POTENTIAL IMPACT OF CLIMATE CHANGE ON ORAL HEALTH & DISABILITIES: A GRASS ROOTS STUDY

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Abstract: Climate change is ongoing & its impact on human health is a matter of grave concern. Rising temperatures, erratic rainfalls, landslides are causing havoc amongst the vulnerable population at risk. Assessment of climate change & its ramifications on systemic & oral health is becoming relevant in the Indian scenario. Furthermore, health disparities are a gaping reality in urban & rural areas. Thus, the population facing unbalanced, environmental & economic impact is a valuable resource to evaluate mitigation & adaptation to climatic changes. Depletion in fresh water resources is emerging as an environmental health threat attributed mainly to increasing rates of water contamination and extraction. This has caused a decline in the water quality & quantity especially in forest regions of Central India. Limited access to safe water has an adverse effect on health outcomes. Ethnobotanical remedies and indigenous medicinal systems are practiced widely in tribal communities of Central India. Traditional healing practices and herbal medicines have therapeutic value amongst tribes. Climate change related change of disease profile and disappearance of plants with medicinal value from their habitat are posing a serious hazard to continuation of these practices, thus rendering them ineffective. Madhya Pradesh (MP) is the second largest state in India & predominately constitutes central India. Tribes constitute a sizeable population (20.27%) of the state population. There are 46 recognized scheduled tribes. This population is likely to be hit hardest by climate change. Malnutrition among children in this region is highest in the country (60%). Genetic abnormalities like, sickle cell anaemia, thalassemia & Down syndrome increase the burden of disabilities. Also infectious diseases such as malaria, tuberculosis, asthma, enteric fever & gastroenteritis are prevalent. The associated disabilities include audiological impairment. Skeletal & dental fluorosis related disability is associated with surface & ground water quality. The local oral hygiene practices contribute to the morbidity of oral diseases. Oral pre-cancer (submucous fibrosis & leukoplakia) and cancer are caused by gene environment interactions and almost 85% of oral cancers are squamous cell carcinomas. Prevalence of dental caries and periodontal disease leads to associated dento-facial disabilities. A community based pilot study is being conducted at district Umaria (MP) spread over 4548 Sq. Km located in Central India. This area is renowned for its extensive forest coverage (52%) and biodiversity. The average rainfall is 1093 mm and the average maximum & minimum temperature is 46.2°C & 1.8°C respectively. This study is being undertaken to evaluate the impact of climate change, water quality, oral health impact and disability. The data is being collected in the field through open ended interviews with tribes, traditional healers & health care professionals. Guided dialogue techniques, questionnaires and pro forma based evaluation form a part of the study. Assessment of impact on existing public health infrastructure would enable formulation of adaptive measures and suggestions for amelioration. The healthcare infrastructure needs to be upgraded to meet the demands of changing disease profile amongst the vulnerable population. This research is targeted towards maintenance of optimum oral health of mainly the scheduled tribes. This would a pioneering study to analyse potential impact of climate change on oral health & disabilities.

Keywords: Climate change, environmental health, oral health, central India, scheduled tribes, disabilities