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1.
THE QUEST FOR HEALTH

" No field of medicine is closer to politics than public health. You cannot implement it without making it a political issue."

Dr. Gro H Brundtland.
WHO Director-General

The quest for health for the Nepali people has been a long and arduous one. If one reads the **Ramayana** one learns that Hanuman was told to bring the **Sanjeebini** from the mountains in the Himalayas. Without arguing whether the actual mountain transported to Lanka was from India or Nepal one can say with justification that many herbal medicines were in use in these lands. The fact is that most of the medicinal plants used in Sri Lanka are similar to the ones used in India and for that matter in Nepal in days gone by. Some authorities felt it was this sameness which "may have given rise to the popular legend that certain forested hills, (of Sri Lanka) eg. Doluwakanda and Rumassalankanda, from which drug plants are often collected, are only fragments of a part of the Himalayas that was carried over to Ceylon by the mythical monkey-king Hanuman, to provide drugs for the wounded in the Rama-Ravana battle." (1) However it is these same magical herbs with their healing properties which have sustained the people of Nepal over the ages.

Lord Buddha (563-477 BC) is said to have attended regularly to all the sick disciples in his camps. His teachings which said "to be born is to suffer, to die is to suffer, and to fall sick is to suffer" motivated his followers to look after the sick. Buddhist hospitals in India existed before the invasion of Alexander. "It is to Gautama and his followers that we owe, apparently the hospital idea." (2) The same authority states that "Lord Buddha in his day enunciated the **vinaya** or disciplinary rules for the monks. These rules touched all aspects of their life and included guidelines on healthy living." (1) Buddha laid down five essential qualities that a person attending to the sick, should viz:-

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i. be able to prescribe,
ii. know what is good from what is not good for the patient,
iii. attend to the sick out of love and not greed,
iv. not revolt at removing excreta, saliva or vomit,
v. administer religious consolation to the patient from time to time. (3)

One of Buddha's disciples, King Ashok is credited to having established charitable hospitals for both men and animals (4).

Ayurved, or "the science of life" is a system of medicine found in this part of the world. A WHO publication (5) has described it as one of the oldest formulated system of medicine, based on doctrines which takes into account the physical, chemical, biological and spiritual dimensions of life. Its various faculties includes internal medicine, paediatrics, psychosocial medicine, otorhinolaryngology, ophthalmology, surgery, toxicology, geriatrics and eugenics.

In this context it is thus natural to hear that **ayurvedic** medicines are inherent to Nepal and are suited to conditions existing here. The only trouble is that as our mountains and hills have become bereft of trees or shrubs having healing properties, and as the practitioners who practised these arts become old and pass away, one wonders about the future. The true **ayurvedic** practice needs to be maintained and kept but at the same time it should not be a hybrid form that combines use of allopathic drugs and passes off the cure as the original **ayurvedic** one. That this is occurring is shown by the fact that Delhi's health minister proposed the Quackery Prohibition Bill in 1997. It seeks to stop the indiscriminate and improper use of drugs by persons not trained in that field. In Nepal the Nepal Medical Council has issued a circular stating that all doctors registered by the NMC should restrict themselves to allopathic medicine when prescribing for their patients.

As far as the Nepalese government is concerned, the existing health system has accepted in its fold the following:

a. The Allopathic or modern system of medicine.
b. The traditional **Ayurvedic** system of Nepal.
c. The Homeopathic system of medicine.
d. The **Unani** system of medicine.

The reason for this statement is that there are health institutions within the government system where these forms of treatment are practised. Besides

this, there is also **acupuncture**, facilities for which are available in government hospitals and also in the private sector.

There is also existing in Nepal the various forms of traditional healing by such practitioners of the art such as Dhamis, Jhankris, Jharphuks. Accepting the fact that **dhami-jhankris** exert a lot of influence regarding health matters, some research work has been done in using them for health education, family planning and treatment of diarrhoeal diseases. One particular study has estimated that there were then in 1978/79 between four and eight hundred thousand faith healers in Nepal (6). The number of doctors was stated to be about 500 and of paramedicals just 1,500 at that time. Whilst what constitutes a faith healer has to be defined and more specific categorisation done, the fact remains that this is a large number of personnel who if properly used can be a great force for education and change in matters concerning health. The reality then and even now is that a large proportion of the rural population go to the traditional healers before they come for government provided services or even to private practitioners of medicine. One of the reasons given was that traditional medicine was cheaper in comparison and the other was that this occurred because of lack of medicines at government health institutions. More recent work by the SCF (UK) at Kalika village in Sindupalchowk has shown that people there are already paying considerable amounts for treatment of illness in cash, kind and time lost in seeking treatment (7).

