INTERNATIONAL

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Eminent Educationist and Researcher (HEC)

Child rights: malnutrition major cause of mortality

Freedom from hunger and malnutrition is a basic human right. Nutrition has been expressed as a right in various international declarations and human rights instruments from time to time. The first declaration of the Rights of the Child adopted by the League of Nations in 1924 marks the beginning of the International child's right movement and is also the first international affirmation of the right to nutrition.

The declaration affirms that "the child must be given all means needed for its normal development, both materially and spiritually and states that the hungry child should be fed. But the right to nutrition receives its fullest attention in the 1989. Convention on the rights of the child and Pakistan ratified in 1997. Article 24 mandates states parties to recognise children's right to the highest attainable standard of health and to make measures to implement this right. States are mandated to provide medical assistance and health care to all children, combat disease and malnutrition through provision of adequate nutritious foods, safe drinking water and adequate sanitation and provide families with information about the advantages of breast-feeding.

The unprecedented numbers of world leaders attended the world summit for children, committed themselves to give high priority to the rights of children in the summit's declaration in 1990. Pakistan was one of the six-initiator countries of the world summit for children. All the nations agreed to achieve the nutrition goals by the years 2000.

The goals remain unmet and right unrealised in Pakistan. For a large part of the population, malnutrition remains the major cause of mortality and morbidity. In addition to hunger and mal-nourishment, more specific forms of nutritional deficiency affect millions of people in particular children and pregnant women.

In addition to infections, the major dietary is that of energy and protein but more specific forms of nutritional deficiency such as iron, iodine and vitamin A remain wide spread. No progress has been made over the last ten years in reducing the prevalence of malnutrition amongst children despite an increase of 27 per cent in the national per capita income. The height and weight of the children were deteriorated during this period.

Malnutrition is wide spread among children under five years of age, affecting 12 million children having low height for their age (stunting), 9.5 million children are underweight (low weight for age) and 2.1 million children have low weight for height (wasting).

In Pakistan, stunting a basic indicator of chronic malnutrition among children under five increased from 35 per cent in 1990 to 50 per cent in 1999 comparing to 39 per cent in the developing world. Stunting is linked to mental and physical development. The causes include low birth weight, insufficient breast feeding, inadequate food given to supplement or replace breast milk and frequent diarrhoea and respiratory infections. Stunted children tend to enter school later and miss more days than well-nourished children.

About 50 per cent children drop out of school before reaching the 5th grade in Pakistan. Stunted children may never regain the height lost and most will never gain the corresponding weight. And when the window of early childhood is closed, the associated cognitive damage is often irreversible. It is evident that malnutrition in children has been continuously increasing during the last decade. This is unacceptable. It is a violation of child's human right because the country failed to achieve the target of reducing malnutrition by half of 1990 level.

A baby's weight at birth is a good indicator of both the mother's health status and the infant's chances of survival and development. In Pakistan, 19 per cent (decreased from 40 per cent in 1990) of all births are attended by skilled health personnel, only 12 per cent of newborns are weighed at birth and only 30 per cent of the babies are registered. About 1.42-1.94 million babies (25-34 per cent) born as low birth weight (less than 2.5 kg) face risk of poor growth and death. It leads to a 50 per cent greater risk of diabetes, high blood pressure, heart disease and cancer later in life. Malnourished girls often grow into undernourished mothers in turn more likely to give birth to low birth weight infants. The target of reducing low birth weight to less than 10 per cent was not achieved.

Pakistan ranks third in the world in neonatal deaths caused by tetanus, as 21,000 children die annually of this deadly disease. An estimated 250,000 children under five die every year due to diarrhoea. Parasitic infection by roundworms, hookworms and whipworms cause diarrhoea and anaemia and each infect between 170-400 million school age children annually. It is estimated that 40 million people including 1.6 million children in Deepalpur area of Punjab are at risk of full spectrum of iodine deficiency disorders (IDD). This results in some 350,000 people handicapped, about 4.3 million persons with reduced motor performance and of these 2.3 million with some reduced mental performance, 14000 still births per year and another 8,400 neonatal deaths.

Only 15 per cent of households are consuming iodised salt and only eight per cent of them are getting required level of iodine in iodised salt in Pakistan. The target of eliminating IDD by the year 2000 was not achieved. Vitamin A deficiency and iron deficiency anaemia have increased over the period. Presently 65-78 per cent of pre-school children have iron deficiency anaemia. Iron deficiency is a major cause of lasting brain damage and death in children. Iron and vitamin A deficiencies are linked to poverty. Poor people frequently cannot get access to a sufficient quantity of variety of high quality foods that are rich in nutrients.

Reaching children with vitamin A supplement alone is not sufficient. Breast feeding practices declined from 87 per cent and 74 per cent in 1990 to 16 per cent (0-3 months) and 31 per cent (6-9 months respectively) in 2000.

The sub-clinical vitamin A and iron deficiency affect million of pre-school children. Success of micronutrient interventions is not visible in the country and the targets of eliminating Vitamin A deficiency by the year 2000 could not be achieved.

