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Factors associated with health behavior in food consumption among Buddhist monks in Trang province

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Abstract

This survey research aimed to examine the association of personal, knowledge and attitude factors with health behavior in food consumption among Buddhist monks in Trang province. Three hundred and one Buddhist monks were asked to complete self-administered questionnaires during November to December 2015. Descriptive statistics and Chi-square were used for data analysis. The results showed that most of the subjects aged between 21 and 40 years, had normal BMI and stayed in non-health promoting temples. They had no chronic disease, took two meals, morning and noon from food offered by people. They had high level of knowledge (11.87±2.31), good in attitude and health behavior in food consumption (3.80±0.39 and 2.86±0.36, respectively). Personal factors on chronic disease were statistically associated with health behavior in food consumption among Buddhist monks in health and non-health promoting temples. Buddhist monks who were in health and non-health promoting temples recognized food information by themselves and other people were statistically associated with health behavior in food consumption knowledge (p-value < 0.05). Knowledge and attitude were statistically associated with health behavior in food consumption among Buddhist monks (p-value < 0.01). These findings could be a guideline for developing practical programs to further promote Buddhist Monks' health behavior in food consumption.

Keyword: Buddhist monks, health behavior, food consumption

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1. Introduction

Buddhist monks had increased health problems including non-communicable diseases such as high cholesterol, hypertension, diabetes mellitus, heart disease and cardiovascular disease. When Buddhist Monks had any illness, 71,037 Buddhist monks went to Priest Hospital in 2013[1], 5,090 were diabetic (7.17%), 5,472 had hypertension (7.70%), 7,315 had high cholesterol (10.30%). The un-nutritious food consumption behavior mainly caused all chronic diseases mentioned. Buddhist monks were not able to select any food so that people decides for their food choice in deliciousness.

Temples were the center of people's heart and soul in the community. Health promoting temples defined as temples were organized for health promotion and environmental health development of people and community, whereas non-health promoting temples were an opposite explanation [2]. They were the project by Department of Health, Ministry of Public Health. The health promoting temples project aimed to improve physical and mental health in order to promote both monks' physical and mental health that consisted of cleanness, peacefulness, healthfulness, spirit and environment development. The roles of Buddhist monks were self-caring and health promoting of themselves, the cooperated leaders of people in the community regarding the government policy that was reducing risk, illness and complicated diseases [1].

The three strategies of health promoting and self-caring were conduction, knowledge; capability; and skill enlargement, and networking. Moreover, there were 12 health promoting temples in Trang province and 143 non-health promoting temples [2, 3]. Promoting health behavior in Buddhist monks' food consumption could decrease their health problems. However, there was not the clear guideline in monks' health promotion that showed the monks had less chance to access health service. Therefore, not only they should be supported in health promotion and self-care but also temples could be chosen for the center of community health and proper environment.

Buddhist monks' health behavior in food consumption was promoted to change the behavioral health problems and to properly practice health promotion behavior. This strategy could make Buddhist monks very healthy. Therefore, this research used knowledge, attitude and practice (KAP) theory for the conceptual framework [4 - 7].

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The purpose of this study was therefore to develop bismuth barium borate glasses doped with Dy^{3+} ions. The study also focused on the fabrication process, material characterizations and analyses. The physical,

Rationale for this research was that Buddhist monks currently are having the serious illness. One of many factors was from their food consumption behavior because they were not able to select any food. Thus, this research focused on health behavior in food consumption among Buddhist monks in health promoting and non-health promoting temples, Trang province. The findings were used for the basic information to encourage their promoting health behavior with good health and without chronic diseases.

2. Materials and methods

Objectives

This survey research aimed to examine the association among personal, knowledge and attitude factors, and health behavior in food consumption among Buddhist monks in health promoting and non-health promoting temples, Trang Province.

Population and Sampling group

The population in this research was Buddhist monks who stayed in temples at Trang province according to the 2015 register of Trang Provincial Office of Buddhism [8]. 1,212 monks were in 155 temples [9]. The participants of Buddhist monks were 301, who were 109 of health promoting temples by purposive sampling and 192 of non-health promoting temples by multistage random sampling [10]. Inclusion criteria were older and equal 20-year old monks, one Buddhist who lent and lived in health promoting temples and non-health promoting temples according to the 2015 register of Trang Provincial Office of Buddhism.

In order to meet the requirements of the Data Protection Act of Sirindhorn College of Public Health, Trang (033/2558), details of monks' names and addresses were not recorded. Buddhist monks were assigned a unique study number so that the individual part of their store records could be linked while ensuring data confidentiality.

