

## Assessment of Possible Risk Factors Affecting Transmission of Dengue in the District of Gampaha Based on Reported Dengue Cases

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Dengue is a fast spreading arboviral infection transmitted by the bite of infected females of *Aedes aegypti* (Linnaeus) and *Ae. albopictus* (Skuse). According to the Epidemiology Unit, the second highest number of dengue cases is reported in the District of Gampaha, Sri Lanka over past ten years. Objective of this study was to investigate the entomological and socio-economic risk factors affecting transmission of dengue in laboratory-confirmed dengue case reported stations in the District of Gampaha. Laboratory confirmed positive dengue patients (n=100) by dengue NS1 antigen test during the period of June, 2018-August, 2019 were selected. Entomological surveillance was conducted by visiting to each patient within one week of notification of a positive case. For the collection of socio-economic data, an interviewer-administrated questionnaire was used. Adult *Aedes* mosquito samples collected using a back-pack aspirator showed, 98.64% (73/74) of *Ae. albopictus* and 1.35% (1/74) of *Ae. aegypti* mosquitoes. Larval collection using standard larval surveillance techniques showed 92.96% (185/199) and 7.04% (14/199) of *Ae. albopictus* and *Ae.aegypti* larvae respectively. The highest House Index (55.17%-16/29), Container Index (28.89%-13/45) and Breteau Index (44.83%-13/29) were reported in the month of June, 2019. The major *Aedes* breeding place was identified as plastic buckets/barrels (48.6%-84/173) that being used to discard waste. Piped borne water (88%-88/100) was the major water source of the house-holds. Water source of tube well (9%-9/100) was the next popular water source and 66.67%(6/9) of tube wells were positive breeding places for *Aedes* larvae. Average homestead of the premises of dengue patients was 16.14 perches. From the 100 dengue cases, 67 cases were from middle of town areas, while 2 were from rural areas. Vegetation coverage of the 78% (78/100) house-holds were grass, bushes and small trees and 3% (3/100) house-holds didn't have any vegetation coverage. The major mosquito prevention method was usage of mosquito nets (54%-54/100) and among dengue patients 7% (7/100) of dengue patients weren't using any mosquito prevention method. High density of *Ae. albopictus* mosquitoes, was reported although *Ae. aegypti* is the major vector of dengue. Therefore, it is required to draw more attention about the *Ae. albopictus* breeding sites in dengue control programmes. Participants from the study sites were well aware about the disease but still there is a lack of knowledge on breeding sites and vector control methods. Drawbacks in the waste disposal methods, lack of cleanliness in gardens, unplanned water sources and neglecting preventive actions could be considered as the possible risk factors.

Acknowledgment: National Science Foundation (RPHS-2016-D03) for financial support.

Keywords: “Dengue; Aedes; entomological surveillance; socio-economic factors; vector control”

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