A study by BNMT in Eastern Nepal has shown that health post usage in hills is very low even when essential drugs are available all the year round at subsidised prices. This showed that acceptability of PHC is not ensured by just the availability of drugs (8).

C.J. Miller SJ did research on the **jhankris** of Dolakha and in the introduction to his book feels that the role of this traditional healer is complementary to both priest and doctor (9). He goes on to write, “I believe that a closer look would reveal to him (doctor) that, at least according to the world-view of his villager patients, he the doctor is treating symptoms while the **jhankri** is getting at causes. There is room, and need, for both. The doctor will certainly realise that a shared world-view between patient and physician can be a powerful factor leading to a cure; he should also realise that his modern medical education, based on a secular view of the world, has deprived him of this advantage which the **jhankri** continues to possess.”

Work has been done by SCF (UK) in running various courses for **dhami - jhankris** in four districts, situated in four regions of Nepal. These traditional healers have been provided knowledge about the basics of PHC

and also how to give first aid. Peons at the health post have been trained in basic medical training regarding sterilisation of instruments, methods of dressings etc. The objective is to provide a more regular and satisfactory service and care at health post level and in the villages (10).

With the advent of outside contacts other forms of alternative medicine have been seen in Nepal from time to time. These may be categorised as:

Naturopathy.

Magnetic or copper therapy.

Japanese methods such as Seimei-kyo.

When we are considering all these systems it is worth noting that the British Medical Association in 1983 had set up a working party with the terms of reference as follows:

"To consider the feasibility and possible methods of assessing the value of alternative therapies, whether used alone or to complement other treatments and to report on the evidence received to the Board of Science and Education."

The report which came as a BMA publication (11) had comments on:

- Acupuncture.
- Herbalism.
- Homeotherapy.
- Hypnotherapy.
- Manipulation, Osteopathy & Chiropractic.
- Other therapies.

In their conclusion however, the working party stated, "In fairness to practitioners of alternative medicine, it has to be said that many patients are comforted and may be **'healed'** when under their care. It is also possible that among the multiplicity of techniques there are some which are genuinely therapeutic, even beyond any placebo effect."

Whatever may be the curative systems that are in vogue or are practised in the country, it is the preventive aspects and the maintenance of a healthy environment that is essential for the welfare of the Nepalese. In the context of Nepal, it is the existing environment that plays a major role on the health of the people. At the present time most of the deaths in the developing world occur because of infestations and infectious diseases. It must however be

remembered that the countries of the developed world went through this same process and during the course of the preceding years, especially following the industrial revolution have made great strides in the area of health. This improvement in the health status, specifically the reduction of infant mortality and the increase in life span was not because of any scientific medical discovery but because of the general improvement of the economic status. The poor economic situation exists in our lands because of the lack of resources for investment in human resources development. The low literacy rate, the widespread malnutrition and lack of sanitation all are responsible for the poor health status of the people. This effect of the environment on the people of Nepal may be considered in the three groups as given below:

1. **Physical environment**
   a. Altitude
   b. Climate
   c. Soils
   d. Water quality.
2. **Social environment**
   a. Housing
   b. Population density
   c. Industrial and agricultural practices with associated pollutants.
3. **Biological environment**
   a. Viruses
   b. Spores
   c. Bacteria
   d. Parasites.

1. Physical Environment

a. Altitude. Nepal is basically a mountainous country and its northern borders have perpetual snow. Polycythaemia plus other haematological changes occur because of the rarefied atmosphere. Ultraviolet burns on exposed skin and high altitude sickness in those not acclimatised is seen from time to time (12).

The incidence of cataract has been reported to be higher in the plain areas of the country than in the mountainous part by Brilliant et al (13).

