A systematic review and meta-analysis of mobile phone messaging intervention on vaccine preventable diseases

ABSTRACT

The re-emerging of vaccine preventable diseases is a global public health burgeoning issue. The incompleteness of vaccination or low uptake rate is due to low awareness of the importance of vaccines, forgetfulness, poor counselling, and health education from the healthcare providers. Mobile phone messaging reminder was one of the most studied interventions to overcome these problems in the last decade due to increasing usage of mobile phones in daily living activities. Therefore the aim of this study was to analyse the effectiveness of mobile phone messaging intervention on vaccination programmes of preventable diseases worldwide. Methods. A systematic literature search of randomised controlled trials on Cochrane database that were published for the past 10 years was done; in which 10 articles were selected for critical appraisal and qualitative synthesis. Out of the 10 articles, 9 articles were selected and proceeded with meta-analysis based on GRADE risk of bias assessment. Results. The overall vaccination coverage of mobile phone messaging in the intervention group was higher than the control group [61,586 (47.7%) versus 61,571(45.7%)] with significant pooled vaccination prevalence difference (PD) of 0.02 (CI 0.01, 0.03). In the subgroup analysis, the pooled PD of childhood vaccination coverage was not significant although significant pooled PD of 0.03 (CI 0.01, 0.04) was detected in the influenza vaccination coverage. Conclusion. This review and meta-analysis have strengthened the evidence that mobile phone messaging is an effective intervention method to increase vaccination coverage, especially for influenza vaccination. However, its effect on childhood vaccination coverage was inconclusive and needed more high quality research.