EFFECTS OF LINE APPLICATIONS FOR HOME VISIT AMONG NCD PATIENTS.

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ABSTRACT

Background: Lifestyle modification now is acceptable for NCD patients also there are a lot of interface applications intervene for healthy behavior. Further, the study aim to compare self-care among chronic patients before and after receiving a home visit plus with Line application.

Methods: Eighteen participants with aged 64.4±10.8 year, lived in Huai Khwang district, were selected to participate line application with a home visit. All participants receiving a couple week the figure information on line application, consisted of healthy food, remind participants for physical activity, and relaxation. And the home visit program plus with line application was evaluated after 8 weeks trial.

Finding: There were statistical differences before and after receiving a home visit plus with Line application in term of a part of healthy food.

Conclusion: We found that a home visit program may encourage NCD patients concerns regarding line application for their self-care.

Keywords: Home visit, Line application, NCD patients, Self-care.

INTRODUCTION

Nonpharmacological treatment for non-communicable diseases (NCD) patients such as having a healthy food, keeping physical health, quitting cigarette, and limiting alcohol consumption could reduce the risk of developing complications [1, 2]. Furthermore, there are a lot of interface applications for health assistance regularly in worldwide which can be downloaded on android such as Line applications, camera, audio, TV, etc [3, 4]. Based on Bandura's self-efficacy theory, self-efficacy motivates participation in physical activity, which suggests potential use of these measures in other contexts [5]. Therefore, in the present study, a set of approaches via line application, a part of development and validation in elsewhere namely "Healthy@3F (FOOD-FIT-FUN)" which including healthy diet (FOOD), exercise (FIT) stressful condition, and relaxation activities (FUN) which was developed into line application. However, as the effects of the developed application were still unknown in the patients, it was hypothesized that line application with a home visit would result in significant improvement in self-care practice of chronic patients in terms of changes in healthy food intake, exercise adherence, and stress-relaxing activities.

METHODOLOGY

Study area

This study was conducted at the urban community under the health services of Public Health Center 25 (PHC25), Huai Khwang district namely "Bueng Praram 9 Community". This community was purposively selected from a total of 38 communities that constituted Huai Khwang district under Bangkok Metropolitan administration (BMA).

Study population and design

This study was a part of the full research which present in elsewhere. Eighteen participants met the inclusion criteria as follows: they were men or women with their age was greater than 40 years old, they had been diagnosed with at least of one chronic condition such as diabetes, hypertension, dyslipidemia, other chronic conditions, they may had been taking medicine, and they regularly had the physician's appointment at the clinic of PHC 25 and/or other hospitals' appointment. Moreover, line application was download on individual smartphone, and screening "Healthy @3Fs". In contrast, as regards the exclusion criteria of the study, the patients were excluded if they suffered from other severe complications such as eyesight problem/retinopathy, or disability/limited movements, etc. In addition, those who could not speak or read the Thai language or had communicable diseases were excluded as well. After the participants signed the informed consent to indicate their willingness to participate in the study, the activities remind via line application during a home visit (the 1st, 4th, and the 8th week), a home visit interval on the 2nd, and the 6th week, respectively. Healthy @3Fs, consisted of FOOD: healthy food menu, FIT: physical activity, and FUN: the recreation were introduced for patients such as slow breathing, and meditation. All activities in line application was approved.

Finally, the participant recruitment process was complete in October 2018. Then, a home visit plus with line application was implemented and finished at the end of December 2018.

