

Effects of Community Health Nursing Process on Health Promotion Behaviors in Adult and Elderly Based on the Primary Health Care Unit in One Thai Community

Pantip Sangprasert * and Saowaluk Khakhong

Division of Community Health Nursing, Faculty of Nursing, Thammasat University, Rangsit Campus, Khlong Nueng, Khlong Luang, Pathum Thani, 12120 Thailand

Pattoon Damri and Somsong Turien

Tumbun Kongsai Health Promotion Hospital Pathumthani Province

Abstract

A quasi-experimental study design aimed at exploring the effects of community the health nursing process based on PCU service application for promoting healthy behavior among 29 participants who are over 35 years old. The participants have been divided into a control and an experimental group.

The experimental group participated in five CHN processes: assessment, analysis of problems, planning, implementation and evaluations, family health education strategies with home visits within the context of PCU service.

The instrumentation employed comprised a health promotion behaviors questionnaire, observations during in-home visits and focus-group discussion records. The data was analyzed by ANCOVA and content analysis.

Following the participation process, the quantitative data was divided into six aspects of health promotion behaviors. The data showed a statistically significant difference between the groups whereby the experimental group had higher mean scores than the control group in two aspects 1) health responsibility at $p = .025$ and 2) personal relationships at $p = .009$ however, the exercise scores were lower than the control group at $p = .039$. In addition, the health problems and health care needs have been analyzed and the policies developed within the scope of PCU service.

Conclusion: The community health nursing process should be useful for health teams to promote health behaviors in adult and the elderly groups based on primary healthcare units.

Keywords: community health nursing process; adult and elderly; health promotion behaviors; primary healthcare unit.

1. Introduction

Today's rapidly changing society and risky lifestyles often lead to chronic illness, with the top four causes of death in Thailand and the world being hypertension, cardio-cerebrovascular disease and diabetes mellitus, especially people over 35 years and elderly. [1, 2, 3]. Health promotion is rooted in the desire to well-being, actualize human health potential, protect people from chronic illnesses, detect diseases early, maintain functioning within the constraints of illness in order to a patient's overall sense of well-being. Pender (2006) that health promotion can be motivated by activities enhancing people's physical, mental and emotional health such as the community health nursing process. The CHN process allows a nurse or healthcare teams to intervene and construct a plan accordingly [4]. This is especially important in the adult and elderly population since they are at a critical time in their life independent healthcare decisions.

The CHN process includes the steps of promoting positive attitudes and perceptions towards the goal of healthy behaviors and desirable feelings in individuals as a result of their participation. The steps shown in the diagram below can bring about greater longevity and can be applicable in many situations across the lifespan [5, 6] prevention, rehabilitation a quality of life in a community environment [7, 8, 9].

The primary health care unit (PCU) is the most frequently used and accessible welfare service for patients in the community. Thus, combination of the CHN process and the services of a PCU can help develop health promotion behaviors for adults and the elderly.

2. The research objectives were to examine the effects of the CHN process for promoting health behaviors in adults and the elderly based on PCU service

The specific objectives

2.1 To find difference in health promotion behaviors between the experimental group and control group before and after the experiment was done.

2.2 To analyze the health problems and health care needs of adults and the elderly within the context of PCU service.

Hypothesis: There will differences between the experiment group and the control group after the experiment.

3. Methodology

Permission was obtained to conduct the study after the protocol and informed consent were approved by the Research Ethics Committee (No.NSTU008/2010), Next, the objectives and the patients' rights regarding protection were developed before any research-related procedures were undertaken.

The population consisted of males and females over 35 years of age and living in Tambon Kongsai, Pathumthani Province.

The sample group was selected a proportion of 1:4 from sixteen villages and four villages were divided into a control (moo 14, 16) and an experimental group (moo 11, 12), the sample lived in the family's a chronic illness, or risking aged need health promotion. A sample size of 17 in each group will have 80% power to detect a difference in means of 3.0 assuming a 0.05 two-sided significance level [11] [12].

