Health Related Social and Economic Problems
HEALTH RELATED SOCIAL AND ECONOMIC PROBLEMS

Health had direct effect on economic growth with the community infrastructure on economically viable society. Health problems and practices of any community are influenced by social, political and economic factors. Distinct health problems are seen because of special placement in difficult areas and circumstances. Many diseases and most epidemics affect poor section of the population in a very serious proportion. Poor economic standards and diseases form a vicious circle. Most people become sick partly because they are poor. They become poorer because they fall sick. Poverty was the major factor for these diseases. Lack of general and health education contributes to make the situation from bad to worse. To be healthy, people require good living and working conditions and sufficient income to provide the necessities of life. Ill health and premature deaths are so common among our people who offer a striking contrast to the high standards of health and longevity of life enjoyed by the people in many of the western countries. The low level of health may be traced to unhealthy conditions of living, improper nutrition, inadequacy of health services and lack of education.

Health care presents a variety of social problems to all of the world’s societies. Where high quality medical care lacked, the social problems associated with physical health were more profound. The problems included the spread of infectious diseases, high rates of infant and maternal death, low life expectancies, scarcities of medical personnel and equipment and inadequate sewage and water systems. Epidemic disease in India is characterized by lingering problems of childhood, maternal disease, malnutrition and rapid emergence of non-communicable disease. Lack of sanitary conditions and protected water supply gave root to innumerable health problems.
Traditionally each one is concerned about own house and keeps one's environment clean. The bunds of a stream or the margin of a tank is commonly used as a public latrine and this predisposes to hookworm infestation and to the spread of all the diseases caused by a polluted water supply, as the same water was used for drinking and for bathing. The rubbish and domestic wastes from houses are thrown out and the poor people use public road margins and open spaces to attend calls of nature.

**Tuberculosis**

Tuberculosis was a world-wide public health problem. As a disease it affects lungs and infection, which passes from person to person though sputum which contains numerous of *tuberculosis bacilli*. Being prevalent among children and adolescents through respiratory tracts, it is associated with social factors like overcrowding, population explosion, under nutrition, lack of education and awareness and early marriage. It can develop both in young and old and can spread both in urban as well as rural areas. It is also rampant among well-to-do people for whom food was not a wanting but available in abundance. TB becomes chronic due to neglected state in the early stage by patients and medical men in the country.¹

Tuberculosis was associated with poverty and bad housing, improper nutrition and hard conditions of work. In urban industrialized areas it was high on account of overcrowding and overstrains. Two big changes such as increase of population and their concentration in cities and food shortage increased the incident of tuberculosis. Large section of people get infected at an early age especially children; young adults and low income groups.
In some cases a person though diagnosed as TB patients were forced to work until he was physically exhausted to work mainly due to penurious condition. This condition was due to starvation that was entailed by the breadwinner of the family stopping from work. There must have been some sort of consideration by medical authorities to alleviate the suffering and to provide support to the family of TB patients with the help of the government or NGOs. The existing facilities for detection, isolation and treatment were very meager, with lack of doctors specialized in the treatment of this disease. The World Health Organization offered travelling fellowships, to overcome the shortage of trained staff and raise the standard of Tuberculosis work.

Diagnosis facility like mass radiography was used in the West, but in our state X-ray plants were installed at the hospitals of every headquarters which were ordinary. A large percentage of the detected cases were put on the waiting list and at the time of admission for treatment, the disease became advanced. The reason was the shortage of beds available at the sanatorium. The patients required suitable conditions of life, employment and continuous medical care and there were only two rehabilitation centers one at Arogyavaram (Madanappalle) and other at Tambaram. In certain cases patients who had been discharged after treatment, the disease flared up within one or two years, when they went back to the normal stresses of life. Therefore suitable conditions of life and employment and continuous medical care were necessary for sometime at least for out-patients. The establishment of homes was necessary for advanced and incurable cases.

Realizing the magnitude of TB problem the WHO had given top priority at the international level for its control. The position of TB in 1947 was alarming. About half a million people suffered and 50000 people died every year in India. Due to shortage of TB clinics and beds in hospitals, treatment was limited.
As a prophylactic measure, *Bacillus of Calmette and Guerin Vaccination* was introduced in South India in 1948. With the combined effort of WHO and UNICEF mass BCG was carried out in India and Madanappalle in South India as trial venue. New cases were dealt in the TB institute, Egmore. In 1948 the number of patients treated was two and a half times more than the number treated in 1955.

No facilities were available in pre-independent India for TB treatment. Centers were associated with hospitals attached to old medical colleges like CMC hospital, Vellore. Prior to 1947 Union Mission TB Sanatorium, Madanapalle with care centres at Madras and Bhowali functioned. Sanatoria were intended to admit early cases who have great chance of recovery. TB was declared a notified infection disease under section 62 of the Madras Public Health Act of 1939.

