EFFECT OF MOBILE PHONE HEALTH MESSAGING ON MODIFIABLE RISK FACTORS OF NON-COMMUNICABLE DISEASES AMONG RURAL POPULATION IN TWANTAY TOWNSHIP

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ABSTRACT

Mobile health and mobile phone technology have become increasingly noticed as favorable communication channels for the prevention of non-communicable diseases (NCDs) by reducing the risk behaviors of NCDs among the community. A community-based quasi-experimental study design was conducted among a total of 240 community members who are 30 to 60 years old selected from two villages in Twantay Township with one-year mobile phone health messaging intervention via Viber application from July 2019 to July 2020. All participants were face-to-face interviewed with the WHO STEP survey questionnaire and behavioral and metabolic risk factors of NCDs measurements were carried out at baseline. Reassessment with the same questionnaire and measurements were carried out after 12 months period. Mean changes of behavior and metabolic risk factors between the intervention and control group were analyzed with linear mixed effect modeling with propensity score adjustment. A total of ten participants (5 participants who improved any behavior or metabolic risk factors and 5 participants who did not change) were interviewed to explore their perception of the intervention. As the findings, compared with the control group, the mean number of smoked and smokeless tobacco using per day among current users in the intervention group was reduced after the intervention ($p<0.05$). Of metabolic risk factors, participants in the intervention group had a significant net reduction in fasting blood sugar especially among diabetes patients with mean change -57.0 mg/dl [95%CI -105.64, -8.45, p=0.021] and reducing in waist-hip-ratio with mean change -0.1 [95%CI -0.07, -0.03, p=<0.001] than the control group. In each group, by comparing before and after the intervention, the mean number of smoking per day, smokeless tobacco chewing per day, fasting blood sugar level, and HbA1C level was reduced and LDL level was reduced only in the female group, while HDL level was increased in the intervention group but not in the control group ($p<0.05$). As the qualitative findings, all participants perceived as being sending health messages was useful for them. Salient findings as the major advantages included that improving their health knowledge, a reminder on healthy behaviors, convenience in getting health information, reducing risk behaviors, and

convey the health message to their family members and friends. Time limitation, vision impairment, technical skill insufficiency, phone and internet connection problems, and privacy issues were the difficulties among the participants in reading the Viber health messages. The study results showed that intervention affected reducing behavior risk factors and metabolic risk factors of NCDs. Mobile phone health messaging via Viber application to risk factors of NCDs should be widely used especially in this COVID-19 pandemic period for reducing the frequency of physical contact between community and health staff.