



IJMRD 2015; 2(1): 459-463  
www.allsubjectjournal.com  
Received: 17-12-2014  
Accepted: 05-01-2015  
E-ISSN: 2349-4182  
P-ISSN: 2349-5979  
Impact factor: 3.762

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## Environment and its influence on health (A case study of Pfutsero town, the highest altitudinal town in Nagaland, India)

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### Abstract

Pfutsero Town is the highest altitudinal town in Nagaland located at 2133.60 meters above sea level. From the study climate is found to be the main environmental factors which influence the health of the people, contributing about 60% of health related problems. Typhoid is the most common infectious disease in the area contributing about 43%. 62% are affected by respiratory related problems due to air pollution especially during the dry spell of winter season. 67% of the population are not satisfied with the contribution of the Town Council towards the management of waste in the area. 80% are not satisfied with the present drainage system. Sanitation is found to be the most cost effective way to improve the health condition of the people. Environment thus largely influences our health to a great extent however the basic and most important way to improve our Health depends on the individual lifestyle.

**Keywords:** Pfutsero, Sanitation, Environment, Health

### 1. Introduction

Environment is viewed in different angles by different groups of people but it may be safely argued as summarised by Singh and Dubey (1983) that:

‘Environment is an inseparable whole and is constituted by the interacting systems of physical, biological and cultural elements which are interlinked individually as well as collectively in myriad ways. Physical elements (space, landforms, water bodies, climate, soil, rocks and minerals) determine the variable character of the human habitat, its opportunities as well as limitations. Biological elements (plants, animals, micro-organisms and man) constitute the biosphere. Cultural elements (economic, social, and political) are essentially man-made features which go into the making of cultural milieu’. (Singh, p.16)

Health on the other hand is defined as the ‘absence of disease’. The World Health Organization (WHO) has defined Health rather broadly ever since its establishment in 1946 that. “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. Health is widely influenced by the Environmental condition where the linkage goes to a wide extent. Environmental health as defined by World Health Organization (WHO) comprises those aspects of human health, including the quality of health that are determined by the physical, chemical, biological, social and psychological factors in the environment. It also refers to the theory and practice of assessing, correcting controlling and preventing those factors in the environment that adversely affects the health of the present and future generations.

Bharucha (2005) suggested that the environment-related issues that affect our health has been one of the most important factors creating awareness for the need of a better environmental management. The changes in our environment induced by human activities in nearly every sphere of life had an influence on our Health patterns.

### 2. Statement of the Problem

Environment and Health are closely interwoven and the health condition of the people largely depends on the existing environmental condition. The present study has been carried out in order to understand the influence of environment in our health. The problem of deforestation, town planning, waste management, sanitation, infrastructural development etc.

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has brought about a lot of environmental and health issues that needs to be analyzed and if possible contribute about addressing them. Therefore the study is expected to bring light into the problems, so as to contribute to the betterment and improvement of Health condition in the Town.

### 3. Objectives

The main objectives of the study is

- ✓ To study how the Environment influences the Health of the people
- ✓ To understand the importance of our Environment

### 4. Data Base and Methodology

Data have been collected from primary and secondary sources. Primary data have been collected through questionnaires (household survey) and Interview Schedule. Simple Random Sampling method is applied for drawing the samples. From all the 11 locality/wards in Pfutsero Town i.e. Rukizu, Mission, Forest, Ketoupa, Chikri Nasa, Menitsuda, Reku, Zhipa, Public Work Department, Seed Farm and Tese Colony. Secondary sources of data include information obtained from various books and journals.

### 5. Study Area

Pfutsero Town located in Phek District of Nagaland, is the largest sub-divisional town in the state. Being located at an elevation of 2133.60 meters (6998 ft.) above sea level it is the highest altitudinal town and one of the coldest inhabited areas in Nagaland. It is situated 70kms away from Kohima, the capital of Nagaland. It is inhabited mostly by the Chakhesang tribe and is commercially an important town as it is located in the middle of Phek district. Here the best season to visit is from mid-October (harvesting time) to April. Some of the important places of interest are Glory Peak, Zanibu Lake and Japan cave.

### 6. The Environment and its Impact on Health

Environment refers to the sum total of our surroundings influencing our health to a great extent. As Environment is too broad to be covered so for the purpose of this study four main parameters are considered viz. Climate, Water, Air and Sanitation.