Home visit and Line application

The participants were attended for a monthly home visit which conducted by the researcher team and healthcare staffs of PHC 25, and making an appointment for the next round of the activities in a couple week via line application. Home visit activities consisted of the figure information based on the concept of lifestyle modification which was recommended for all patients who were advised to consume healthy food, be physically active, quit smoking, and reduce alcohol consumption [1, 6]. In other words, "Healthy @3F" via line application on smartphone and a home visit activity by nurses showed the major components included information of 1) healthy food, 2) Exercise such as household chores, walking, and running, and 3) Daily relaxing activities such as slow breathing, meditation , napping, and watching TV recreation. Home visit was repeated at patients' home once a month in two consecutive months also plus with line application on smartphone to ensure that participants received the same categories of "Healthy@3Fs" on the screen. Furthermore, the participants were encouraged those activities individually via line application on smartphone at the 2nd week, and the 6th week interval, respectively. The description of a home visit and the activities via line application on smartphone as shown below.

Table 1.
Home visit plus with Line application on smartphone

Week	Activity
1	Home visit Introduction - Food for Life - Fit for health - Fun for relaxing and recreation Download "Healthy @3F" via Line application on smartphone
2	The 1st Booster line application on smartphone
4	Home visit -Food choice -Do the exercise -Slow breathing practice To remind participants to adhere "Healthy @3F" via line application
6	The 2nd Booster line application on smartphone
8	Home visit wrap up -Food choice -Do the exercise -Slow breathing practice To ensure participants to adhere "Healthy @3F" via line application

Baseline screening

Before and after a home visit and line application launched, all the participants underwent physical screening. All clinical measurements were done by a team of multidisciplinary team members of PHC25, a government healthcare services under the Bangkok Metropolitan Administration (BMA).

Patients' self-care

Self-care practice was categorized into "3Fs" as follows: F: FOOD refer to healthy food consisted of 6 items 1) Eating high fiber, 2) Drinking a lot of water at least 1 liter/day, 3) Eating sweet less fruit, 4)Eating plant-based protein 5) Eating fiber, brown rice, other whole grain, and 6) Controlling high-fat diet; F: FIT refer to a physical health fit consisted of 2 items 1) Doing household chores, and 2) Walking or running at least 30 minutes/time; F: FUN consisted of and F3: FUN is refer to recreation which were introduced for patients consisted of 4 items 1) family recreation/neighbor, 2) Family counselling, 3) Watching TV/listening radio/traveling, and 4) Practicing a slow breathing/meditation.

Data analysis

The results obtained were statistically analyzed using the statistical package. The dependent t-test was employed to analyze the differences between the baseline data and the data collected at the week 8th. All analyses used a 95% confident interval (CI) and the level of significance for all the statistical tests was set at p-value less than 0.05.

Ethics Consideration

This study was reviewed by the Ethics Review Committee for Research Involving Human Research Subjects, Health Sciences Group, Suan Sunandha Rajabhat University (COA.1-054/2018). Prior to participation, the purpose and procedures of the study were fully explained to the prospective participants and all participants signed the informed consent form to indicate their willingness to participate in the study.

RESULTS

Baseline characteristics

The baseline characteristics of 18 participants are shown in Table 1. Participants had the mean age of 64.4 ± 10.8 year, most of the participants were women, and 44.4% were married. Participants had completed elementary education for 66.7%. And the same percentage, or 66.7%, were retired/housewives, 61.1 % have enough income. All participants used smartphone for general communication and using line application. Those, 100% spent time for more than 3 hours on smartphone. NCD diseases-related characteristics present hypertension for 38.9%

Table 2
Baseline characteristics of participants (n = 18)

Variables	Amount	
	n	**(%)**
Sex: women	12	(66.7)
Marital status: married	8	(44.4)
Education: elementary school	12	(66.7)
Occupation: housewives/ retired	12	(66.7)
Enough income	11	(61.1)
Duration to spent time for smartphone	9	(50.0)
NCD diseases		
Hypertension	7	(38.9)
DM & Hypertension	5	(27.8)
Post-stroke/Dyslipidemia/Dyslipidemia	6	(33.3)
	Mean	(S.D)
Age (years) Max 89 Min 47	64.4	(10.8)

*Significant at P value <0.05

As shown in Table 3, there were statistically significant differences in the self-care practice in terms of drinking water at least 1 liter/day ($p < 0.05$). However, there were no statistically significant differences in other items of 3Fs: food, Fit, and fun ($p > 0.05$).