—Prof Dr M Akmal Khan
(Part I)

Prof. Dr. M. Akmal Khan
Ph.D (London), Research Fellow (DANIDA), MI Biol, FRSH (London), MIFT (USA)
Former Chief Scientific Officer (PARC), Professor of Nutrition (KSU), Consultant to FAO and UNICEF
Eminent Educationist and Researcher (HEC)

Professor of Nutrition
Dept. of Biochemistry
Quaid-i-Azam University
Islamabad, Pakistan
Cell: +92-321-5282230

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Child Rights: malnutrition biggest contributor to child mortality

Malnutrition is the biggest single contributor to child mortality in Pakistan. Infant mortality rate declined from 104 in 1990 to 90 per 1000 live births in 1999. While children under five-mortality rate an indicator of human and economic development decreased from 138 in 1990 to 126 per 1000 live births in 1999.

However, the targets of reducing infant and under-five child mortality rates by one third of the 1990 level were not achieved. Even the Social Action Programme (SAP) failed to achieve the child mortality targets. Child mortality rates in Pakistan are still the highest among the low-income countries of the world. The decline in child mortality without a corresponding improvement in child nutrition has resulted in an expanding pool of undernourished survivors and this is reflected in the high prevalence of stunting in children under five in Pakistan.

The education sector, a key for development of the country has not witnessed any dramatic reform particularly in the expansion of primary school enrollments. The most powerful of all interventions, the key of keys, to solve the issue of gender equality is the education of girls. There has been no progress towards the SAP; goal of expanded primary education coverage. Both gross and net enrollment at the primary level and at middle level schooling declined over the 1990s.

Rural areas in particular have suffered from the decline in gross enrollment rates. Only 16 per cent of children aged 10-12 attended middle level education. The co-efficient of educational efficiency — a synthetic indicator of the internal efficiency of an education system — is 68 per cent in Pakistan, reflecting the combined impact on efficiency of repetition and dropout.

A co-efficiency less than 100 per cent indicates that 32 per cent of resources are wasted. Improving the level of education of mothers to at least the primary level can reduce child stunting by at least 13 per cent while increasing per capita income by 10 per cent can reduce child stunting by two per cent.

The progress of a nation can be measured by three key indicators i.e. percentage of children adequately nourished, the percentage being educated to at least five grade and the percentage surviving to age five. The National Performance Gap — a measure of the extent to which positive child right's are being honored in relation to available resources, indicates that Pakistan has a performance gap of —27 per cent for children under five mortality, —13 per cent for children underweight and —18 per cent children reaching grade five in school, indicating that the country has not achieved considerably social progress. Pakistan in terms of human development index is ranked at 138 out of 174 countries.

— Prof Dr M Akmal Khan (Part II)

Prof. Dr. M. Akmal Khan

M.Sc (Hons), Ph.D (London), Research Fellow (DANIDA), MIBiol, FRSH (London) MIFT (USA)
Ex: Chief Scientific Officer (PARC), Professor of Nutrition (KSU), Consultant to UN-FAO and UNICEF
Eminent Educationist and Researcher (HEC)

3-E, Karakoram Blessings
F-11/1, Islamabad, Pakistan
Cell: +92-321-5282230
mak_nut@yahoo.com

INTERNATIONAL

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Child rights: malnutrition costs Pakistan Rs 200 billion every year

ISLAMABAD: The social and economic costs of poor nutrition are huge. Malnutrition adversely affects mental development, physical development, productivity and the span of working years, all of which significantly influence the economic potential of man.

It has been estimated that Pakistan suffers the following losses each year due to micro-nutrient malnutrition (vitamin A, iron and iodine deficiency): 60,000 deaths, 33,000 children born as cretins or blinded as per schooler, four million person-years of work lost due to lethargy or more severe disability, and one million student-years wasted.

The malnutrition costs the country Rs. 200 billion every year equivalent of more than five per cent of GNP in lost lives, disability and productivity. Iodine deficiency (goitre) alone costs the country Rs. 1.6 billion every year equivalent of 3.3 per cent of GDP in lost adult productivity. Poverty is closely correlated with under nutrition.

However, rapid improvement in nutrition will not necessarily be a direct result of economic growth. Nutrition may not even respond to improved income. Some studies have demonstrated that it was possible to improve nutrition despite economic stagnation. This may be attributed to good care practices and access to basic health services. Low levels of education and poor health and nutrition status are limiting Pakistan's productivity and adversely affecting economic growth and poverty reduction prospects.

Good nutrition in early life pays dividends in childhood and in later life. It is most likely to result where there is economic growth, especially equitable growth, when social services become affordable and accessible and when adequate investment is made in human resources, including the empowerment of women.

Good nutrition in turn contributes to greater productivity and thus to economic growth. Investing in nutrition makes good economic sense because it reduces health care cost and the burden of non-communicable diseases, it improves productivity and economic growth and promotes education, intellectual capacity and social development.

The cost-effectiveness of preventive programmes has been well recognised. Resources put into nutrition are an investment with significant returns today and in the future. Fortifying foods with vitamin A, iodine and iron may cost Rs. 30 per capita (versus Rs. 1,400 per capita in above estimate of annual malnutrition cost) and may yield 45-fold annual return on investment.

Child malnutrition can be reduced by 43 per cent by improving women education (secondary school enrollment), by 26 per cent by improving per capita food availability, and by 19 per cent by improving health environment.

