

Climate Change Impacts on Public Health: a Taiwan Study

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The local, regional or global climatic activities may alter atmospheric compositions and chemical processes, and are implicated in extreme precipitation, temperature, among many other impacts. Urbanization, economic development, and human activity may also contribute to intensify the related effects. Ultimately, deteriorating health consequences to such exposures may be of primary concerns.

In Taiwan, low temperature appears to derive at higher cardiovascular or respiratory mortality than does the high temperature for general populations. Rural residents are less affected than urban dwellers under extreme temperature events if cardiovascular diseases or respiratory mortality is benchmarked. Towns and villages with a high percentage of the elderly living alone, the senior and the disabled people, as well as the aborigines, present a higher mortality associated with events of extreme temperature. Continuing and steady rise of temperature will also change the conventional module for food storage, capacity to moderate food security.

Extreme rainfall events may also interrupt the chain of food supply and life support and derive at reporting malnutrition of affected populations. In addition, contaminated water sources for drinking and recreation, due mostly to flooding after extreme precipitation, are known to be associated with disease outbreak and epidemics. In Taiwan, for water-borne infections, extreme torrential precipitation (>350 mm/day) was found to result in the high relative risk for bacillary dysentery and enterovirus infections when compared to ordinary rain (<130 mm/day). Yet, for vector-borne diseases, the relative risk of dengue fever and Japanese encephalitis increased with precipitation up to 350 mm/day. Differential lag effects of precipitation appeared to be associated with varying risk levels for individual infectious diseases.

Changing patterns of temperature and precipitation appear to affect geographical distribution and prevalence and incidence rate of climate-related diseases. Varying distributions of medical resources or sanitary conditions would have to be taken into account in further analyses before the final conclusions.

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