Because the major part of the country is also mountainous and also because the lower hills do not grow a large amount of food produce, it comes

as no surprise that the Nepal Nutrition Survey of 1975 showed that 41.5% of the population had first degree malnutrition, 24% with second degree and 5.1% from third degree (14). However, this may be partly related to frontier migration which in turn has led to propagation of landlessness and environment degradation (15). Another study by Ruzika & Kane in 1985 on nutrition and child survival in South Asia concluded that "the trend of malnutrition, infection and poor environment seems to operate synergistically in determining the mortality and morbidity levels (16).

b. Climate. The cold environment conditions leads to frost bites, chilblains and even gangrene. The excessive rains specially during monsoon time and the landslides as a result of the degradation of the soil are followed by periodic flooding in the swiftly flowing rivers. The resulting disasters that the people are subject to are either burial in the earth or drowning in the waters.

c. Soils. Being land-locked and far from the sea, the land has been depleted of iodine and as a result the incidence of Iodine Deficiency Disorders (IDD) is high. Some attempt at tackling this problem is being made.

d. Water quality. Before the starting of the various water supply schemes the percentage of piped water supply in the country was very meagre. Though stone water spouts were already in use, the use of piped water supply in the capital Kathmandu was introduced during PM Bhim Shumsher's time as late as the 1930s. Even now the availability of safe drinking water to the population is limited. The pollution of the rivers leads to a water supply which is not very suitable for drinking. Thus most people in Nepal are ill during the summer season when gastrointestinal infections are a major cause of illness. Diseases such as cholera, typhoid, dysentery and hepatitis, all as a result of faeco-oral transmission are rampant. Infestations by intestinal worms and giardiasis affect all Nepalese at some time in their lives.

The intention to provide safe drinking water and proper sanitation facilities from the present 63% and 18% respectively in 1996, to new figures of 77% for water supply and 31% for sanitation respectively by the year 2000 AD augers well for the Nepalese (17).

2. Social Environment

a. Housing. It is the urban centres which are gradually becoming unmanageable. To counter this, there was some three decades back a campaign known as “Back To the Village”. There were also schemes by which smaller towns with their city councils were created so as to induce people to stay in the rural areas, the areas where they were born and grew up. This was all very well in theory but in practice, the work, the industries, the commerce, the health and educational services, the courts etc were either in the capital or the bigger towns and so it was obligatory to come to the centres. The centres became overcrowded, the amenities or the services became overloaded so that they could not function. The open areas of the towns were soon used for buildings. The parks, the trees and the birds disappeared. Smoke and pollution took over, the sanitation and sewerage systems did not function or broke down, leading to huge piling up of garbage and various epidemics of diseases. The hospitals in turn had long waiting queues and there was general dissatisfaction with the services provided. This was the result of environmental degradation which was occurring at a rapid rate within the country.

There was a time when the towns of Kantipur, Lalitpur and Bhaktapur were said to be constructed with both the requirements of the people and the limited land of the valley in mind. The houses built in square fashion, surrounding a central courtyard which was common to all made provision for adequate ventilation and open space. There was responsibility of keeping the environment clean, a concept which one these days has to drill almost into everybody (18). The minority UML government for the major part of 1995 had stressed the importance of the rural areas by the new slogan “Let us Build Our Villages Ourselves” (BOVO). Subsequent coalition governments of NC/RPP/NSP have retained this stress on the rural areas and the Village Development Committees (VDC) have been made the responsible bodies. The decentralisation policy has still to be fully implemented but the feeling is that more power is being given.

b. Population density. More than 50% of the population live in the hills and mountains, which have limited agricultural land. There is therefore a great shortage of arable land and so the hill-sides have been terraced over the years to provide more area for agricultural production. However, because of the stony and hard nature of the soil and the difficulty for irrigation, much of the land is unsuitable. To increase the total amount of arable land, forests have been cut down leading thereby to a shortage of firewood and animal

fodder. As a result, farmers keep fewer animals so that there is less manure for the land. Furthermore the animals that Nepalese farmer keeps makes a lot of difference. The goat mountain or otherwise ie. **changra** or **boka** is an animal which survives on sparse vegetation. The reason for its ability to live in such surroundings is because it not only just eats the blades of the sparse grass, but finishes off the roots also. Unlike the sheep which live on the blade and leave the roots in the soil; our **boka, khasi** or **changra** literally pull up the whole plant from the soil, leading thereby to further degradation and ultimate erosion of the soil. Many areas where the locals had perhaps done the tree planting ceremony a few years back is reduced to a clearing of just stumps as a result of this type of grazing. This means that to correct this, we Nepalese have to change our eating habits and eat more meat of a less environment destructive animal such as sheep and buffalos. All this has been suggested and the information propagated by the SCF unit working at Dhankuta in the format shown below :-