In Madras city there were about thousand persons dying every year due to this disease. At the TB institute, Egmore the number of cases in 1935 was 2 ½ times number treated in 1948. Before 1948 specific medicine would not have been discovered. There was a steady campaign against TB in the presidency and proposals made for improvement of TB sanatorium in the province. BCG laboratory at Guindy, Madras was opened in 1948 where vaccine and purified tuberculin were manufactured to meet the needs of India, South East and Mid East countries. Government sanctioned free treatment of poor TB patients with streptomycin in Government hospitals in the city and districts with high incidents of TB. The scheme for the control of the disease in the state was accepted by the Government. The essentials of the scheme were BCG vaccination opening of TB clinics, and institutional treatment of TB. By this scheme 4389 cases were given BCG vaccination.

In October 1955 on the request of the Indian Government, WHO came forward to locate its centre of study in Madras city. Majority of patients came from
Government TB institute and the main TB clinics in Madras city. The Control of TB was possible by the opening of clinics and institutional treatment. TB institutions were controlled by the medical department and health awareness on TB was organized by Public health department.\(^9\)

In 1955 blood banks were opened in Tuberculosis Sanatorium, Tambaram to supply blood on demand.\(^{10}\) The Tuberculosis Chemotherapy center at Madras had carried out the campaign of home and sanatorium treatment for twelve months in 1956. This case study was done owing to the TB problem aggravated by acute shortage of sanatorium beds. The result showed that it was appropriate to treat patients at home or in the sanatorium.\(^{11}\) Further intensification of the campaign was made possible in 1957. A mass radiography unit was organized and it was under demonstration. All Government transport employees were X rayed and the public who attended the demonstration were also X rayed. Of them active strains of TB was seen in 176 cases and they were brought under medical supervision.

High mortality rates of TB were recorded in municipalities of Palani, Tellichery, Mettpalayam, Kozhikode and Palayamkottai, Mangalore, Periakulam, Bellary and Kancheepuram. In reducing the mortality of TB, the State Government sought the co operation of WHO and British Medical Council and they readily agreed to the proposal. Thus the instances of TB came down to some extent. Four TB sanatoriums were established in Madanappalle, Rajamundry, Tiruchirappalli and Coimbatore and proposals for state TB sanatorium at Madurai had been finalized to fight the scourge.\(^{12}\) The TB institute at Chingleput, Madras continued to function with diagnosis and treatment of outpatient cases. BCG vaccination campaign was at full swing and by the introduction of control programme mortality was very much reduced in rural and urban areas.\(^{13}\)
Large scale application of control measures were adopted to local situation in accordance with the findings in pilot areas which followed the methods of vaccination. As a social problem there was also need for community participation to wipe out the poverty, create clean environment, intake of nutritious food, family planning measures for healthy and health awareness activities. Invariably a large number of TB cases fell under the age groups 16-36 years in low income groups. There was a demand for 1200 beds accommodation for TB afflicted patients but there were only 300 beds available in all the sanatoria in total.

The TB patients were considered as cursed persons and therefore they were separated from the members of the family. Normally the family members never mingled with them and kept them aloof. The separation of the patients from the house and the society was another cause for their sudden death. They were not given proper food and sanitation which told on their health and they counted their days. So model houses were built for by the health authorities and small industrial enterprises like printing, farming and poultry were also taught for the benefits of the patients to divert their minds from the unhealthy atmosphere. By adopting control measures like plenty of sunlight and fresh air, dry and dust free dwellings, nourishing food and propaganda this disease could be checked to a great extent. TB when diagnosed at the earlier stage is curable and chance of complete recovery was greater and the period of stay in any medical institution was shorter.

**Leprosy**

Leprosy was a disease found since ancient times in India, China and Africa and reference to this disease was under the name *Kustha roga*. It is also known as Hansens disease. Being a highly chronic and moderately contagious disease infection is caused by the *bacillus mycobacterium leprae*. The word *leper* meant *scaly* derived from Greek...
word and conveyed the meaning of bad odour. India was the home of lepers next to Central Africa. The incidence was not uniform in all states of India and was common among immigrant wanderers.

Among 25 lakhs of leprosy cases in India, half of the cases had occurred in Madras State alone. Under the areas of high incidence Madras was one of the states to be brought to light. Before independence the scourge of leprosy was a neglected subject and various state governments had no specific plans. Being a chronic communicable disease, the recovery time was long and with limited medical resources it was not possible to hospitalize all the infective cases for treatment. Only after independence this problem was engaged with great attention of the government and the people.

Chart – 1

The distribution of Leprosy in the various states of India
From the above table it is evident that Madras State had leprosy cases next to West Bengal, which was nearly twenty percentage.

