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Study on possible risk factors affecting transmission of dengue in high risk areas of dengue in Gampaha District, Sri Lanka

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Dengue is an important mosquito-borne vector-borne disease in Sri Lanka with 37,000 reported annual cases during the last five years. The second highest prevalence of dengue was observed in the Gampaha District in the Western Province during the past ten years. The objective of this study was to identify possible risk factors affecting transmission of dengue in selected high risk areas of dengue in the Gampaha District. The study was conducted in four high risk Medical Officer of Health (MOH) areas of dengue based on the annual number of dengue cases being greater than 250 during the last ten years. In each MOH area, one Grama Niladhari (GN) division with the highest dengue incidence was selected as the study area. In each study area, a cluster of 75 households was selected and a house-hold and entomological surveys were carried out in March, 2015. Eriyawatiya (Kelaniya MOH), Welikadamulla (Wattala MOH), Akbar town (Mahara MOH), and 3-Kurana (Negombo MOH) were selected as study areas. There was a population of 1234 in 300 house-holds from all four study areas. Average number of dwellers per household was 4.11. Most of house-holds were individual type houses with a small garden (98%) and the average size of a homestead was 14.92 perches. The main source of water was piped water, but 2.02% dwellers were using ground well or tube well water for daily purposes other than cooking and food processing. Some people accumulated water in containers (8%). The main waste disposal method was by collecting tractors of municipal councils and 1.02% families collect their waste and destroy it. The main dengue vector mosquito species present in the study areas was *Aedes albopictus* (98%-101/104). The identified main breeding places of the mosquitoes were plastic containers, discarded bottles and tins, roof gutters, plant axils and refrigerator drain pans. Dwellers in these areas have a considerable knowledge of the dengue disease and preventive measures, but disfavor perusing preventive measures. Possible risk factors affecting transmission of dengue in study areas may be crowded conditions due to small houses and homesteads, poor water and waste management systems, availability of a large number of water filled containers and vector species, disfavor to pursue preventive measures by themselves and depending on control methods conducted by the government. Continuous encouragement is needed for people to follow control measures.

Keywords: Dengue, Gampaha, vectors, risk factors

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