CONCLUSION

Occupational health and safety programmes and many structural changes have improved the conditions of work in some sectors. Several hazardous agents and factors such as physical, chemical, biological and psychosocial stress in addition to occupational accidents still threaten the health of workers in all countries causing occupational and work related diseases and injuries throughout the world. More than 50% workers in industrialized countries complain today about stress in the workplace. Job stress and overwork have been associated with sleep disturbance and depression, job stress is associated with several types of chronic health problems, including cardiovascular diseases, hypertension, and musculoskeletal and psychological disorders, reproductive disorders, mental, and neurological problems (Bernard, 1997). Moreover, not only injuries and diseases caused by work, but disability in pre-existing disorders like asthmatic attacks, aggravate their ill health in the workplace. Common disorders associated with work, such as low back pain, non-specific upper limb pain and occupational stress lead to absenteeism and loss of production. The occupationally exposed physical workers are miners, farmers, lumber-jacks, fisherman, construction workers, storage workers and so on. Saltpan workers are one such workers exposed to a wide variety of health hazards at work. The exposure differs from job to job. The work-related diseases for workers are typically as follows:

1. Physical hazards and mechanical injuries result due to exposure to noise, extreme heat or cold and, work in windy, rainy, snowy or foggy weather, nonionizing ultraviolet radiation of the sun.

2. Chemical hazards due to dusts, fume, mists, vapors or gases.

3. Biological hazards and environmental diseases due to poor sanitation and unsafe drinking water.
4. Psycho-social hazards that occur due to so many factors such as temporary employment, frequently changing the employer living in the work site which is away from one’s home and family, lack of recreational facilities and lack of safe drinking water, heavy workload, workplace violence or community violence and limited social support.

The present study on the occupational illness observed among saltpan workers showed a lot of unexposed facts. The various finding confirmed the physiological dysfunction and unhealthy status of saltpan workers. The hematological and biochemical study of blood provides the healthy/unhealthy status of any individual. The hematological and biochemical studies on the blood of saltpan workers displayed the unhealthy status of salt workers. The various parameters studied show their status as follows:

The hemoglobin content, RBC count and other RBC related parameters such as PCV, MCH and MCHC showed a significant fall in their value than the control population in relation to their age, sex, nature of work, experience and so on. Whereas the MCV and ESR showed an increasing trend. The observed symptoms are very good indication for microcystic anemia and malfunctioning of haemopoietic system. On the other hand the WBC count and differential count showed a significant increase in all types of workers than the normal population. The eosinophil level showed a tremendous increase whereas the basophil, platelets showed a fall in their count. The increased WBC count especially the eosinophil and lymphocytes are an indication for the increased defence mechanism of the body. The increased eosinophil count is considered as eosinophilia and this may develop among the workers due to the allergic conditions and infective conditions that prevail in their humid working environment.

The plasma protein, lipid profile, blood sugar showed a significant fall among the workers. It was due to prolonged exposure to under nutrition, irregular feeding, repeated
starvation, anemia, infectious condition that prevailed in their environment. It was also due to prolonged persistant stress on mind because of some socio-psychological factors and doing much painful and hard bone breaking work.

The working environment indirectly enhanced the serum sodium and chloride among the workers. The entry of sodium into the blood of workers enhanced through the nasal inhalation and through the cracks and ulcers present in their limbs. The increased volume of sodium on the other hand resulted in hypertension. The increased sodium among workers may be influenced by their anemic status and hyper ventilation that prevailed in their working environment. Dehydration developed due to their hard continuous and strenuous work in the scorching sun for several hours also influenced the enhancement of sodium.

Another important occupational illness observed among workers was defective eye. The various physical and chemical factors present in the saltpan environment promotes several problems in the eyes of the workers. Hence the vision status of the workers is highly vulnerable. The various eye disorders observed were eye irritation, cataract, blurred vision and so on. In the present study among workers it was observed to have been caused by the salt fumes and dust that fly in the vicinity. It is further aggravated by the influence of severe radiation and glare generated from the saltpan waters and salt heaps. Working for long duration in the day light when the UV rays are the strongest, further affected the eyes resulting in the development of cataract and pterygium.