Low birth weight can be reduced by 40 per cent and infant mortality by 50 per cent through improved food intake during pregnancy. The vitamin A supplementation during pregnancy can reduce maternal mortality rates by 44 per cent and to newborns in the first 48 hours can reduce infant mortality by 21-24 per cent.

Improved breast feeding practices and reduction of artificial feeding can save more children. Eliminating malnutrition among pregnant women would reduce disability in their infants by almost one third.

It is important that the issue of malnutrition be moved from the agenda of welfare to the agenda of rights. It is the right of a child to have adequate care and to grow to the mental and physical potential with which he or she was born. The problem of child malnutrition could best be solved by honoring the rights of women, including education, dignity, respect, resources, adequate food and health care, during pregnancy and child birth.

The progress to achieve the nutrition goals set at 1990 World Summit for Children has been very disappointing. We have failed to protect child right to nutrition. There could be several reasons but the major factor relates to the element of policy and strategy to improve nutrition.

The country has not achieved normalcy in nutritional stability due to poor nutrition planning and implementing national programmes. We must now face the fact that we have the worst nutritional levels, and that the roots of malnutrition run deep into social soils.

A malnourished nation cannot participate in economic development effectively unless its nutritional problems are solved. Policies for combating under-nutrition must be firmly rooted in food-based rather than a drug-based approach. This can be achieved through greater linkage between agricultural research and nutrition research.

Lastly, the policy makers must understand that no progress in child health can be achieved unless under-nutrition among children is eliminated. Elimination of malnutrition should be made a major focus of national strategy and economic and social policy in the country.

The nation is facing the following nutrition challenges: low birth weight, child hood under-nutrition and micro-nutrient deficiencies and should be tacked by improving household income and food security, education level of the mother, child feeding practices, nutrition education and investment in nutrition, health environment, political stability, good governance, national nutrition surveillance, and statistical systems, bio-technology applications and to bridge communication gap between public and private sectors.

There is also need to reactivate nutrition unit in the Planning Commission to strengthen the manpower and research facilities in the field of nutrition and to set up a national nutrition council to coordinate inter-sectoral programmes and projects defined by national food and nutrition policy.

— Professor Dr. M Akmal Khan
(Concluded)

mak_nut@yahoo.com
(The writer is Nutritionist and ex-Chief Scientific Officer (PARC), former Professor of Nutrition (KSU), Consultant to the United Nations Food and Agriculture Organization and UNICEF and Fellow of Royal Society of Health)
Tel 051-2299898

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Consequences of Iodine Deficiency Disorders

A high prevalence of goitre has recently been reported in 'The News', in village Neelam Bhotho, not far away from the Nutrition Section of the Planning Division, responsible for improving nutrition through better implementation of food and nutrition programmes. Pakistan being a signatory to the Declaration of the World Summit 1990, was committed to the goal of universal iodisation of salt by the end of 1995 and the virtual elimination of iodine deficiency disorder (IDD) by the year 2000.

Iodine deficiency is a major obstacle to human and social development of communities living in iodine deficient environment. Endemic goitre due to deficiency of iodine in the diet is a serious public health problem affecting 40 million people in Pakistan. It is wide spread (71%) in Northern Pakistan (Northern Areas, AJK and the northern parts of NWFP). It's prevalence (2-3%) in some pockets being flooded in Punjab, Sindh, Balochistan has been reported. In Islamabad 39 to 62% school children (8-10 years) has goitre. Goitre is also caused by consuming foods such as millet, cabbage, turnips, rapeseed, peanut and soybean, by water (geologic origin) and by bacteria (E. coli) in water. Other nutritional factors such as protein-energy malnutrition and vitamin A and selenium deficiency and parasitic infestation may worsen the manifestation of IDD in a population.

Iodine deficiency leads to permanent brain damage and physical and mental retardation in children, child mortality, poor school performance, still birth and abortions, decreased ability to work, goitre and socio-economic retardation. There are 4.3 million persons with reduced mental ability, one million cretins, and 14000 still births per year and over 8400 neonatal deaths in endemic areas. According to WHO there are 14 million people in Pakistan possess some kind of disability. Cancers of thyroid and breast have been associated with dietary iodine. Although rates of thyroid cancer in some areas with endemic goitre have been observed to be higher than in non-goitre areas. Breast cancer incidence in females may be influenced by abnormalities of thyroid functions.

A direct correlation between mortality from breast cancer and corresponding prevalence rates of endemic goitre has been reported. Breast cancer incidence is also high where iodine intake is high. In Pakistan, the IDD costs the country Rs. 1.6 billion every year equivalent of 3.3% of GDP in lost adult productivity. Iodine deficiency also affects the domestic animals in the same way that people do. The animals will be smaller, have more abortions and are frequently sterile, produce less meat, eggs and wool.

Food fortification (adding iodine to salt, oil, water etc) provides an opportunity to improve the quality of life at a lower cost, the results of fortification are fast, broad and sustainable. The nutrient intake of the targeted group improves and impact can be detected with one to three months. Over the last thirty years efforts have been made towards virtual elimination of IDD in Pakistan. A programme of iodised oil (lipiodol) injection/capsule at a cost of Rs. 50 million to cover 6 million people in the Northern Areas, AJK and some parts of NWFP was initiated in 1987 for about 8 years.