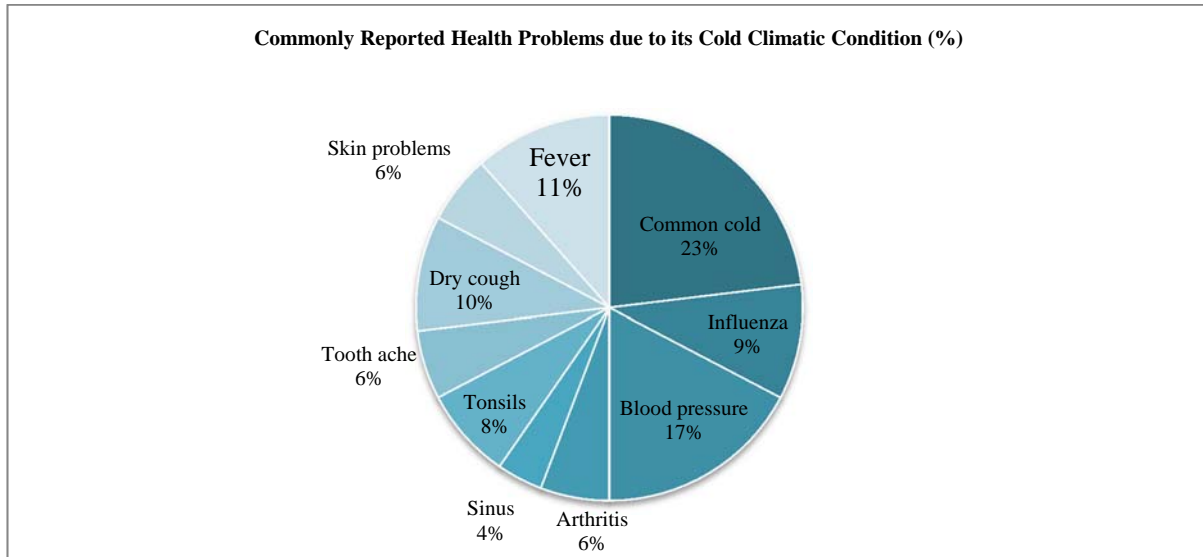


**Plate 1:** Scenic beauty of Pfutsero Town, Nagaland

### 7. Climate and its effects on Health

Pfutsero town has a unique and distinct climate as compare to other parts of the state. Because of its high altitudinal location it has a wide difference between the summer and the winter season. Winters here are known for their extreme harshness and cold bite bearing a distinct difference between

these two seasons of the year. According to the survey conducted, 60% of the populations are affected because of the cold climate. Some of the most commonly reported health problems due to its climatic influences are shown in the following pie-diagram.



**Source:** Field Survey, Pfutsero Town, Nagaland

Common cold is the most commonly affected health problems (23%), improper circulation of blood (17%) mainly suffered by the older age group especially during the winter season. Fever (11%), Influenza and dry cough 10%, Tonsil 8%, tooth ache, skin irritation and Arthritis (6%) respectively.

### 8. Health problems related to Climate change

Climate change is one of the most burning issues right now related to Global warming, sea level rising etc. It is been observed from the survey that 65% of the respondents could notice the difference in their health due to climate-change. The differences in the temperature, with rasher sun-rays, caused problems of skin-irritation and sun-burn. Temperatures during winter season have become more extreme than before. Winters are becoming more chiller and cold.

### 9. Health Problems Related to the use of Firewood and Charcoal

Firewood and charcoal are using by most of the residents in the area during the cold winter seasons, which has contributed a lot of health issues as the smoke produced are harmful Carbon monoxides which can be lethal to health if not cautious. From the survey conducted it has been observed that 73% of the residents used firewood and charcoal in their home and 27% used other sources like room heater, halogen heater. The most commonly reported health problems because of the used of firewood and charcoal are dizziness (42%), 32% of respiratory problems and 26% of headache.

### 10. Water and its effect on Health

Water plays an important role in the Health scenario; March 22<sup>nd</sup> is celebrated as World Water Day. The quality of water very much affects our Health. Over three billion people worldwide each year suffer from water related diseases that can be fatal, and children under the age of five are the most affected.

According to the survey conducted, the area is blessed with good source of water. However the main problem faced is the uneven distribution of water. Some locality faced very severe water problems they have to even buy water, especially during the dry season. 60% of the household have Public Health Engineering (P.H.E.) water pipe line connection, while the remaining 40% of the household doesn't have P.H.E. pipe line connection. However they manage it from nearby water sources like spring, pond, public water tank etc. The most commonly affected water borne diseases reported from the area are Typhoid 43%, Dysentery 23%, Diarrhea 20%, and Cholera 14%. From the survey it has been observed that 67% of the respondents suffered from water related diseases.

### 11. Management of water problem in the area

The following suggestions are contributed from the respondents regarding the management of water problems in the area. And as a result solve the problems of uneven distribution of water.

