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"Asbestos Roofing" as "Housing Pattern" and Its Implications on Health of the Households in Sub Urban Area of Chennai

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Abstract

Background: *Health implications of asbestos roofing are the first of its kind and there are no studies on it.*

Objectives: *To see prevalence of health implications of the household members related to the asbestos roofing and suggest remedies for the same.*

Materials and method*: Households with asbestos roofing in suburban area are enumerated down and 100 household are selected randomly and members clinically examined. Analysis is done in SPSS 21.*

Results: *Prevalence of Dermatological Pathology found to be 68%. Females affected more than males.($p < .001$). Face & neck being the more common parts affected, with skin lesions($p < .01$). Presence of plants and trees surrounding the household and the presence of dermatological lesions are negatively correlated.*

Conclusion: *Housing pattern with asbestos as roofing has certainly effect on the health and is associated with skin pathology.*

Key words: *asbestos roofing, health implications, sub-urban area.*

INTRODUCTION

Asbestos Use in Developing Countries

Some developing countries, such as India, China, Russia and Brazil have continued Wide spread use of asbestos. The most common is corrugated asbestos-cement sheets or "A/C Sheets" for roofing and for

side walls. Millions of homes, factories, schools or sheds and shelters continue to use asbestos. Cutting these sheets to size and drilling holes to receive 'J' bolts to help secure the sheets to roof framing is done on-site. There has been no significant change in production and use of A/C Sheets in developing countries following the widespread restrictions in developed nations.Asbestos sheet is a common roofing commodity used in the rural areas of India. Popularity of asbestos in these areas is due to low cost of the material, and its effectiveness as protection from sun, rain and other natural calamities (Tossavainen et al., 2004). Besides, due to high durability and tensile strength, asbestos is used in numerous other places including water pipes, manufacture of pressure and non-pressure pipes used for water supply, irrigation, sewage and drainage system in urban and rural areas, asbestos laminated products, textiles, tape, packing ropes, gland packing, brake lining and jointing used in industries like automobile, heavy equipment, petro-chemicals, nuclear power plants, fertilizers, thermal power plants, transportation, defense, etc. Instead of its wide application the health hazardous effect cannot be under looked as there are several scientific evidences of health effects.[1]

OBJECTIVES

1. To study the prevalence of health implications related to the asbestos roofing as housing pattern.

2. To suggest recommendations for the same.

MATERIALS AND METHODS

Households with asbestos roofing in suburban area are enumerated down and100 household with asbestos roofing are selected randomly and members of the household examined. Study design: cross sectional study. Study population: Members of household with asbestos roofing as housing pattern.Study period: April 2010 to march 2013.

RESULTS

Prevalence of Dermatological Pathology found to be 68% among the members of the household. Females have moreDermatological Pathology when compared to males ($p < 0.001$). Face& neck being the more common parts affected ($p < 0.001$). Presence of plants and trees in the surroundings of the household and dermatological lesions are negatively correlated. Seasonal variations are also seen. Summer skin pathology is more than winter.

(P <0.001).Psychological stress due to dry heat of radiation is reported by 87% of the respondents.

Popular eruptions are found in 12%.Allergic dermatitis in 2%. Those presented with allergic dermatitis also had (h/o) taking siddha drugs with high intake of non-vegetarian diet.Rashes on the face and neck are found to be 40%.Fungal lesions (Taeniacorporis) are seen in 8%.Super added pyogenic infections 2%.Wart 10%,Acne 20%.

Asthmatic attacks and upper respiratory infections are found to be in 17% of the household members.

DISCUSSION

Needless to say that the ignorance still prevails in the field of governance and monitoring of relevant regulatory implementations, People using asbestos sheet for roofing generally belong to lower or other financially modest population groups. They often cook their food in the open wood fire under asbestos roofing. This results in flaking and pitting on asbestos cement roof exposing asbestos, making it airborne. They paint their asbestos roofing with emulsion paint which deteriorates it rapidly resulting discoloration and mould growth. The effect of surface weathering also exposes asbestos from asbestos cement roof. Also, height of a rural cottage, roofed by asbestos cement, is too small to have effective ventilation. [2]Asbestosis or "asbestos-induced pulmonary fibrosis" is a lung disease that causes scarring of lungs. It happens due to the long-term exposure to high doses of asbestos that results deposition of collagen in the lungs. Our body generates an acid as an attempt to dissolve the asbestos fibers in the lungs, but the acid often has little effect on the asbestos and instead damages lung tissue. That results the scarring of the lungs. The time taken for the development of this condition or the latency period of this disease is 25-40 years (Lippmann and Morton et al., 2000).[3]

RECOMMENDATIONS

1. The governance and monitoring from both the governmental and nongovernmental agencies should come in contact with military-footing and making aware about the health hazards of asbestos and its deadly health hazards

2. Enforcing need of proper ventilation in households with asbestos roofing.

3. Educating about the need for planting trees and vegetation around these households.

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