The instrumentation

1. Intervention activity comprised the participation in five processes of CHN shown in Fig 1 and a manual on health promotion were tested by specialists.

2. Data collection instruments:

2.1 Questions the patients' general personal such as gender, age, educational level, occupation, income, chronic illness, health status and perceived stress.

2.2 Questionnaires about HPB [13] covering six aspects: interpersonal relationships, physical activity or exercise, spiritual development or

intelligence, responsibility for health, stress management and good nutrition; positive behaviors (36 items) were rated on four-level rating scales; never sometime frequency and always tested with the reliability coefficient of .91.

2.3 Observational records on home visits and focus group discussion about health problems and needs with regard to the PCU's services.

3. Instruments for physical health assessment were medical equipment, all calibrated before use, with the same devices used throughout the entire study.

Study Design

The quasi-experimental research was carried out on subjects in the experimental and control groups. The experimental group participated in the CHN processes and was home visited over an eight-week period as follows:

X0 signifies the CHN process has not started yet.

O1 signifies the acceptance of applications and the screening process.

O2 and O3 signify the second and third data collection: The 1st round of health promotion behaviors and collection of questionnaires in O2 and O3.

X1 signifies the 1st stage of implementation of the 5 processes in CHN (begin in week 4):

Process 1 Assessment Health and Environment (AHE) survey aimed at searching for the health problems and needs of health care based on PCU service within the context of the community environment. These were implemented by community leaders and healthcare teams. This step of implementation took 4 weeks.

Process 2 Analysis and Diagnosis of Problems (ADP) aimed at analyzing problems linked to negative environmental factors could cause severe health issues at the village were implemented by community leaders, healthcare volunteers, and PCU health care teams. The criteria were divided into four categories: problem-size, problem-

severity, difficulty/ease of resolution and community concern. Then, the problems were ranked in order to develop health project plans, with citizens needing to approve the dates and times of participation. In addition, the problems in PCU services were analyzed by brainstorming processes.

This step of implementation took 2 hours.

Process 3 Planning (P) aimed at purpose, nursing activities and evaluation criteria. The prioritize of health problems was addressed by the health team and focus group discussion to develop practical guidelines primary concern was the promotion of family health services and community planning utilizing Thai indigenous wisdom and available resources. Next, the plans were summarized by the health team and roles and responsibilities were defined to enable management to work to improve health promotion. This implementation step took 2.5 hours.

X 2 signifies the 2nd stage of implementation (duration of 8 weeks):

Process 4 Implementation (I) aimed at developing health promoting behaviors in adults and the elderly as well as better adaptation to living in their environment the health team's educational strategies in the form of demonstrations, counseling, campaigns and exhibitions. In addition, focus group discussion gave participants opportunity to exchange experiences and ideas on behavior promotion and disease prevention, and on how to resolve the problems and barriers confronting them and their families. Furthermore, the PCU health teams developed a service system e.g., queuing and making appointments as well as improving promoting traditional health knowledge. Moreover, the weekly home visits (q ↑ 1 wk) with a duration of 40 minutes per dealt with the complexity of the health problems telephone consultations.

X3 signifies the 3rd stage of evaluation (ended in week 12):

Process 5 Evaluation (E) aimed at resolving criteria and other impacts following the development plan based on home visit records, the community project, family and the PCU services which were interpreted to form policies by focus group discussions. Then, the policies were approved by the hospital's PCU network. This implementation step took 3 hours.

Control Group: The control group had normal lifestyles throughout the study and were given a consultation similar to the experimental group at the end of the project.

4. Results

The demographic data for the 15 experiment and the 14 control participants is shown in Table 1. The comparison between groups shows a statistically significant difference, whereby the experimental group had higher mean scores than the control group in two aspects 1) health responsibility at $p = .025$ and 2) personal relationships at $p = .009$ however, their exercise scores were lower than the control group at $p = .039$. In addition, the total increased scores of six aspects of behaviors in the experiment group had higher mean scores than control group and it was of no statistically significant difference at $p < .05$ as shown in Table 2.

