sanitation.

In 1981, Government tried to define its target by describing a Problem Village as one which does not have a safe drinking water source within 1.6 kms. With an annual drainage of 1360 millions acre feet, it was not beyond us. The Lok Sabha Estimates Committee later wanted to define a problem village as one having no such source within 500 Hectometres (0.5 km). Moreover, the depletion of ground water itself led to the increase in the number of villages which do not have water within 1.6 kms. All this had led to a substantial increase in the money to be invested and the efforts to be made to achieve the target in a given time frame.

Novel Programmes

India took up this challenge by adding water supply to novel programmes such as Minimum Needs Programme (MNP) and Accelerated Rural Water Supply Programme. A sum Rs. 2140 crores was made available to these programmes. According to latest available figures, 1,31,964 villages were covered by December 1983.

For human waste disposal 14,000 pour-flush, low cost latrines were supplied to 210 towns in 11 States and 3 Union Territories, till the end of 1983, under the aegis of the UNDP. They were well received. By 1984 December, 37,738 new pour-flushers were installed in the same 210 towns.

These latrines cost only about Rs. 200 per unit and need just 1.5 to 2 litres of water for flushing. For a latrine with sewerage connections the running minimum cost is Rs. 1,500. The new latrines are simple in design and the village masons can reproduce them on a mass scale. All the 170 municipalities of Rajasthan have accepted this technology. Many States have started training personnel, and the State Governments are making provisions for this in their Plan estimates.

As an integral part of Applied Nutrition Programme, water supply is provided to primary schools and rural health centres. About 20 States are utilising rigs to dig borewells in rural areas. A sturdy, reliable, deep-well handpump, the India Mark-II, developed by UNICEF is in extensive use in the countryside. **—PIB** ○

THE CHILD SURVIVAL AND DEVELOPMENT REVOLUTION

Growth monitoring charts, packets of oral rehydration salts, and vaccines, are low-costs life-saving growth-protecting technologies which can enable parents to protect their children against the worst effects of poverty. Similarly, a matrix of up-to-date and down to earth information about pregnancy, breast-feeding, weaning, feeding during and immediately after illness, child spacing, and how to make and use home-made oral rehydration solutions, could also empower parents to protect the lives and the health of their children.

But how can these technologies and this information be put at the disposal of million of families in the low-income world? For at least the next quarter of a century, significant improvement in the health of the poor World's children will depend on how well that question can be answered.

The initial task of the Child Survival and Development Revolution is the communication of what is now possible.

From: GRANT, J. P. Marketing child survival. *Assignment children*, 65/68: 3 (1984).

NEED FOR EFFECTIVE SCHOOL HEALTH SERVICES

—SMT. MOHSINA KIDWAI

HEALTH status of the children of a nation is a highly reliable index of the health of her population. Our Government is earnestly taking measures to improve the health indices, and has achieved tangible success in this direction. It is, however, a reality that the health and nutrition status of our children especially young children is far from satisfactory. The infant mortality rate of 105 is considerably high, when compared to the rates obtained in the developed world. Protein calorie deficiency is major nutritional disorder among children. Vitamin 'A' deficiency leading to blindness affects children below 6 years of age and around 25,000 children become blind every year due to this cause. Large number of school children suffer from anaemia. Poor nutritional status of school children is responsible for adverse effects on school progress. Many young school-going children are infact chance survivors of chronic episodes of malnutrition in their early life. Their dietary situation continues to be unsatisfactory. In view of their poor resistance and physical stamina, they end up as substandard adults with low functional capacity and endurance. During the school stage the overcrowding in classroom, poor sanitary environment coupled with inadequate arrangements for drinking water and toilet facility, all contribute to lowering of general health standards. Children who are mal-nourished and are unhealthy have difficulty in mastering school material, and their learning is slow and there are high chances of dropping out early from school. It is estimated that more than fifty per cent of students drop out of schools before reaching class V.

Surveys carried out in India indicate that the major health problems faced by our school children are: malnutrition, infectious diseases, dental caries, trachoma, refractive errors, ear, nose and throat diseases.

Our country is committed to achieve an appropriate level of Health for All by the Year 2000 A.D. The needs of children and our duties towards them are enshrined in our Constitution. Our late Prime Minister Smt. Indira Gandhi had stated, "There is hardly any constructive activity which does not con-

Smt. Mohsina Kidwai, Minister of Health and Family Welfare, delivering the Inaugural Address at the Conference of the State Project Coordinators of the National School Health Services Scheme at CHEB, New Delhi.

cern itself with welfare of children." The National Policy for Children adopted in 1974 by our Government laid emphasis on areas like child health, child nutrition and welfare of handicapped children. The policy also emphasised that health services for school children should be an integral part of school activities and should include supplementary nutrition, health check up, immunization and referral services. Schools should have safe drinking water, sanitary latrines, adequate light and air, and clean surroundings.