INCREASE IN POPULATION
↓
DIVISION OF LAND
↓
FOREST CLEARANCE
↓
LESS FODDER
↓
LESS ANIMALS
↓
LESS MANURE
↓
LOWER PRODUCTIVITY OF THE LAND

The stress of the government must not only be to provide health care to the people but also to take effective measures to try to contain the growth of the population to reasonable limits:

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Table 1.1 Nepal - Population increase in Twentieth Century

Census year	Population (in Millions)
1911	5.638
1920	5.573
1930	5.533
1942	6.283
1952/53	8.256
1961	9.412
1971	11.555
1981	15.022
1991	18.462

Source. Health Bulletin - 4. Vol **2**(1) of 1984 (19).

The slow increase in population during the course of the fifty years between 1911 and 1961 may be due to the two World Wars during which many young Gurkha soldiers lost their lives.

However it means that the rate at which the population of Nepal is growing is very worrying and we are likely to be in a very difficult situation pretty soon. With the present day state of affairs and a very fragile ecosystem the population will enter what has been referred to by Notestein and quoted by King, as the demographic trap (20). The theory propounded is that there is a **first stage** when both birth and death rates are high and the population grows only slowly. During the **second stage** living and health conditions improve and death rates falls, but birth rates remain high and the population grows rapidly. In the **third stage** the economic and social gains combine to reduce poverty and lower the birth rate, so that birth and death rates are in equilibrium again but at a lower level. The difficult period is the **second stage** for if the birth rate does not fall, the death rate will start rising again leading to depletion of resources and a deteriorating environment. Many countries especially of Africa are finding themselves in this situation. Nepal may be conjectured to be in the second stage and unless prompt thought is given and action taken, we too may find ourselves in this unhappy situation of the demographic trap.

c. Industrial and agricultural practises with associated pollutants. Whilst rapid industrialisation must take place for the whole economy to improve, one must at the same time ensure that this is not at the cost of the Nepalese people. We cannot afford to repeat the mistakes of the industrial

countries of the West. We must not be subjected to increasing contamination by synthetic organic compounds such as insecticides, herbicides and detergents used for household or agricultural purposes. One such problem is the discharge of water used for cleaning carpets and thus polluted with chemicals, directly into the river.

There have been in the past reports of insecticide poisoning, more specifically malathion in spray-men who were involved in the task of spraying in the districts of the Terai (21). The question of use of "gifted" DDT in Nepal has been periodically in the news. One such instance in December 1994 saw the massive poisoning of fishes and birds following the pollution of the water of the Koshi Tappu Wildlife Reserves.

Hopefully the pollution of the atmosphere by chemical has not so far reached hazardous levels. A study by Piomelli S. et al in 1980 showed that the lead content in the air at the foothills of the Himalayas was found to be negligible and much lower than the lead levels in the blood of children and adults of the industrialised populations (22). The increase of vehicles during the course of the last two decades has increased atmospheric pollution in our urban centres. Some attempt has been made to keep fuel inefficient or old vehicles off the roads by mandatory testing of emissions from vehicle exhausts. Some battery operated, environment friendly vehicles e.g. SAFA three-wheeler tempos are being used in the capital. Lead free petrol has also been introduced in the capital.

It is perhaps with the increasing importance of population control and the maintenance of a proper and healthy environment that the coalition government of NC, RPP and NSP created a separate ministry and appointed a Minister for Population and Environment in early, 1996.

3. Biological environment

a. Viruses. Water borne viral disease, by the faeco-oral route are common in urban centres, more so in Kathmandu. Polio Pulse campaign with National Days of Immunisation has been introduced since December 1996. Whilst polio will hopefully be eradicated around or soon after the year 2000 AD one cannot say the same for infectious hepatitis. To lessen the incidence of such infections we must have a proper sewage treatment and disposal system.