Table 3
Comparison of the changes self-care among NCD patients at baseline and after an 8-week of a home visit plus with line application (n = 18)

Lists	Mean	SD	P-value
F: Food			
1. Eating high fiber	2.67	1.32	0.110
2. Drinking water at least 1 liter/day	5.06	1.51	0.028
3. Eating sweet less fruit	2.44	0.86	0.331
4. Eating plant-based protein	2.61	0.92	0.055
5. Eating fiber, brown rice, other whole grain	0.78	0.94	0.111
6. Controlling high-fat diet	1.83	0.86	0.331
F: FIT			
7. Doing household chores	2.11	1.28	0.163

Lists	Mean	SD	P-value
8. Walking/running at least 30 minutes/time	1.25	0.78	0.331
F:FUN			
9. Family recreation /neighbor	0.89	0.58	0.163
10. Family chatting /counselling	0.33	0.59	0.331
11. Leisure time for watching TV/listening radio /traveling	4.89	1.91	0.430
12. Meditation/slow breathing.	0.33	.485	0.096

*significant at $p < 0.05$

DISCUSSION

The hypothesis of the study was Healthy @3Fs via line application would result in improvement on self-care for NCD patients. The results reported no statistically significant differences in self-care before and after receiving the healthy @3Fs via line application ($p > 0.05$). However, after the 8-week of a home visit plus with line application intervention was completed, the one item of self-care practice regarding drinking water at least 1 liter/day before and after receiving line application activities showed statistically significant difference ($P < 0.05$). This study result was consistent with the findings of Haghighatdoost et al which confirm the beneficial effects of drinking plenty of water can reduce diseases' risk [7]. The other reason in randomized trials of the positive effects of an increased water intake has been implicated as assisting with weight loss [8]. Therefore, it could be noted that line application which involved knowledge motivation to guide for taking food with additional monthly of a home visit, could raise the awareness of the participants before receiving the activities compared to the -8 week of intervention. In contrast, the study findings showed unchanged self-care in terms of eating high fiber, whole grain, plant-based protein and low fat diet, household chores and relaxation. Such a finding yielded support to the study undertaken by Mai et al. (2007) which invesigated behavior changes after participation in a screening program for diabetes, as they stated that no changes in routine activities could be detected one year after screening for diabetes in the setting of general practice [9, 10]. Likewise, a similar finding was reported in a study carried out with hypertensives after 12 months of implementation of a comprehensive motivational approach that promoted lifestyle modification [11]. However, the findings that line application did not show differences before and after receiving the figure information via line application on smartphones in this study may be described that 1) the differences could not be detected that the implementation of the program was too short; 2) Home visit that required the participants adults who living with a chronic condition to engage the new activity assignment may have made some participants did not feel like willing to do; and 3) the participants might ignore the program sufficiently by themselves because of individual arguments and/or the social environment [12]. For example, each participant should follow line application guide on smartphone once a month, and the activities would be added twice time interval of each month individually. Moreover, some participants said that there was no internet access anytime to serf the figure information during the intervention process.

CONCLUSIONS AND RECOMMENDATION

This study reveals significant changes only drinking plenty of water, a part of healthy food compare with changing of self-care after the intervention at the 8-week. Therefore, we concluded that line application might promote how to maintain practicing of self-care among NCD patients by assisting healthcare providers motivation. However, the design of this study did not allow for generalization of the study findings to other conditions patients who are under treatment in other healthcare facilities in Thailand. The further studies should carefully consider the free mobile network when planning research implementation. In addition, during the intervention period, weekly for home visits after meetings at the clinic can directly provide individual support to patients enrolled in the program by offering individually tailored health education and counseling. Therefore, a home visit would be useful in improving lifestyle changes among NCD patients particularly those who are limited to use high technology on smartphone, especially for the elder group.

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