

CHAPTER I

THE PROBLEM

1.1 Introduction

Rapid industrialisation and urbanisation are two prominent phenomena in developing countries that have generated much research in a wide range of disciplines. In most developing countries industrial progress is coterminous with urbanisation. Although many geographers and planners have time and again expressed their concern regarding problems of health created by urbanisation, the impact of industrialisation on the status of health in urban areas, still remains a neglected sphere of investigation.

The fact that industrialisation brings ⁱⁿ its wake a host of health problems, is no longer disputed. However, the manifestations of ill-health, associated with industries, depend on the nature of industries. Thus, these health hazards reveal considerable spatial and temporal variations in accordance with the prevailing industrial structure and character of manufacturing.

What regional factors are responsible for the differences in the distribution of diseases in industrial areas, can be understood if studies are conducted at the micro-level. So this study in medico-social geography is an

attempt to understand the health problems in the expanding industrial city of Vadodara and to investigate the health and environmental conditions associated with different types of industries. By identifying some of the risk factors at the micro-level, such a study can, not only establish the linkage between health and environment, but also help in understanding the distribution pattern of occupational diseases. It can thereby aid in assessing one of the adverse impacts of industrialisation that may be anticipated and taken into consideration in the process of planning.

Sound health in relation to vocation and employment is of utmost importance to the very life of the person who works and to the society as a whole. The modern concept of sound health refers to "The health which is the outcome of the interaction between the individual and his environment. He is healthy who is well adjusted". Occupation for the sake of livelihood has always been fraught with situations which cause ill-health. Such situations have been labelled as "health hazards". Occupational health, is therefore, an aspect seeking attention at individual, group and community levels. It is equally important for industry and society, as the industrial environment has directly proportionate impact on workers' health, productivity and progress.

Occupational health has been a matter of concern for many professionals. Rapid and extensive developments in occupational health began in the early 1940's when the second

world war made an impact on manpower. In developed and developing countries there has been a growing awareness of its importance.

There are several factors that retard or accelerate developments in the field of occupational health. There are four that have a positive effect on occupational health : the economic need to conserve the efficiency of the work force; changing attitudes of workers and their trade unions towards health and safety; compassion which includes a sense of caring for others; increasing competence of health and safety professionals. Not only government and industries but also individual work places have been influenced by these factors to take more effective action in hazard control and health promotion (Waldron, 1989).

1.2 Importance of Health in Industrial Environment

On an average, an industrial worker, spends a minimum of 8 hours per day in the industrial environment that means 48 hours a week and about 200 hours a month - excluding the overtime. This shows that out of 24 hours available to a worker per day, apart from time spent in eating, sleeping (rest), personal hygiene, time spent with family members, other activities, he spends 33.3% of his time in industrial environment. This environment might not be conducive to a healthy life. This might soon or over a period of time spread in years, develop into a disease or a symptom.

Malnutrition and stress under which he lives also might contribute to the development of his ill-health. On the one hand efficiency in work is possible only when an employee is healthy, on the other, the industry (in which he works) exposes him to certain hazards which he would not meet elsewhere, and may cause ill-health. It is with the intention of reducing these hazards and improving the workers' health that the discipline of occupational/industrial health came into being as a branch of public health in its own right (Govt. of India, Labour Bureau, 1946).

A high rate of absenteeism, industrial discontent and indiscipline, poor performance and low productivity are the symptoms of bad health. That is the reason why, when occupational health programmes are introduced, both employer and employees benefit. The natural consequences of occupational health programmes are reduction in the rate of accidents, labour absenteeism and occupational diseases. The other benefits which cannot be easily measured, include reduced spoilage, improved morale, increased productivity per employee and a longer working period of an individual (Park, 1985).

Till recently, as observed by Mamoria (1991), Indian industrialists were not much concerned about the potential benefits from modern health services. Keeping in view the importance of industrial or occupational health, the I.L.O. Recommendation No.112 was adopted in 1959, and it says; (i)

protecting the workers against any health hazard arising out of work or conditions in which it is carried out (ii) contributing towards workers' physical and mental adjustment and (iii) contributing to establishment and maintenance of the highest possible degree of physical and mental well-being of the workers".

In India, the Royal Commission on Labour (1931), the Labour Investigation Committee (1945), the Labour Welfare Committee (1969) and the National Commission on Labour (1969), all emphasized upon the 'creation and maintenance of as healthy an environment as possible in the homes of the people as well as in the places where they congregate for work, amusement or recreation are essential".

1.3 Occupational Diseases

Occupational diseases are usually characterised by symptoms like: loss of appetite, nausea, vomiting, stomach pains, muscular and joint pains, intestinal disorders, anaemia or in severe cases might even cause death (Park, 1985). It is further observed that workers in pottery, ceramics, metal grinding, glass industry, slate, pencil, mines etc., suffer from a disease called Silicosis - characterised by respiratory disorders, spitting of blood and a general overall deterioration of health, sometimes even resulting in death. Workers in cotton textile industry also suffer from a similar chest disorder caused by the inhalation

of cotton films dust called Byssinosis. Many chemicals have proved to be allergic ~~in~~ human beings causing skin rashes, blisters. itching, discolouration of the skin and even burns.

Schuler (1980) suggested that occupational diseases are the result of physical conditions and the presence of industrial dust (poisonous and non-poisonous) in the atmosphere. Occupational diseases may also develop due to exposure (long and extended) to a particular hazardous occupational environment, which may consist of excessive heat, noise, dust, vibration, chemicals or agents used in the manufacturing process.

