Proceedings of the international nursing conference on Chronic Disease Management Pekalongan, Indonesia, August, 7-8, 2019
Paper No. INC2DM

The Health Promotion Guidelines to Control Monk's Blood Pressure in Nong Khai Province

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Abstract

This research aimed to study the health promotion guidelines to control monks' blood pressure in Nong Khai Province. This research had 3 phases and used research development model. The target groups included 4,183 monks, 31 persons involved and 9 experts in Nong Khai province. **Result** Monk health examination implemented in all 9 districts of Nong Khai province for 4,183 monks of which 3,741(89.43%) monks participated. One thousand six hundred and seventy-five (1,675) (44.77%) monks had normal systolic pressure, risk condition 1,298 (34.70%) monks, and normal diastolic blood pressure 2,541 (67.92%) monks. In risk condition 587 monks (15.69%), hypertension conditions 768 monks (20.53%, 95% CI = 18.73 - 21.27). The health promotion guidelines for controlling blood pressure for monks were 6 elements (21 activities) including belly reduction, blood sugar control, medication, continuous blood pressure measurement, health literacy and protection & rest, and the 9 factors for successful operation were clarity of policy, all sector corporation, mutual understanding, integration of operations, administrator emphasizing, network and coordination, monitoring and evaluation, continuity in operation, faith and confidence in merit**.**

Keywords: hypertension, monk

Introduction

The monks are a group of people who follow Buddha teachings and teach others to follow Him. It is considered as the group of people that is important to the Buddhism institution. For monks, conquering sex is necessary in following and teaching Buddhism which makes them different from ordinary people. From the past, it was found that monks were less likely to have health services access and lack of health promotion because of having to follow daily ministry, facing various stress problems from people. In addition, the health promotion behaviors of monks were at a low level like consumption from alms, lack of annual health examination as well as restrictions on exercising or doing outdoor sport activities for monks etc. *(Phra Thammakittiwong Thongdee Suratocho Rachabandit, 2005).* In addition, monks still have risky behaviors that cause diseases such as smoking, drinking coffee, energy drinks and lack of proper exercise. If they cannot resolve, they will become a patient. In 2011, the study of nutritional problems in monks showed; obesity 48 %, diabetes 10 %, high cholesterol 42 % and hypertension 23 % *(Office of Health Promotion Foundation, 2017)* In 2015, 5 top symptoms found on monks admitted to monk's hospital were: metabolic diseases, hyperlipidemia, hypertension, diabetes, kidney failure and osteoarthritis caused mainly from food-borne disease because monks could not choose food that the laymen offer. At the same time, there are research results in the project to develop the health care of monks and novices by conducting a survey of monks' health in Bangkok's 50 districts, from April to May 2016, surveying 200 temples, 1,479 monks. The initial interesting data is that the number of fat problems is as high as 60 % while sugar is higher than 50 %. Importantly, the trend of monks who are sick with paralysis, and kidney disease are increasing every year as well. Therefore, we wanted the society to be aware of the food that would be offered to monks *(Bureau of Risk Communication and Health Behavior Development, 2016)*

In 2016, Nong Khai Province has set up and conducted health check project for monks to support and promote the five precepts: screening

monks (Mahanikai sect) between 12 September to 7 October 2016, in 9 districts. The results exposed that the measurement of waist circumference of 2,934 monks found that most of them had a normal waist circumference 2,530 (86.21%) and belly 404 (13.79%), blood sugar test 2,857, sugar normal levels 2,699 (94.47%) 94 new suspected cases, 3.29 % and 64 risk groups (2.24 %) respectively. Out of 2,864 monks, blood pressure level measurement shows most of them with normal blood pressure level 2,078 (72.56 %), risk groups 524 (18.29 %) and 262 new suspected cases (9.15 %). From the operation in 2016, there have been the screening and promotion of specific health with Mahanikai sect monks and presented that the screening was not comprehensive in Dhammayut sect. Therefore, we must carry out the project continuously to consent the monks to take care of screening and promoting continuous health appropriately and more wide-ranging. (*Nong Khai Provincial Public Health Office, 2017*)

From the health problems of the monks mentioned above and according to the spirit of the statute of the Buddhist monk's health in 2017, the research team is interested in studying to find factors that are related to blood pressure in the monks and Health Promotion Guidelines that Controls Blood Pressure for Monks in Nong Khai Province. It is expected that the results will be a guideline and information for use in the recommendation for relevant agencies as well as providing information to support the health promotion for monks effectively. The resulting in the promotion of the health for monks at Nong Khai Province affected to have good health in order to inherit and sustain Buddhism, a group of people that will be a good example of healthy people for others.

