

Mechanisms of Motivational Program to Increase Perceived Self-efficacy of Healthy Eating among Thai Elderly with Hypertension and Hyperlipidemia

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The purpose of this study was to identify the mechanisms of a motivational program to increase perceived self-efficacy of healthy eating among Thai elderly, 60 years of age and older, having diagnosed with hypertension and hyperlipidemia. Purposive sampling was used to obtain 66 elderly to participate in the motivational program. The program comprised health education, focus group discussion, eating monitoring, and counseling. Quantitative data assessing the elderly' perceived self-efficacy of healthy eating, blood pressure and triglyceride levels were analyzed by one-way repeated measure ANOVA. Qualitative data from focus group discussion and counseling were analyzed by content analysis. The results revealed that at the 1-month, 3-month and 6-month motivational program, elderly reported significantly increased perceived self-efficacy of healthy eating while their blood pressure and triglyceride levels significantly decreased. In addition, gaining knowledge, a sense of empowerment and self-confidence that elderly received from focus group discussion and counseling increased their self-efficacy to better managing their eating behavior. The recommendation was that the motivational program as a form of mutual aid could offer great benefits to promote healthy eating among Thai elderly with hypertension and hyperlipidemia.

Keywords: elder, healthy eating, hyperlipidemia, hypertension, self-efficacy

The rising elderly population in Thailand has resulted in more numbers of elderly aged 60 years and above exposed to hypertension and hyperlipidemia (Alpha Research, 2013). It has been known that morbidity rates for those diseases can be reduced by healthy eating (Dixey, 2013). Therefore, promotion of healthy eating seems to be important among elderly. The term "healthy eating" suggests cooking and consuming the proper food (Dehghan et al., 2012; Pothibal et al, 2002). Eating essential nutrients also found to help elderly improve their health (American Red Cross, 2011). Elderly with hypertension and hyperlipidemia should consume foods that are low in salt and fat (Oldroyd, Burns, Lucas, Haikerwal, & Waters, 2008). Therefore, promotion of healthy eating behavior is considered to be an important strategy for elderly to improve their health, decrease their risks of chronic diseases, extend their long life, and enhance their quality of life (World Health Organization, 2013).

Prior studies indicated support from family members are factors associated with healthy eating behavior among elderly. Since elderly mainly live with their families, their family members play a role in providing care for them (Neelapaichit, Yamarat, Poomriew, Kijpredaborisuthi, & Taneepan, 2001; Wellman & Johnson, 2014; Wongpeng & Sillapa, 2004). The programs related to health education, healthy eating monitoring, as well as individual counseling also have been used to promote healthy food consumption of elderly (Pasuwan, Yamarat, Poomriew, Sirichotiratana, & Kobkuechaiyapong, 2004). However, most Thai elderly are known to have limited nutritional knowledge and poor healthy eating

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(Misajon, Pallant, Manderson, & Chirawatkul, 2014). Elderly have been found to consume an unhealthy diet that is high in salt, sugar and fat (Ministry of Public Health of Thailand, 2013). Therefore, in order to promote elderly' healthy eating behaviors, it needs to ensure them has adequate knowledge and skills regarding a healthy diet.

Moreover, sharing experiences derived from focus groups discussion can enhance self-efficacy by promoting elderly' confidence to carry out their healthy eating activities (Nongyaow, Linchong, Sharon, Khanokporn, & Sirirat, 2011; Siriagekarat & Tunsakul, 2000). Perceived self-efficacy occurs when individuals compare their achievements to those of others who have similar status to them (De Coster & George, 2005). If individuals judge the performance of others to be superior to their own, they will raise their efforts to improve their own performance. Emotional support received from others also increases their effort to deal with barriers that confront them (Bandura, 1999). Similarly, if an elderly with hypertension or hyperlipidemia sees a friend who can control his/her blood pressure or triglyceride well; the elderly may also try to do so. Though empirical studies related to focus groups typically reported positive health outcomes, the mechanism by which positive change occurring had been not identified among elderly. The existing empirical research had the lack of seeking out elderly' own views and how changes in their health and well-being were brought about. As such, this study was designed to explore the mechanism by which the motivational program would have the potential of making positive changes in health outcomes among Thai elderly with hypertension and hyperlipidemia indicated by increasing perceived self-efficacy of healthy eating and lowering blood pressure and triglyceride levels to nearly normal levels in long run.