Our Government provides health care to the children as a part of the comprehensive health care to the community through the health infrastructure which is being constantly expanded in rural and urban area of the country. However, there are some exclusive schemes for child health care like prophylaxis against nutritional anaemia, against blindness due to Vitamin 'A' deficiency and immunization against infectious diseases. The Integrated Child Development Service Scheme of the Ministry of Human Resource Development, provides a package of services to mothers and children below six years of age comprising supplementary nutrition, immunization, health check-up, health and nutrition education and referral services, etc. The number of ICDS Projects is being gradually increased.

To maintain the continuum from pre-school to school stage, health care services are provided through the School Health Service Programme. The broad objective of the services under the scheme are promotion of positive health concepts, awakening health consciousness among children, medical check up, early diagnosis, treatment, referral to specialist centres, follow up and diseases prevention.

The development of School Health Services in India has been sporadic and uneven. Various States have launched school health schemes in one form or the other, with varying priorities. Lack of financial resources with the State Governments have, however, restricted the scope and reach of the services. Considering the fact that the School Health Programme was not implemented uniformally in all the States and adequate funds were not allotted by States for this programme, Government of India constituted a Task Force on School Health Services in 1981 to assess the status of the programme and suggest measures as future guidelines for launching a comprehensive School Health Service Programme in the country. On the recommendations of the Task Force an Intensive Pilot Project on School Health Services was started in 1982 in 25 selected blocks located in 17 States and 3 Union Territories.

The broad objectives of this Intensive Pilot Project include study of: (i) extent of prevailing morbidity including nutrition status of children in the project areas, (ii) volume and type of acute and chronic morbid conditions requiring referral facilities, (iii) To deterime feasibility of entrusting primary school teachers with responsibility related to health status of the school children, (iv) strengthening health education in order to have better results from the schemes. Besides, there are specific objectives relating to feedback about adequacy of existing resources to provide one medical check up to all students of primary classes during a year and suitability of mechanism for ensuring referrals, follow up, health education and monitoring, etc.

In the year 1984-85, the project was extended to additional 75 Primary Health Centres, thus totalling 100 PHCs in 21 States and 3 Union Territories. The scheme is now 100% Centrally Sponsored and covers 10 lakh primary school children of rural, tribal and backward areas. The primary purpose of the Project is to draw experiences and develop feasible and workable module so as to extend the scheme to other areas in a phased manner. Though the project had been in operation for more than three years in 25 PHCs and approximately 20 months in other 75 PHCs, this too has been found to suffer from limitations. I am sure that the State Programme Officers would use this forum to make a thorough assessment of bottlenecks and suggest practical measures so that the programme may be implemented effectively.

Concomitant to effective school health services are availability of minimum healthful living conditions including safe drinking water, proper drainage, safe disposal of waste and adequate nutrition for children. All these call for increased coordination of activities by various Government departments and voluntary bodies. A systematic planning, implementation and programme evaluation would help in getting better yields from the inputs. Our objective through these programmes is to enable children to develop as healthy and duty conscious citizens, imbibe desirable habits to protect themselves from preventable diseases and adopt a lifestyle which may keep them away from most of the non-communicable diseases. Our objectives also include making them rational citizens, fight superstitions, misconceptions, beliefs and fads which are likely to adversely affect their health, and make maximum use of available health care facilities. This requires proper coordination of activities of various Ministries involved in developmental activities for children. I may mention here that the Ministry of Human Resources Development is actively considering a comprehensive scheme, pooling the resources of Health, Social Welfare, Education and Rural Development Departments for the overall development of the personality of the child.

Our Prime Minister, Shri Rajiv Gandhi declared while launching the Universal Immunization Programme on 19 November, 1985, that "All children do not come with the same natural endowments, but every Government should be able to give to every child the best opportunity to develop its potential, to the fullest". The school health service scheme of the Government is one such measure and the Government is keen to make it a success. ●

(Text of the Inaugural Address delivered by the Minister of Health and Family Welfare, at the conference of the State Project Coordinators of the National School Health Services Scheme held on 24th January, 1986, in New Delhi.)

CONFERENCE OF STATE PROJECT COORDINATORS

THE Orientation-cum-Review Conference of the State Project Coordinators of the National School Health Services Scheme was held on 24 January, 1986, at the Central Health Education Bureau, New Delhi. Smt. Mohsina Kidwai, Minister of Health and Family Welfare inaugurated the Conference. She reviewed the health problems and prevailing health conditions in the schools. She emphasised the need for strengthening of basic facilities in the schools like safe drinking water, sanitary latrines, drainage and clean surroundings for developing healthful living practices. She also stressed the role of health education for prevention of health problems and health promotion with a view to achieve Health for All by the Year, 2000 A.D. She further highlighted the importance of health services for the school-going children including immunizations.