The impact of this programme on the health of the people was not evaluated. However, the publications of the Planning Division did not show any change in the prevalence of goitre in the northern areas during this period. In fact, the prevalence of goitre has increased from 66% in 1976 to 71% in 2001 and use of syringe and needle to inject iodised oil may have increased hepatitis and AIDS in these areas.

Iodisation of salt is the preferred approach for supplementation in iodine deficient population. In order to meet the goals of world Summit 1990, the government of Pakistan in 1994 focused to achieve the objectives of universal iodisation of salt by the end of 1995 and elimination of IDD by the year 2000 under Dr Mushtaq Khan, Senior Chief (Health and Nutrition) Planning Division as National IDD Coordinator. The donors (UNICEF/ CIDA/ MI) provided US $ 5.7 million and an additional Rs 10.62 million for hiring technical experts. The project targeted the entire population of Pakistan. At the end of the project (2000), only 19% of the households were consuming iodised salt. About 33 to 50% of iodised salt packets at household levels, on testing, showed no iodine, another 25% had either very low or very high levels of iodine in the packets. Loss of iodine in iodised salt occurs due to humidity (30-98%), room temperature (15-20%) after 3-12 months, polythene bag (10%), storage (28-51%) after 3 months, boiling (58%), frying (20%), grilling (23%) and cooking (50-70%). The consumer due to lack of awareness about the use of iodised salt may not get any iodine from the iodised salt under the present circumstances. Moreover, more than 50% of Pakistanis are malnourished and cannot utilize iodine effectively even some iodine is present in iodised salt. The impact of the project on the health of the people was never evaluated.

According to the Planning Division there were 20 million people affected by IDD in 1996, which increased to 40 million in 2001. In Northern Areas 70% of the people still have goitre reported recently by the Planning Division and there appears to be no change in the prevalence reported in 1989. However, the number of people suffering from IDD must have increased during this period. Despite utilizing enormous resources, the Nutrition Section of the Planning Division failed to achieve the goals of world Summit 1990. There are several lessons to be learnt by the Planners from the serious set backs may be due to poor planning, monitoring, coordination, hiring of foreign consultants, quality controls, lack of public awareness and mismanagement. It may be pointed out that universal iodisation programme is important for endemic areas and in non-goitre areas it may increase hypertension and excessive intake of iodine may lead to breast cancer in women. In fact, the prevalence of IDD has increased and has already done serious damages in the hilly areas of Pakistan, adversely affecting the productivity and if this problem is not controlled, it could result into more grave consequences.

The policy makers should realize the gravity of situation and tackle it seriously. The institutional framework for planning and implementation of nutrition programmes is not satisfactory and needs to be improving to influence policy and coordinate programmes. A task force to deal with the development and control of nation IDD programme be established. There is great challenge for the policy makers to save millions of children from malnutrition, disability, and mortality and to improve productivity leading to economic growth.

Dr M Akmal Khan
mak_nut@yahoo.com
(The writer is Nutritionist and ex-Chief Scientific Officer (PARC), former Professor of Nutrition (KSU), Consultant to the United Nations Food and Agriculture Organization and UNICEF and Fellow of Royal Society of Health)

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Improving quality of life of senior citizens

Dr. M Akmal Khan

Aging is a normal process that begins at conception and ends at death. It is not a disease, but a normal part of life cycle, which involves every dimension of our lives: physical, mental, social and spiritual. Traditionally, the senior citizens age group has been defined as 65 and beyond. However, the increasing number of healthy and active people at the younger end of the aging spectrum has led to the need for more definite age groupings. Thus, the specific age groups of 65-75, 75-85 and older are often referred to as "Young old," the "old old" and "the oldest old" respectively. There are 9.7 million senior citizens with gender gap of 5.3 million males and 4.4 million females in Pakistan — a significant increase from 2 million in 1951. Among the elderly, only 15% were reported literate and a large proportion — from 10 to 50% — rated their health as poor.

Good nutrition throughout life is a clear factor in determining the quality of life a person may expect in later years. Attempts are occasionally made to associate dietary practices with extended life spans as observed in people of Hunza who live to approximately 100 years of age. Genetic factors, high consumption of fruits and vegetables, exercise and productive roles appear to be responsible factors in prolonging lives in this population. Good nutritional status is essential for a high quality of life, since food contributes to the quality of life through psychological, social and physical mechanisms. Nothing can stop the aging process, however, optimal nutrition can slow it down. Through proper foods and supplements, elderly can dramatically improve their quality of life. The average life expectancy has been reported to be 63 years in Pakistan. The majority of poor older people enter old age after a life time of poverty and deprivation, a diet that is inadequate in quantity and quality, and a life time of disease and poor access to healthcare. For most of these older people retirement is not an option. Poverty, lack of pension retirement, deaths of younger adults from infectious diseases and rural to urban migration of younger people are among the factors that compel older people to continue working. Adequate nutrition, healthy aging and the ability to function independently are thus essential components to preserve a minimum quality of life.