Research Objective

The objective of this study was to identify the mechanisms of a motivational program to increase perceived self-efficacy of healthy eating among Thai elderly with hypertension and hyperlipidemia.

Method

Design

This study was a pretest-posttest experimental design via the integration of quantitative and qualitative approaches. Quantitative data were obtained through diastolic blood pressure and triglyceride levels, and questionnaires regarding perceived self-efficacy of healthy eating, while qualitative data were collected through focus group discussions and counseling.

Sample

Potential samples were randomly selected using a purposive sampling method from a community hospital, which were: diagnosed with controllable or uncontrollable hypertension and hyperlipidemia; 60 years of age or older; not previously involved in a health promotion program during the past 6 months; and willing to participate in the study. Individuals who appeared to have cognitive impairments and not able to continue the protocol or demonstrating an illness that would interfere with their participation were excluded from the

study. Elderly which volunteered and met the inclusion criteria were identified and asked to participate in the study.

A total of 66 elderly consented to participate in the study. The majority of them were: female ($n = 34$, 51.52%); Buddhists ($n = 47$, 71.21%). Half of elderly (50.00%) completed a primary school. The mean age of the elderly was 64.53 years (range = 60-78). The majority of elderly lived with their spouses and children ($n = 39$; 59.09%); and, had average incomes 12,080 baht per month (range = 5,000-15,000). The source of income was from a salary, children support and a monthly government payment. Most elderly complaint to perceive inadequate incomes ($n = 61$; 92.42%). In terms of health-related information, the majority of elderly chose a community hospital for treatment of their illnesses ($n = 59$; 89.39%). The body mass index (BMI) of elderly ranged from 24.28 to 32.14 kg/m² ($M = 23.86$ kg/m²). Most of children tended to be responsible for elder's food selection and preparation ($n = 57$; 86.36%).

Research Instruments

1. Demographic information sheet (DIS) was created by the researcher. The DIS was obtained information about gender, age, religion, educational level, occupation, marital status, living persons, and source of income.

2. Health related information sheet (HIS) created by the researcher. The HIS consisted of questions regarding BMI, source of health care services; and person responsible for selecting and preparing elderly' food.

3. The Perceived Self-efficacy of Healthy Eating Scale (SHE) was used to measure elderly' confidence in their ability to perform healthy eating activities. The researcher adapted the SHE from the research instrument of Nongyaow et al. (2011); consisted of 114 items in 3 dimensions related to food selection (36 items), food preparation (26 items), and food consumption (52 items). Examples of items were, "I can select quality fruits (fresh, good-color and no bruises)" "I can avoid using animal oils (pork or poultry) to cook" and "I can decrease eating salty and sweetened foods" Possible responses to the 114 items ranged from 1 = "never perform" to 5 = "routinely perform." Subscale scores were obtained by summing all items. The possible range of scores for each of the subscales was: 36 to 180 (food selection), 26 to 130 (food preparation), and 52 to 260 (food consumption). A total score for the entire scale which could range from 114 to 570 was obtained by summing the three subscale scores. The SHE was examined for clarity, language appropriateness, and content validity (Polit & Beck, 2006) by five experts in nutritional care of elderly. The item content validity index (CVI) was .97 (Nongyaow et al., 2011). The scale's internal consistency was tested, with 30 elderly similar to those in the study, and found to be .77.

4. Blood pressure was used to assess hypertension of each elder. Hypertension defined as an elevated blood pressure exceeding 90 mmHg of a diastolic pressure (PubMed Health, 2014). The researcher had asked permission to record elderly' blood pressure levels from a chart review of the community hospital.