Instrument

The questionnaire was designed for this study and used to survey the association between factors and health behavior in food consumption among Buddhist monks in health promoting and non-health promoting temples, Trang Province [11, 12]. Content validity was examined by three experts in nutrition, research statistics and Buddhism (IOC = 0.98).

The questionnaire was tried out for reliability with 30 similar characteristics of the study population. Cronbach's Alpha Coefficient of attitude and behavior was 0.80. Difficulty and Discrimination of knowledge by using Kuder-Richardson (KR) were 0.75.

Data collection

Data were collected from November to December 2015.Before collecting data, participants were directed about objectives and methods for taking part in this research. They could refuse if they did not allow. However, anyone who allowed should sign the inform consent. All data participants provided were kept completely confidential and used only for statistical purposes and cannot be used for any other purpose. Additionally, the ethicalproval was obtained from the Data Protection Act of Sirindhorn College of Public Health, Trang.

Data analysis

Data were analyzed by mean, standard deviation and chi-square.

3. Results and discussion

General information

Most samples aged 21-40 years, had normal BMI, stayed in non-health promoting temples, had not chronic disease, received food offering both morning and noon and were recognized food information by themselves and others – see Table 1.

Knowledge, attitude and behavior in food consumption

Most samples had high level of knowledge (11.87±2.31) and good level of attitude and behavior in food consumption (3.80±0.39 and2.86±0.36, respectively) – see Table 2.

Association among personal, knowledge, attitude and behavior factors in food consumption

Personal factors on chronic disease were statistically associated health behavior in food consumption among Buddhist monks in non-health promoting and both, and recognizing food information by themselves and others were statistically associated health behavior in food consumption knowledge among Buddhist Monks in health and non-health promoting temples (p-value < 0.05). Knowledge and attitude factors were statistically associated health behavior in food consumption among Buddhist monks in both health and non-health promoting temples (p-value < 0.01) – see Table 3.

Most samples who had chronic disease were hypertension, which was similar to the studies of Pannathorn Chuchvarat [13], and Supaluck Thontham -sathit *et al.*[14] These were found that a quarter of Buddhist monks had hypertension as well as Ajchariya Pongnumkul *et al.*[15] Buddhist monks' knowledge in both health and non-health promoting temples was high, which was similar to the study of Ajchariya Pongnumkul *et al.*[15] This was found that knowledge toward food consumption behavior was more likely to be high.

Table 1 General information (n=301)

General information	Buddhist monksin temples (%)		Total (n=301)
	Health promoting (n=109)	Non-health promoting (n=192)	
Age(Years)			
- 20-40	67 (61.5)	83 (43.2)	150 (49.8)
- 41-60	32 (29.4)	64 (33.3)	96 (31.9)
- >60	10 (9.2)	45 (23.4)	55 (18.3)
$\bar{x}$ ± S.D.	38.42±15.34	46.50±17.32	43.57±17.05
BMI (kg/m^2)			
- < 18.5	15 (13.8)	17 (8.9)	32 (10.6)
- 18.5-22.9	51 (46.8)	98 (51.0)	149 (49.9)
- ≥ 23.0	43 (39.4)	77 (40.1)	120 (39.9)
$\bar{x}$ ± S.D.	27.37±38.17	23.67±12.79	25.01±25.13
Temples			
- Health promoting temples	109 (100.0)	0 (0.0)	109 (36.2)
- Non-health promoting temples	0 (0.0)	192 (100.0)	192 (63.8)
Monks' chronic diseases			
- No	89 (81.7)	125 (65.1)	214 (71.1)
- Yes*	20 (18.3)	67 (34.9)	87 (28.0)
Diabetes Mellitus	3 (2.8)	18 (9.4)	21 (7.0)
Gout	2 (1.8)	5 (2.6)	7 (2.3)
Hypertension	4 (3.7)	36 (18.8)	40 (13.3)
High Cholesterol	2 (1.8)	28 (14.6)	30 (10.0)
Heart and Cardiovascular disease	3 (2.8)	7 (3.6)	10 (3.3)
Asthma	4 (3.7)	7 (3.6)	11 (3.7)
Kidney Disease	2 (1.8)	3 (1.6)	5 (1.7)
Cataract	4 (3.7)	10 (5.2)	14 (4.7)
Others	4 (3.7)	13 (6.8)	17 (5.6)
Sources of food			
Received food offering both morning and noon	109 (100.0)	192 (100.0)	301 (100.0)
Sources of food information **			
- By myself and others	61 (56.0)	93 (48.4)	154 (51.2)
- By myself	44 (40.4)	75 (39.1)	119 (39.5)
Books	69 (63.3)	74 (38.5)	143 (47.5)
Internet	55 (50.5)	72 (37.5)	127 (42.2)
Television	64 (58.7)	117 (60.9)	181 (60.1)
Newspaper	41 (37.6)	38 (19.8)	79 (26.2)
Sources of food information **			
- By others	4 (3.7)	24 (12.5)	28 (9.3)
Health officials	45 (41.3)	60 (31.3)	105 (34.9)
Relative/Cousins	29 (26.6)	51 (26.6)	80 (26.6)
People offered food.	33 (30.3)	69 (35.9)	102 (33.9)
Others such as other monks.	4 (3.7)	3 (1.6)	7 (2.3)