Thanks to the discovery of sulphone drug which substituted the usual treatment of hydrocarpus drug from 1948. This drug had been found to cure mothers and avoid the risk of maternal deaths and childhood fever but it showed serious toxic effects. It was realized that though sulphones are effective in the treatment of leprosy, the cost of the drugs was prohibitive as it was dearer to the masses. Most of the leprosy patients were too poor to afford treatment. Madras state endeavored to reduce the cost of the powerful remedy. After the research work it was decided to reduce the dosage which is to be injected to the patients thereby the cost of sulphone therapy was reduced from Rupees three hundred to Rupees twenty.

Another remedy used in the treatment of leprosy was DDT. When the leprosy patient was given a dosage of Dichloro Diphenyl Trichloroethane, they became anaemic. Hence it was necessary to give iron and yeast tablets to the patients which contained Vitamin B Complex. The reasons for their anaemic conditions were the lack of nourishment in South India, owing to the failure of the monsoon and the poor crop. The patients from south who were given DDT showed toxic signs than the people from other places.

South Arcot was the worst affected district in the state with more number of leprosy patients as evident from the above table. Eradication was possible there by carrying out Leprosy control scheme of mass sulphone therapy to affected villages. The census of 1951 showed that the real scourge of South Arcot district was leprosy which afflicted 3% of the population. The highly endemic districts in Madras State were South Arcot, North Arcot, Chingleput, Salem and Madras. The Madras Medical Relief Wing of the Madras Medical College, Madras conducted routine health check-up in the villages. During their medical survey, they came to know that
diseases that higher degree of incidences of leprosy, was due to under nourishments and skin diseases. In South India suryanamaskaram, a yoga practice, in vogue which took care of skin against diseases.\cite{18}

The rate of incidence of leprosy in the various districts of the Madras state is given below.

**Chart – 2**

**District Wise Incidence of Leprosy**

![Chart showing district wise incidence of leprosy]

Source: Madras Information, Volume XVV, No.3 March 1964, p-52.

Subsidiary centers which have been established since 1955 had engaged in mass treatment, intensive survey and observation of healthy contracts and health education about leprosy. In the economically backward and under developed and highly endemic area of South Arcot, the government set up the Leprosy Treatment and study centre in 1955. Prior to 1955 no mass leprosy treatment work was done.
Till the beginning of the third five year plan, there were fourteen government leprosy centres covering a population of twelve lakhs. These centers were engaged in continuous case finding programme. A novel scheme of leprosy control work was started in the year 1959 known as the Wallajah scheme which was operative in the Wallajah Taluk of North Arcot district. In the North Arcot district leprosy, was endemic in Tiruvannamalai, Chengam, Wandiwash and Cheyyar.¹⁹

Survey Education and Treatment units were established in the dispensaries, primary health centers with specially trained staff. Decision was also taken to convert the old subsidiary centers as well as the treatment and study centers into leprosy control units of the concerned districts.

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<th>LEPROSY CONTROL UNITS</th>
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During 1962-63 there were about 30 SET units and the proposal for establishing 38 such units had been deferred. These control units were setup according to the endemic nature of the disease in each district and each unit covered a population of one and a half lakhs.

In 1965, the Ninth All India Leprosy Workers Conference was inaugurated by Dr. A. Lakshmanaswamy Mudaliar at Madras. In the Silver Jubilee Children’s Clinic,
Saidapet, investigation on causes, classification and development of leprosy in children were made. The Central Leprosy Teaching and Research Institute, Tirumani was an industrial workshop. Here facilities for occupational therapy and rehabilitation of the patients were provided. Weaving, gardening, tailoring, toy making, poultry farming were some of the rehabilitation works taught to the leprosy patients.

Thus every effort was made to cover the entire state with adequate leprosy relief works. Voluntary agencies had taken great interest in the relief measures by providing sulphone tablets, vehicles for control units and skimmed milk powder. Research work was done at Chingleput, Madras, Saidapet and Vellore for new drugs especially sulphone derivates. Ayurvedic treatment did not provide satisfactory results.

Gandhiji’s Martyrdom Day was also known as the Anti Leprosy Day every year. Gandhi attached great significance to leprosy problem as his close associate Sri Parchure Shastri who was suffering from leprosy made him to visit him every evening. Hence the problem of leprosy patients was uppermost in his mind. In the prevention and control of leprosy night segregation was a significant measure. Without this voluntary effort on the part of the people it would have been impossible to prevent and check the spread of leprosy

Other Diseases

The major diseases highlighted in this chapter had their origin since ancient times and they had caused several havoc in the state. A view over the statistical report of death due to disease indicated that more deaths took place in each district of Madras state, and in certain diseases equal distribution was seen. In addition to unkind environment man made economic distress opened the gateway for nature’s forces to enter the human system and assail its weakness.
Dysentery and *diarrhoea* had shaken the healthy atmosphere of almost every district in the state since independence. Amoebic and bacillary dysentery are the two main diseases which cause so much morbidity. Intestinal worms got a foothold among the people and dietary insufficiency as well as social customs played some part in maintaining the infestations. In Madras alone, 3 million people were infected with hookworm. In the cold damp months, in places where sanitation was neglected and in areas where fly breeding was at its height this disease had occurred. The death toll had only slightly decreased in the case of this disease. A decrease in dysentery and *diarrhoea* cases was felt in 1950. Due to scarcity of foodgrains and consequent rationing, people had to consume unaccustomed food stuff.

