ABSTRACT

Background: 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. Mobile SMS could be the low cost health promotion intervention to enhance the knowledge and practices of people. This study aimed to explore the acceptability, appropriateness, and effectiveness of mobile SMS intervention in improving dengue control practices.

Methods: This is an implementation research study 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 structured questionnaire to collect information regarding knowledge and practice of dengue prevention. We conducted in-depth interview and key informant interviews to measure acceptability and appropriateness of intervention. Mean difference was calculated and one way ANOVA, paired t-test and regression analysis was done to study the effectiveness of interventions. Thematic analysis of qualitative data were used to assess the acceptability, appropriateness and barriers and enablers of the intervention.

Results: DPL+SMS intervention produced mean knowledge difference of 32.68±13.68 SD and mean practice difference of 27.94±11.44 SD compared to DPL only group with mean knowledge difference of 13.32±8.79 SD and mean practice difference of 4.88±5.42 SD with high significant difference (p=0.000). Multivariate analysis showed that DPL+SMS intervention was effective to increase knowledge by 28.62 points and practice by 28.06 points compared to control group. The intervention was perceived as acceptable and appropriate by the study participants and key stakeholders. Perceived barriers included reaching private network users and poor network in geographically remote areas, while enabling factors included mobile phone penetration, low cost, and shared responsibility.

Conclusions: Mobile SMS is an effective, acceptable and appropriate health communication tool for improving dengue preventive practices. This intervention can be adopted as emerging and promising tool for health education against dengue and other diseases.

Keywords: Implementation Research, Effectiveness, Acceptability, Appropriateness, Dengue Prevention, Mobile SMS, Nepal