Research Question:

What is the effectiveness of Health promotion guidelines for controlling blood pressure in monks in Nong Khai Province?

Research Objectives:

1. To study the relationship between factors and blood pressure in monks in Nong Khai Province.
2. To create health promotion guidelines for controlling blood pressure for monks in Nong Khai Province.
3. To assess and confirm health promotion guidelines for controlling blood pressure for monks in Nong Khai Province.

Research Scope:

1. Research Area: All 9 districts of Nong Khai ernaProvince
2. Research Variables:

- Independent Variables: age, year in monk, education level, dharma education level, smoking, sleeping/day, congenital disease, regular medication, annual health examination, health insurance, appropriate body exercise for the monkhood, height, weight, body mass index, waist circumference, FBS (NPO) and FBS (aft_meal)
- Dependent Variables: Blood pressure

3. Population and Target group

3.1 Population: 4,183 monks in Nong Khai Province.

3.2 The group of people who are involved: 31staff from various agencies involved in the practice of health promotion.

3.3 Health promotion expertise: 9 experts

4. Research Period**:** October 2018 to March 2019

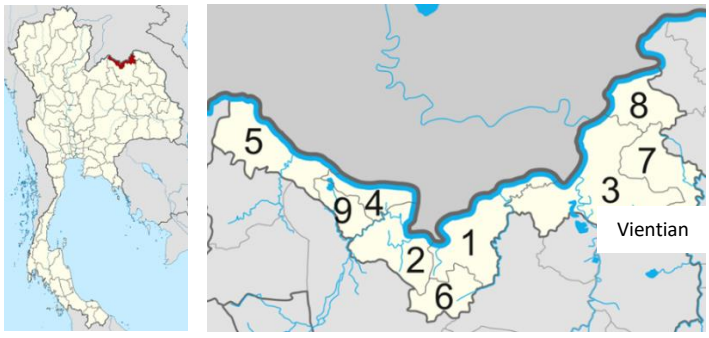

Figure 1: Map of Nong Khai Province, Thailand. : https://th.wikipedia.org/wiki/19 July 2019.

Research Methodology:

1. Research Conducting: 3 phases

1.1 Phase 1: to study the relationship between factors and monk's blood pressure in Nong Khai Province.
1.2 Phase 2: to study creating health promotion guidelines to control monk's blood pressure in Nong Khai Province.
1.3 Phase 3: to study an assessment and confirmation of health promotion guidelines to control monk's blood pressure in Nong Khai Province.
2. Research instruments:
- Monk health screening form of Nong Khai Province
- Confirmation form by an expertise
- Medical instruments
- Evaluating content validity using IOC (Index of item objective congruence) value greater than 0.5 and evaluating the reliability using Cronbrach's Alpha Coefficient to determine its reliability which is 0.974.
3. Data Collection and Data Analysis
3.1 The researcher collected data using monk health screening from monks, and the target group for the operation in the activities as planned.
3.2 The researcher analyzed the data using computer program; descriptive statistics using frequency: percentage, standard deviation and inferential statistics: Pearson Correlation Coefficients and Exploratory Factor Analysis (EFA).

Results:

Phase 1: To study the relationship between factors and monk's blood pressure in Nong Khai Province

The monks' health examination implemented in all 9 districts of Nong Khai province receiving 3,741 monks (89.43%) out of 4,183 monks in total. The monks had 1,675 normal systolic pressure (44.77%), risk condition 1,298 (34.70%), and normal diastolic blood pressure 2,541 (67.92%), in risk condition 587 (15.69%), hypertension conditions 768 (20.53%). The coefficients Correlation of Pearson analysis showed that the early variables that were related to blood pressure levels are given in table 1.

Table 1: Factors Related to Blood Pressure Level in Monks

Relationship of variables with Blood Pressure		
Variables	**Pearson Correlation Coefficients (r)**	**p-value**
Age	0.333	<0.001
Year in monk	0.177	<0.001
Education	-0.147	<0.001
Smoking	0.11	0.01
Sleeping/day	-0.42	0.01
Congenital disease	-0.166	<0.001
Regular medication	-0.169	<0.001
Annual health examination	0.061	<0.001
Weight	0.294	<0.001
Height	0.081	<0.001
Body mass index	0.308	<0.001
Waist circumference	0.294	<0.001
FBS(NPO)	0.231	<0.001
FBS(aft_meal)	0.231	<0.001

Analyzing the exploratory factor, the components of each element from the analysis of EFA values**;** Kaiser-Meyer-Olkin Measure of Sampling Adequacy: KMO = 0.601, Approx. Chi-Square = 33097.33 df= 192 p-value < 0.001, are given in table 2.