Apart from the defective performance of the eyes of the workers, the native microbial population of the eye also was affected by the saltpan environment. The normal microflora such as *Staphylococcus epidermis* and pathogenic *Staphylococcus aureus* were increased than in the normal population. The native bacterium such as *Eubacterium* sp. *Clostridium* sp. were totally absent. These abnormalities may be due to the weakening of the defence mechanism and entirely different environmental condition that prevailed in the saltpan.
Another major disability observed among salt workers is the malfunctioning of their respiratory system. The respiratory disorders are encountered with the respirable dust that (< 10 µm) floats in the vicinity of the workers. The non-brine workers are more affected than brine workers. The common disorders observed were cough, bronchitis, asthma and sinusitis. The non-brine workers such as grinders, packers and loaders are more affected. In correlation with this, the eosinophil level also increased (> 10%) among the workers than among the normal population. The increased percentage of eosinophil on the other hand resulted in obstructive type of pulmonary dysfunction.

The other major affected region of saltpan workers by this unique environment is skin. The halophilic environment, high pH and humidity, deposition of Salt in palm, in between fingers, legs and hands promote several skin problems. Some common skin disorders observed were dry and itchy skin, sun burn, skin rashes, cracks and ulceration, dermatitis and subungal melanoma. The extreme saltpan environment also affects the native population of microbes that are generally lodged in several numbers on the external surface of humans. The four organisms viz; E.coli, Pseudomonas, Streptococcus and Staphylococcus studied from the selected regions of the workers such as ear lobe, hand, throat and teeth showed a steep fall in their count than in the normal population.

From the findings of the present study on saltpan workers, it is concluded that the saltpan environment affects the health status of the workers to a greater extent.
SUGGESTIONS AND RECOMMENDATIONS

- A sense of balance in one's life – between solitude and sociability, work and play, sleep and wakefulness, rest and exercise, and so on are very essential to lead a peaceful and healthy life. It is the prime duty of the employer to provide all these things to their employees.

- In order to maintain the health status of the workers, the employer should provide a good hygienic and healthy environment at all times. Good sanitation facilities, toilet facilities, drinking water and so on should be provided in the work place itself. As the ages of the workers are increased they are advised to do less work/easy work.

- The workers should be advised to consume nutritious diet at least once a day, intake of several cups of water during work especially in hot weather. Compulsory bathing after completion of work will definitely improve their health status.

- Develop self-realization among workers participating in life to the fullest extent possible, through meaningful activities and positive relationships. Create interest for living - the ability to enjoy life, to laugh and have fun.

- Economic status is a vital factor for good health. Eliminate the wage gap between men and women and high reasonable salary must be provided to the workers with proper wage revision at a stipulated time interval. Facilities like adequate leave, regular medical checkup, housing, loan, education to children and so on must be provided to the workers both by the employer and Government. Health coverage insurance, life insurance, old-age pension, educational assistants, marriage assistants to their children should be planned and provided to the workers. To improve their economy during off-season – the Government/Governmental agencies should provide other kinds of work to them. At least work to one member in one family must be provided.

- Employee education is vital, so that workers are aware of the need to replace fluids and salt lost through sweat and can recognize dehydration, exhaustion, fainting, heat cramps, salt deficiency, heat exhaustion, and heat stroke as heat disorders. To improve the educational
status of the workers’ children compulsory education must be implemented by establishing a separate school very close to their work place. Monitoring early dropouts, providing free meals, books and other essential may improve the attendance in the school.

- Employers should consider an individual worker's physical condition when determining his or her fitness for working in hot environments. The employer should provide frequent free medical facilities to their workers. ESI and other types of medical provisions should be freely provided or at a nominal rate to the workers.

- Employees must be advised to wear all sorts of protective equipments - this will reduce the impact to the maximum extent. It should be made compulsory that the workers use gloves, safety shoes, mask and sun glasses. Wearing of gumboot and gloves by the workers will avoid the penetration of sodium into the body through the openings / ulcers of the skin by osmosis. Wearing of mask / goggles by the workers must be made mandatory - that will avoid the entry of salt particles into the respiratory tract and through the mouth. Workers must be advised to stop the work during scorching sun.

- Eye status should be inspected periodically for sign of wear and tear and should be protected from physical damage, chemical damage, dust and excessive heat that are generated in the saltpan environment.

- To uplift the life status of saltpan workers essential laws should be amended by the State and Central Governments and the laws should be enforced strictly without any deviations. A separate monitoring committee exclusively for saltpan workers should be established and this will monitor and fulfill all the requirements of the workers. A separate ministry for this Industry is also essential to uplift the salt industry as well as the associated ancillary industries and the workers employed in this sector.

- In order to reduce the stress and strain of the workers, recreations must be provided. Sufficient resting time, holidays with salary must be provided to the workers.