The analysis of the health problems and needs in adults and the elderly within the context of PCU service in process 1 (AHE) and process 2 (ADP), revealed that the individuals and the families had a general lack of awareness about the complications of disease and treatment because of habits and preferences. Other negative factors included food consumption, failure to receive health examinations, insomnia due to stress and anxiety about illness and other disease vectors, misuse of medications, e.g., the bolus, unlicensed herbal medications and substandard housing. The community environmental

sanitation problems created breeding grounds for mosquitoes at waterlogged sites and an abundance of theft. In addition, the PCU service health teams, so clients became frustrated because they waited for a long time, "especially when the physician opened the clinic one day per month",

...barriers to receiving care,... "someone has no availability time and does not trust anyone bringing treatment to their children." In addition, the participants requirements were problematic, especially in chronic patients needing continuous monthly surpluses of medications (they only receive medication that cover two weeks of normal services).

The goal, nursing activities and evaluation criteria were planned in process 3 (P); short and long purposes were in this step. The participated in process 4 (I) in the campaign project ... "Use the right drug and substance abuse prevention." and "the healthy home and safety environment far from dengue disease" and had received home visits, and brainstorming.

The short and long term were evaluated in process 5 (E), in which individual family had successful interpersonal improvements which made for better sleep without medication on a nightly basis. The clients' trust was placed in the healthcare volunteers, who encouraged treatment, because the policy procedures were developed to provide services, e.g. coconut shells for foot massage and the exchange of organic traditional vegetable herbs. In addition, the physician's monthly increased to two days per month, queue cards were adjusted and Thai traditional music was played while patients waited for treatment. There was also an improved sanitation environment for health; micro-organisms in the water to decrease mosquitoes. In addition, long term plans included monitoring disease complications and the environment.

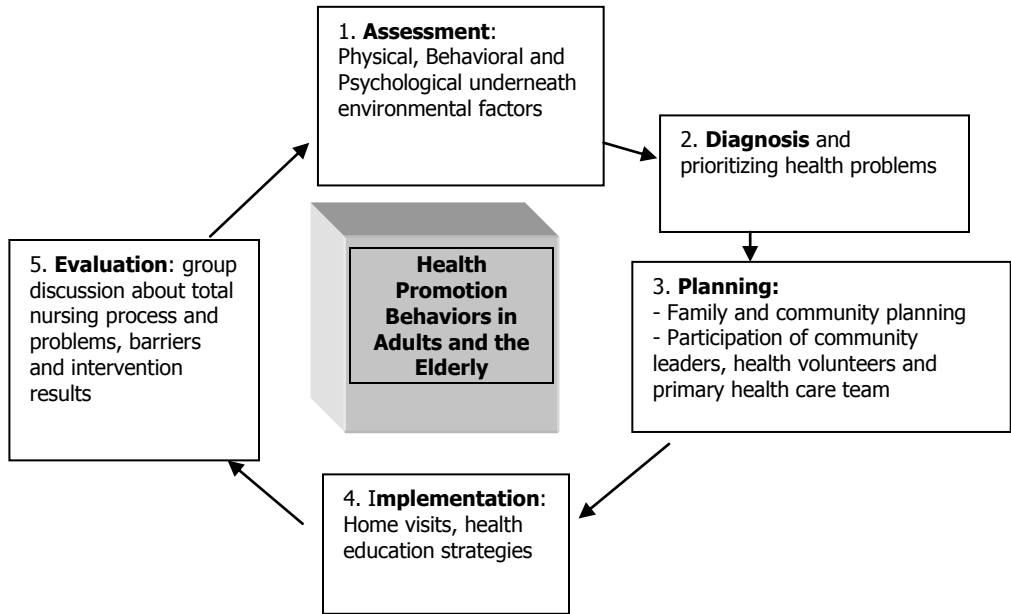


Fig.1. The Concept of CHN as Applied in Adults and the Elderly: Five Steps from the Dimensions Model and Nursing Process : Mary Jo Clark, 1999. 10