Table 2: The analysis of EFA for components grouping.

Component Matrix						
Variable	**Component**					
	1	2	3	4	5	6
Weight	.957					
Body mass index	.896					
Waist circumference	.861					
FBS(NPO)		.968				
FBS(aft_meal)		.968				
Regular medication			.845			
Congenital disease			.830			
BPsys				.820		
BPdias				.818		
Education					.719	
Year in monk					.669	

Component Matrix						
Variable	**Component**					
	1	2	3	4	5	6
Smoking						.723
Sleeping/day						-.642

Component 1 Belly Reduction: Weight, Body mass index, Waist circumference
Component 2 Blood Sugar Control: FBS (NPO), FBS (aft_meal)
Component 3 Medication: Regular medication, Congenital disease
Component 4 Blood Pressure Measurement: BPsys, BPdias
Component 5 Health literacy: Education, Year in monk
Component 6 Protection & Rest: Smoking, Sleeping/day

Phase 2: To Study Creating Health Promotion Guidelines to Control Monk's Blood Pressure in Nong Khai Province

This phase of research was a qualitative study to create guidelines for health promotion in order to control blood pressure for monks in Nong Khai Province by taking the results of the research in Phase 1as a database in the study by organizing the workshop (Focus), the concerned group, to brainstorm for consultation (Brainstorming) to form effective health promotion for monks with 3 1 experts and persons involved are given in table 3.

Table 3: Health promotion guidelines.

Component	Health Promotion Guidelines Controlling Blood Pressure
Component 1 Belly Reduction	- Activities to reduce the belly not to exceed 90 cm - Waist circumference - Exercise activities that are appropriate for the monk - Healthy food for monks - DASH Eating food - Weighing-machine at temple - Continuous body mass index assessment
Component 2 Blood Sugar Control	- Blood sugar control: level FBS (NPO) <100 & level FBS (aft_meal) <180 - Reducing sugar or drinking that contain sugar - Reducing the amount of sticky rice.
Component 3 Medication	- Continuous treatment - Annual health examination
Component 4 Blood Pressure Measurement	- Continuous blood pressure measurement - Providing blood pressure monitors at temple - Reduce eating salty, reduce eating spicy - No smoking - Reflection, Confirmation of results and Referrals for effective treatment
Component 5 Health literacy	- to give knowledge of health promotion for monk - Training for volunteer health promotion at the temple
Component 6 Protection & Rest:	- No smoking - Sleeping > 6 hr./day

Phase 3: To study an assessment and Confirmation of Health Promotion Guidelines to Control Monk's Blood Pressure in Nong Khai Province

This phase is a qualitative study to create a model of promotion taking the results of the study in Phase 2 on the health promotion for monks context as a database in workshop by 9 experts (Expertise Meeting) to evaluate and confirm the guidelines for health promotion that controls blood pressure for monks in Nong Khai Province which the experts have stood for such guidelines that was appropriate to confirm the accuracy with content validity by using the IOC (Index of item objective congruence), which must be greater than 0.5 confirming the health promotion guidelines from phase 2 with 5 components and 17 activities. The After-Action Review between researchers, 9 experts and 31 experts and persons involved have proposed the success factors of health promotion guidelines to control blood pressure for monks in Nong Khai Province includes:
1. Clarity of policy
2. All Sector collaboration
3. Mutual understanding

4. Integration of operations
5. Administrator emphasizing
6. Network and coordination
7. Monitoring and evaluation
8. Continuity in operation
9. Faith and confidence in merit

Conclusion

Monk health examination implemented in all 9 districts of Nong Khai province had a total of 4,183 monks, received 3,741 monks (89.43%), monks had normal systolic 1,675 (44.77%), 1,298 risk conditions (34.70%), and 2,541 normal diastolic blood pressure 2541 (67.92%), risk conditions 587 (15.69%), hypertension 768 (20.53%) (95% CI = 18.73 - 21.27), accorded with *Mintra Sararak (2017)* research on prevalence and factors related to chronic illness of monks in Warinchamrab district, Ubon Ratchathani. The results of the study revealed that the prevalence of chronic illnesses of monks with illness of 32 monks accounted for 14.68 %. It was found that monks were ill with hypertension 65.63 % (95% CI = 48.23 - 83.02), followed by high blood fat disease 18.75% (95% CI = 4.45 - 33.05).