Dysentery and *diarrhoea* accounted for 4.2% of our mortality. Digestive disorder symptoms were felt in Madurai and about 3180 were affected. An analysis of diarrheal diseases, revealed the presence of high percentage of disease in Tiruvannamalai, Ramanathapuram, Vellore, Virudhunagar and Cuddalore with lower percentage of water source.

Impounding reservoirs formed the source of water supply to Madras and water discolouration was due to vegetable matter that caused *diarrhoea*. Streams, rivers and lakes contained chemical pollutants, human and animal waste. The bacteria in the waste caused fever, cramps and diarrhoea. The control measures adopted were arrangements for collection and disposal of excreta, protection of water supply sources and extermination of flies.

In Tanjore, about 3500 deaths and in Tiruchirappalli about 3346 deaths occurred in the year 1953. There was a decrease in the deaths in Tanjore in 1955 which was about 1693 in number. In Tiruchirappalli also the number of death declined from 3346 to 2136. In 1960 about 2728 deaths occurred in Madras. Within the time bracket, this digestive disease had its frequent invasion in part of the state.
due to the absence of protected drinking water in rural areas. The antibiotic *aureomycin* had remarkable effect on both acute and chronic dysenteries and was tried in state hospitals as a treatment measure.

Yet another disease scarcely distributed was *guinea worm*. In 1947 experiment was done for *guinea worm* and stray cases were seen in Ooty and Anantapur district. Guinea worm and hookworm infections are endemic in our country. Chemical method to suppress this disease proved ineffective and control measure like chlorination, lime sterilization and biological methods were carried out. The high incidence of hookworm and related intestinal parasitic infestations, in the deltaic and the wet areas of the state, was due to the indiscriminate fouling of soil surface by defecation in open fields. Without approved design of sanitary convenience in every house in villages and towns, the infestation could not be controlled. Therefore, intensive publicity was carried out and cheap designs of flush-out type of water-closet latrines were popularized. Provision of proper sanitary convenience with improved designs, if enforced throughout the state would have checked soil pollution, fly breeding and dissemination of all diseases traceable to filth flies and infected food.

Kadambuliur in South Arcot was a God forsaken firka referred to as Sahara desert of Madras Presidency. There were no roads, bridges but only shallow ponds used for drinking and washing purpose for men and women. During summer season these ponds dried up and hence this disease was widely prevalent. *Guinea worm* disease was endemic in all districts in the state except in Nilgiris and Kanyakumari and highly endemic in South Arcot and North Arcot districts. The subsoil water in these areas were brackish and people preferred surface water collection like step wells and ponds for drinking and cooking. Bleaching powder were treated in those wells and ponds meant for domestic purpose.
Guinea worm survey was carried out in areas like Javadi Hills, Bargur hills and Kalrayan hills where communication was difficult. When 397 villages were surveyed in 1961-62, 4118 persons were found suffering from the disease.

*Yaws* was another tropical infection of skin, bones and joints caused by *spirocheta bacterium*. It was seen among the backward people in the plains and tribals, living in hill areas in certain taluks of Coimbatore (Avinashi and Tiruppur). It was endemic in certain tracts of Madras State and affected primitive population. Three teams of Government, one from Madurai and one from Madras Corporation, had undergone special training in Serology in Simla. They brought facilities to the state in the form of drugs and equipments provided by the World Health Organization and UNICEF for use. The State Government proposed to utilize the services of the above trained team and submitted a scheme to the international organizations for the eradication of yaws. Patients who suffered from yaws were treated with *penicillin*. During 1961-62, 397 villages and hamlets were surveyed and 4118 persons were found suffering from the disease. During *Yaws* eradication in the year 1963 in Coimbatore, 117939 houses were surveyed in 1040 villages and 496504 persons were examined for yaws and 2231 cases were recorded. *Yaws* recorded and treated in villages was controlled by the application of DDT.

**Housing problem**

There was considerable movement of population from rural areas to towns. The conditions created by the World War had accelerated the drift to towns. In the decade between 1941 and 1951 population in municipal areas had increased by 42.8%. About twelve percent of the people lived in towns and cities. Housing conditions were unsatisfactory. Slums and overcrowding made the situation worse in industrial areas. Roads were narrow and dusty thus causing faulty environment. The rapid increase in population created a gap between the available quantity of food supply and the number of people to be fed.
Town improvement by slum clearance, replanning of insanitary and congested areas, provision of hygiene dwellings in healthy surroundings for low income groups were important challenges to be tackled by municipal authorities. Due to war conditions housing shortage had become acute on account of growth of population in towns. It resulted in overcrowding among middle class people and need for housing for scavengers and sweepers was felt. Towns and cities lacked adequate provision of recreation space area facilities by means of parks, playgrounds and open space. Housing problems were tackled by the authorities by introducing town improvement programme but the migration of population occurred at certain instances.