In Pakistan, most old people are cared for at home by families/relatives and other in the community. But traditional support systems and extended families are breaking down especially with urbanisation and migration & old people there may end up lonely, living in poverty, with chronic illnesses, poor hearing and vision and perhaps psychological problems. Compounding these problems, they face difficulties in producing foods, purchasing it and preparing it. Old people are at greater risk than any other age group of developing nutritional deficiencies as a consequence of reduced food intake, inadequate absorption and utilization of food due to loss of smell, taste, vision, poor dentition, lesions in the mouth, dysphagia, abdominal pain, depression, social isolation, lack of exercise, financial constraints and medication. Elderly people are particularly vulnerable to malnutrition due to deficiencies of protein calories and essential micronutrients such as vitamin A, iron and iodine and drug-nutrient interaction. Malnutrition in elderly results mental problems due to poor nutrition and poor disease resistance of elderly could be closely related to their poor dietary habits.

Most body functions change/diminish somewhat with age. Body muscle decreases by about 3 kilograms per decade after the age of 50, a 10% loss in brain volume, the pumping efficiency of heart decreases by 30%, the efficiency of lungs declines by 50 to 70%, the velocity of nerve transmission diminishes by 15% basal metabolic rate declines by 20% which reduces the caloric need of the elderly, the filtering capacity of kidneys is about half that of younger adult, minerals begin leaving the bones, with an average loss in height of two inches for men and eight inches for women by the time they are in their seventies, digestion and absorption of nutrients are less efficient, constipation, glucose tolerance is lowered, 80% of the elderly lose their teeth, levels of blood cholesterol elevated, high prevalence of arthritis, cataracts and chronic bronchitis, and impairment of renal function and hearing, degenerative diseases such as cardiovascular and cerebrovascular diseases, diabetes, osteoporosis and cancer are common diseases affecting the elderly.

Since aging is incurable, the quality of life of elderly can be improved by the following changes in the dietary pattern. The elderly should be served meals in the company of other members of the family. Reduce calories and fat and increase protein in the diet to maintain the body weight of elderly at desirable level. Use nutrient dense foods such as whole grain products, pulses, beans, poultry, fish, eggs, nuts, low fat dairy products, increase fruits and vegetable, and water (fluids), reduce oils, butter, ghee and sugar in the diet. Limit traditional dishes/foods heavily preserved/ pickled in salt or breaded and fried. Vitamins and mineral supplements may be used in moderation. High consumption of fruit and vegetables, low use of butter/ghee and moderate physical exercise can reduce the risk of stroke by 40%, coronary heart disease by 30% and blood cholesterol level by 10%, awareness of nutrition and health can reduce 40% in death rate from CHD. Avoid organ meat such as liver, kidney and heart in the diet.

Policy systems and structures need to be implemented to establish programmes, which support the health and welfare of our aging population. Aging should be an integral aspect of social and economic development policy, improving the availability of sufficient foodstuff through appropriate schemes and encouraging the elderly in rural areas to play an active role in food production, developing food based dietary guidelines for elderly, providing health and dental services and increasing the number of geriatric specialists in community medicine, implementing the perspective National Plan for Senior Citizens (1986-2006), developing information system to provide nutrition advice both for elders at risk and for healthy aging, assessing nutritional status, functional ability and risk factors of nutritional vulnerability, emphasising the respect of elderly at all levels of education and for the people in general, increasing pensionable age from 60 to 65 for all employees and to 70 years for scientists and university professors, linking social security and employment intensive programmes with employment and development policies, provision of Zakat funds to deserving elderly particularly to elderly female widows, tax reduction to children who are supporting elderly, subsidizing the cost of medical and transport services, nominating senior citizen on national policy-making bodies, promoting research on nutritional health, strengthening the Senior Citizens Foundation for expending its activities to all parts of the country.

In short, old age need not to be a period of despair, isolation and ill health. Preparation for enjoyable healthy aging should include financial planning, the establishment of lasting social contacts, the learning of skills and activities that can be pursued into later life, the maintenance of a program of regular physical exercise and the cultivation of healthy dietary pattern and nutrition status to preserve quality of life during old age.

(The writer is nutritionist and ex-chief scientific officer (PARC), former professor of nutrition (KSU), research fellow (DANIDA), Fellow of Royal Society of Health, consultant to FAO and UNICEF)

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Diet and coronary heart disease

Dr M Akmal Khan

It is well known that diet influences the risk of several major chronic diseases namely coronary heart disease (CHD), hypertension, cerebrovascular disease, obesity and diabetes. These conditions are commonest cause of premature death and disability in affluent communities and they impose major burden on society.

According to National Institute of Cardiovascular Disease, Karachi, 12-15 per cent of the population in Pakistan has some kind of cardiovascular disorder and of these 11 per cent have high blood pressure, affecting people at their most productivity age between 30 and 60. In Pakistan circulatory diseases cause over 100,000 deaths, 12 per cent of all deaths annually (NHSP, 1998).

The modifiable risks for CHD have been identified. Three of these factors are linked to nutrition practices: obesity, high blood cholesterol and hypertension. Other strong non-nutrition factors include cigarette smoking, physical inactivity, stress, certain drugs and lack of information, education and guidance on the role of diet in the prevention and treatment of CHD.