The study of factors related to blood pressure levels showed in table 1 accorded with *Mintra Sararak (2017)* founded that the body mass index factors, how to treat when have sick, health examination and frequency of health examination have in relationship and chronic illness of monks with statistically significant (P = 0.014, P <0.001, P <0.001 and P = 0.015 respectively) and *Phra Thamma Kittiwongthongdee Surtecho (2005)* founded: the temple was part of the community of monks, mostly are elderly monks. There were chronic diseases, smoking, energy drinks. When they were sick, they would buy medicine themselves. The food they got from alms are starchy foods, sugar, coconut milk and fatty food mostly.

Health promotion guidelines controlling blood pressure for monks in Nong Khai province had 6 elements namely: belly reduction, blood sugar control, medication, continuous blood pressure measurement, health literacy and protection & rest which are accorded with *Deja Buathet (2012)* offering a holistic health care model for monks consisting of encouraging the temple to be the center of community development establishing plans to promote the health of the monks and prepared medicine cabinets at the temple, check the monk's health 1-2 times a year, prevent disease control in the temple. The integrated working group establishing monk's health care fund, developing public health volunteers at temples. There were public health volunteers at the temple, safe environment management, participation of temples, houses, schools and local administrative organizations, promoting the nutritious food that was beneficial for monk's health. Developing a temple to be a health promotion temple in accordance with the research of *Panathorn Chatchawarat and Samanjit Piromruen (2014)* presents the development of health promotion model, monks activities should promote monks health in 5 areas namely: food consumption, exercise, stress management, Health responsibility and overall health care in which each side consists of activities of monks, equipment and places, and those responsible for health promotion and monitoring with formal meetings had a critique of the form that is created. It was found that the monk health promotion model was feasible for use and did not contrary to the ethics of monks, research studies of *Phra Kittianyametee (Somkiat Ramanwong) and the other (2018*). The guidelines for promoting holistic health care of monks in Lopburi province for 6 reasons: 1) having a plan and health care team for monks 2) having an increase Monks' registration and the creation of monks' database system in the area 3) Public health agencies should set guidelines for promoting holistic health care of monks. 4) Public health officers and village health volunteer in the communities in which the temple is located, monitor patients after receiving treatment and then return to restore health. 5) Accelerate self-change behavior in

promoting holistic health care of monks. 6) Clearly define roles and guidelines for promoting holistic health care of agencies and network partners in the Lopburi area.

Factors of success of health promotion for monks in controlling blood pressure for monks in Nong Khai Province were clarity of policy, all sector corporation, mutual understanding, integration of operations, administrator emphasizing, network and coordination, monitoring and evaluation, continuity in operation, faith and confidence in merit which has similarities with research of *Rochini Upra and Taksika Chatcharat (2016)*. Research on chronic diseases, effects on health, monks and guidelines for health promotion of monks with appropriate form of health promotion for monks. Therefore, they should come from participation of all parties and in accordance with faith beliefs and ways of life of the community. Promoting appropriate health for the monks must be consistent with the Buddhist discipline and is accepted by the monk organization to permit monks to have suitable health behaviors and the study of *Phrakhru Suwattanapattanabandit (2014*) proposed the guidelines for health care for monks in 4 areas: promotion, prevention, treatment and rehabilitation. All in the principle of holistic health care and the role of network partners in the operation. There was a result of the implementation of various health service systems in accordance with the context of the monks solving the problems in the lack and needs of monks and *Punnathorn Chachawarat and Samanjit Piromroen (2014)* presenting the development of the health promotion model, the monks are activities that endorse the health of the monks in 5 aspects of overall health care in which consists of activities of monks, equipment and places, and those responsible for health promotion and monitoring with formal meetings has a critique of the form that is created. It was found that the monk health promotion model was feasible for use and did not contrary to the ethics of monks.

Acknowledgments:

The authors are grateful to all contributors to this research especially the monks who participated in this study. The author would like to thank Mahanikai sect and Dhammayut sect Ecclesiastical, Nong Khai Province Governor, Province Health and Kalasin University for their support in conducting this research.

Suggestion

The next research will be on studying the effectiveness, results or impact of the pattern on the health of monks.

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