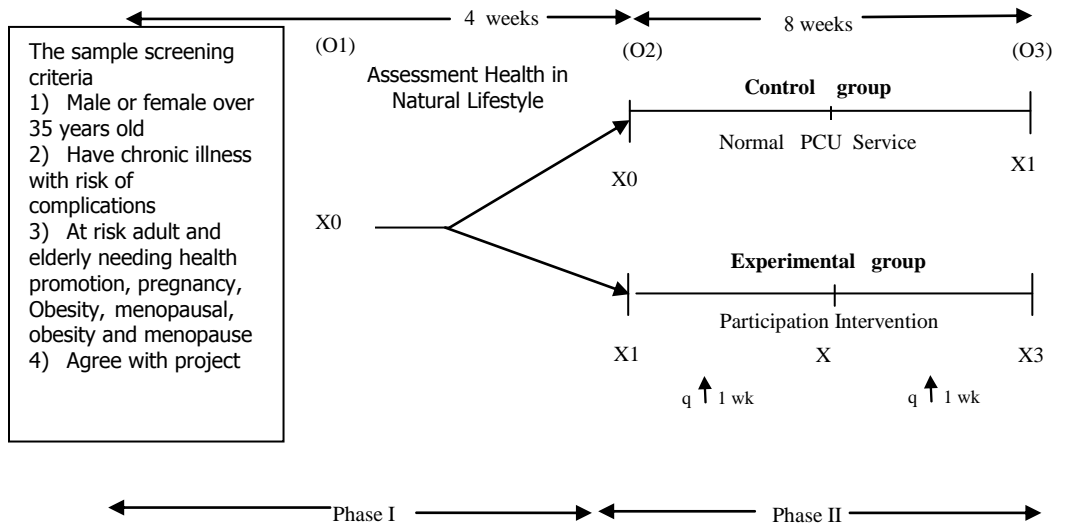


Fig.2. Study design.

Table1. Number, Percentage of demographic data for all volunteers (n = 29 persons or families).

General characteristics	Control group (n = 14)	Experiment group (n = 15)	total (n=29)
	Number (%)	Number (%)	Number (%)
Gender			
Male	6 (42.9)	3 (20.0)	9 (31.0)
Female	8 (57.1)	12 (80.0)	20 (69.0)
Age (years) ($\bar{X} \pm$ S.D.)	48.6 \pm 9.0	57.5 \pm 12.9	53.0 \pm 11
Educational level			
Primary level	9 (64.3)	13 (86.7)	22 (75.9)
Secondary level	3 (21.4)	2 (13.3)	5 (17.2)
Vocational diploma	2 (14.3)	-	2 (6.9)
Occupation character			
Generally employment; industry	8 (57.1)	3 (20.0)	11 (38.0)
Agriculture	1 (7.1)	4 (26.7)	5 (17.2)
Maid / butler	-	5 (33.3)	5 (17.2)
Trader	5 (35.7)	-	5 (17.2)
Elderly	-	3 (20)	3 (10.4)
Income			
Did not report income	14 (100)	12 (80.0)	26 (89.7)
Reported income	-	3 (20.0)	3 (10.3)
Chronic illness			
No Chronic illness	4 (28.6)	4 (26.7)	8 (27.6)
Have chronic illness	10 (71.4)	11 (73.3)	21 (72.4)
Diabetes mellitus	2 (14.3)	4 (26.7)	6 (20.7)
Hypertension	4 (28.5)	2 (13.4)	6 (20.7)
Skeletal and joint	2 (14.3)	2 (13.4)	4 (13.8)
Other; hyperlipidemia,	2 (14.3)	3 (19.9)	5 (17.2)
Health status ($\bar{X} \pm$ S.D.)			
Weight (Kg.)	63.51 \pm 16.45	61.08 \pm 11.90	
Body mass Index (Kg./M ²)	24.95 \pm 5.74	26.48 \pm 9.43	
West circumference (inch.)	32.50 \pm 5.39	32.36 \pm 4.50	
Systolic Blood Pressure (mmHg)	132.44 \pm 13.52	121.14 \pm 16.00	
Diastolic Blood Pressure (mmHg)	77.94 \pm 8.82	78.25 \pm 14.36	
Fasting Blood sugar (DTX) (mg%)	111.50 \pm 25.60	123.75 \pm 44.86	
Perceived stress ($\bar{X} \pm$ S.D.)			
Negative score	8.8 \pm 4.3	6.13 \pm 3.7	
Positive score	21.7 \pm 6.2	24.7 \pm 5.4	