Shri P. K. Umashankar, Additional Secretary Health, addressing the State Project Coordinators, reviewed the development of School Health Services in the country and requested the participants to suggest alternative approaches for successful and meaningful implementation of the programmes *vis-a-vis* the large student population to be covered under the constraints of limited resources. He further emphasised the importance of coordination between home, school and community, including health education departments, and voluntary agencies. He suggested that the participants may consider involvement of medical colleges

Smt. Mohsina Kidwai viewing the exhibition organised during the State Project Coordinators Conference at the Central Health Education Bureau. Seen in the photo are (from right) : Dr H. C. Agarwal, Director CHEB; Dr Mahendra Datta, Deputy Director General (Planning) and Shri J. S. Manjul, Deputy Director (School Health Education), CHEB.

and private medical practitioners to ensure maximum coverage through this scheme.

The Conference was attended by the officers of the Directorate General of Health Services, Central Health Education Bureau and the Health Directorates of the States. Dr H. S. Hassan, Regional Director, Health Education, SEARO, WHO and Mrs. Anna Kari Bill, SIDA, representative and Dr U. C. Gupta, Director, Dr A. V. Baliga Memorial Trust, also attended the Conference, as special invitees.

Shri P. K. Mehrotra, Joint Secretary (M) and Dr Mahendra Dutta, Deputy Director General (Planning) chaired the sessions in which Statewise progress under the Scheme was discussed. DDG(P) clarified the procedure regarding expenditure under the centrally sponsored schemes. He made it very clear that once the Administrative Sanction is issued by the respective State Government, the expenditure can be incurred as per approved pattern of the scheme and is reimbursed by the Central Government. It is not necessary that actual funds are remitted to the State Governments, before any action is taken.

The State Project Coordinators informed that all the States and U.Ts. are implementing the scheme. The National School Health Services Scheme is an additional charge given, usually, to an officer who has several other responsibilities and as such required attention is not paid. Difficulties of not having exclusive vehicle and having inadequate number of medical officers at the PHCs, were brought forth as major impediments in the way of effective implementation of the scheme.

Joint Secretary (M) emphasised that the State Project Coordinators should expeditiously follow-up issue of administrative sanctions with their respective Governments where these have not been issued so far. He further stressed frequent visits to the PHCs implementing the scheme and ensure periodic meetings of the Project Coordination Committees at the State and district levels. ○

The Universal Immunization Programme was launched in Andhra Pradesh on 19 November, 1985. Dr M.S.S. Koteswara Rao, Minister for Medical and Health, delivered the Presidential Address at a function in Hyderabad. To his right are Shri G. Narayan, Rao, Speaker, Andhra Pradesh Legislative Assembly; Shri Kala Venkat Rao, Minister for Municipal Administration; Shri Arjun Rao, Special Officer, Municipal Corporation of Hyderabad and Dr D. Sunder Rao, Director of Health and Family Welfare.

BOOKS

Alcohol policies, edited by Marcus Grant. Copenhagen, WHO Regional Office for Europe, 1985, 153 pages (WHO Regional Publications, European Series, No. 18). ISBN 92 980 1109 2.

If we are serious about the goal of health for all by the year 2000, then we cannot afford to ignore alcohol-related problems. Throughout the WHO European Region, and in many other parts of the world, rates of alcohol consumption and of alcohol-related problems are now so high that they give rise to considerable concern. Piecemeal attempts to deal with these problems seem to have had inadequate results. In an effort to find a more lasting solution, WHO has begun to pay special attention to the development of national alcohol policies.

What is presented here is an integrated approach to the whole question of policy formulation. Past experiences are analysed and research priorities are assessed. A real attempt is made to suggest the logical sequence of stages in national policy development. The contribution made by economists is particularly important, since one of the many conclusions of this book is that a reasonable balance needs to be struck between economic and public health interests.

But alcohol-related problems must not be viewed in isolation. They need to be seen as a consequence of particular life-styles and of choices made both by individuals and by societies. What this book achieves is a sharpening of the focus on preventing alcohol-related problems without any loss of the wider view of health. It is concerned not only with promoting alcohol policies in a general sense, but with demonstrating that they are indeed practical, necessary and comprehensive. It is to be hoped that the suggestions it contains will be studied and adapted by all those, throughout the world, who are interested in improving health. This book is, in a real sense, a plan for action and its success will be measured by the extent to which it is actually used in developing and implementing alcohol policies.

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FIRST HUMAN TRIAL OF BIRTH CONTROL VACCINE IN AUSTRALIA

Thirty women have volunteered for the world's first human trial of a synthetic birth-control vaccine, which began in February, 1986 in Adelaide, Australia, at Flinders Medical Centre, a Collaborating Centre of the World Health Organization (WHO).

The trial, part of WHO's Special Programme of Research, Development and Research Training in Human Reproduction, is scheduled to last for nine months, and aims to determine the safety and side-effects of the vaccine in already sterilized women.

Following successful completion of this phase, the vaccine will then be tested on fertile women to determine its efficacy as a birth control method. Also to be determined is the duration of the vaccine's effect, which is foreseen to be between one and two years. WHO estimates that if all the trials proceed satisfactorily, the vaccine could be available by the mid-1990s.

The vaccine was developed by Ohio State University (USA), in collaboration with other academic institutions, the pharmaceutical industry and WHO over the past decade. It has already been shown to be safe in several animal species, and to prevent pregnancy in baboons.

—WHO

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