- ✓ Majority of the people prefers Rain water harvesting as an alternate means to meet the growing demands of the population. Especially in localities where P.H.E. pipeline cannot be provided or areas where there is less sources of water like natural spring, pond etc.
- ✓ Replacement of old pipe lines, installing new pipelines to meet the demands of the people at large.
- ✓ Public Engineering Department (P.H.E.) should be more sincere and maintain the water supply in each and every locality. They need to be more responsible towards their duty.
- ✓ Water reservoir should be set up, new water pipeline be installed, and proper utilization of water should be the prime concern of the public. So that judicious use of water can be practiced.
- ✓ Above all maintaining the Environment is a must there should be a balance where the community needs to be educated about various issues related to water and its influence in our health.

Water sources should be well maintained and taken good care of, as the saying goes “*Save Water, Save Lives*”. Thus, proper maintenance of water sources is very much a necessity and cannot be compromised.

### 12. Air pollution and Health

D. S. Lal (2006) defines Air pollution as that condition of air whose natural components are disrupted by the addition of harmful elements in it; Undesirable concentration of any phenomenon in the air causes air pollution.

From the survey, it has been reported that the main health problems related to air pollution are respiratory problems and allergy due to dust. Health is widely affected due to the plying activities of vehicles daily producing a lot of unwanted pollution and dust upheavals, especially during the winter season as the area is very dry and dusty; contributing

about 62% of related respiratory health problems and 38% of dust allergies.

### 13. Sanitation and Health

Sanitation is one of the most cost-effective ways to improved public health. Good sanitation results in better and healthier lifestyle. However poor sanitation is responsible for the spread of a number of communicable diseases, resulting in lower productivity and at the same time reducing the quality of life. From the survey, it has been observed that there is no common garbage disposal system in Pfutsero Town. The area has eleven localities, where 56% of the residents collect and burn the waste, 23% maintained their own garbage dump and the remaining 21% just dump their waste without any maintenance.



**Plate 2:** Improper waste disposal around the surrounding areas in Pfutsero Town, Nagaland

The contribution of Town Council towards the maintenance of waste in the Town is very unsatisfactory. About 67% of the populations are not satisfied with the contribution of Town Council towards waste management. Development towards waste management is growing at a very slow pace which needs to be further motivated to take some productive steps towards community sanitation drive in the area.

### 14. Drainage System in the area

Also, one of the major draw backs on sanitation in the area is the lack of proper drainage systems. The town lacks the maintenance of a proper drainage system in the area. Due to ever increasing of population and the higher generation of waste the drainage system has become insufficient. From the survey (80%) of the people view the drainage system as very poorly maintained.



**Plate 3:** Poorly maintained drainage system in the Area (Pfutsero Town, Nagaland)

Therefore proper maintenance of waste and drainage system in the area should be given utmost priority, by the Town Council as the health condition of the people largely depends upon the existing environmental condition.

### 15. Management towards Sanitation

The following suggestion has been given by the residents of the area for the better management of waste.

- ✓ People should be educated about civic sense.
- ✓ Awareness towards waste management and sanitation.
- ✓ Town council can do much better towards waste management, by collecting waste from every locality twice a week.
- ✓ More waste bins, garbage dump should be provided for the maintenance of sanitation in the area.
- ✓ Drainage system should be well planned and maintained.
- ✓ Disposal of community garbage dump should be maintained away from the Town, as far as possible.

From the survey, it has been highlighted that the Church youth in the area and Mother's Association has play a major role in maintaining the clean environment in the Town, effort for the beautification of the Town too is initiated from their side.

### 16. Summary and Conclusion

Environment greatly influences our health condition from the study 60% of the population are affected with health related problems because of its cold environmental condition. About 66% could feel the difference in climatic change and its influence on their health. 67% are affected because of water related diseases, the most common is typhoid accounting for about 43%. 62% suffered from respiratory related problems due to air pollution. However from the survey the main factors that hamper the health condition of the people is their poor socio-economic condition, ignorance, habits of excessive drinking etc. Ultimately the bottom line depends on the individual lifestyle and his food habits.

Sanitation one the other hand is one of the most cost-effective ways to improve the health condition of the people. Poor sanitation is responsible for the spread of a number of infectious diseases reducing the quality of life. Therefore proper sanitation in the area needs to be taken with utmost priority. Though various steps have been carried out towards better sanitation in the area, yet the main steps however need to be initiated by the Town Council. As of now it has been found that most of the credit for all these efforts towards sanitation goes to the Church organization like the youth, Mother's association and school students where the students used to carry out cleanliness drive in the area.

### 17. Acknowledgments

For the present research work I want to convey my sincere gratitude and thanks to Ani, Ate and Chera for their constant support, guidance and valuable suggestions throughout the various stages of framing questionnaires, interview schedules and research design.

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