**Food Problem**

People suffer from inadequate development and form various degrees of ill health on account of low nutritive value of the food they consume. Nearly 75% of the human ailments may be traced due to food deficiency. Food situation deteriorated towards the later part of 1947. In Madras State, food problem was closely integrated with population and dietary habits of the people. Rice and millets formed staple food stuff. In Andhra districts of the state, raw rice was consumed. Majority of the people living in Tamilnadu district, Malabar and South Kanara preferred boiled rice. The South Indian diet when compared to North Indian diet lacked animal protein, fat, mineral salts and vitamins but excess proportion of carbohydrate was found in it. People subsisted on milled rice which lowers its nutritive value, but parboiled rice was superior in nutritive value which was not consumed.

After the introduction of rationing system, people became rice eaters and hence there was heavy shortage of rice. Scarcity of rice and millets made people to switch over to wheat which can be easily transported from Northern India and imported from western countries. In course of time wheat has entered into dietary of
middle and upper strata of society in this state. Diet surveys by health staff of nutrition units showed that protective food like milk and its products, meat, fish, eggs found a place in the diet consumed by higher socio-economic group.

There was only one Central Laboratory for food analysis at Guindy, and it was not possible to extend the operation of the Food and Adulteration Act to all areas of the state to deal with prevailing food adulteration. As Burma beans, Kesari Dhal and their products which were unwholesome caused disease. Hence the sale of these articles was prohibited by the government in the 1950s. During the war time, the Government used to tighten the administration of the medical department. Madras experienced was induced prices rise from 1940 onwards. Further, poor harvest caused food shortage. So the Madras Government started a scheme to move grains from surplus to deficit districts. Food rationing on card system was introduced in Madras in 1943.

During 1942-43 there was an exportable surplus of food grains and it was exported to Ceylon and other countries. The Government had to face a critical food situation which became more acute in August 1947. It was possible to tide over the crisis through special measure like decontrol of food grains and rationing. At that time of worst food situation, the Government of Madras had received ten thousand refugees in September 1947 from riot affected areas of Pakistan.

Another reason for the deficit in food grains due in the year 1947-48 was the failure of north east monsoon. In the Northern Circars, cyclonic rains caused submersion of paddy which hindered the manufacture of rice. To compensate the loss incurred by the farmers, the Government allotted an amount of rupees one lakh to the people.

There were signs of food deficiency diseases in school children and their undernourished condition suggested the presence of vitamin A and B complex deficiency.
When 2692 samples of diet articles were surveyed, adulteration of coconut and mineral oil were detected. Among the 18524 samples checked for adulteration, about 8637 were found adulterated. Health officers were too directed to watch the adulteration of food products like vegetable oil. Under Madras Prevention of Food Adulteration Act, food samples were received from 25 local bodies. Turmeric was adulterated with lead chromate to give yellow colour, tea leaves with *agathi* leaves, rice shaped granite stone and ghee was substituted by foreign fat. Milk adulteration was analyzed and found that milk men kept cattle in congested localities with poor bread and yield of small quantity of milk. The above mentioned food items were frequently adulterated and it was on the increase. Out of 18458 samples analyzed at Guindy, 1832 were found adulterated milk. The common deficiencies traced were Vitamin A and B2. Fines were imposed and those found guilty of adulteration of food were imprisoned.

In the budget of 1948-49 allocations and grants were given to education, medical relief, public health and village development. New agricultural strategy warranted to improve food production. ‘Grow More Food Campaign’ aimed at achieving self sufficiency in food by 1952. Normally North east monsoon failed in majority districts, mostly in Tamilnadu. East Godavari, West Godavari, Krishna, Nellore and Tanjore were districts. The famine conditions in North Arcot, Salem, Coimbatore, Ramanathapuram, South Arcot, Chittoor were compensated by paddy crops in deltaic areas. The abolition of rural rationing since January 1951 brought trouble to the villagers. In order to meet out their hunger many people migrated from dry areas to fertile districts like Tanjore. The big ‘mirasdars’ and landlords were responsible for the price hike of food articles. Cases of starvation deaths and suicides had become common feature in most of the districts.
In 1951 the Director of Public Health proposed a scheme for prevention of epidemic disease in the state on account of food scarcity. This proposal was considered by the Government in 1952. There was 10% increase price of foodgrains from 1957 to 1959 and among the different states of India the price was the second lowest. In the 1960s the situation was tackled to attain self sufficiency by increasing food production.

