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DISTRIBUTION OF ENDEMIC GOITRE IN KALUTARA DISTRICT

A PROJECT REPORT PRESENTED BY

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Goitre has been reported in the wet climatic zone of the country for past fifty years. Present study addresses the distribution of goitre in the Kalutara District and the main objectives were to provide social and genetic information about occurrences of goitre in Kalutara District, to identify the sites that are mostly affected by goiter and to find out the reasons for increased of goiter incidence in the Kalutara District. A questionnaire survey was carried out and iodine and selenium levels of the water sources were analyzed.

The highest numbers of goitre patients were recorded in the northern part of the Kalutara District and the lowest numbers of patients were found in the southern sector. Females were more susceptible to the disease and it is transmitted between generations, mostly among females.

Iodine concentrations in dug wells in goitre common regions are of $28.25 \pm 15.47 \mu\text{g/l}$ whereas non-goitre regions show similar values at $24.74 \pm 18.29 \mu\text{g/l}$. Surface water shows relatively high values at $30.87 \pm 16.13 \mu\text{g/l}$. The difference in iodide contents of drinking water in cases of goitre and controls is minimal. However, some isolated patches can be observed in some places with low iodine concentrations less than $10 \mu\text{g/l}$, especially in Ingiriya, Horana and Bandaragama DS divisions where a higher number of goiter patients were reported. The Selenium level of the water is low and none of the samples exceeded the desired limit of $10 \mu\text{g/l}$. The difference in Selenium contents of drinking water in case of goitre and controls is minimal.

Since the area is underlain by high-grade metamorphic rocks, which have very low iodide concentrations along with the formation of acid sulphate soils in most parts of marshy lands in the Kalutara district may lead to transformation of biologically available iodide into volatile iodine. This may be a cause for the incidence of endemic goitre in the Kalutara district. Thick lateritic formation containing iron and aluminum may absorb the iodide in the Kalutara district. Earlier studies have also noted that even though levels of total selenium and iodine in Sri Lankan soils are not low compared to other areas of the world where IDD do not occur, geochemical features such as soil pH, organic matter and thick lateritic cap in the study area play an important role in controlling the amount of selenium and iodine available to the food chain through plant uptake.