The presence of more than one risk factor increases the risk of CHD. Risk increases by 30 per cent with the presence of any one of the three major controllable risk factors (high blood pressure, high blood cholesterol and smoking). With any two of these risk factors, the risk of CHD increases three fold, with all three of these risk factors CHD risk increases seven fold. Smoking more than ten cigarettes per day alone increases coronary mortality by 1.6 fold. Coronary mortality doubles when systolic blood pressure is more than 130 mm Hg in smokers. Risk of myocardial infarction estimated to increase by four fold in oral contraceptives agents (OCA) users. Coronary risk in OCA users increases with age and with the presence of other risk factors, cigarette smoking and hypertension in particular. An important risk factor for chronic diseases is the low birth weight (LBW) of newborn babies.

About 7.3 million Pakistani adults have high blood cholesterol levels, One out of seven older adults are obese or overweight. About 40 per cent urban women (45-64 years) are obese or overweight. Obesity in urban males increases from 15 per cent of those with low economic status to 40 per cent of those with high economic status. Approximately 2.7 million people have prevalence of diabetes.

In 1992, Over 11,000 Pakistani died due to diabetes. Among urban women over 45 year of age, one in four are diabetes and prevalence in urban overweight men is 2.4 per cent. High blood pressure is a leading risk factor for heart disease and stroke, affecting 17.9 per cent of adults (15 year and above). There are 5.5 million men and 5.3 million women who have hypertension. Urban Pakistanis have higher prevalence of high blood pressure than rural dwellers (21.5 per cent Vs 16.2 per cent).

The positive relationship of saturated fat intake and dietary cholesterol to CHD and mortality has been well documented. High carbohydrate intake lowers the risk of CHD. Recent studies suggest an inverse association between the consumption of fish and CHD. Men who consumed more than 30g of fish per day had a risk ratio 2.5 time lower than those who did not consume fish. Some studies have shown that animal protein (meat) is positively and vegetable protein negatively correlated with CHD. High intake of fruits and vegetables (400g per day) and pulses (30g per day) are associated with low rates of CHD and reduced risk of stroke. High fiber diets may be hypotensive.

Here are some small steps that can make a big fat difference in your diet. Choose leaner meat, choose low-fat dairy products, eat more fruits, vegetables and grains, treat yourself to low-fat desserts and snacks, choose healthier cooking methods and watch out for added fat.

It has been reported that a one per cent reduction in plasma cholesterol is associated with a two per cent reduction in CHD risk. The USA has seen a reduction of over 40 per cent in the death rate from CHD through increased awareness of nutrition and health promotion policies.

Vegetable oils such as canola, olive, corn, sunflower, sesame, soybean should be included in the diet. Cod liver oil drops blood pressure significantly and linseed oil (one teaspoon per day) is effective in lowering heart disease risk.

A vegetarian or semi-vegetarian diet can seriously cut heart disease risks. Red peppers prevent the stickiness of blood cells that lead to blocked vessels. Always use some turmeric (Haldi) with red peppers to prevent the ill-effects on the peptic ulcers.

Use regularly fresh ginger (one teaspoon) and yogurt (one cup) for improving the health of blood vessels and heart. Both are good for lowering serum cholesterol. Garlic (two cloves daily) lowers blood cholesterol and triglyceride and blood pressure. It also keeps the blood vessels clean and healthy.

Cut sodium and salt intake (less than five grams per day). Use potassium - based salt. Highly processed salty, salt preserved and salt picked foods is consumed sparingly.

The American Heart Association has recommended a standard of 20mg sodium per litre to protect heart and kidney patients, whose sodium intake must be restricted. It may be suggested that the choice to install a water softener in the home may be unwise especially if the family may be heart disease prone.

While moderate alcohol consumption appears to be negatively associated with CHD, it should not be recommended to reduce CHD risk. Alcohol increases plasma triglyceride levels, affects hypertension, alcohol hepatitis, cirrhosis and certain cancers and can cause social and psychological problems.

Butter, palm oil, coconut oil, vegetable oils of unknown origin, hydrogenated fats and oils, visible fat on meat, chicken skin, fried meats, full cream milk, evaporated or condensed milk, cream, full fat cheese, cream cheese, full fat yogurt, potato chips, fancy breads, cakes, pastry, puddings and biscuits made with saturated fats, deep fried snacks, ice cream, full fat malted milk drinks e.g. Horlicks, ovaltine, drinking chocolate, cream soup, chocolate spreads, toffees, butterscotch, chocolate, coconut bar, salad cream, mayonnaise, cream cheese dressing, egg noodles to be avoided.

The writer is Nutritionist and ex-Chief Scientific Officer (PARC), former Professor of Nutrition (KSU), Consultant to the United Nations Food and Agriculture organisation and UNICEF.

mak_nut@yahoo.com

0321-5282230

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A controlled diet effectively ensures a healthy heart

Healthy diet is the key

Dr M Akmal Khan

IT IS well known that diet influences the risk of several major chronic diseases. These include coronary heart disease (CHD), hypertension, cerebrovascular disease, obesity and diabetes.

These conditions are the common cause of premature death and disability in affluent communities and they impose major burdens in terms of morbidity and mortality on society.