Malnutrition

The fundamental principle of health was manifested in the proper regulation of diet. People suffered from many diseases owing to malnutrition, unbalanced diet and excessive eating. The WHO and the FAO mentioned the causes of malnutrition as little food availability, vitamin deficiency, anaemia and increased illness rate.

Anaemia was prevalent all over the country. Malaria and hookworm created favourable condition for development. Low economic status and lack of education were serious impediments to improvement of public health. The unsatisfactory condition of environmental sanitation created situation far from conducive to health living. Owing to inadequate and poor quality of diet consumed by majority of people, malnutrition was common.

Vitamin A Deficiency $\rightarrow$ low income group and fragment children leading to night blindness

Beri Beri $\rightarrow$ people who use polished rice.

Rickets $\rightarrow$ people in slums areas

Two outstanding nutrition deficiency problems were protein malnutrition and Vitamin A deficiency. Infants in the post weaning period and the young children of poor classes were chief sufferers. Skimmed milk powder was a good remedy which was imported from abroad. Night blindness due to vitamin deficiency lead to loss of
eye sight and this was prevented by means of cheap vegetable foods rich in Vitamin A. Green leafy vegetables which are rich source of Vitamin A and C and important minerals like calcium and iron were consumed only in small quantities though cheaply available. The cheapest of fruits with nutritive value like plantains were rarely eaten. Majority of the children were underweight and short of height with varying degrees of deficiency disorders on account of under and malnutrition. A glass of reconstituted skimmed milk, multivitamin tablets and a free cereal midday meal showed remarkable effects in increasing the height and weight of school children.

Malnutrition which severely affects children, as revealed by the fact that infant mortality rate was higher in India than any other country. It impairs physical as well as mental growth in children, lowers vitality and reduces resistance to disease in young and old giving rise to certain diseases. The adulteration of milk increased food infection and intoxication due to bacterial infection of food like milk, ghee, vegetable oil, coffee powder in 98 municipal areas were found.

Macrrison, a nutritional expert took step by gearing activities to study nutrition problems of people related to their dietary habits. Diarrhoea was diagnosed to have occurred due to nicotinic acid deficiency. Burning feet syndromes due to pathogenic acid in diets were investigated. Endemic fluorisis due to fluoride bearing water was brought to light in certain districts of Madras and this resulted in Vitamin C deficiency.

A demonstration project for mapping out the prevalence of beri-beri in the Northern Circars and the combating of Thiamin deficiency in white -rice diets of the area was carried out. Enriched and fortified rice was used with the financial and technical assistance of Williams Waterman Fund and the Research Corporation, New York. Nutritional science had devised the enrichment programme for artificially fortifying foods which were deficient in some nutrients.
Tiruchirappalli had congested houses and families were seen in close contact, and their poor economic condition led to malnutrition. Poverty syndrome was characterized by low income, poor education and poor sanitation and diminished food intake. Due to repeated diseases, too many families got instable and their social status was lowered. It also exerted an influence on the mental growth and physical development of a child which resulted in malnutrition and infection.

Since 1950, the Nutritional Bureau was reorganized and it carried out intensive work of nutritional survey in selected firkas. A publicity drive to make good the deficiencies in diets by use of locally grown foods was instituted. The work carried out in the Madras State Hospitals under the Paediatrics Department and in the Nutrition Research Laboratories, Coonoor, revealed the existence of nutritional dystrophies among infants and children.

To combat malnutrition, encouragement was given to larger production of milk and development of fisheries. The free distribution of skimmed milk and other food supplements at maternity centres, the use of hand pound rice in hospitals were also the measures taken to avoid malnutrition. Public Health department in the state gave important place to nutrition work in its programme. Dietitians were employed and special diet kitchens were established in teaching hospitals. The nutrition bureau of Public Health department devoted attention to question of raising malnutrition standards among the people. Malnutrition weakened the community and strength making an individual to succumb more quickly to disease.

Use of Drugs and Cost of Health

In the usage of drugs, antibiotics had become a sovereign cure for many primary bacterial infections. As they were administered on a large scale, their cost had become prohibitive to individual patients and a heavy burden to the state. These drugs were used with care and discrimination and the doctors prescribed them
according to the patients' condition. Most of the patients in the general wards of our hospitals were under-nourished. When they were discharged after treatment, a large number of them had a relapse or suffered from further complications. The administration of vitamin preparations in deficiency diseases showed remarkable therapeutic effects. There had been excessive and unnecessary use of vitamins. The proper way to be followed would be to correct the diet as a whole and to give vitamin supplements only in necessary cases.

Both the patient and the doctors had been accustomed to lead to the extensive and indiscriminate use of many medicines which cannot be considered necessary on medical grounds. Commercial advertisement of drugs was responsible for this state of affairs. Moreover doctors also succumb to the blandishments of manufacturing concerns that inundate them with samples of new preparations. The rising cost of drug bill was one of the gravest and most urgent problems which were due to the increasing use of new, valuable and expensive drugs. Hence doctors should educate patients in the use and abuse of drugs.