Table 2. Comparison of the average scores for health promotion behavior before and after participated program between control and experiment group. (n = 29 persons or families).

Variable		Control group (n=14) \bar{X} (SD)	Experiment group (n=15) \bar{X} (SD)	p-value (2-tailed)
- Aspect of health promotion behaviors				
1) Personal Relationship	before	18.43 (3.1)	18.13 (3.1)	.798
	after	15.43 (2.7)	17.8 (3.1)	.037*
mean diff with 95%CI (ANCOVA) experiment - control		2.53 (0.67, 4.39)		.009* *
2) Physical activity or exercise	before	11.64 (1.6)	11.73 (3.2)	.924
	after	14.57 (4.3)	11.73 (3.5)	.062
mean diff with 95%CI (ANCOVA) experiment - control		- 2.90 (-5.64, -0.16)		.039*
3) Spiritual or Mental intelligence	before	20.43 (3.5)	20.07 (3.6)	.786
	after	18.64 (3.6)	18.93 (3.1)	.817
mean diff with 95%CI (ANCOVA) experiment - control		0.45 (-1.82, 2.73)		.682
4) Responsibility for health	before	14.57 (3.1)	15.33 (2.5)	.467
	after	14.36 (3.8)	17.73 (3.7)	.018*
mean diff with 95%CI (ANCOVA) experiment - control		3.26 (0.44, 6.09)		.025*
5) Stress management	before	11.79 (1.9)	12.0 (2.1)	.778
	after	12.07 (2.5)	13.2 (2.9)	.269
mean diff with 95%CI (ANCOVA) experiment - control		0.99 (-0.86, 2.85)		.280
6) Nutrition for healthy	before	15.79 (2.8)	15.40 (3.1)	.729
	after	14.79 (2.4)	15.93 (3.1)	.277
mean diff with 95%CI (ANCOVA) experiment - control		1.29 (-0.69,3.28)		.193
7) Total health promotion behaviors	before	92.15 (10.8)	92.07 (12.9)	.910
	after	88.62 (12.2)	95.07 (15.6)	.340
mean diff with 95%CI (ANCOVA) experiment - control		6.50 (-3.18, 16.19)		.178

* p < .05 ** p < .01 The comparison between groups using ANCOVA test

5. Discussion

The Covariate by ANCOVA was carried out to remove the effects of the differences in the variables between groups because the sample was 17 participants per group, who were tested by the normality Kolmogorov-Smirnov Shapiro-Wilk with acceptance in a normal curve of more than .05. [11,12]. Accordingly, the overall health promotion can be described as follows:

The CHN process of this study made a significant difference in three aspects of health behaviors; health responsibility, personal relationships and exercise, which consisted of the personal family, community participation with a partnership between the health team and the community leader, and Family Health Nursing Care (FHNC) in home visits. The characteristics include affirmation and support for one another and a shared sense of responsibility [4]. For example; participants had examinations to check abnormalities at least once a month, consultations were made regarding the occurrence of co-morbidities and to read the labels or containers to identify types and components of nutrients, such as fat or sodium. These process [14] findings might have been due to increasing awareness about the recognition of diseases and the severity of complications, which could affect the lifestyles and expectations

of patients. Occupational characteristics were particularly influential, some subjects said they, "...do not want to be a burden for their children, so they need to leave to take care of treatment....", was a factor for individuals to take care of themselves. This factor was directed at increasing responsibility for wellness behaviors [4]