The rabies virus is another organism whose cycle is maintained in the Nepalese environment. For the containment of the virus some action such as elimination of stray dogs, observation of suspected animals and protection of

susceptible pets must be done. The giving of vaccines to the susceptible animals and dog handlers is not standard practice.

b. Spores. The fact that most of the population live in the rural areas and the economy is agro-based means that a large number of people come in contact with animal wastes which can carry the tetanus virus. It is seen to be more prevalent where the horse is in use as a form of transportation, as in Nepalgunj and the incidence has been reported upon by Shrestha (23). The Universal Immunisation of Children plus the use of tetanus toxoid in the mother has had some positive results though the elimination of neonatal tetanus by 1995 has not been achieved so far.

Woolsorter's disease may be an entity of the past in Western countries but in Nepal it has to be kept as a differential diagnosis in cases of chest infections. Such cases may be seen in those working in the carpet industry, in which a large number of Nepalese are working as sorters and weavers.

c. Bacteria. Poor living and working conditions, especially with the advent of industrialisation has led to large numbers of people being herded together in small, ill-ventilated cramped conditions. An increased incidence of respiratory infections in the children working in the carpet industry has been reported by Sharma and Adhikari (24). Tuberculosis in Nepalese living in crowded conditions in our towns or living in such conditions as migrant workers in other countries has been reported too from time to time. It was even suspected by doctors of the Royal Army Medical Corps that the Nepalese who joined the Gurkhas probably had a relatively higher tendency to suffer from tuberculosis (25).

d. Parasites. These may be blood borne as the vectors of malaria and leishmaniasis. Many parts of Nepal were, because of the environment then existing, uninhabitable. The eradication of malaria and the spraying of DDT not only controlled malaria but because of the control of mosquitoes lessened the incidence of viral borne diseases such as Japanese encephalitis. This same spraying is supposed to have killed the rat flea and thus controlled plague except for the outbreaks of 1968 in Bajhang, when the last case was seen and was thought to have originated from wild rodents or their fleas (26). Because of the stoppage of spraying, the sandfly has increased in numbers and this is now leading to an increased incidence of leishmaniasis in Nepal.

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The Future

A safe environment with safe water, uncontaminated food and a decent place to live are the demands of the day. Besides the preservation of environment, stress must be on water supply, sewerage and solid wastes disposal. The proper management of these would influence to a greater degree the health of more people in Nepal than all the actions of members of the health profession. Other factors such as the planning and control of urbanisation, attention to proper housing, the control of pollution, food hygiene, vector control and health education all come into it.

Multi sectoral approach should be adopted by the government with the involvement of not only the health sector but also those of agriculture, public works, mining and rural engineering. A decade ago there was a HFA Committee involved in this aspect. One has not heard much recently, as to what has been achieved as a result of that effort. It seems to be part of history now.

We should take a lesson from the West, where the prevalent social and economic equity, technological development with the subsequent affluence have led to a progressive decline in death rates in what were the traditional disease categories. There, the safe water supply with proper sanitation, improved nutrition and decreased contamination of foods, safer housing and working condition, mass education all produced remarkable improvements in health long before specific advances in medical therapy.

The awareness that the environment exerts a long lasting effect on all the living organisms of this earth has now been accepted. The feeling that we must at least try to pass on the earth to future generations, at least in the same conditions that we ourselves found it in, has become as an ingrained responsibility. The world wide focus on the environment was highlighted at the United Nations conference on Environment and Development held at Rio de Janeiro in June, 1992. It all seems so long ago !

WHO in its turn too has specified certain Action Areas:

In comparatively developed countries

Improving the quality of life while decreasing resource consumption; reducing pollution to air, land and water; promoting safe and healthy living conditions, especially for the poor; preventing industrial, road and other accidents; safeguarding food from biological and chemical contamination; safe disposal of hazardous wastes and reclaiming polluted “hot spot”; and

enforcing standards to protect the public and workers from environmental, chemical and other hazards.

In developing countries

Many of the above actions, vary according to level of development. Also, improvements to ensure safe and sufficient water supplies, proper disposal of domestic wastes, safe housing to reduce accidents and respiratory diseases, reduction of under nutrition; and prevention of water and vector-borne diseases (27).

Whilst the thoughts of Rio seem so far away the Berlin gathering of 1995 was not successful in laying down specific guidelines for the maintenance of our environment. There is still a long way to go.

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