Mental Disorders

Mental disorders that cause severe social problems were the most extreme forms of mental illness. The most sensational ones threaten the social order but such type of persons who were violent and irrational was found in small numbers. People classified as mentally ill and chemically addicted, were likely to be indigent and homeless. They suffered from physical ailments like epilepsy and brain tumours.40

The social conditions like physical abuse, neglect and severe stress brought about the mental breakdowns that affected the normal function. A range of social problems like family stress, heavy demands on health care institutions, moral and ethical problems, the cost of treatment to society were faced by the mental patients. It was recognized that health and disease are necessarily psychosomatic. It was
impossible to treat states of mind apart from states of body. Doctors had learnt to respect psychotherapy when emotional stress and strain caused a wide range of disorders.

Chronic starvation and certain tropical fevers were also reasons for mental breakdowns. The incidence of mental ill-health was high in this land of hunger and poverty. But the provision for the care and treatment of mental patients were short of requirements, since there were only two mental hospitals in the state in the 1950s. Kilpauk Mental Hospital and hospitals at Madurai and Thanjavur provided psychiatric treatment to the mental patients and trained doctors in the treatment and cure of mental diseases. It is not to be denied that the mental illness had a damaging effect on the patients’ personality. Doctors must study the environmental and social factors which played a large part in the genesis and course of patient’s illness. Their duty must be not only to cure disease but to prevent it and promote health.

**Maternal and Infant mortality**

Another problem in the field of public health tackled on a very well-organized footing was maternal and infant mortality. Maternity and child welfare service had been recognized as a very important branch of public health work. The high infant and maternal mortality in the province was attributed, to a certain extent, to the lack of skilled aid at child birth and facilities for ante and post natal care of the mother. In the midst of influenza and small pox epidemic, maternity and child welfare schemes were laid by the pioneering efforts of Dr. Virasinghe, who was educated at the Madras Medical College.\(^4\) In 1916 only 400 salaried midwives were employed by district boards and municipalities. Births were handled by barber midwives or *thayis* who were ignorant of hygiene and cleanliness. The lack of trained midwives was felt by the government and training schools for midwives were opened.
Madras Corporation inaugurated the first child welfare scheme in 1917. The scheme was started as an experimental measure and became a permanent institution of the Corporation with gradual progress. Malnutrition was seen to be at the bottom of maternal mortality and thus there was increase in maternal mortality. Deaths occurred under the head anaemia of pregnancy which was a result of bad nutrition. In Madras city there was a well laid out scheme of maternity relief, with maternal institution that catered to the needs of a very large population. The lack of organization and concentrated effort was the chief drawback in the success of the scheme. In order to prevent the maternal mortality, the public health officer could not do his work without the active cooperation of the practitioners. When in 1930-31 a study of the statistical comparison was instituted between the mortality rates of different countries and Madras it was seen that mortality rate was higher in Madras than other countries.

International health organizations had urged to assist nations to expand maternal health and to promote basic literacy and health education programmes for women. The World Health Organization had taken it as one of the foremost problems to be dealt with in their programme of health development. Women perform society’s important functions in rearing children with care for their bodily and mental growth. The health of the mother had intimate bearing upon the health of the child.

In India maternal death-rate was comparatively high. Damage to health and disablement caused by frequent and ill-spaced births were common. High birth rate was associated with a high rate of sickness and mortality among the infants and children, especially in poor and half-starved families. Large proportion of women received insufficient nourishment during pregnancy. The poor maternal health was related to malnutrition due to poverty. The storm of maternal mortality had besieged happy homes with mothers who die during delivery time alone. Young men had
become widowers and many motherless infants were seen. Infant mortality was interwoven into everyday life. During unsafe deliveries both the life of mother and child were at risk. It enabled the Government to respond immediately by taking steps to protect the mother and children through safe deliveries.

At the end of 1949, the infant mortality rate had decreased from 192 to 117. Thus moral, social and economical responsibility was necessary to mitigate these horrors which were rampant and devastating. As Maternal and Child Hygiene was an integral part of Public Health, the Public health authority cared for the health of the individual in the community.

Health visitor was the most important health publicity agent in the field of Maternity and Child Hygiene who is responsible for interpreting the value of these services to the public. In the rural areas the indigenous hereditary dais continued to monopolise the maternity services. Institutional care of pregnant mothers and for their delivery was provided as an essential adjunct to an organized maternal and child health service. In the field of obstetrics, recent advances were responsible for reducing the morbidity and mortality among women by the use of chemotherapeutic agents and biotics like sulphadiazine and penicillin. Blood transfusion in Hemorrhage associated with child birth was treated by pelvic radiography.

