Assessment of possible social and entomological risk factors affecting transmission of dengue in the District of Gampaha

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Dengue is the most important mosquito-borne viral infection transmitted to humans in Sri Lanka causing more than 30,000 cases annually. The objective of the study was to identify possible social and entomological risk factors affecting transmission of dengue in Gampaha district where the second highest number of dengue cases recorded during last ten years. Four Medical Officer of Health (MOH) areas were selected based on annual number of dengue cases greater than 250 for last ten years. One GramaNiladhari (GN) division was selected from each MOH area as a study area where the highest number of dengue incidents reported. In each study area, a cluster of 150 households was selected and household and entomological surveys were conducted. The selected areas were Eriyawatiya (Kelaniya MOH), Welikadamulla (Wattala MOH), Akbar town (Mahara MOH), and 3-Kurana (Negombo MOH) GN divisions. There were 2577 population in 600 households in the study areas and 53.5% were females. Average size of a homestead was 17 perches and most of the households (98%-588/600) were individual house. Main vegetations in the homesteads were grass and bushes (97%-583/600) and potential breeding places of dengue vector mosquitoes were observed in 96.1% (577/600) households. Main dengue vector mosquito present in the captured Aedes adult mosquitoes was Aedes albopictusis (92.9%-183/197). Most prominent breeding places were discarded bottles and tins (4.0%-15/371), plant axils (9.7%-36/371), plastic containers (26.4%-98/371), and roof gutters (4.3%-16/371) in the observed premises and 9.2% (34/371) were Aedes larvae positive. Most frequent mosquito preventive measure was bed-nets (30.3%-182/600), but mosquito coils (30.8%-185/600) and vaporizers (17.6%-106/600) were frequently used. Participants have adequate knowledge about the disease, but they neglect preventive measures and highly depend on government vector control programs. Unplanned households, crowded conditions, poor waste management systems, and negligence to pursue preventive measures may be possible risk factors and therefore, frequent encouragement is needed to control dengue transmission.

Key words: Dengue, Gampaha, Sociological and entomological risk factors