In Pakistan, 12 to 15 per cent of the population has some kind of cardiovascular disorder. Of these, 11 per cent suffer from high blood pressure, affecting people at their most productive age between 30-60. This is also the cause of over 100,000 deaths, 12 per cent of all deaths annually.

However, the modifiable risks for CHD have been identified.

Three of these factors are linked to nutritional practices: obesity, high blood cholesterol and hypertension. Other strong non-nutrition factors include cigarette smoking, physical inactivity, stress, certain drugs and lack of information, education and guidance on the role of diet in the prevention and treatment of CHD. The presence of more than one risk factor increase the risk of CHD. Risk increase by 30 per cent with the presence of any one of the three major controllable risk factor (high blood pressure, high blood cholesterol and smoking). With the presence of any two of these risks factors, the risk of CHD increases three fold. With all three of these risk factors CHD risk increases seven fold.

Smoking increases the chance of developing diabetes and raises blood fat levels. Smoking more than ten cigarettes per day alone increases coronary mortality by 1.6 fold. Coronary mortality doubles when systolic blood pressure is more than 130mm Hg in smokers. Risk of myocardial infarction is estimated to increase by four fold in oral contraceptive agents' (OCA) users. Coronary risk in OCA users increases with age and with the presence of other risk factors, cigarette smoking and hypertension in particular.

In Pakistan 1.4 to 1.9 million babies are born as low birth weight (less than 2.5kg) that leads to a 50 per cent greater risk of diabetes heart disease and cancer later in life. About 57000 babies are born with congenital heart disease in Pakistan.

According to the National Health Survey of Pakistan, chronic diseases are a burden to many Pakistanis. People are acquiring many unhealthy life style, dietary and behaviours similar to developed countries. These lefestyle includes sedentary occupations, inadequate physical activity, imbalance diet, tobacco, alcohol and drugs. About 7.3 million Pakistani adults have high blood cholesterol levels and half of all heart disease deaths in women today are caused by raised cholesterol.

Female heart attack patients, younger than 50 are more likely to die than their male counterparts. One out of seven older adults are obese or overweight. About 40 per cent urban women (45-64 years) are obese or overweight. Obesity in urban males increases from 15 per cent of those with low economic status to 40 per cent of those with high economic status. Approximately 2.7 million people have prevalence of diabetes.

In 1992, over 11,000 Pakistani died due to diabetes. Among urban women, over 45 year of age, one in four suffer from diabetes and prevalence in urban overweight men is 24 per cent. High blood pressure is a leading risk factor for heart disease and stroke, affecting 17.9 per cent of adults (15 years and above). There are 5.5 million men and 5.3 million women who have hypertension. Urban Pakistanis have higher prevalence of high blood pressure than rural dwellers (21.5 per cent vs 16.2 per cent).

Tobacco use is one of the well-established risk factors for diabetes and CHD. About 34 per cent of men and 21.5 per cent of women use some form of tobacco regularly in Pakistan. About one in every 500 people has an inherited condition for increased risk of heart disease.

Diet is included in the category of modifiable risk factors because of its effects on Primary CHD risk factors. Many studies demonstrate a relationship between diet, plasma cholesterol and CHD. The positive relationship of saturated fat intake and dietary cholesterol to CHD and mortality has been well documented.

High carbohydrate intake lowers the risk of CHD. Recent studies suggest an inverse association between the consumption of fish and CHD. Men who consumed more than 30gm of fish per day, have a risk ratio, 2.5 times lower than animal protein (meat), which is positively, and vegetable protein, negatively, correlated with CHD. High intake of fruits and vegetables (400g per day) and pulses (30g per day) are associated with low rates of CHD and deduced risk of strokes. High fiber diets may be hypotensive.

Raised cholesterol is one of the biggest risk factors for heart disease along with smoking and high blood pressure. High cholesterol also increases the risk of clots forming, which can blocked or narrowed arteries, and cause heart attack. According to the American Heart Association, the ideal adult plasma total cholesterol is 130-190mg/dl. The National Cholesterol Education Programme defines a desirable blood cholesterol level as less than 200mg/dl. Border line — high blood cholesterol is 200-240mg/dl and high blood cholesterol level is greater than 240mg/dL.

Blood cholesterol readings can vary by upto 10 per cent during the course of the day, depending on what you have eaten, so your doctor may do several readings before considering treatment. If you have other risk factors such as smoking or a family history it is certainly worth testing your cholesterol.

