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Comprehensive evaluation of demographic, socio-economic and other associated risk factors affecting the occurrence of dengue incidence among Colombo and Kandy Districts of Sri Lanka: a cross-sectional study

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Abstract

Background: Comprehensive understanding of risk factors related to socio-economic and demographic status and knowledge, attitudes and practices (KAP) of local communities play a key role in the design and implementation of community-based vector management programmes, along with the identification of gaps in existing control activities.

Methods: A total of 10 Medical Officers of Health (MOH) areas recording high dengue incidence over the last five years were selected from Colombo ($n = 5$) and Kandy ($n = 5$) Districts, Sri Lanka. From each MOH area, 200 houses reporting past dengue incidence were selected randomly as test group ($n = 1000$ for each district) based on the dengue case records available at relevant MOH offices. Information on socio-economic and demographic status and knowledge, attitudes and practices were gathered using an interviewer administered questionnaire. The control group contained 200 households from each MOH area that had not reported any dengue case and the same questionnaire was used for the assessment ($n = 1000$ for each district). Statistical comparisons between the test and control groups were carried out using the Chi-square test of independence, cluster analysis, analysis of similarities (ANOSIM) and multi-dimensional scaling (MDS) analysis.

Results: Significant differences among the test and control groups in terms of basic demographic and socio-economic factors, living standards, knowledge, attitude and practices, were recognized ($P < 0.05$ at 95% level of confidence). The test group indicated similar risk factors, while the control group also shared more or less similar characteristics as depicted by the findings of cluster analysis and ANOSIM. Findings of the present study highlight the importance of further improvement in community education, motivation and communication gaps, proper coordination and integration of control programmes with relevant entities. Key infrastructural risk factors such as urbanization and waste collection, should be further improved, while vector controlling entities should focus more on the actual conditions represented by the public on knowledge, attitudes and personal protective practices.

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