5. Blood triglyceride was used to assess hyperlipidemia of each elder. Hyperlipidemia defined as an elevated blood lipid exceeding 150 mg/dl of triglyceride (PubMed Health, 2014). The researcher had asked permission to record elderly' blood triglyceride levels from a chart review of the community hospital.

The Motivational Program

The motivational program included:

1. Health education: The education session was scheduled at the 1st month of the program at the community hospital. The session included 30 minutes via providing elderly a video presentation about healthy eating, food choices and purchases, food preparation, and barriers to healthy eating. Each elder also received the healthy eating booklet developed by the researcher to increase their nutritional knowledge.

2. Focus group discussion: The group discussion was scheduled at the 2nd month of the program at the community hospital. The researcher set the date and time for the group sessions, and established six groups of 6-10 elderly each. The group activities included two hours of cooking healthy food and sharing experiences among group members. The researcher asked permission the elderly for tape-recording the information.

3. Eating monitoring: The eating monitoring was scheduled throughout the 6-month program. The elderly were required to take note about their eating behavior every day.

4. Healthy eating reminding: The researcher sent each elder a letter for reminding healthy eating at the 4th, 5th and 6th month of the program. The letters tell elderly to keep healthy eating continuously.

5. Individual counseling: Each elder received the 30-minute counseling with the researcher once a month during the 6-month program by phone. The counseling assisted the elderly to solve and recommend regarding to barriers to embracing healthy eating and adjusting their dietary plan. The researcher also called them if they needed additional concerns. The researcher also asked permission the elderly for tape-recording the information.

Data Collection

At the initial period of the study, the questionnaires of DIS, HIS, and SHE were administered to each elder.

During the 6-month study, the elderly participated in the motivational program. The researcher asked permission the elderly for tape-recording the information during focus group discussion and counseling.

At the 1st, 3rd, and 6th month of the study, the questionnaires of SHE, blood pressure and triglyceride levels of each elder were assessed.

Data Analysis

Descriptive statistics were used to assess the elderly' demographic characteristics and calculate their scores on the health related information. One-way repeated measure ANOVA was used to examine changes over time of the mean scores of the elderly' perceived self-efficacy of healthy eating, diastolic blood pressure and triglyceride levels. Content analysis was used to assess transcripts of the tape-recorded focus group discussion and counseling. The content of those materials were coded, word-by-word, in terms of their meaning. The codes then were compared and sorted, according to their differences and similarities, into sub-categories. Similar sub-categories then were sorted into categories. Finally, tentative categories were formulated into key themes (Graneheim & Lundman, 2004).

Results

Quantitative Finding

Table 1 showed elderly demonstrated significantly increased scores on perceived self-efficacy of healthy eating, while the diastolic blood pressure and blood triglyceride revealed significantly decreased at the 1st, 3rd, and 6th month of the motivational program.

Table 1

Perceived self-efficacy, blood pressure and triglyceride of healthy eating scores at the 1st, 3rd, and 6th month

Variables	Means			Statistics Values	p-values
	1 st month	3 rd month	6 th month		
Perceived self-efficacy					
Food selection	40.09	59.15	63.58	283.31 *	.00**
Food preparation	34.83	49.39	50.97	29.93 *	.00**
Food consumption	54.50	86.38	91.22	456.63 *	.00**
Diastolic blood pressure	101.31	90.12	80.19	-3.34 *	.00**
Blood triglyceride	153.39	142.12	128.63	-3.13 *	.00**

Note: * one-way repeated measure ANOVA

** $p < .01$

Qualitative Finding

All elderly expressed satisfaction with participating in the motivational program. During the focus group's activities, feelings, experiences and recommendations, related to managing healthy eating, were noted. As a result of the content analysis of data obtained from the program, three themes emerged: gained knowledge, perceived a sense of empowerment, and self-confidence.