In addition, this changed the experimental group for the better due to the participation of all sectors in the community. Consistent with the studies, the community-based health promotion program could be applied to promote the

health of older persons in other communities. The key is the community involvement which encourages coordination and participation of the representatives of the community [15,16]. These results with other study had only always participated one group pre-post test. In addition, the FHNC was a family service as clients. The members had relationships and a commitment to increase health promoting behaviors while correlations with interpersonal relationships increased, they learned to accept the changes happening in their lives, both good and bad. Moreover, participation in campaign projects for development with the community enhanced concrete cooperation in the learning process [17,18]. This strategy involves the use of communication and training methods [18] to raise awareness and facilitate additional abilities and skills, as well as encourage the participation of family members in all situations, which directly and indirectly affected the performance, recognition and the intention to engage in health promoting behaviors [4].

The home visits included continued care, prevention of early complications of disease, reduce family barriers and increased incentives for patients. These are consistent with the values of Thai society and the beliefs of professional nursing. This can serve as a guide for an exploration of the complex biopsychosocial processes that motivate individuals to engage in behaviors directed toward the enhancement of health [8]. There are ways in which the contribution can achieve the goals of holistic nursing care, correspond the priority of prevention and healthcare for patients at home and could be used for more than 83 percent of home visits in the CHN [19].

The scores for physical activity or exercise in the experimental group were lower than the control group. This finding can be explained in that 73.3 percent of the

subjects had chronic diseases and exercise had to be compatible with the disease. The goal of exercise is to delay the degeneration of the cardiopulmonary system rather than bodily fitness. The focus of the exercise is similar to the sports in Thai Sports Medicine for the Elderly and focuses on increasing the duration of walking sessions [20]. In addition, the elderly participants in the experimental group, but not in the control group, were people with concerns regarding bone and joint diseases or diabetes who needed to be careful due to existing injuries and severe diseases. This was consistent with the study of 2020 adults which found that the elderly have difficulty maintaining regular exercise routines even though work and family demands may decrease with age due to fear of resultant illnesses or injury, disabilities, and sensory impairment [21, 22, 23].

The CHN process based on PCU services encouraged brainstorming sessions from the beginning to the end of the process comprised of participants along with their families, healthcare volunteers, community leaders and healthcare teams. This process encouraged community development [24, 25, 26] and community organization intervention through the Planned Approach To Community Health (PATCH) and Mobilizing for Action through Planning and Partnerships (MAPP), a community-wide planning tool that leads communities to prioritize important public health issues and identify the community resources necessary to eliminate the problems [26,27]. In addition, it describes the process of collective and collaborative learning, which are based on sociocultural learning concepts and focus on the role of group membership or community participation for (collaborative and individual) learning [28].

The CHN Process intervention has three levels of intervention education, counseling and support individual targets, community-based participation in

community targets and policy changes in public policy [4, 29]. The behavioral outcomes are the result of changes in individual attitudes, beliefs, values and the conditions in the family and community. Because they are interrelated, success was more likely to be achieved if all were taken into consideration when planning and evaluating health promotion. The resulting strategies in terms of individual lifestyle changes and community-based interventions by primary care were increased in the specific populations of adults and the elderly. Further studies could follow up on continuity and sustainability.

Health promotion interventions are complex and usually involve multiple components. Individuals must thus maintain their new behaviors in large social environments or maintain healthy behaviors [30, 31]. The challenge for nurses and health teams is to develop, test evaluate, implement and promote health models that incorporate the influences of community factors based on primary healthcare [31].

Implications and recommendations for further study

The implications in the experimental group's scores study result may be many factors such as the occupation time of life style and wide aged -range in the samples. The strengths of this study included improved family relationships and health responsibility. Moreover, the treatment of chronic illnesses was empowered by health care volunteers and health teams working with local organizations in the community [32]. Further studies should separate adults and the elderly receiving services to reveal different strategies between age groups and should have only one group pre-post test as a means to increase.

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