*Some monks could have multiple chronic diseases.
**Some monks could receive information from multiple sources.

Buddhist monks' attitude in both health and non-health promoting temples was good, which was similar to the study of Chumphon Tonwattanasenee and Luyong Veranawin [16]. This study was found that psychological factor in belief affected to food consumption behavior of monks.

Buddhist monks' food consumption behavior in both health and non-health promoting temples was good, which was similar to the study of Sakuntala Sae-tiew *et al.* [17] and Suthipot Suthi-waja-no [18]. These findings were the highest in health behavior of food consumption.

Personal factor on chronic disease were statistically associated with health behavior in food consumption (p-value < 0.05). This was similar to Munthana Hirunpradith study,[19] which was found that monks' illness or chronic diseases were associated with nutrition. Additionally, recognizing

Table 2 Level of Knowledge, attitude and behavior in food consumption of health promoting temples and non-health promoting temples (n=301)

Level	The average score of Buddhist monks in food consumption ($\bar{x}$ ±S.D)		
	Health promoting temples (n=109)	Non-health promoting temples (n=192)	Total (n=301)
Knowledge: High (≥12 Qs)	12.12±2.12	11.73±2.41	11.87±2.31
Attitude: Good (3.67–5.00)	3.78±0.39	3.80±0.40	3.80±0.39
Behavior: Good (2.51–4.00)	2.86±0.35	2.89±0.37	2.86±0.36

Table 3 Association among personal, knowledge, attitude and behavior factors in food consumption of health promoting temples and non-health promoting temples (n=301)

Factors in monks' food consumption	Health promoting temples (n=109)		Non-health promoting temples (n=192)		Total (n=301)	
	χ^2	*p*-value	χ^2	*p*-value	χ^2	*p*-value
Personal factor						
- Chronic diseases	0.41	0.51	5.15	0.02*	5.79	0.01*
- Recognizing food information	0.98	0.02*	5.21	0.001*	8.26	0.01*
Knowledge factor	10.05	0.001**	37.98	0.001**	32.29	0.001**
Attitude factor	13.19	0.001**	70.17	0.001**	76.99	0.001**

**p*-value<0.05 considered statistically significant.
***p*-value<0.01 considered statistically significant.

food information among Buddhist monks in non-health promoting and both, and recognizing information about food or health was associated with self-care behavior. This was similar to Mahamin-naphat Khumchanam study, [20] which was found that when monks received any information, they were liable to take care of health behavior in food consumption and could make a decision with the proper food.

Knowledge factor in health promoting temples, non-health promoting temples and both were statistically associated health behavior in food consumption (*p*-value < 0.01). This was similar to Ajchariya Pongnumkul *et al*. [7] which were found that knowledge toward food consumption behavior was positively associated with consumption behavior.

Attitude factor in health promoting temples, non-health promoting temples and both were statistically associated health behavior in food consumption (*p*-value < 0.01). This was similar to Chumphon Tonwattanasenee and Luyong Veranawin, [8] which was found that psychological factor in belief was associated with food consumption behavior.

4. Conclusion

To conclude, personal factors on chronic disease, knowledge and attitude were statistically associated with health behavior in food consumption among Buddhist monks in health and non-health promoting temples. These findings could be the primary data for government officials who planed about food consumption behavior among Buddhist monks, and a guideline for developing practical programs to further promote Buddhist Monks' health behavior in food consumption. Likewise, Bureau of Health Promotion, Department of Health and Office of Public Health, Trang could plan for the strategic policy in order to increasingly encourage health promoting temples.

5. Recommendations

Further study is warranted in order to determine other factors such as motivation or religious denomination, develop the experimental study by knowledge; attitude; and practice program, and compare health promoting and non-health promoting temples in self-care, exercise and food sanitation.

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