1. Gained Knowledge: The knowledge gained from shared experiences, among elderly, appeared to enhance acceptance of healthy eating and understanding of the need for self-management. Barriers noted by elderly included: having limited education; being poor; and, having lack of support from adult children. Most elderly received more knowledge about the causes of hypertension and hyperlipidemia than before taking part in the program. Sharing experiences provided by others, with respect to managing healthy eating, made sense to elderly. A clarification derived from elderly within the same situations was easy to understand. An elder commented:

"I only finished sixth grade. It's pretty good to listen to others' stories related to hypertension management. I can apply this knowledge to better control my blood pressure level."

2. Perceived a Sense of Empowerment: A sense of empowerment, or an ability to make a decision, was found to occur as a result of elderly. Recommendations and information sharing among focus group members enhanced their sense of confidence in, managing their healthy eating. When the elderly got high blood pressure or triglyceride levels, they would

plan to eat healthy food more often than usual and limit eating high salt and fat foods. One elderly stated:

"I think about friend reminders that the healthy eating should be performed continuously. So I didn't eat much since my friend told me I had gained weight. I just ate a bit of my favorite foods. The group told me to keep strength of mind and not eat much, especially the salty and fatty foods."

3. Perceived a Sense of Self-Confidence: Social support, gained from friends' assistance, appeared to foster the elderly' self-confidence to manage their healthy eating. Some elderly thought having friends was simply a good thing because it fostered a sense of motivating. As a result of the program, elderly no longer felt alone in their struggle to manage their hypertension. This was reflected in one elder's comments:

"I'm not the only one with high blood pressure. My friends also have the same thing. We motivate one another to have self-confidence on limiting our eating of salty snacks. In the past, I also preferred eating fatty foods. I had a problem with my heart. Someone in the group advised me to limit consuming the high cholesterol foods. This time my heart problem improved."

Discussion and Conclusion

The results revealed the elderly who received the motivational program had significantly increased healthy food selection, preparation and consumption; at the 1st, 3rd, and 6th month. This finding is reliable with the prior research wherein health education, healthy eating monitoring, as well as individual counseling has been shown to be an effective program for promoting healthy eating among elderly (Pasuwan et al., 2004). The positive effects of the program likely were due to the use of well-designed multiple methods. The use of focus group discussion allowed the elderly to learn from each other and to appropriately adapt their eating behaviors. Similar to prior research, perceived self-efficacy derived from verbal persuasion and emotional support through demonstration of healthy food preparation and selection of others can improve healthy eating (Nongyaow et al., 2011; Siriagekarat & Tunsakul, 2000). Perceived social support from family members can effectively promote and maintain healthy eating among elderly (Neelapaichit et al., 2001; Wellman & Johnson, 2014; Wongpeng & Sillapa, 2004). Family members, in this study, prepared healthy food to their elderly. Individual counseling via telephone calls for the purpose of talking healthy food consumption and problem-solving provided the elderly with social support from the researcher.

Regarding mechanisms of positive changes in eating behavior among elderly, the elderly received a sense of perceived self-efficacy from participating in the motivational program. The knowledge gained from sharing experiences among elderly during focus group discussion was likely to fit with each elder's life condition. It enhanced understanding, belief and acceptance among the elderly. Social support from the mutual assistance of group peers had fostered more self-confidence among the elderly in managing their eating behavior in their day-to day lives. A sense of empowerment received from participating in the program played a role in motivation and fostered conformity among elderly toward better changes in eating behavior. Similar to the findings of De Coster and George (2005), learning from others

enhanced a sense of perceived self-efficacy. Emotional support from others also increases individuals' effort to deal with obstacles that confront them (Bandura, 1999). Thus, a sense of perceived self-efficacy derived from participating in the motivational program inspired the elderly to have better healthy eating behavior that control their blood pressure and triglyceride levels.

Limitations and Recommendations

The elderly were dwelling in rural community and they had family members assist them with respect to food selection, preparation, purchasing and consumption. Therefore, the findings can be generalized only to samples that have characteristics similar to them. Further studies with the program using a variety of educational methods should be conducted on elderly who live alone in urban community and have no assistance from their children.

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