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Mobile SMS effectively improves dengue prevention practices in community: An implementation study in Nepal

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Dengue is an emerging public health problem in Nepal that pose threat with frequent outbreaks. Dengue control activities are mostly outbreak driven, still, lack systematic interventions and people have poor knowledge and practices. This study aimed to explore the acceptability, appropriateness, and effectiveness of mobile SMS intervention in improving dengue control practices. This is an implementation research that used mixed-methods design with intervention. A total of 300 households were divided into three groups, i.e. one control group, one dengue prevention leaflet (DPL) only intervention group and DPL with mobile SMS intervention group (DPL+SMS). We used a structured questionnaire to collect information regarding the knowledge and practice of dengue prevention, and in-depth interviews to measure the acceptability and appropriateness of intervention. Mean difference, one way ANOVA, paired t-test and regression analyses were used to assess the effectiveness of the interventions. Thematic analysis was used to assess acceptability, appropriateness and barriers and enablers of the intervention. DPL+SMS intervention produced significantly higher mean knowledge difference (32.68 ± 13.68 SD vs 13.32 ± 8.79 SD) and mean practice difference (27.94 ± 11.44 SD vs 4.88 ± 5.42 SD) compared to DPL only group ($p=0.000$). Multivariate analysis showed that DPL+SMS intervention was effective to increase knowledge by 28.62 points and practice by 24.06 points compared to the control group. The intervention was perceived as acceptable and appropriate by the study participants and key stakeholders. Mobile SMS is an effective, acceptable and appropriate health intervention to improve dengue prevention practices. This intervention can be adopted as a promising tool for health education against dengue and other diseases.

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