Eco-bio-social determinants of Aedes infestation in Dhaka, Bangladesh

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**Background:** Globally, vector borne diseases are becoming a significant public health problem, with a number of 'old' diseases resurging in recent years alongside newly emerging infectious diseases. Among them, Dengue has become most prominent example. While dengue is regarded as one of the most alarming infectious diseases, its resurgence reflects the failure of traditional reductionist disciplinary approach in understanding dengue disease transmission process as well as in eliminating and controlling dengue vectors (i.e., *Aedes aegypti* and *Aedes albopictus*). My research is based on the notion that the understanding of the dengue transmission requires the development of a holistic epistemology that can assess the eco-bio-social determinants and their interactions with human action and vice versa. The proposed study has four components: i) determination of dengue virus prevalence, ii) determination of vector density and its correlation with dengue prevalence; iii) effects of local-level social-ecological and human behavioural factors on vector density; and iv) enhancement of local community capacity for public participation in health intervention and development policy fora.

**Methods:** The proposed research has adopted a transdisciplinary approach as the basis for understanding dengue transmission in Bangladesh and for identifying community-centered interventions. In order to attain the objectives of the research, a total of 842 households from 12 urban wards were surveyed with a specific survey instrument. Vector distribution was monitored and vector density has been calculated by the commonly used larval indices and the human-hour catch and per room collection of adult vector population. For in-depth understanding and identification of potential interventions, Focus Group Discussions were held in three selected wards of the City of Dhaka. These were supplemented by semi-structured interview of 30 stakeholders representatives; responses from 300 ward/community members; 12 policy- and/or decision makers (national and local institutions), and Mental Map construction of 24 ward representatives (supplemented by 300 ward members).

**Results:** Overall, the findings have revealed that vast majority of the community members are well aware of Aedes infestation, however, very few have taken specific measures to control them in their household and in the neighbourhood.

**Conclusion:** It is suggested that more community ownership will be required to make Aedes control a success.