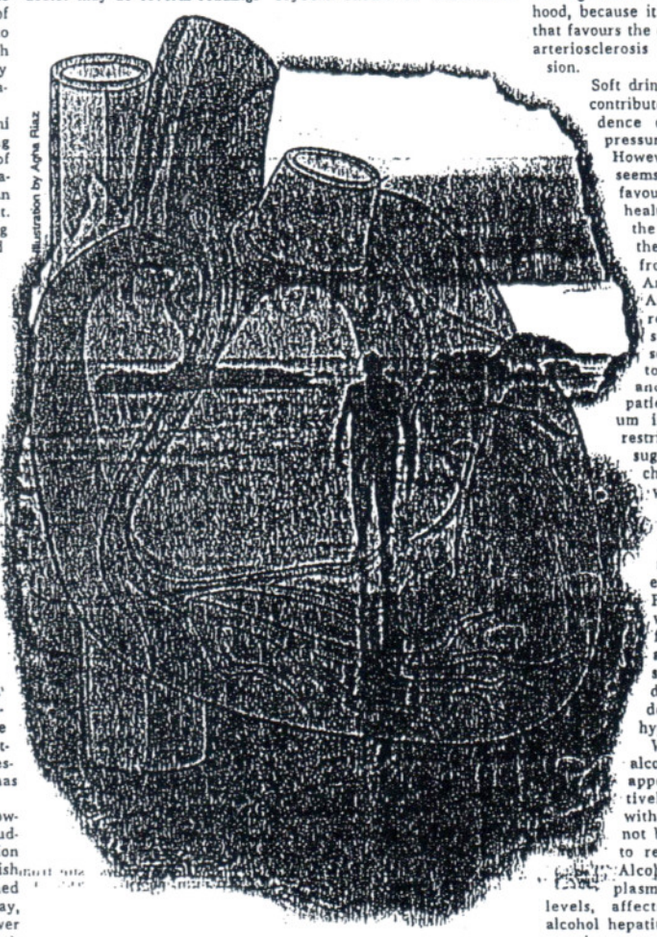

Illustration by Agha Riaz

Atherosclerosis takes decades to build up but if you lower protective cholesterol; it helps convert bad cholesterol (LDL) into a product that can carry cholesterol in the artery wall and encourages clot function in the blood.

In order to reduce reduce serum cholesterol levels and other diet related risk factors associated with CHD, the following dietary recommendations and guidelines are necessary.

Eat a variety of foods. Avoid large meals. Eat small and frequent meals to lower cholesterol levels and other heart diseases risk factors. Such dietary patterns make the body healthier and longer-lived. The consumption of fats high in cholesterol (butter fat, beef fat) and saturated fatty acids (coconut oil, palm oil and palm kernel oil) should be reduced. Minimize intake of hydrogenated (vegetable ghee) and continuously heated oils. Vegetable oils such as canola, olive, corn, sunflower, sesame, soybean should be included in the diet. Cod liver oil drops blood pressure significantly and linseed oil (one teaspoon a day) is effective in lowering heart disease risk. Emphasis on plant foods (fruits, vegetables, whole cereals, pulses, potatoes) fish, poultry, lean meat, low-fat dairy products and fewer whole eggs. Intake of orange, guava, carrot, yellow maize bread and vegetable oil reduce the risk of atherosclerosis.

Low fat milk or *lassi* or calcium supplementation lowers blood pressure and cholesterol. A vegetarian or semi-vegetarian diet can seriously cut heart disease risks.

Red pepper prevents the stickiness of blood cells that lead to blocked vessels. Always use some turmeric (*Haldi*) with red pepper to prevent the ill effects on the peptic ulcers. Use regularly fresh ginger (one teaspoon) and yogurt (one cup) for improving the health of blood vessels and heart. Both are good for lowering serum cholesterol. Garlic (two cloves daily) and onion lowers blood cholesterol and triglyceride and blood pressure. It also keeps the blood vessels clean and healthy. High intake of coffee (6-9 cups per day) is associated with higher cholesterol level. However, two cups a day is probably safe for most people.

Tea drinking appears to have no association with serum cholesterol or CHD. Reduce sugar intake. Cut sodium and salt intake (less than 5gm per day). Use potassium-based salt. Highly processed salty, salt preserved and salt pickled food is consumed sparingly. Adequate nutrition to pregnant mothers can prevent the problem of low birth weight in newborn, leading to CHD later in life. Discourage snacking on high fat, high sugar and high salt foods in early childhood, because it sets a pattern that favours the development of arteriosclerosis and hypertension.

Soft drinking water can contribute to higher incidence of high blood pressure and CHD. However, hard water seems to have a more favourable impact on health. The harder the drinking water the lower the death from CHD. The American Heart Association has recommended a standard of 20mg sodium per liter to protect heart and kidney patients, whose sodium intake must be restricted. It may be suggested that the choice to install a water softener in home may be unwise especially if the family may be heart disease prone. People in hard water areas suffer fewer heart attacks; those in soft had more cardiovascular accidents related to hypertension.

While moderate alcohol consumption appears to be negatively associated with CHD, it should not be recommended to reduce CHD risk. Alcohol increases plasma triglyceride levels, affects hypertension, alcohol hepatitis, cirrhosis and certain cancers and can cause social and psychological problems.

Butter must be avaoided. So too should palm oil, coconut oil, vegetable oils of unknown origin, hydrogenated fats and oils, visible fat on meat, chicken skin, fried meats, full cream milk, evaporated or condensed milk, cream, full fat cheese, full fat yogurt, potato chips, fancy breads, cakes, pastry, puddings and biscuits made with saturated fats, deep fried snacks, ice cream, full fat malted milk drinks. Cream soup, chocolate spreads, toffees, butterscotch, chocolate, coconut bar, salad cream, mayonnaise, cream cheese dressing, egg noodles.

There is also a need to develop following policies to address diet-related diseases including CHD. ■

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The writer is Nutritionist, Former Professor of Nutrition (KSU), Research Fellow (DANIDA), Fellow of Royal Society of Health (London), Consultant to FAO and UNICEF