Occupational diseases usually develop over an extended period of time. They are slow and generally cumulative in their effects, are inversible and often complicated by non-occupational factors. They are the result of constant exposure to the toxic substances, air-borne contaminants and stress producing elements.

Stress is another factor which when present reduces productivity and makes the worker more prone to various diseases. Stress has always been associated with job. Studies have shown that stress reduces mental concentration level of an individual at work , making him more prone to accidents. Stress is thus associated with general reduction of the physical ability of the person to make him more susceptible to diseases.

Therefore, the causative factors of occupational diseases range from organisational factor to stress factor.

1.4 Impact of Industrialisation on Worker's Health

Inside the factories and mines of nineteenth century the workers were exposed to hazards of occupational disease and injury and the adverse effect of excessively long hours of work.

With the improved manufacturing techniques, machines became speedier and dangerous. Little attention was paid to safety devices and workers were often untrained to handle the new machinery. Toxic hazards increased due to prolonged exposure to a wider range of chemicals which were introduced without considering their possible effect on workers. In the milieu of his cottage industry, the handloom weaver or spinner had worked by the rule of his strength and convenience. He could take a break to cultivate his plot of land. In the factory these rules no longer applied, and he became exposed to the pressure of continuous work at a speed imposed by the needs of the production pressure which dominates society today and against which man so often rebels (Waldron 1989). Occupational health has individual as well as community level implications and therefore this study will help in understanding the person (industrial worker) in a better and more detailed way.

1.5 Geography and the Challenge of Health Problems::

When questioned as to the nature of medical geography, one usually defines the field as "the application of geographical concepts and techniques to health related problems". Most of us agree that geography is a discipline that bridges the social and environmental sciences. Its integration and coherence derive from systems related analysis of man-environment interaction through time and over space. By "environment" we holistically embrace its diverse physical, biological, social, cultural and economic components. By "space" we signify a prime interest in the spatial dynamics of man-environment phenomena in space. In short, geography is a holistic, synthesizing, systems related, spatio-environmental discipline (Hunter, 1971a). The scope of geographic contribution to health and disease is immense. According to Dolfman (1914), "an individual is healthy (that is, has attained or is in state or condition known as health) if he is functioning adequately in a stated environment; and if, while functioning in the environment he is subjected to some sort of stress, he is able to adapt to his stress within the range of normal functioning. Conversely, an individual is not healthy if he is not functioning adequately in a stated environment, he is subjected to some sort of stress, he does not adapt within the range of normal functioning" (1974). Thus, Pyle (1979) has rightly asserted that the study of spatial aspects of

disease as well as health care are logical extension of trends in geographical analysis that have developed during this century. Within these contexts, health problems are viewed as environmental problems, requiring the use of spatial research techniques to assist in understanding and in some instances explanations". Mayer (1983) has pointed out that, "spatial patterns of disease may serve as useful indicators of how regions are structured, and of how individual and groups exist in mutual interaction with environment. Elements of this interaction may be adaptive while other elements may be maladaptive". In the same vein, Yola Verhasselt (1981), argued that medical geography, besides seeking determinants of sickness, places emphasis on the environmental conditions of health.

1.6 Rationale for study of health and the industrial worker

One of the important aspects of human life is health. The health of individual worker is directly related to the productivity and indirectly related to national economy. It has direct relations to the family life of the worker and his place in society. Physical and mental well-being of the worker therefore are of prime importance for growth of industry and nation.

The susceptibility of the industrial workers to various occupational diseases is very high. The maintenance of health and well-being of the population in the industrial

environment of the city, is therefore of utmost importance for planners and public health authorities. A multidisciplinary approach to the problem of health and health care of industrial workers is assuming urgency. Along with other social scientists, geographers need to contribute their mite in the identification and tackling of this vital emerging problem.

The industrial environment affects the well-being and health of the working population. The understanding of these industrial hazards can help to explain spatial and temporal distribution of health problems. Medical researchers have carried out researches on the health hazards. The spatio-temporal and social science researches are rare regarding the health hazards. So the present research has been aimed at identifying how the health of working population is affected by industrial environment and thus throws valuable light on the nature of health and diseases that may be anticipated in industrial areas.

1.7 Chapterisation

Chapter I introduces the problem under study by emphasising the impact of industrialisation on health conditions in the industrial environment. It brings out the problem of occupational health hazards, and the consequent implications to the health of the entire area and society where the industrial activity is located. The role of geography in the study of this problem is also stressed.

Chapter II provides the conceptual framework for the

study by showing the relationship between industrial environment and health of workers . by giving a preview into the situation in the industrial centre of Vadodara which provides the study area.

Chapter III states the objectives, hypotheses and methodology adopted for the study and gives a brief description of industries in the study ^raea. The difficulties encountered in carrying out this research are also stated.

The review of literature in Chapter IV consists of references to studies carried out by medical personnel in the field of occupational health as well as ^{those} by geographers.

Chapters V to VIII give the results of the analysis of primary data collected during the course of this study. They enumerate the health risks associated with different categories of industries, and relate the health problems with different variables.

Chapter IX deals with the problems of health care of industrial workers, their socio-economic conditions, and the impact of industrial pollution on the population living near the factories.

Finally Chapter X gives the conclusions derived from this study. It lists the major findings, recommends remedial measures, and suggests the nature of future research.