Madras was the only state which had a Public Health Act under which provision for maternity and child hygiene also existed. Through the practice of Public Health measures, such as vaccination, registration of births, care of the mother during her pre-natal, intra-natal and post-natal periods of pregnancy and the care of the infant and pre-school child health was taught. Modern Public Health Department undertook active teaching of the principles and laws of health emphasizing prevention of mother and child discrepancies. Technical help and supervision were given by women medical officers, health visitors and midwives employed for this purpose.
Environmental Hygiene

Prevention of diseases and preservation of health depend greatly on the environment in which people are born, live, eat, drink, work and rest. Sanitation relates to the essentials of life and health, the environmental significance of water and air, food, shelter, clothing, and protection against vectors of disease. Environmental sanitation, no wonder has been recognized even from pre-historical days to be fundamental and basic to individual existence. Archaeological and other evidences of the existence of sanitary institutions, five to seven thousand years ago stand as monuments of the degree of civilization attained in the Indus valley in undivided India and Grecian, Mesopotamian, Roman and Egyptian societies.

Sanitation in India progressed under the Local self government. It was proclaimed that the British had brought sanitary science to India, stopping the ravages of cholera, by majority utilizing the services of medical officers. Allocation of special grants to sanitation matters increased during early years of the epidemics by the Government of India. Environmental hygiene provides the most permanent and most economical protection against many of the most serious diseases as compared to the most elaborate systems of medical treatment. Rural sanitation was at virtual standstill in rural districts of Madras from 1900 to 1906. Protected water supply was not available to all villages and due to poor sanitation gastro intestinal diseases were prevalent.

The keystone in the arch of sanitation was registration of birth and deaths. Mass immunization and other measures like water supply, rural and urban sanitation, compost manufacture, building and town planning scheme, fairs and festivals acute drinking water scarcity prevailed in the summer months in affected areas of the state. Existing wells were deepened under rural water supply schemes in the scarcity areas. Salinity in water sources, owing to Tamilnadu’s long coastal tract, also posed problem
in the provision of protected water supply. Toilets within or near dwellings are rare in rural areas and defecation in open space was common in the villages. Even in household with latrine constructed within, only women use it while men continued to go to the fields.

Dysfunctional latrines were due to the water scarcity in some villages. Lack of good drainage was another possible cause that contributed to water borne diseases. The scheme of Environmental Hygiene under the Second Five Year Plan was continued. Every house owner in selected areas was persuaded to provide sanitary hole latrine in his house with Government aid. Water Analysis department was constituted to maintain proper check over hygienic quality of public drinking water supplies in the state.

When examined the way in which health needs are perceived by different social classes, it is well understood that low classes are more prone to communicable and occupational diseases and preventive health service are essential in such cases. The rural population fall an easy prey to the many epidemics that ravaged the country from one end to the other. They are the backbone of the government, and most neglected in regard to elementary facilities. A Tamil daily Swadeshmitrn argued that many diseases would disappear from this country if people are allowed plenty of wholesome food to eat and provided with houses free from sanitary defects.

Medical scientists who had visited as a team to our state had observed that the wide prevalence of communicable diseases seemed to them as one of the greatest health problems. The proper method to meet the situation according to the scientist was environmental sanitation and improved nutrition. They also observed that the establishment of even the best curative services would not materially improve the health conditions and impossible to establish modern curative services for the tremendous number of disease-ridden individuals. In the case of dysentery and diarrhoea mortality rate was high in municipalities than in rural areas. Whereas
respiratory diseases like asthma, bronchitis and pneumonia were highest in Nilgiris, followed by Chingleput and North Arcot. In 1958 there were 1,16,366 cases in Nilgiris when compared to the number affected in 1956 of 44,221 cases. Due to the change of climate people were affected by skin disease, fever and eye trouble.

Large scale efforts towards improving environmental hygiene, providing better housing, raising nutritional standards and spreading education can proceed only at a slow pace on account of limited financial resources. As the provision of water supply and drainage was of fundamental importance for improving the living conditions of the people, they ought to be given the first priority in health development programme. Efficient sanitation control over food production and distribution were exercised by the Public Health officials in municipal and rural areas under Madras Public Health Act of 1939. Safe water supply and sanitary disposal of human excreta were the unsolved problems even now. Apart from the socio economic problems that occupied the state there were major health problems which claimed many lives amidst the efforts of the state health personnel. The details and intensity of the disease, nature of its spread, epidemiology and surveillance has been explained in the following chapter.
Reference

5. GO (MS) No. 138/Public Health/17.1.1948.
9. GO (MS) No. 3868, Public Health, 4-11-1941.
10. GO (MS) No. 1911 Health, 4 June 1955.
17. GO, No. 3025, PH, 03-09-1948.
33 GO (MS) No.1340, Health, 09-04-1953.
37 Madras Information, Volume IV, No.10 Dec 1950, p-59.
41 Shankar, A.K., Public Health Organisation in Indian Medical Record, New Delhi, 1931, p-76.
43 Times of India, Editorials & Articles, New Delhi.
45 GO(MS) No.2242, Health, 30-07-1957.